Program Change Request

New Program Proposal

Viewing: PHD-PHSC : Doctor of Philosophy Pharmaceutical Sciences

Last edit: 08/13/18 2:59 pm
Changes proposed by: mkhan

Contact(s)

<table>
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<tr>
<th>Name</th>
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<tr>
<td>Mansoor Khan</td>
<td><a href="mailto:mkhan@pharmacy.tamhsc.edu">mkhan@pharmacy.tamhsc.edu</a></td>
<td>9794360562</td>
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Academic level: Graduate
Effective Term: 2018-2019
Department: College of Pharmacy
College: Pharmacy
Program type: Degree
Degree designation: PHD - Doctor of Philosophy
With a major in: Pharmaceutical Sciences (PHSC)

Catalog Program Title
Doctor of Philosophy Pharmaceutical Sciences

CIP and Fund code: 51201000

Rationale for Proposal
A pharmaceutical science graduate degree is in great demand in the State and nation. The Texas A&M Rangel College of Pharmacy has started its secondary campus in College Station, and the primary campus is in Kingsville. Our students as well as others in Texas want to advance their education with research-based graduate degrees for careers in industry, academia, and regulatory agencies among others. At the present time, such a program is available in UT Austin, Texas Tech, University of Houston, and Texas Southern. Our surveys have indicated that all their graduates are almost immediately employed with well paying jobs, and these school are operating beyond their capacities. They are unable to admit even 10% of interested students. Texas A&M does not have this program in any of the campuses, even though we are in an outstanding position to develop a cutting edge program because of the facilities and outstanding research leaders across the Aggie campus for collaborations and drug development. The Rangel College of Pharmacy has prepared itself for this wonderful program by hiring highly accomplished faculty and developing State-of-the-Art facilities in College Station as well as Kingsville. Our pharmacy School started admitting professional students in 2006 in Kingsville campus, and 2015 in the College Station campus. The College faculty in both campus VOTED unanimously to start this graduate program WITH HIGHEST PRIORITY to enable our students to progress with the enormous talents and facilities that are available in Texas A&M. Currently there are more than 80 pharmaceutical science graduate programs in the Nation with a total enrollment of 3294 students in 2015.

Program hours: 96
Is this program eligible for financial aid?: Yes

Program delivery mode: On-campus

Proposed Program Start Date: 08/2018

Catalog Program Requirements

In Workflow
1. CP Curricular Affairs Committee DH
2. Curricular Services Review
3. CP Executive Committee
4. CP General Faculty
5. Provost
6. GC Preparer
7. GC Chair
8. Faculty Senate Preparer
9. Provost Senate
10. Provost II
11. President
12. External Approval
13. Curricular Services

Approval Path
1. 01/27/17 10:48 am Steven Peterson (speterson): Approved for CP Curricular Affairs Committee DH
2. 01/27/17 2:05 pm Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 01/27/17 2:57 pm Mansoor Khan (mkhan): Approved for CP Executive Committee
4. 01/27/17 4:14 pm Merlyn Joseph (joseph): Approved for CP General Faculty
5. 01/30/17 10:57 am Deena McConnell (djm): Rollback to CP Executive Committee for Provost
6. 01/30/17 4:14 pm Mansoor Khan (mkhan): Approved for CP Executive Committee
7. 01/30/17 4:58 pm Maria Jaramillo-Gonzalez (maria-v-jaramillo): Approved for CP General Faculty
8. 01/30/17 5:44 pm Deena McConnell (djm): Approved for Provost
Program Requirements

Student’s Advisory Committee
Degree Plan
Transfer of Credit
Research Proposal
Examinations
Preliminary Examination
Final Examination/Dissertation Defense
Dissertation

Student’s Advisory Committee

After receiving admission to graduate studies and enrolling, the student will consult with the head of his or her major or administrative department (or chair of the intercollegiate faculty) concerning appointment of the chair of the advisory committee. The student’s advisory committee will consist of no fewer than four members of the graduate faculty representative of the student’s several fields of study and research, where the chair or co-chair must be from the student’s department (or intercollegiate faculty, if applicable), and at least one or more of the members must have an appointment to a department other than the student’s major department. The outside member for a student in an interdisciplinary degree program must be from a department different from the chair of the student’s committee. The chair, in consultation with the student, will select the remainder of the advisory committee. Only graduate faculty members located on Texas A&M University campuses may serve as chair of a student’s advisory committee. Other Texas A&M University graduate faculty members located off-campus may serve as a member or co-chair (but not chair), with a member as the chair.

If the chair of a student’s advisory committee voluntarily leaves the University and the student is near completion of the degree and wants the chair to continue to serve in this role, the student is responsible for securing a current member of the University Graduate Faculty, from the student’s academic program and located near the Texas A&M University campus site, to serve as the co-chair of the committee. The Department Head or Chair of Intercollegiate faculty may request in writing to the Associate Provost for Graduate and Professional Studies that a faculty member who is on an approved leave of absence or has voluntarily separated from the university, be allowed to continue to serve in the role of chair of a student’s advisory committee without a co-chair for us to one year. The students should be near completion of the degree. Extensions beyond the one year period can be granted with additional approval of the Dean.
The committee members’ signatures on the degree plan indicate their willingness to accept the responsibility for guiding and directing the entire academic program of the student and for initiating all academic actions concerning the student. Although individual committee members may be replaced by petition for valid reasons, a committee cannot resign en masse. The chair of the committee, who usually has immediate supervision of the student’s research and dissertation or record of study, has the responsibility for calling all meetings of the committee. The duties of the committee include responsibility for the proposed degree plan, the research proposal, the preliminary examination, the dissertation or record of study and the final examination. In addition, the committee, as a group and as individual members, is responsible for counseling the student on academic matters, and, in the case of academic deficiency, initiating recommendations to the Office of Graduate and Professional Studies.

Degree Plan

The student’s advisory committee will evaluate the student’s previous education and degree objectives. The committee, in consultation with the student, will develop a proposed degree plan and outline a research problem which, when completed, as indicated by the dissertation (or its equivalent for the degree of Doctor of Education or the degree of Doctor of Engineering), will constitute the basic requirements for the degree. The degree plan must be filed with the Office of Graduate and Professional Studies prior to the deadline imposed by the student’s college and no later than 90 days prior to the preliminary examination.

This proposed degree plan should be submitted through the online Document Processing Submission System located on the website http://ogsdpss.tamu.edu. A minimum of 60 hours is required on the degree plan for the Doctor of Philosophy for a student who has completed a master’s degree. A student who has completed a DDS/DMD, DVM or a MD at a U.S. institution is also required to complete a minimum of 60 hours. A student who has completed a baccalaureate degree but not a master’s degree will be required to complete a 90-hour degree plan. Completion of a DDS/DMD, DVM or MD degree at a foreign institution requires completion of a minimum of 90 hours for the Doctor of Philosophy. A field of study may be primarily in one department or in a combination of departments. A degree plan must carry a reasonable amount of 691 (research).

Additional coursework may be added by petition to the approved degree plan by the student’s advisory committee if it is deemed necessary to correct deficiencies in the student’s academic preparation. No changes may be made to the degree plan once the student’s Request for Final Examination is approved by the Office of Graduate and Professional Studies.

Approval to enroll in any professional course (900-level) should be obtained from the head of the department (or Chair of the intercollegiate faculty, if applicable) in which the course will be offered before including such a course on a degree plan.

No credit may be obtained by correspondence study, by extension or for any course of fewer than three weeks duration.

Transfer of Credit

Courses for which transfer credits are sought must have been completed with a grade of B or greater and must be approved by the student’s advisory committee and the Office of Graduate and Professional Studies. These courses must not have been used previously for another degree. Except for officially approved cooperative doctoral programs, credit for thesis or dissertation research or the equivalent is not transferable. Credit for “internship” coursework in any form is not transferable. Courses taken in residence at an accredited U.S. institution or approved international institution with a final grade of B or greater will be considered for transfer credit if, at the time the courses were completed, the courses would be accepted for credit toward a similar degree for a student in degree-seeking status at the host institution. Credit for coursework taken by extension is not transferable. Coursework in which no formal grades are given or in which grades other than letter grades (A or B) are earned (for example, CR, P, S, U, H, etc.) is not accepted for transfer credit. Credit for coursework submitted for transfer from any college or university must be shown in semester credit hours, or equated to semester credit hours.

Courses used toward a degree at another institution may not be applied for graduate credit. If the course to be transferred was taken prior to the conferral of a degree at the transfer institution, a letter from the registrar at that institution stating that the course was not applied for credit toward the degree must be submitted to the Office of Graduate and Professional Studies.

Grades for courses completed at other institutions are not included in computing the GPR. An official transcript from the university at which transfer courses are taken must be sent directly to the Office of Admissions.

Research Proposal

The general field of research to be used for the dissertation should be agreed on by the student and the advisory committee at their first meeting, as a basis for selecting the proper courses to support the proposed research. As soon thereafter as the research project can be outlined in reasonable detail, the dissertation research proposal should be completed. The research proposal should be approved at a meeting of the student’s advisory committee, at which time the feasibility of the proposed research and the adequacy of available facilities should be reviewed. The approved proposal, signed by all members of the student’s advisory committee, the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), must be submitted to the Office of Graduate and Professional Studies at least 20 working days prior to the submission of the Request for the Final Examination.

Compliance issues must be addressed if a graduate student is performing research involving human subjects, animals, infectious biohazards and recombinant DNA. A student involved in these types of research should check with the Office of Research Compliance and Biosafety at (979) 458-1467 to address questions about all research compliance responsibilities. Additional information can also be obtained on the website http://rcb.tamu.edu.

Examinations

Preliminary Examination for Doctoral Students

The student’s major department (or chair of the interdisciplinary degree program faculty, if applicable) and his or her advisory committee may require qualifying, cumulative or other types of examinations at any time deemed desirable. These examinations are entirely at the discretion of the department and the student’s advisory committee.

The preliminary examination is required. The preliminary examination for a doctoral student shall be given no earlier than a date at which the student is within 6 credit hours of completion of the formal coursework on the degree plan (i.e., all coursework on the degree plan except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other...
graduate courses specifically designated as S/U in the course catalog). The student should complete the Preliminary Examination no later than the end of the semester following the completion of the formal coursework on the degree plan.

Preliminary Examination Format
The objective of preliminary examination is to evaluate whether the student has demonstrated the following qualifications:

a. mastery of the subject matter of all fields in the program;
b. an adequate knowledge of the literature in these fields and an ability to carry out bibliographical research;
c. an understanding of the research problem and the appropriate methodological approaches.

The format of the preliminary examination shall be determined by the student’s department (or interdisciplinary degree program, if applicable) and advisory committee, and communicated to the student in advance of the examination. The exam may consist of a written component, oral component, or combination of written and oral components.

The preliminary exam may be administered by the advisory committee or a departmental committee; herein referred to as the examination committee.

Regardless of exam format, a student will receive an overall preliminary exam result of pass or fail. The department (or interdisciplinary degree program, if applicable) will determine how the overall pass or fail result is determined based on the exam structure and internal department procedures. If the exam is administered by the advisory committee, each advisory committee member will provide a pass or fail evaluation decision.

Only one advisory committee substitution is allowed to provide an evaluation decision for a student’s preliminary exam, and it cannot be the committee chair.

If a student is required to take, as a part of the preliminary examination, a written component administered by a department or interdisciplinary degree program, the department or interdisciplinary degree program faculty must:

a. offer the examination at least once every six months. The departmental or interdisciplinary degree program examination should be announced at least 30 days prior to the scheduled examination date.

b. assume the responsibility for marking the examination satisfactory or unsatisfactory, or otherwise graded, and in the case of unsatisfactory, stating specifically the reasons for such a mark.

c. forward the marked examination to the chair of the student’s advisory committee within one week after the examination.

Preliminary Examination Scheduling
Prior to commencing any component of the preliminary examination, a departmental representative or the advisory committee chair will review the eligibility criteria with the student, using the Preliminary Examination Checklist to ensure the student is eligible for the preliminary examination. The following list of eligibility requirements applies.

Student is registered at Texas A&M University for a minimum of one semester credit hour in the long semester or summer term during which any component of the preliminary examination is held. If the entire examination is held between semesters, then the student must be registered for the term immediately preceding the examination.

An approved degree plan is on file with the Office of Graduate and Professional Studies prior to commencing the first component of the examination.

Student’s cumulative GPR is at least 3.000.

Student’s degree plan GPR is at least 3.000.

All English language proficiency requirements are satisfied.

At the end of the semester in which at least the first component of the exam is given, there are no more than 6 hours of coursework remaining on the degree plan (except 681, 684, 690, 691, 692, 693, 695, 697, 791, or other graduate courses specifically designated as S/U in the course catalog). The head of the student’s department (or Chair of the Interdisciplinary Degree Program, if applicable) has the authority to approve a waiver of this criterion.

Report of Preliminary Examination
Credit for the preliminary examination is not transferable in cases where a student changes degree programs after passing a preliminary exam.

If a written component precedes an oral component of the preliminary exam, the chair of the student’s examination committee is responsible for making all written examinations available to all members of the committee. A positive evaluation of the preliminary exam by all members of a student’s examination committee with at most one dissension is required to pass a student on his or her preliminary exam.

The student’s department will promptly report the results of the Preliminary Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Preliminary Examination form. The Preliminary Examination checklist form must also be submitted. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the preliminary examination.

The Report of the Preliminary Examination form must be submitted with original signatures of the approved examination committee members. If an approved examination committee member substitution (one only) has been made, that signature must also be included, in place of the committee member, on the form submitted to the Office of Graduate and Professional Studies. The original signature of the department head is also required on the form.

After passing the required preliminary examination for the doctoral degree, the student must complete the final examination for the degree within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

Retake of Failed Preliminary Examination
Upon approval of the student’s examination committee, with no more than one member dissenting, and approval of the Office of Graduate and Professional Studies, a student who has failed the preliminary examination may be given one re-examination. Adequate time must be given to permit the student to address the inadequacies emerging from the first preliminary examination. The examination committee must agree upon and communicate in writing to the student, an adequate time-frame from the first examination (normally six months) to retest, as well as a detailed explanation of the inadequacies emerging from the examination. The student and the committee should jointly negotiate a mutually acceptable date for this retест. When providing feedback on inadequacies, the committee should clearly document expected improvements that the student must be able to exhibit in order to retake the exam. The examination committee will document and communicate the time-frame and feedback within 10 working days.

Final Examination/Dissertation Defense

Final Examination for Doctoral Students
The candidate for the doctoral degree must pass a final examination by deadline dates announced in the “Office of Graduate and Professional Studies Calendar” each semester. The doctoral student is allowed only one opportunity to take the final examination.

No unabsolved grades of D, F, or U for any course can be listed on the degree plan. The student must be registered for any remaining hours of 681, 684, 690, 691, 692, 791 or other graduate courses specifically designated as S/U in the course catalog during the semester of the final exam. No student may be given a final examination until they have been admitted to candidacy and their current official cumulative and degree plan GPAs are 3.00 or better.
To be admitted to candidacy for a doctoral degree, a student must have:

1. completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 692 (Professional Study), or 791 hours,
2. a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
3. passed the preliminary examination,
4. submitted an approved dissertation proposal,
5. met the residence requirements.

The request to hold and announce the final examination must be submitted to the Office of Graduate and Professional Studies a minimum of 10 working days in advance of the scheduled date. Any changes to the degree plan must be approved by the Office of Graduate and Professional Studies prior to the submission of the request for final examination.

The student’s advisory committee will conduct this examination. The final examination is not to be administered until the dissertation or record of study is available in substantially final form to the student’s advisory committee, and all concerned have had adequate time to review the document. Whereas the final examination may cover the broad field of the candidate’s training, it is presumed that the major portion of the time will be devoted to the dissertation and closely allied topics. Persons other than members of the graduate faculty may, with mutual consent of the candidate and the chair of the advisory committee, be invited to attend a final examination for an advanced degree. A positive vote by all members of the graduate committee with at most one dissension is required to pass a student on his or her exam. A department can have a stricter requirement provided there is consistency within all degree programs within a department. Upon completion of the questioning of the candidate, all visitors must excuse themselves from the proceedings.

Report of Final Examination

The student’s department will promptly report the results of the Final Examination to the Office of Graduate and Professional Studies via the Report of Doctoral Final Examination form. These forms should be submitted to the Office of Graduate and Professional Studies within 10 working days of completion of the final examination. The Office of Graduate and Professional Studies must be notified in writing of any cancellations.

A positive evaluation of the final exam by all members of a student’s advisory committee with at most one dissension is required to pass a student on his or her final exam. The Report of the Final Examination Form must be submitted with original signatures of only the committee members approved by the Office of Graduate and Professional Studies. If necessary, multiple copies of the form may be submitted with different committee member original signatures. If an approved committee member substitution (1 only) has been made, his/her signature must be included on the form submitted to the Office of Graduate and Professional Studies.

Dissertation

The ability to perform independent research must be demonstrated by the dissertation, which must be the original work of the candidate. Whereas acceptance of the dissertation is based primarily on its scholarly merit, it must also exhibit creditable literary workmanship. The format of the dissertation must be acceptable to the Office of Graduate and Professional Studies. Guidelines for the preparation of the dissertation are available in the Thesis Manual, which is available online at http://ogaps.tamu.edu.

After successful defense and approval by the student’s advisory committee and the head of the student’s major department (or chair of the intercollegiate faculty, if applicable), a student must submit his/her dissertation in electronic format as a single PDF file. The PDF file must be uploaded to the website, http://ogaps.tamu.edu. Additionally, a signed paper approval form with original signatures must be received by the Office of Graduate and Professional Studies. Both the PDF file and the signed approval form are required by the deadline.

Deadline dates for submitting are announced each semester or summer term in the Office of Graduate and Professional Studies Calendar (see Time Limit statement). These dates also can be accessed via the website http://ogaps.tamu.edu.

Each student who submits a document for review is assessed a one-time thesis/dissertation processing fee through Student Business Services. This processing fee is for the thesis/dissertation services provided. After commencement, dissertations are digitally stored and made available through the Texas A&M Libraries.

A dissertation that is deemed unacceptable by the Office of Graduate and Professional Studies because of excessive corrections will be returned to the student’s department head or chair of the intercollegiate faculty. The manuscript must be resubmitted as a new document, and the entire review process must begin anew. All original submittal deadlines must be met during the resubmittal process in order to graduate.

Additional Requirements

Residence

A student who enters the doctoral degree program with a baccalaureate degree must spend one academic year plus one semester in resident study at Texas A&M University. A student who holds master’s degree when he/she enters doctoral degree program must spend one academic year in resident study. One academic year may include two adjacent regular semesters or one regular semester and one adjacent 10-week summer semester. The third semester is not required to be adjacent to the one year. Enrollment for each semester must be a minimum of 9 credit hours each to satisfy the residence requirement.

To satisfy the residence requirement, the student must complete a minimum of 9 credit hours per semester or 10-week summer semester in resident study at Texas A&M University for the required period. A student who enters a doctoral degree program with a baccalaureate degree may fulfill residence requirements in excess of
one academic year (18 credit hours) by registration during summer sessions or by completion of a less-than-full course load (in this context a full course load is considered 9 credit hours per semester).

Students who are employed full-time while completing their degree may fulfill total residence requirements by completion of less-than-full time course loads each semester. In order to be considered for this, the student is required to submit a Petition for Waivers and Exceptions along with verification of his/her employment to the Office of Graduate and Professional Studies. An employee should submit verification of his/her employment at the time he/she submits the degree plan.

See Registration.
See Residence Requirements.

Time Limit

All requirements for doctoral degrees must be completed within a period of ten consecutive calendar years for the degree to be granted. A course will be considered valid until 10 years after the end of the semester in which it is taken. Graduate credit for coursework more than ten calendar years old at the time of the final oral examination may not be used to satisfy degree requirements.

After passing the required preliminary oral and written examinations for a doctoral degree, the student must complete the final examination within four calendar years. Otherwise, the student will be required to repeat the preliminary examination.

A final corrected version of the dissertation or record of study in electronic format as a single PDF file must be cleared by the Office of Graduate and Professional Studies no later than one year after the final examination or within the 10-year time limit, whichever occurs first. Failure to do so will result in the degree not being awarded.

Continuous Registration

A student in a program leading to a Doctor of Philosophy who has completed all coursework on his/her degree plan other than 691, 5V98 or 5V99 (research) are required to be in continuous registration until all requirements for the degree have been completed. See Continuous Registration Requirements.

Admission to Candidacy

To be admitted to candidacy for a doctoral degree, a student must have:

• completed all formal coursework on the degree plan with the exception of any remaining 681, 684, 690 and 691, 5V98 and 5V99, or 791.
• a 3.0 Graduate GPA and a Degree Plan GPA of at least 3.0 with no grade lower than C in any course on the degree plan,
• passed the preliminary examination (written and oral portions),
• submitted an approved dissertation proposal,
• met the residence requirements. The final examination will not be authorized for any doctoral student who has not been admitted to candidacy.

Languages

A student is required to possess a competent command of English. For English language proficiency requirements, see the Admissions section of this catalog. The doctoral (PhD) foreign language requirement at Texas A&M University is a departmental option, to be administered and monitored by the individual departments of academic instruction.

99-Hour Cap on Doctoral Degrees

In Texas, public colleges and universities are funded by the state according to the number of students enrolled. In accordance with legislation passed by the Texas Legislature, the number of hours for which state universities may receive subvention funding at the doctoral rate for any individual is limited to 99 hours. Texas A&M University and other universities will not receive subvention for hours in excess of the limit.

Institutions of higher education are allowed to charge the equivalent of nonresident tuition to a resident doctoral student who has enrolled in 100 or more semester credit hours of doctoral coursework.

A doctoral student at Texas A&M has seven years to complete his/her degree before being charged out-of-state tuition. A doctoral student who, after seven years of study, has accumulated 100 or more doctoral hours will be charged tuition at a rate equivalent to out-of-state tuition. Please note that the tuition increases will apply to Texas residents as well as students from other states and countries who currently are charged tuition at the resident rate. This includes those doctoral students who hold GAT, GANT, and GAR appointments of 20 or more hours and recipients of competitive fellowships who receive more than $1,000 per semester. Doctoral students who, after seven years of study, have not accumulated 100 hours are eligible to pay in-state tuition if otherwise eligible.

For count purposes, a year is counted as three semesters, normally fall, spring and summer. Using this system, a student is allowed 21 semesters as a G8 student to complete the doctoral degree before being penalized with the higher tuition rate. Any semester in which a G8 student is enrolled for a doctoral level course is counted.

The following majors are exempt from the 99-Hour Cap on Doctoral Degrees:

• Biomedical Sciences
• Biochemistry
• Microbiology
• Genetics
• Toxicology
• Nutrition Sciences
• Community Clinical Psychology
• School Psychology
• Veterinary Pathology
• Clinical Psychology
• Counseling Psychology
Application for Degree

For information on applying for your degree, please visit the Graduation section.

Additonal Information  4/10/17--Updates to the Final Exam, Preliminary Exam and Degree Plan verbiage requested by OGAPS.

Required Proposal Forms

- Planning Notification THECB_KW.pdf
- THECBPlanningconfirmation.pdf
- AppendixE-Carlson Letter of Support.pdf
- AppendixF_TAMUDeansSupport.pdf
- AppendixAreaEmployersSupport.pdf
- Appendix B -RCOP_CS_Five Year Master Hiring Plan.pdf
- AppendixC_RCOP Faculty Workload Guidance.pdf
- Appendix-D_Equipment.pdf
- THECB PHSC Graduate Program Proposal - Jan302017-ver15.docx
- THECB Proposal Agenda Item Briefing Jan302017_Ver15.docx
- AppendixA-PhD.pdf
- Appendix G.pdf
- AppendixH-SupportFacultyCV.pdf
- Appendix C - Institution Policy on Faculty Teaching Load.pdf
- CertificationTHECB-Jan302017-v1.docx
- Pharm Sciences Proposal REVISED 7-31-18.docx

Reviewer Comments

- Sandra Williams (sandra-williams) (01/27/17 2:04 pm): The form shows the program is not eligible for financial aid. This needs to be fixed. Also, the attachments include the documentation for a Master of Science in Pharmaceutical Sciences. Shouldn't these be attached to a MS proposal created/submitted through CARS?
- Sandra Williams (sandra-williams) (01/27/17 2:05 pm): Moving forward to meet Graduate Council February deadline.
- Mansoor Khan (mkhan) (01/27/17 2:57 pm): Called Sara in registrar's office to help correct the financial aid box to "eligible". Re attachments, the relevant sections for MS degree have been attached with the MS proposal.
- Mansoor Khan (mkhan) (01/27/17 4:21 pm): The financial aid box is fixed now.
- Deena McConnell (djmc) (01/30/17 10:57 am): Rollback: The content of the BOR agenda item and THECB proposal is okay. However, some of the appendices to the proposal are missing - specifically, A, B, C, D, G, and H. The Librarian's Statement (Appendix E) and support letters from area employers (Appendix I) are included and I assume there is no Articulation Agreements with Partner Institutions (Appendix F). The appendices need to be added.
- Mansoor Khan (mkhan) (01/30/17 4:13 pm): Replaced all relevant files to reflect accuracy and consistency of MS (32 SCH for thesis option and 36 sch for non-thesis option). Also added all required appendices
- Deena McConnell (djmc) (01/30/17 5:44 pm): Appendix B will need to be updated prior to submission to the System Offices and THECB.
- Cathy Cordova (ccordova) (04/17/17 7:40 am): Approved on behalf of President's Office. Memo 4/10/17
- Linda Newman (lnewman) (06/14/17 2:35 pm): Degree was submitted May 19, 2017 to agenda items for BOR approval at the August 23, 2017 Board meeting.
- Linda Newman (lnewman) (04/10/17 4:05 pm): Request was approved by the BOR on August 23, 2017, agenda item 6.16, Certified Minute Order # 144-2017. Pending THECB approval.
- Linda Newman (lnewman) (07/31/18 9:07 am): Following completion of the Curricular Process and approval of the new degree program by the Board of Regents, the THECB updated their required proposal form. After the new form was completed, the THECB clarified that program/discipline specific justification is required for over 90 SCH for a doctoral program. The proposal form has been revised to comply with the THECB requirements and the SCH has been reduced from 96/64 to 90/60. Because of the reduction in SCH, the proposal is being routed again through the Curricular Process. New proposal form attached named: Pharm Sciences Proposal REVISED 7-31-18.
December 13, 2016

MEMORANDUM

TO: Karan L. Watson, Ph.D., P.E.  
Provost and Executive Vice President for Academic Affairs 
Texas A&M University

FROM: Indra K. Reddy, Ph.D.  
Professor and Founding Dean 
Texas A&M Irma Lerma Rangel College of Pharmacy

RE: Planning Notification for Graduate Degree Programs in Pharmaceutical Sciences

Upon the recommendation of our graduate program committee, the Department of Pharmaceutical Sciences Chair, Dr. David Potter, and Vice Dean of College Station Campus, Dr. Mansoor A. Khan, I request your concurrence for the submission of planning notification to the Texas Higher Education Coordinating Board (THECB). The proposal has been in preparation for this past year and is near completion pending final concurrence from Ms. Deena Williams before submission in DARS.

Please note that we have received a very strong show of support from several Texas A&M academic deans, the Texas A&M University-Kingsville provost, national professional organizations, and members of the Texas pharma industry for the establishment of this program. The Rangel College of Pharmacy faculty has voted this program as a top priority need of the college and students. The required details for planning notification are provided below; however, should you need additional information, we will be happy to provide it.

1. **Title of the potential proposed program:** Establishment of two new graduate degree programs at Texas A&M Irma Lerma Rangel College of Pharmacy
2. **Level:** MS and Ph.D.
3. **CIP Code:** 51.2010.00
4. **Anticipated date of proposal submission:** April 2017
5. **A brief description of the proposed program:** Pharmaceutical science (PHSC) has dramatically changed in the last decade with globalization and generic product development leading to 88% of US prescriptions filled with generic products. Scientific innovations with a multidisciplinary approach are the keys to maintaining a global competitive edge in the one trillion-dollar pharma industry in the United States. The proposed Ph.D. in PHSC will utilize the extraordinary strengths of the various programs of Texas A&M to converge their scientific discoveries into actual dosage forms or delivery systems that patients, animals, or plant species use. Consistent with the Food and Drug Administration’s (FDA’s) white paper and guidance on pharmaceutical current good manufacturing practice (cGMP) of the 21st Century, Process Analytical Technologies (PAT), Quality by Design (QbD), and the Critical Path Initiative, the Ph.D. in PHSC aims to provide strong foundation, education and research training in drug discovery and pharmaceutical product development.
The proposed Ph.D. program will provide education and research training for a comprehensive knowledge base required for translational research from bench to bed side, and to identify product quality issues that cause post-marketing adverse drug events and recalls that lead to dose and medication changes by physicians. It will prepare the students to fill the voids of pharmaceutical scientists and executives in academia, research, education, government, industry, and related fields. The MS. program will primarily serve those students who do not complete the Ph.D. degree.

6. **A brief justification for the need of the proposed program:** Ph.D. graduates in PHSC are readily employable in academia, industry, and regulatory agencies in the state of Texas and across the nation. All Texas universities that offer this degree are operating at full capacity, and the demand is not being met by existing graduates. Based on the employment figures from other Texas institutions, all Ph.D. graduates in pharmaceutical science are readily employed. The Bureau of Labor Statistics in 2014 indicated a gap of 6,570 medical scientists between the demand and readily available supply, including pharmaceutical scientists. The Texas Biotech Industry Report, 2016, indicates these scientists earn an average salary of $90,688. Additionally, the number of pharmacy schools in the nation have risen from 79 in early 2000 to about 132 in 2016, requiring more advanced degrees for teaching and research. There are numerous vacancies for faculty appointments in pharmaceutical sciences.

Graduate programs in Pharmaceutical Sciences across the nation and in the state of Texas, in particular, are mostly traditional Ph.D. programs with little or no emphasis on process or product development for innovations, post-marketing corrections, and cost reduction of medications. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path initiative and the National Institute for Pharmaceutical Technology and Education’s (NIPTPE) recommendations for graduate education.

**Texas A&M has been strong in basic and engineering research programs, and has recently made significant advances in creating infrastructure to support product development and drug delivery research. Developing a Ph.D. program in PHSC will be a timely endeavor, which allows bridging the gap between the basic sciences and product development, and advancing the institutional research mission. The Rangel College of Pharmacy is unique in terms of its two teaching locations, one in College Station and another in Kingsville. This provides the college a unique opportunity of developing highly qualified workforce through its presence in College Station at the main campus and also through its south Texas presence in Kingsville with an opportunity to serve and develop much needed representation of Hispanic and minority workforce.**

Since the introduction of FDA’s position paper on cGMPs of the 21st century in 2005, research strategies have changed dramatically and continually in the pharmaceutical industry. Drug discovery and drug development are more intertwined as the identification of optimal pharmaceutical properties of the biologically active molecules becomes more important, necessitating the integration of product formulations knowledge into the drug discovery process.

**One of the greatest challenges of pharmaceutical industry today is rapid, seamless translation of biomedical discoveries into drug products. To accommodate such a dramatic shift in the research enterprise, development of new drug discovery and delivery technologies, methodologies for modernization of manufacturing processes with process analytical technologies, Quality by Design**
(QbD), emerging technologies, *in vitro/in vivo* simulation models, and understanding of regulatory issues with sustained supply of qualified interdisciplinary scientists are critically needed. However, according to the 'Path Forward' report of the Educational Testing Service and Council of Graduate Schools, the percent of graduate students with US pharmacy degrees has declined sharply in the past decade leading to paucity of appropriately trained investigators.

A significant need for the continued success of the profession of pharmacy is the availability of well-qualified professors in pharmaceutical sciences who will continue to educate and provide the new generation of pharmacy professors and researchers. Academically sound schools and colleges of pharmacy provide suitable courses at the professional and doctoral levels to establish a pipeline of basic, applied, and clinical faculty who are well qualified to meet the demand and fill the pharmaceutical sciences void in a broad range of settings, including academic pharmacy, industry, regulatory, clinical, community, compounding, and marketing.

7. **Anticipated costs over the first 5 years of the program**: The estimated 5-year cost for this program, fully covered by the Ph.D. degree, is estimated to be $12,809,283. Five-year revenue and reallocation is estimated to be $13,154,699.

8. **Anticipated implementation date**: Fall 2018
December 22, 2016

Karan Watson, Ph.D., P.E.
Provost and Executive Vice President for Academic Affairs
Texas A&M University
1248 TAMU
College Station, Texas 77843-1248

Dear Dr. Watson:

This letter serves as your institution’s official notice that the request for preliminary authority to plan for the following specific program was received and has been added to your institution’s Table of Programs (TOP):

- **Pharmaceutical Sciences**
  (Doctorate-level — CIP 51.2010.00)

Your institution’s revised TOP may be found on the Board’s website at: http://www.theb.state.tx.us/apps/top/.

Please note that although the proposed program has been added to your institution’s TOP, that in no way guarantees the proposed program will receive a recommendation for approval once a request is submitted.

I wish you every success in planning for the future.

Sincerely,

Rex C. Peebles

cc: James Hallmark
    Michael K. Young

AQW/el/19942
July 15, 2016

MEMORANDUM

TO: Dr. Mansoor Khan  
   Professor and Vice Dean  
   Irma Lerma Rangel College of Pharmacy

FROM: David H. Carlson  
      Dean  
      University Libraries

RE: Library Support for New PhD program in the Rangel College of Pharmacy

The TAMU University Libraries can support the new proposed PhD program in Pharmaceutical Sciences. The University Libraries has a solid foundation of the information resources needed to support this new program. We do not anticipate major expenditures for new resources required to support the program.

Anchored by the Medical Sciences Library and its collection, existing library holdings contain about 90% of the journals listed on the American Association of Colleges of Pharmacy list of 2014 Basic Resources for Pharmacy Education, 88% of the e-resources, 81% of the first purchase monographs and 62% of the supplemental purchase monographs. Library personnel are dedicated to benchmarking against the list to identify purchases to update and enhance the collection relevance. Since the preference has long been for electronic resources, these resources are available online to Kingsville students and faculty. Additionally, the library has established a purchase-on-demand plan with another book seller that automatically includes access to new electronic books in our catalog that are then purchased as they are used.

Faculty and students are encouraged to request additional resources for the collection through a form on the University Libraries’ website, through email, or by phone. The University Libraries will continue to collect to support teaching and research in these areas. Interlibrary loan and document delivery, through the “Get It for Me” service, allows students and faculty to receive books and other materials from the main print collection in College Station or from other lending libraries across the U.S. In addition to these resources, the MSL partners with numerous state and regional consortia to bring a wider range of resources to our users. These collaborations include the Texas Digital Library (TDL), the South Central Academic Medical Libraries (SCAMEL) Consortium and the TAMHSC Alliance of Libraries.

A quick summary of our national rankings underscores our ability to provide ongoing support for this program. The TAMU University Libraries was ranked, for the 2014/2015 cycle, 13th among the Association of Research Libraries’ (ARL) 115 research libraries and 6th among ARL’s U.S. Public University Libraries. Further, among ARL U.S. Public University Libraries, the TAMUL ranks first in both information resource and ongoing information resource...
expenditures. A full 57% of total funds expended by the libraries go toward information resources, compared to the University's Vision 2020 Peers' average of 40%.
July 25, 2016

Mansor A. Khan, R.Ph., Ph.D.  
Professor and Vice Dean  
Irma Lerma Rangel College of Pharmacy  
Texas A&M University  
College Station, TX 77843-1114

Dear Dr. Khan:  

The Texas A&M University College of Veterinary Medicine & Biomedical Sciences (CVM) supports the proposal from the Irma Lerma Rangel College of Pharmacy (RCOP) at Texas A&M University to create Doctor of Philosophy and Master of Science degrees in Pharmaceutical Sciences. We anticipate that the proposed degrees would be complementary to the Ph.D. in Biomedical Sciences offered by the CVM and have no concerns about overlap with our degree. In particular, the proposed Ph.D. program in Pharmaceutical Sciences would allow research-based training that would enhance drug development and testing in both humans and animals. This program should significantly strengthen the One Health Initiative of the university, which emphasizes that animal, human, and environmental health are fundamentally interdependent and that both animal and human disease share common biological origins. The proposed Ph.D. degree would offer new opportunities for collaboration between the Texas A&M Health Science Center, of which the RCOP is a part, and the CVM, such as the development of innovative training grants funded by the National Institutes of Health.

We consider the objectives of the proposed Ph.D. degree in Pharmaceutical Sciences to be innovative, timely, and achievable, especially with regard to filling unmet training needs and opportunities in pharmacology in Texas. We are impressed that in only 10 years since its founding, the RCOP has established an excellent D. Pharmacy program that is forward-looking, student-oriented, and extremely effective college in serving South Texas. This program has an exceptionally high graduation rate, strong network of preceptors for practical training in the community, very high minority enrollment, and low tuition. In addition, the college has grown its research program to a point where a Ph.D. program would be well supported. We understand that last year, the college generated $1.1M in grants and published 55 research papers in the areas of cancer, asthma, drug discovery and drug development. The college is also part of a pharmaceutical consortium with Texas A&M Colleges of Medicine and Engineering and the CVM. In addition, RCOP is setting up a Good Manufacturing Practice laboratory on the Texas A&M campus across from the CVM complex. Its specialty with small molecules manufacturing for the purpose of improved drug formulations. The infrastructure and research emphasis on product development will be a major strength of the proposed Ph.D. degree in Pharmaceutical Sciences.
Mansor A. Khan, R.Ph., Ph.D.
July 25, 2016
Page 2

The proposal presented by the Irma Lerma Rangel College of Pharmacy (RCOP) at Texas A&M University to create Doctor of Philosophy and Master of Science degrees in Pharmaceutical Sciences is timely for the State and the university and we therefore fully support its approval.

Sincerely yours,

Eleanor M. Green, DVM, DACVIM, DABVP
The Carl B. King Dean of Veterinary Medicine
July 19, 2016

Mansoor A. Khan, R.Ph., Ph.D.
Professor and Vice Dean
Irma Lerma Rangel College of Pharmacy
Texas A&M University
College Station, Texas 77843-1114

Dear Dr. Khan:

I am pleased to offer my support for the establishment of a graduate program in pharmaceutical sciences in the Irma Lerma Rangel College of Pharmacy.

The proposed graduate program offers exceptional promise in developing pharmaceutical scientists who will pave the way for the use of cutting-edge technologies and drug delivery methods. Texas A&M University offers unparalleled research facilities for this program comprised of innovative faculty members who will serve as capable mentors for our pharmacy students.

A graduate program in pharmaceutical sciences in Rangel College has the potential to unite enterprise and education, making the state of Texas an epicenter for pharmaceutical development. By offering doctorate and master’s degrees, the Rangel College stands to draw top students, top faculty, and increased research for sustainability and new collaborations.

Research is the primary basis for the funding of renowned programs. While the Rangel College has ramped up its efforts to garner state and national grants, it needs a graduate pharmaceutical sciences program to compete with more established, professional pharmacy programs to become one of the top schools in the country.

I firmly believe the formation of a graduate program in pharmaceutical sciences will be a game changer for the existing pharma and biotech industries in the state of Texas. On behalf of the College of Engineering, I support the Rangel College’s proposed graduate program without reservation.

Sincerely,

M. Katherine Banks, Ph.D., P.E.
Vice Chancellor and Dean of Engineering
Director, Texas A&M Engineering Experiment Station
Harold J. Haynes Dean’s Chair Professor
Mansoor A. Khan, Ph.D.
Professor and Vice Dean
Irma Lerma Rangel College of Pharmacy
Texas A&M University
College Station, Texas 77843-1114

RE: Support Letter for Graduate Program in Pharmaceutical Sciences

Dear Dr. Khan:

I am pleased to learn that the Texas A&M Irma Lerma Rangel College of Pharmacy is in the process of embarking upon a new doctoral program in pharmaceutical sciences. I know firsthand that the Rangel College of Pharmacy has been preparing for this for a few years, and I am proud to see that you are implementing a plan to cover one of its strategic goals within the Health Science Center. I am writing to offer my strongest support and best wishes for this worthy endeavor.

A graduate program in pharmaceutical sciences within the Rangel College of Pharmacy has the potential to bring together several required disciplines from within as well as outside the Health Science Center to advance pharmaceutical product development. By offering doctorate and Masters-level degrees, the Rangel College of Pharmacy stands to draw top students, top faculty, and increased research for sustainability and new collaborations. This should certainly help appeal more pharma industry business to the state of Texas.

Research in pharmaceutical sciences is unique to our University, and it provides new opportunities for funding and training students to become successful scientists in the pharmaceutical product development areas. While the Rangel College of Pharmacy has ramped up its efforts to garner state and national grants, it needs a graduate pharmaceutical sciences program to compete with more established, professional pharmacy programs for a realistic chance of enhancing its national ranking similar to other excellent programs in our University. Thus, this graduate program proposal is well in tune with success.

In closing, I offer my highest support for the establishment of a new PhD and Master's program in pharmaceutical sciences in the Texas A&M Irma Lerma Rangel College of Pharmacy. If you need any assistance, please do not hesitate to contact me.

Sincerely,

Paul Ogden, M.D.
Interim Senior Vice President & COO
Texas A&M Health Science Center
Interim Dean of Medicine

8441 State Highway 47
Clinical Building 1, Suite 3125
Bryan, TX 77807
MS: 1359

Tel. 979.436.9103 Fax 979.436.0072
www.tamhsc.edu
July 26, 2016

Mansoor A. Khan, Ph.D.
Professor and Vice Dean
Irma Lerma Rangel College of Pharmacy
Texas A&M University
College Station, Texas 77843

Dear Dr. Khan:

I have learned from Dean Indra K. Reddy that the Texas A&M Irma Lerma Rangel College of Pharmacy is submitting a proposal for a new PhD program in pharmaceutical sciences. I would like to offer the support of the Texas A&M College of Agriculture and Life Sciences for the development and approval of this PhD program.

Our faculty have identified and extracted valuable compounds from AgriLife sources with highly competitive federal and state grants. Additionally, we are working on several nutritional compounds that are required to be formulated into dosage forms. Since we do not currently have this expertise in house, we often rely on external resources with limited success.

For a successful translation of horticulture compounds, nutritional supplements and other AgriLife discoveries, broad-based interactions between doctoral students and faculty of both our programs are critical. These interactions will allow for the development and evaluation of Investigational New Drugs (INDs) and New Drug Applications (NDA) within the Texas A&M System for eventual product development and FDA approvals and are likely to dramatically increase the product portfolio with increased revenue generation

The area of pharmaceutical sciences is clearly the missing puzzle for formulations development at Texas A&M University. I am excited about the prospects of new collaborations between faculty and the development of training opportunities for students in both programs.

Please be assured of our strongest support for the PhD program in pharmaceutical sciences.

Sincerely,

Mark A. Hussey
Vice Chancellor and Dean
Agriculture and Life Sciences
August 16, 2016

Indra Reddy, Ph.D.
Dean
Irma Lerma Rangel College of Pharmacy
Texas A&M University
College Station, Texas 77843

Dear Dean Reddy:

This letter represents my strongest endorsement for the proposal being submitted by your college to develop a Doctor of Philosophy (Ph.D.) program in pharmaceutical sciences.

The program will allow basic and applied scientists to collaborate in the teaching and research endeavors. Thus, providing students with an understanding of pharmaceutical sciences contributions to health care, ability to interact with world-class researchers, and additional career opportunities.

As the first doctoral program designed to offer graduate training and education based on the FDA’s critical path initiative and the National Institute for Pharmaceutical Technology Education (NIPTE’s) recommendations, this distinction will make the Irma Lerma Rangel College of Pharmacy unique. Such distinction should place the College on the path to becoming one of the top schools of pharmacy nationwide.

The emphasis of the new degree on drug discovery, design, and developing pharmaceutical dosage forms will enhance the future of patient care and be very beneficial for the citizens of the State of Texas.

On behalf of Texas A&M University-Kingsville, I support the Irma Lerma Rangel’s College of Pharmacy proposed doctoral program.

Sincerely,

Heidi M. Anderson, Ph.D.
Provost and Vice President for Academic Affairs
June 30, 2016

Mansoor A. Khan, Ph.D.
Professor and Vice Dean
Texas A&M University
College Station, TX

Re: New Graduate Program for Ph.D./MS degrees in Rangel College of Pharmacy

Dear Mansoor,

Thanks for the opportunity to comment on Rangel College of Pharmacy’s proposal for a new Ph.D./MS programs in pharmaceutical sciences. As you are aware, the National Institute of Pharmaceutical Technology and Education (NIfte) is a non-profit organization established to spearhead communication among pharmacy, engineering, basic sciences and other programs to develop and train pharmaceutical manufacturing science workforce for the 21st Century. This trained workforce will be the key to tackling severe shortage of required manpower in pharmaceutical sciences, particularly with knowledge and expertise in the modernization of pharmaceutical manufacturing for efficiency and consistency of dosage forms, delivery systems and devices for expected therapeutic outcomes in our patients. We have started this organization in response to FDA’s call to the Nation to help build this workforce due to severe deficiencies in our curriculum and training which were leading to manufacturing inefficiencies, product shortages, product recalls, and excessive wastage of academic and industrial pipeline drugs. Obviously, this wastage, among other reasons, is leading to very high and unsustainable drug costs.

I am very pleased to see a much-needed multidisciplinary approach with concrete plans to connect pharmacy, engineering, basic science, medicine and veterinary medicine, and other areas in Texas A&M University in your program. In particular, your courses with the examples of biotech and vaccine products, chemometrics and big data management, process analytical technologies, pediatric, herbal, and cosmetics product development, nanotechnology, controlled, and targeted drug delivery, industrial pharmacy, in vitro/in vivo simulations and modeling are on the cutting edge of today’s needs in pharmaceutical sciences.

I support this proposal without reservations, and would like to congratulate you and your colleagues for putting this nice and timely proposal. I invite you to visit our website at www.nippte.org for more information on our organization. If you need any additional information, please do not hesitate to contact me.

With best wishes,

Ajam S. Hussain, Ph.D.
President, NIPTE
Mansoor A. Khan, Ph.D.  
Professor and Vice Dean  
Texas A&M University  
College Station, TX  
Re: New Graduate Program for PhD/MS degrees in Rangel College of Pharmacy  

Dear Mansoor:  

I am pleased to write this letter in support of the proposed PhD program in pharmaceutical sciences. As you are aware, I presently work as a Board of Trustees Distinguished Professor of Pharmaceutical Sciences in the University of Connecticut. I have served as the elected President of the American Association of Pharmaceutical Scientists (AAPS), the elected president of the Controlled Release Society (CRS), and currently serve as the North American Editor of the International Journal of Pharmaceutics, among others. Texas A&M is a mega university with comprehensive programs in health sciences, engineering, veterinary medicine, agriculture, life sciences and many related programs. Needless to say, I am acutely aware of the needs and scope of a Ph.D. degree in pharmaceutical sciences in the Nation. I believe that a new PhD in pharmaceutical sciences will be a logical extension to your PharmD program that was started in 2006.  

Pharmaceutical product development strategies have dramatically changed after FDAs call for modernization of pharmaceutical manufacturing in 2002. I believe that newer programs have a much better opportunity to integrate various disciplines and specialties so that a genuinely multidisciplinary approach can be offered in their curriculum to make the education more relevant in today’s competitive environment. Also, you have the advantage of experienced leaders such as Dean Indra Reddy and Vice Dean Mansoor Khan who are extremely well-known in the pharma industry, academia, and regulatory agencies. I recall that Dr. Khan had started a very similar PhD program as the founding Director at Texas Tech University. A review of the website and past student performance indicates that the program at Texas Tech is very successful with over 40 PhD students enrolled at this time. With a strong University system such as yours in the Texas A&M, your new program is poised to grow very quickly into national prominence.  

In conclusion, I strongly support your PhD program in pharmaceutical sciences. It will allow your faculty to remain competitive for funding, and provide new job opportunities for students in academia, industry, and FDA. If I can be of any further assistance, Please let me know. Thank you for the opportunity to provide my comments.  

Sincerely,  

Diane J. Burgess, Ph.D.  
Distinguished Professor of Pharmaceutics  
2002 President of AAPS and 2010 President of CRS  
Fellow of AAPS, CRS, APSTJ and AIMBE  
Editor of the International journal of Pharmaceutics
July 12, 2016

Dr. Mansoor A. Khan  
Professor and Vice Dean  
Rangel College of Pharmacy  
Texas A&M University  
College Station, TX

Re: Ph.D. Program in Irma Lerma Rangel College of Pharmacy

Dear Dr. Khan,

I am pleased to hear that the Texas A&M University Rangel College of Pharmacy is planning to start a new Ph.D program in pharmaceutical sciences. I am writing to express my strong support for such a program. Our pharma industry frequently face a shortage of well trained and skilled pharmaceutical scientists in the State. Hopefully this new program will alleviate some of this shortage.

As you are aware, I serve as the Research and Development Head at Mylan, San Antonio, Texas. Prior to this appointment, I served as the executive vice president of DPT Laboratories in San Antonio. Mylan N.V. (NASDAQ, TASE: MYL)) is one of the largest generic product manufacturers in the world with its product distribution in 165 different countries. Today, about 86% of all the prescriptions are filled with generic products, and Mylan is proud to disclose that one in every 13 generic products dispensed in US is a Mylan product. The Mylan research and Development group includes more than 2900 scientists worldwide. These scientists design bioequivalent versions of brand name products, many of which are difficult to make because of technical, regulatory, and patent challenges. That is why we pursue innovations and hire highly talented scientists with outstanding backgrounds. Often times, we face challenges with the lack of availability of talented PhD level scientists domestically in Texas. Therefore, I believe that the Texas A&M Aggies are filling a very big void within the State of Texas. It is important to point out that there is wave of FDA push for modernization of pharmaceutical product development with quality by design and process analytical technologies. The long established and traditional programs do not cover these areas very well in their curriculum. Texas A&M University with its
well-known engineering program and the Health Science Center will be an advantage for modernization of manufacturing sciences in your new pharmacy school.

Please let me know if you need additional support. I am confident that Mylan and several other companies in the region will tremendously benefit with qualified graduates as well potential research collaborations with your institution. Please do not hesitate to contact me should you need any further information or support.

Sincerely,

[Signature]

Kuljit Bhatia, PhD.
Head, Pharmaceutical Research and Development
3300 Research Plaza
San Antonio, TX 78235
Re: Ph.D. Program in Irma Lerma Rangel College of Pharmacy

Dear Dr. Khan,

I was delighted to hear from Dr. David E. Potter that Texas A&M University Rangel College of Pharmacy is planning to start a new Ph.D program in pharmaceutical sciences. This is welcome news to Texas pharma and biotech industries as currently they face a shortage of well-trained and skilled pharmaceutical scientists in the State. Hopefully this new program will benefit healthcare of citizenry in Texas, the United States and the world at large.

I have worked as Senior Vice President, Chemical Sciences at Allergan for over 30 years where I supervised drug discovery chemistry and active drug ingredient development. As you are aware, Allergan is noted for its specialty work in ocular drug discovery and delivery, dosage forms as well as treatments for skin and neuromuscular junction. Currently I am a Founding Partner of three companies. PharmaChem Associates is a medicinal chemistry and active ingredient consulting company. Akrivista and Whitecap Bioscience are discovering and developing new treatments for eye and skin. Business professionals have realized that pharmaceutical sciences and product development landscape has dramatically changed with the increased use of complex drug molecules including biotechnologically derived monoclonal antibodies, and modernization of manufacturing sciences with process analytical technologies, quality by design and now continuous manufacturing. With its vast resources and national ranking of many colleges, Texas A&M University is well poised to lead the nation in the specialty area of pharmaceutical sciences. In my opinion, this will not only increase the availability of talented scientists for employment in existing pharma and biotech sector in Texas but also enable the creation new industrial ventures in the region.

Please be assured of my full support for the mission of this new Ph.D. program in pharmaceutical sciences. I am confident that Allergan, Santen, Alcon / Novartis, Pfizer and other companies in the region will tremendously benefit with qualified graduates as a well potential future research collaborations. Please do not hesitate to contact me should you need any further information or support.

Sincerely,

Michael E. Garst
mgarst@pharmacemassoc.com
July 12, 2016

Dr. Mansoor A. Khan
Professor and Vice Dean
Rangel College of Pharmacy
Reynold Medical Science Building
Texas A&M University
College Station, TX

Re: Ph.D. Program in Irma Lerma Rangel College of Pharmacy

Dear Dr. Khan,

I was delighted to hear from Dr. David E. Potter that Texas A&M University Rangel College of Pharmacy is planning to start a new Ph.D. program in pharmaceutical sciences. This is welcome news to Texas' pharma and biotech industries, as currently they face a shortage of well-trained and skilled pharmaceutical scientists in the state. Certainly, this new program will benefit healthcare of citizenry in Texas, the United States, and the world at large.

I have worked in ophthalmic pharmaceutical research and development for over 35 years, and I have been involved in the development of a dozen ophthalmic drug products and several medical devices. Currently, I am Chief Scientific Officer / Executive Vice President of Nicox, an international company specializing in the R&D of nitric oxide (NO) donating molecules for ophthalmic indications. For example, latanoprostene bunod, a NO-donating prostaglandin F2α analog designed by Nicox and developed by Bausch & Lomb is in the final stages of FDA review its New Drug Application. Nicox has several other molecules in various stages of ocular drug discovery and delivery, dosage form development, and preclinical evaluation prior to proof-of-concept clinicals.

Those of us, who are professionals in the drug and device business, have realized that the pharmaceutical sciences and product development landscape has changed dramatically with the increased use of complex drug molecules (including biotechnologically derived monoclonal antibodies) and with the modernization of manufacturing sciences to include process analytical technologies, quality by design, and now continuous manufacturing. With its vast resources and national ranking of many of its colleges, Texas A&M University is well poised to lead the nation in the specialty area of pharmaceutical sciences. In my opinion, this will not only increase the availability of talented scientists for employment in the existing pharma and biotech sector in Texas but also will enable the creation new industrial ventures in the region.
Please be assured of my full support for the mission of this new Ph.D. program in pharmaceutical sciences. I am confident that Allergan, Santen, Alcon / Novartis, Pfizer, and other companies in the region will benefit tremendously with advent of qualified graduates from this program. Indeed, I expect that the program also will provide access to potential future research collaborations with companies in the pharma and biotech sector in Texas and beyond. Please do not hesitate to contact me should you need any further information or support.

Very truly yours,

[Signature]

Chief Scientific Officer / Executive Vice President
Office: +1 (817) 529-9315
bergamini@nicox.com

and

Adjunct Professor, Pharmacology and Neuroscience
University of North Texas Health Science Center
3500 Camp Bowie Boulevard
Fort Worth, Texas 76107
Mobile: +1 (817) 798-8588
michael.bergamini@unthsc.edu
July 12, 2016

Dr. Mansoor A. Khan  
Professor and Vice Dean of College Station Campus  
Texas A&M University  
Rangel College of Pharmacy  
Mail Stop 1114  
159 Reynolds Medical Building  
College Station, TX 77843

Re: Ph.D. Program in Irma Lerma Rangel College of Pharmacy

Dear Dr. Khan,

I am pleased to hear that Texas A&M University Rangel College of Pharmacy is planning a new Ph.D program in pharmaceutical sciences. This is welcome news to Texas pharmaceutical and biotechnology industries as they frequently face a shortage of well trained, skilled pharmaceutical scientists in the state.

As a graduate pharmaceutical scientist, I experienced firsthand the crossover opportunities available for businessmen and scientists. Since 1998, I have served as the CEO of ARL Bio Pharma, Inc. in Oklahoma City, Oklahoma. ARL is a contract research laboratory that provides analytical and microbiological services to pharmaceutical, health-system, and compounding pharmacy markets. In addition, ARL works with a variety of state boards of pharmacy and has performed contractual work with the Texas State Board of Pharmacy for many years. With the recent changes in state and federal compounding regulations as a result of the New England Compounding Center disaster in 2012, there is an increased need for individuals with extensive knowledge of sterile and non-sterile compounding as well as the knowledge to research and develop new dosage forms. The Texas A&M University Rangel College of Pharmacy graduate program will have a significant impact on research, therapeutics, and forensic science studies needed to continue providing the highest quality pharmaceutical services to the patients and healthcare systems in Texas and the United States.

I am confident that your program and institution will add great value to the state and country. Texas A&M University is well positioned to lead the nation in the specialty area of pharmaceutical sciences with its vast resources and national ranking among U.S. colleges and universities. In my opinion, this will not only increase the availability of talented scientists for employment in the existing pharmaceutical and biotechnology sector in Texas, but will also draw new industry into the region.
Please be assured of our full support for the new PhD program in pharmaceutical sciences. I am confident that ARL Bio Pharma, Inc., other companies, and healthcare systems in the region will benefit tremendously from the highly qualified graduates as well as potential research collaborations. Please do not hesitate to contact me should you need any further information or support.

Sincerely,

Thomas C. Kupiec

Thomas Kupiec, Ph.D.
CEO/President
ARL Bio Pharma, Inc.
## Strategic Expansion
### Master Hiring Plan

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<td>Fac-PP-Clinical Sciences (Asst/Assoc)</td>
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<td>Fac-CS-Clinical Sciences (Asst/Assoc)</td>
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<td>Fac-CS-Clinical Sciences (Asst/Assoc)</td>
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<td><strong>Total FTE</strong></td>
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<td><strong>20</strong></td>
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</table>
College of Pharmacy
Faculty Workload Guidance

The College of Pharmacy recognizes the need for a general faculty workload policy that establishes the principles of consistency, equity, and flexibility together with a process for ascertaining workload responsibilities that is uniform across the various disciplines and departments within the College. It is the expectation of the College that the appointment to the faculty carries with it the responsibilities to the educational, research/scholarship, and service goals of the College of Pharmacy. While the College, at this time, does not have a formal Faculty Workload Policy, it accedes to and complies with the Texas A&M University Policy Statement on the Faculty Academic Workload and Reporting Requirements, 12.03, (http://www.tamus.edu/offices/policy/policies/pdf/12-03.pdf).

The Department Chairs, in consultation with the individual faculty member, determines a faculty member’s assignments and distribution of effort in the areas of teaching, research, and service in accordance with the College’s academic/programmatic requirements. Assignments among faculty members may vary to meet the objectives of the department and the College. The College of Pharmacy, however, strives to determine the activities, duties, and responsibilities for each faculty member in accordance with (a) the mission, priorities and objectives of the Texas A&M Health Science Center, (b) the specific mission, goals, and objectives of the College, (c) the mission, goals, and objectives of the respective departments within the College, and (d) the primary academic focus of the individual faculty member. It is recognized that the workload obligation of an individual faculty member should reflect the proportion of faculty effort within each of the three areas of responsibility (i.e., teaching, research, and service) that best represents the interests and strengths of the faculty member, while simultaneously advancing the excellence of the department’s and the College’s academic, research/scholarly, and service programs.
Appendix-D: A complete list of small and capital equipment acquired by the Rangel College of Pharmacy is provided:

**List of Equipment at the Texas A&M Irma Lerma Rangel College of Pharmacy**

- Mass Spec
- UPLC
- TA instrument DSC with autosampler
- TA instrument TgA with autosampler
- FTIR spectroscopy
- Raman spectroscopy
- Near-IR spectroscopy – online monitoring
- Hyperspectral/Chemical Imaging
- Microfluidizer
- KG5 High Shear Mixer
- Quadro CoMill
- 3D-printer
- Tablet press
- V-Blender
- Beads coater
- Dissolution equipment
- Disintegration equipment
- Hardness equipment
- Friability equipment
- Surface tension measuring equipment
- Viscosity equipment
- Packaging equipment
- HPLCs
- Texture Analyzer
- Stability chamber at 25 degrees C
- Stability chamber and 60% RH
- Stability chamber at 40 degrees c/75% RH
- Stability chamber at 30 degrees C and 65% RH
- Bioanalytical solid phase extraction
- Centrifuges
- Amersham Pharmacia Akta Purifier HPLC
- Tecan systems fluorescence and luminescence plate reader
- Caframo BDC 3030 voltage controlled stirrer for emulsion microencapsulation
- Nisco microencapsulator for preparation of single walled microcapsules
- Innova encapsulator for preparation of dual walled microcapsules
- Nisco nebulizer for fine particle production
- Micromeritics Elzone II 5390 Particle Size Analyzer
- Brookhaven Instruments ZetaPals for measurement of particle size and Zeta Potential through dynamic light scattering
- TomTec liquid handling system for automated plate washing
- Bioplex 2200 system with Luminex technology for bead-based multiplexing immunoassay
- Miltenyi autoMACS Pro Separator for large scale cell separation
- GentleMACS cell dissociators
Olympus Vanox AHBT3 Research Photomicrographic microscope equipped with CCD color camera and RGB output
Nomarski differential contrast and polarization microscopy are available
BD instruments spinning disk confocal microscope
Kodak In Vivo FX imaging system for whole animal imaging
HPLC-GPC 1220 Infinity, Agilent
Biosafety IIA Cabinet
EVOS microscope
CO2 incubator
VWR Cryopro rack system, roller base, low liquid level alarm
-80 Freezer
-20 Freezer
Particle size analyzer, nanoSight LM10
Eppendorf Centrifuge (85, 1.5 mL rotors)
VWR UV-Vis Spectrophotometer
Elga Lab water purification system
Environmental Chamber Binder (for Q1A/Q1B temp, humidity and light)
Beckmann Avanti JE HPC Ultra Centrifuge
Thermo Savant Speed Vac
Freeze drier
Kinematica (PT 2500E) (PT-DA Shaft length: 115 mm; Stator/Rotor 11.8 mm/9 mm; Tip speed: 18.8 m/s; working vol: 2-250 mL) Homogenizer
Hei-Vap Advantage Rotary Evaporators, Heidolph, with chiller and vacuum pump
Rotavapor
MS Series Analytical and Precision Balances, METTLER TOLEDO Balance
pH Meter
QSonica, LLC (with box) Probe Sonicator
Branson Ultrasonics Ultrasonic cleaner
VWR Vortex multi-tube
VWR Shaker water bath
Chroma Crimper EZ 20 MM
Freeze drier
Biosafety IIA Cabinet
VWR inverted microscope
CO2 incubator
pH Meter
-20 Freezer
-20 Freezer
Display refrigerator
Eppendorf miro-Centrifuge (85, 1.5 mL rotors)
Eppendorf Centrifuge
Water bath
QSonica, Probe Sonicator
Digital Heatblock
Thermo Savant Speed Vac
Freeze drier
Kinematica (PT 2500E)
Homogenizer
Hei-Vap Advantage Rotary Evaporators,
Heidolph, with chiller and vacuum pump
Rotavapor
MS Series Analytical and Precision Balances,
METTLER TOLEDO Balance
pH Meter
QSonica, LLC (with box) Probe Sonicator
Branson Ultrasonics Ultrasonic cleaner
VWR Vortex multi-tube
VWR Shaker water bath
Chroma Crimper EZ 20 MM
Texas Higher Education Coordinating Board
Proposal for a Doctoral Program

Directions: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) the Chief Executive Officer, acknowledging agreement to reimburse consultants’ costs; (3) a member of the Board of Regents (or designee), certifying Board of Regents approval for Coordinating Board consideration; or, if applicable, (4) a member of the Board of Regents (or designee), certifying that criteria have been met for Commissioner consideration. Additional information and instructions are available in the Guidelines for Institutions Submitting Proposals for New Doctoral Programs found on the Coordinating Board website, www.thecb.state.tx.us/newprogramscertificates. Institution officials should also refer to Texas Administrative Code (TAC) 5.46, Criteria for New Doctoral Programs.

Note: Institutions should first notify the Coordinating Board of their intent to request the proposed doctoral program before submitting a proposal. Notification may consist of a letter sent to the Assistant Commissioner of Academic Quality and Workforce, stating the title, CIP code, and degree designation of the doctoral program, and the anticipated date of submission of the proposal.

Information: Contact the Division of Academic Quality and Workforce at (512) 427-6200.

Administrative Information

1. Institution Name and Accountability Group

Texas A&M University 003632

2. Program Name – Show how the program would appear on the Coordinating Board’s program inventory [e.g., Doctor of Philosophy (PhD) in Electrical Engineering].

Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences

3. Proposed CIP Code – Include justification if the program title is not already included in the Texas Classification of Instructional Programs.

51.2010.00

4. Program Description – Describe the program and the educational objectives.

The mission of the Ph.D. program in Pharmaceutical Sciences (PHSC) is to provide a comprehensive knowledge base that leads to drug discovery, design, and development of pharmaceutical dosage forms through basic and applied research in pharmaceutical sciences. This comprehensive knowledge will afford graduates the ability to detect and correct product manufacturing issues of post-marketing adverse drug events and to perform translational research leading to the discovery and development of pharmaceutical dosage forms. Consistent with the Food and Drug Administration’s (FDA) message of pharmaceutical current good manufacturing practices (cGMP) of the 21st century, Process Analytical Technologies (PAT), Quality by Design (QbD), and the Critical Path Initiative, the PHSC aims to provide strong foundational, educational, and research training in drug discovery and pharmaceutical product development; delivery of drugs to their sites of action; modernization of pharmaceutical manufacturing; regulatory affairs; and to support the existing preclinical and translational research programs within Texas A&M to obtain practical dosage forms that benefit patients and the citizens of Texas.

The PHSC program will prepare students for executive positions in academia, research, education, government, industry, and related fields. These new leaders will identify, research, and problem-solve issues related to pharmaceutical sciences. The proposed Ph.D. program will provide education and research training for a comprehensive knowledge base required for translational research from bench to bed side, and to identify product quality issues that cause post-marketing adverse drug events and recalls that lead to dose and medication changes by physicians. It will prepare the students to fill the voids of pharmaceutical scientists and executives in academia, research, education, government, industry, and related fields. The
M.S. program (submitted concurrently with this Ph.D. proposal) will serve primarily those students who do not complete the Ph.D. degree.

Primary objectives of the PHSC program are:

- To provide a meaningful and important course of study that is currently unavailable in Texas A&M.
- To ensure Ph.D. seats exist within the program to train as many Texas students as is practical.
- To train and create pharma and biotech entrepreneurs who will know how to leverage the vast knowledge and infrastructure of Texas A&M programs in engineering, veterinary medicine, Agri-Life, medicine, dentistry, biomedical sciences, physical and life sciences, business, and how to advance drug and medication policies through the Bush School of Government.
- To advance the sciences of Pharmacy and Pharmaceutical Sciences on the international stage.
- To foster knowledge of, and help direct, current trends and issues in pharmaceutical sciences, biopharmaceutical products development, and compounding of medications.
- To provide students with specific experiences in conceptual and technical research areas in the pharmaceutical sciences, e.g., pharmaceutics, medicinal chemistry, pharmacology, pharmacy administration, and basic sciences.
- To promote research and scholarly activities that will enable students to learn and develop a solid foundation to successfully pursue a career in the pharmaceutical sciences and related industries.
- To offer new career training options to undergraduate and pharmacy graduates of The Texas A&M University System programs and others in the State of Texas.
- To develop methods and/or innovations in analytical processes and technologies relevant to pharmaceutical and biotech products.
- To provide opportunities for residents of College Station, South Texas, and other broader areas of Texas where such a program doesn't exist.
- To provide pharma development, pharma industrial, critical path, and precision medicine for dose tailoring and FDA/NIH training opportunities for interested students.

The degree program will be offered at both the College Station and Kingsville locations of the Irma Lerma Rangel College of Pharmacy.

5. **Administrative Unit** – Identify where the program would fit within the organizational structure of the institution (e.g., The Department of Electrical Engineering within the College of Engineering).

Irma Lerma Rangel College of Pharmacy

NOTE: The proposed program will be reflected on the Program Inventories of both Texas A&M University and the Texas A&M University Health Science Center.

6. **Proposed Implementation Date** – Include the first year and semester that students would enter the program.

   Fall 2018

7. **Contact Person** – Provide contact information for the person who can answer specific questions about the proposed program.

   Name: Mansoor A. Khan, R.Ph., Ph.D.
   Title: Professor and Vice Dean, College Station, TX
   E-mail: mkhan@tamhsc.edu
   Phone: 979-436-0562
Proposed Doctoral Program -- Required Information

I. Need

Graduate programs in Pharmaceutical Sciences (PHSC) across the nation, and particularly in the state of Texas, are mostly traditional Ph.D. programs with little or no emphasis on process or product development for innovations, post-marketing corrections, and cost reduction of medications. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path initiative and the National Institute for Pharmaceutical Technology and Education’s (NIPTE) recommendations.

Texas A&M’s strength in basic sciences, medical sciences, and engineering research programs has recently made significant advances in creating infrastructure to support product development and drug delivery. Developing a Ph.D. program in PHSC will be a timely endeavor, which will allow bridging the gap between the basic sciences and product development and advancing the institution's research mission. The Rangel College of Pharmacy (RCOP) is unique in terms of its two teaching locations – one on the main campus in College Station and another in Kingsville. This distribution provides the RCOP a unique opportunity to develop a highly qualified workforce through its presence in College Station and through its south Texas presence in Kingsville with an opportunity to serve and develop much needed representation of the Hispanic and minority workforces. It will also strengthen other Texas A&M programs with more opportunities for collaboration and drug development, particularly on the main campus. By providing collaborations among students and faculty from all of the disciplines that are encompassed by the pharmaceutical sciences, the proposed Ph.D. program will offer an interdisciplinary, team-approach philosophy to problem solving needed by professionals today. Such diversity in student interactions can create a dynamic, intellectual environment and improve the quality of research, research ideas, and information generated from such a program.

Since the introduction of the FDA's position paper on cGMPs of the 21st century in 2005, research strategies have changed dramatically and continually in the pharmaceutical industry. Drug discovery and drug development are more intertwined as the identification of optimal pharmaceutical properties of the biologically active molecules becomes more important, necessitating the integration of drug development (pharmaceutics) into drug discovery process. One of the greatest challenges of today’s pharmaceutical industry is rapid, seamless translation of biomedical discoveries into drug products. To accommodate such a dramatic shift in the research enterprise, development of new drug discovery and delivery technologies, methodologies for modernization of manufacturing processes with process analytical technologies, Quality by Design (QbD), and emerging technologies, in vitro/in vivo simulation models, and understanding regulatory issues with sustained supply of qualified interdisciplinary scientists are critically needed. However, according to the ‘Path Forward’ report of the Educational Testing Service and Council of Graduate Schools, the percent of graduate students with US pharmacy degrees has declined sharply in the past decade which is leading to a scarcity of appropriately trained investigators.

A significant need for the continued success of the mission of RCOP and the profession of pharmacy is the availability of well-qualified professors in the pharmaceutical sciences who will continue to educate and provide the new generation of pharmacy professors and researchers who will follow them. Academically sound schools and colleges of pharmacy provide suitable courses at the professional and doctoral levels to establish a pipeline of basic, applied, and clinical faculty who are well qualified to meet demand and make advances in a broad range of settings, including academic pharmacy, industry, regulatory, clinical, community, compounding, marketing, and consulting.

Despite the enormous strength of existing programs at Texas A&M, the pharmaceutical product development pipeline needs improvement. This improvement will come with an understanding of conversion of discoveries to tangible pharmaceutical dosage forms. It requires an integration of chemistry, engineering, life sciences, and clinical sciences for small and biotech molecules for human, veterinary, and
AgriLife products. Too many valuable Texas A&M discoveries have been hindered from practical development by a lack of a substantial bridge between fundamental bench research, clinical drug development, and medical practice. The Ph.D. program in PHSC is about filling the gaps and joining the parts. Patients do not take discovered drugs as chemicals; rather, they take dosage forms such as tablets, injections, transdermal patches, and many other forms. At the present time, Texas A&M has no provision for formulations development teaching and research to promote scientists of the 21st century who understand the successful development of our chemical discoveries.

To develop the most updated Ph.D. program with respect to national and regional needs, the RCOP has hired a former FDA executive who has a proven experience of integrating the pharmacy and engineering programs in the nation. This former FDA executive started a Ph.D./M.S. program in pharmaceutical sciences at Texas Tech University as the founding director of graduate programs while he was a professor before joining the FDA. The program at Texas Tech has done well with approximately 40 students enrolled each year in the Ph.D. program in pharmaceutical sciences. It accepts about 25% of the qualified applicants that apply (correspondence with Dr. Thomas Abbruscato, associate dean). In addition, the RCOP has knowledgeable faculty and staff to comprehensively understand and link the essential components of all dosage forms and delivery systems from various colleges across Texas A&M.

Amongst many initiatives on development and modernization of pharmaceutical products, the FDA launched a “Critical Path” initiative in 2004 to invigorate pharmaceutical research to suit the emerging medical needs of the 21st century. The ultimate goal of this initiative is to modernize and facilitate the development process in order to bring drugs, biological products, and medical devices from discovery to commercialization. The initiative has identified six important areas for improving medical product development, including high quality product manufacturing. It is clear that in addition to modernizing the ‘Critical Path Sciences’ with bench to bedside discoveries, developing quality academic programs in product development, manufacturing sciences, quality assurance and control, and regulatory affairs is needed to meet these goals. Developing a graduate program in pharmaceutical sciences provides opportunities for researchers who want to work in a multidisciplinary environment in the future and generates a strong human resource pool in the field of drug discovery, development and translational research.

Product development from drug discovery through dosage-form manufacturing has recently become a highly visible enterprise in the pharmaceutical sector. Expenditures on pharmaceuticals have grown faster than other major components of the health care system since the late 1990s. This has shifted the emphasis of drug development towards optimization of the synthetic manufacturing process via Process R&D, resulting in active pharmaceutical ingredient (API) production with greater efficiency and lower cost. New strategies, such as combinatorial chemistry, are speeding up the discovery portion of the new-drug time line and pumping more candidates in the developmental pipeline, resulting in a significant decrease in the Post-IND drug development times and rapid drug approval. According to a recent testimony of FDA officials in the US Congress, about 80% of drugs and 45% of finished dosage forms, originate overseas. We need to educate our students for US self-reliance for the development of drug and dosage forms of this 1.06 trillion-dollar worldwide industry of which US revenues are 44.5% (Reference Statistica portal; Feb 2016). Support letters obtained from Mylan and other pharma industry leaders in Texas indicate a shortage of Ph.D. graduates with a background and expertise in pharmaceutical sciences. These letters are shown in Appendix I.

### A. Job Market Need

Provide short- and long-term evidence of the need for graduates in the Texas and US job markets. Common sources for workforce need and workforce projections include the Bureau of Labor Statistics, the Texas Workforce Commission, and professional associations. If the program is designed to address particular regional or state needs in addition to workforce demands, provide a detailed description.

A national study was conducted by the Bureau of Labor Statistics in 2014 to determine the estimated supply and demand trends and resultant gap of biomedical occupations (based on standard
occupational classification (SOC codes) in 10 metropolitan statistical areas (MSAs), at all degree levels. The results were determined by comparing annual job postings and the supply of graduates in the MSAs. The study establishes that there is an undersupply of medical scientists with graduate degrees in the delineated MSAs (see Table 1). According to the SOC codes, medical scientists are individuals trained to conduct research dealing with the understanding of human diseases and the improvement of human health, engage in clinical translational investigation, research and development, or other related activities. This definition would include individuals with a Ph.D. in PHSC as trained in the proposed RCOP program.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>All degrees</th>
<th>Graduate-level degrees</th>
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<tr>
<td></td>
<td>Demand</td>
<td>Supply</td>
</tr>
<tr>
<td>Biochemists and biophysicists</td>
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<td>1870</td>
</tr>
<tr>
<td>Biological scientists, all other</td>
<td>1622</td>
<td>12,375</td>
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<td>Biomedical engineers</td>
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<td>2575</td>
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<tr>
<td>Epidemiologists</td>
<td>574</td>
<td>815</td>
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<tr>
<td>Medical scientists</td>
<td>27,549</td>
<td>12,191</td>
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<tr>
<td>Microbiologists</td>
<td>1103</td>
<td>576</td>
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<tr>
<td>Natural sciences managers</td>
<td>5107</td>
<td>26,513</td>
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<tr>
<td>Statisticians</td>
<td>6239</td>
<td>5923</td>
</tr>
<tr>
<td>Total</td>
<td>43,658</td>
<td>62,838</td>
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According to Texas Biotech Industry Report 2016 (www.texaswideopenforbusiness.com), Texas is home to 3700 firms involved in research and development (R&D) and biotech manufacturing. More than 93,800 workers are employed in biotech related sectors with an annual average salary of $80,400. Of these, 10,688 are reportedly pharmaceutical and medicine manufacturing jobs with a median salary of $90,688. Between 2009 and 2014, venture capitalists invested over $1.4 billion. This investment can dramatically increase with help from Texas A&M. Texas has a dynamic biotechnology marketplace with an estimated economic impact of $75 billion. Based on these statistics, it is evident there will be a persistent demand for an adequately trained work force in the pharmaceutical and biotech industries in the areas of manufacturing, R&D, quality control and regulatory affairs. Because of the rapidly rising cost and speed of drug development, the demand for quality pharmaceutical scientists is higher than ever. In recent years, however, there has been a significant decline in the number of people who are entering science programs at the undergraduate/graduate levels in the state of Texas (www.txhigherereddata.org). New opportunities with state of the art laboratories of Texas A&M would help reverse that trend.

Recent data from 2015 graduates in pharmaceutical sciences was obtained from Texas institutions of higher education with correspondences with Deans or their representatives. In 2015, UT Austin has graduated 13 Ph.D.s, University of Houston has graduated 11 Ph.D.s, Texas Tech has graduated 10 Ph.D.s, and Texas Southern has graduated 2 Ph.D.s. All these graduates are placed in academia as assistant professors, industry as scientists, FDA as reviewers and scientists, or as post-doctoral fellows. It provides a clear evidence that these are highly sought-after scientists with a very bright future. The graduation and employment data for the past five years from UT Austin and Texas Tech University's pharmaceutical sciences programs, and University of Houston's pharmaceutics, pharmacology, and outcomes research programs indicate that almost 100% of the graduates readily found jobs in the industry, academia, or US government. Therefore, there is evidence that the Ph.D. in PHSC represents an unmet need where the students are readily employable after earning their degrees. Pharmaceutical science is not listed in the THECB low producing Ph.D. programs.
B. Existing Programs

Identify the existing programs and their locations in Texas. Provide enrollments and graduates of these programs for the last five years, and explain how the proposed program would not unnecessarily duplicate existing or similar programs in Texas. Provide evidence that existing Texas programs are at or near capacity and describe how the existing programs are not meeting current workforce needs. Provide the job placement of existing Texas programs. Provide information about the number of existing programs nationally.

Pharmaceutical science is an interdisciplinary field of applied sciences pertaining to the design action, delivery, manufacturing, disposition and evaluation of drugs. In pharmacy schools, this discipline encompasses pharmaceutics and pharmacology alongside other disciplines. Public institutions in the state of Texas offering a Ph.D. in Pharmaceutical Sciences (CIP 51.2010.00) are the following: University of Texas at Austin, Texas Tech University Health Science Center, and Texas Southern University. The University of Houston offers Ph.D. degrees in the key elements of pharmaceutical science including pharmaceutics (51.2003.00), pharmacology (51.2004.00), and outcomes research (51.2007.00). Because the number of graduates in Outcomes Research is not available on the THECB website, this degree program is not included in the data presented below. Data of Ph.D. enrollment and graduates in Ph.D. programs in pharmaceutical sciences in Texas universities are provided in tables at the end of this section.

Graduate programs in Pharmaceutical Sciences across the nation, and particularly in the state of Texas, are mostly traditional Ph.D. programs with little or no emphasis on process or product development of pharmaceutical products. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path initiative and the National Institute for Pharmaceutical Technology and Education’s (NIPT) recommendations. NIPT’s consortium of 16 schools of pharmacy and engineering is trying to address the FDA’s call for enhancing national capabilities in pharmaceutical manufacturing sciences. A complete list of the available data on enrollment and graduation for five years is provided in the tabular forms below. The paper from Mason et al., 2016 (Mason JL, Johnston E., Berndt S., Segal K, Lei M, Wiest JS. Labor and skills gap analysis of the biomedical research workforce. FASEB J 30;2016; 2016 Apr 13. pii: fj.201500067R. [Epub ahead of print]) indicates the need for 12,816 medical scientists with advanced degrees with the supply of 6,246 graduates in 10 metropolitan areas. This specialty includes pharmaceutical scientists, and leaves open a gap of 6,570 graduates per year. The combined annual graduation numbers for Ph.D.s from all Texas universities is about 36. Moreover, the quality of training for modernization of pharmaceutical development is essential for global competitiveness. The presence and strong support of engineering, veterinary, and Agri-Life programs at Texas A&M is likely to prepare outstanding Ph.D.s with entrepreneurial skills in pharmaceutical product development. Therefore, this program in pharmaceutical science is not unnecessarily duplicating any existing Ph.D. program in the state. Further, with the annual graduation of 36 students in pharmaceutical sciences (collected from the combined 2015 numbers from UT Austin, Texas Tech, University of Houston and Texas Southern pharmaceutical science programs), it is readily apparent that the graduate degrees’ level gap of 6,570 in the medical scientist category in the table above on page 5 cannot be met by the existing programs in Texas universities. This may be contributing to the statements from local pharma industry, e.g. Mylan in San Antonio, that there is frequently a shortage of finding suitable pharmaceutical scientists.

Further, the support letters obtained from executives in Texas Pharma industry indicate the shortage of pharmaceutical scientists and the opportunities of employment. These letters are consistent with the employment data obtained from Texas Tech University School of Pharmacy and the University of Houston, College of Pharmacy with regards to their Ph.D. graduates’ employment. Most of their graduates obtained employment after their degrees, a vast majority without even any post-doctoral training.
### Five Year Ph.D. Pharmaceutical Sciences Enrollment in National and Texas Universities

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
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<td>Nation (colleges of pharmacy), data from aacp.org</td>
<td>3294</td>
<td>3086</td>
<td>3094</td>
<td>3266</td>
<td>3109</td>
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<tr>
<td>UT Austin College of Pharmacy, data from THECB</td>
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<td>66</td>
<td>67</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td>U of Houston College of Pharmacy (combination of pharmaceutics and pharmacology Ph.D. degrees within pharmaceutical sciences), data from THECB</td>
<td>33</td>
<td>33</td>
<td>24</td>
<td>24</td>
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<tr>
<td>Texas Tech University HSC College of Pharmacy, data from THECB</td>
<td>45</td>
<td>38</td>
<td>38</td>
<td>37</td>
<td>38</td>
</tr>
<tr>
<td>Texas Southern University College of Pharmacy, data from THECB</td>
<td>11</td>
<td>11</td>
<td>14</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

### Five Year Ph.D. Pharmaceutical Sciences Graduates in National and Texas Universities

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nation (colleges of pharmacy), data from aacp.org</td>
<td>565</td>
<td>589</td>
<td>497</td>
<td>471</td>
<td></td>
</tr>
<tr>
<td>UT Austin College of Pharmacy, data from THECB</td>
<td>13</td>
<td>18</td>
<td>12</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>U of Houston College of Pharmacy (combination of pharmaceutics and pharmacology Ph.D. degrees within pharmaceutical sciences), data from THECB</td>
<td>11</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Texas Tech University HSC College of Pharmacy, data from THECB</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Texas Southern University College of Pharmacy, data from THECB</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

### Colleges in the Nation (www.aacp.org)

<table>
<thead>
<tr>
<th>Colleges in the Nation (<a href="http://www.aacp.org">www.aacp.org</a>)</th>
<th>Ph.D. Enrollment in Pharmacy Schools in the year 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auburn</td>
<td>41</td>
</tr>
<tr>
<td>Arizona</td>
<td>59</td>
</tr>
<tr>
<td>Arkansas</td>
<td>12</td>
</tr>
<tr>
<td>California-San Francisco</td>
<td>261</td>
</tr>
<tr>
<td>Pacific-California</td>
<td>41</td>
</tr>
<tr>
<td>Southern California</td>
<td>69</td>
</tr>
<tr>
<td>Colorado</td>
<td>43</td>
</tr>
<tr>
<td>Connecticut</td>
<td>49</td>
</tr>
<tr>
<td>Howard</td>
<td>15</td>
</tr>
<tr>
<td>Florida A&amp;M</td>
<td>41</td>
</tr>
<tr>
<td>Nova Southeastern</td>
<td>39</td>
</tr>
<tr>
<td>Florida</td>
<td>97</td>
</tr>
<tr>
<td>Mercer</td>
<td>44</td>
</tr>
<tr>
<td>Georgia</td>
<td>56</td>
</tr>
<tr>
<td>Hawaii-Hilo</td>
<td>11</td>
</tr>
<tr>
<td>Colleges in the Nation (<a href="http://www.aacp.org">www.aacp.org</a>)</td>
<td>Ph.D. Enrollment in Pharmacy Schools in the year 2015</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Idaho State</td>
<td>6</td>
</tr>
<tr>
<td>Illinois at Chicago</td>
<td>122</td>
</tr>
<tr>
<td>Purdue</td>
<td>111</td>
</tr>
<tr>
<td>Iowa</td>
<td>68</td>
</tr>
<tr>
<td>Kansas</td>
<td>84</td>
</tr>
<tr>
<td>Kentucky</td>
<td>68</td>
</tr>
<tr>
<td>Louisiana at Monroe</td>
<td>42</td>
</tr>
<tr>
<td>Maryland</td>
<td>78</td>
</tr>
<tr>
<td>Maryland Eastern Shore</td>
<td>3</td>
</tr>
<tr>
<td>MCPHS-Boston</td>
<td>63</td>
</tr>
<tr>
<td>Northeastern</td>
<td>51</td>
</tr>
<tr>
<td>Michigan</td>
<td>96</td>
</tr>
<tr>
<td>Wayne State</td>
<td>15</td>
</tr>
<tr>
<td>Minnesota</td>
<td>106</td>
</tr>
<tr>
<td>Mississippi</td>
<td>76</td>
</tr>
<tr>
<td>Missouri-Kansas City</td>
<td>36</td>
</tr>
<tr>
<td>Montana</td>
<td>20</td>
</tr>
<tr>
<td>Nebraska</td>
<td>45</td>
</tr>
<tr>
<td>Rutgers</td>
<td>55</td>
</tr>
<tr>
<td>New Mexico</td>
<td>22</td>
</tr>
<tr>
<td>A&amp;M Schwartz</td>
<td>18</td>
</tr>
<tr>
<td>St. John's</td>
<td>68</td>
</tr>
<tr>
<td>New York at Buffalo</td>
<td>49</td>
</tr>
<tr>
<td>North Carolina</td>
<td>87</td>
</tr>
<tr>
<td>North Dakota State</td>
<td>24</td>
</tr>
<tr>
<td>Ohio State</td>
<td>96</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>20</td>
</tr>
<tr>
<td>Toledo</td>
<td>44</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>25</td>
</tr>
<tr>
<td>Oregon State</td>
<td>31</td>
</tr>
<tr>
<td>Duquesne</td>
<td>52</td>
</tr>
<tr>
<td>Temple</td>
<td>22</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>49</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>35</td>
</tr>
<tr>
<td>South Carolina</td>
<td>30</td>
</tr>
<tr>
<td>South Dakota State</td>
<td>20</td>
</tr>
<tr>
<td>Tennessee</td>
<td>29</td>
</tr>
<tr>
<td>Texas Southern</td>
<td>17</td>
</tr>
<tr>
<td>Texas Tech</td>
<td>45</td>
</tr>
<tr>
<td>Houston</td>
<td>63</td>
</tr>
<tr>
<td>Texas as Austin</td>
<td>123</td>
</tr>
<tr>
<td>Utah</td>
<td>48</td>
</tr>
<tr>
<td>Virginia Commonwealth</td>
<td>64</td>
</tr>
<tr>
<td>Washington</td>
<td>64</td>
</tr>
<tr>
<td>Washington State</td>
<td>20</td>
</tr>
<tr>
<td>West Virginia</td>
<td>38</td>
</tr>
<tr>
<td>Wisconsin-Madison</td>
<td>64</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,294</strong></td>
</tr>
</tbody>
</table>
The following tables reflect employment information obtained from the individual institutions. There are variations in the number of graduates each year when compared with the THECB data. This could be the result of the use of different time periods for each year. The THECB data is also included for comparison and completeness.

### UT Austin Pharmaceutical Sciences Graduates and Their Employment

<table>
<thead>
<tr>
<th>Number of Ph.D. Graduates</th>
<th>Placement</th>
<th>Year</th>
</tr>
</thead>
</table>
| 13                         | 6 post-doctoral  
|                            | 3 academic faculty position  
|                            | 4 corporate position | 2011 |
| 19                         | 4 post-doctoral  
|                            | 3 academic faculty position  
|                            | 10 corporate position  
|                            | 2 other – 1 non-profit, 1 med school | 2012 |
| 12                         | 4 post-doctoral  
|                            | 2 academic faculty position  
|                            | 5 corporate position  
|                            | 1 other – law school | 2013 |
| 18*                        | 4 post-doctoral  
|                            | 2 academic faculty position  
|                            | 10 corporate position  
|                            | 1 government position  
|                            | 2 want to start families | 2014 |
| 13                         | 3 post-doctoral  
|                            | 7 corporate position  
|                            | 1 government position  
|                            | 2 other – 1 start family, 1 family business | 2015 |

* The graduation number is presented as 19 by UT Austin in personal correspondence

### U of Houston Pharmaceutics Graduates (51.2003.00) and Their Employment

<table>
<thead>
<tr>
<th>Number of Ph.D. Graduates - U of H Data</th>
<th>Number of Ph.D. Graduates - THECB</th>
<th>Placement</th>
<th>Year</th>
</tr>
</thead>
</table>
| 3                                       | 4                                 | 1 post-doctoral  
|                                        |                                   | 1 academic faculty position  
|                                        |                                   | 1 corporate position  
|                                        |                                   | 1 family business | 2011 |
| 6                                       | 8                                 | 2 post-doctoral  
|                                        |                                   | 3 academic faculty position  
|                                        |                                   | corporate position  
|                                        |                                   | 2 other – 1 non-profit, 1 med school | 2012 |
| 1                                       | 1                                 | 1 corporate position | 2013 |
| 4                                       | 3                                 | 2 post-doctoral  
|                                        |                                   | 1 corporate position | 2014 |
| 8                                       | 5                                 | 1 post-doctoral  
|                                        |                                   | 3 corporate position  
|                                        |                                   | 1 at home | 2015 |
### U of Houston Pharmacology Graduates (51.2004.00) and Their Employment

<table>
<thead>
<tr>
<th>Year</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2 post-doctoral, 1 academic faculty position, 5 corporate position, 1 family</td>
</tr>
<tr>
<td>2012</td>
<td>2 post-doctoral</td>
</tr>
<tr>
<td>2013</td>
<td>1 post-doctoral, 1 academic faculty position, 1 Abstract reviewer</td>
</tr>
<tr>
<td>2014</td>
<td>2 post-doctoral</td>
</tr>
<tr>
<td>2015</td>
<td>3 post-doctoral</td>
</tr>
</tbody>
</table>

### TTU Pharmaceutical Sciences Graduates and Their Employment

<table>
<thead>
<tr>
<th>Year</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>4 academic faculty position, 4 corporate position, 1 government position</td>
</tr>
<tr>
<td>2012</td>
<td>3 post-doctoral, 2 academic faculty position, 4 corporate position</td>
</tr>
<tr>
<td>2013</td>
<td>3 post-doctoral, 1 academic faculty position, 1 corporate position, 1 unknown</td>
</tr>
<tr>
<td>2014</td>
<td>3 post-doctoral, 1 academic faculty position, 4 corporate position, 1 government position, 2 unknown</td>
</tr>
<tr>
<td>2015</td>
<td>9 post-doctoral</td>
</tr>
</tbody>
</table>

### C. Student Demand

Provide short- and long-term evidence of student demand for the program. Types of data commonly used to demonstrate this include increased enrollment in related and feeder programs at the institution, high enrollment in similar programs at other institutions, qualified applicants rejected at similar programs in the state, and student surveys. Provide documentation that qualified applicants are leaving Texas for similar programs in other states.

The RCOP receives numerous inquiries each year about the existence and development of a new Ph.D. program. Within the month of October 2016, there were eight inquiries about the Ph.D. program. New enrollment in several feeder colleges within Texas A&M has risen. RCOP total enrollment in its PharmD program has increased from 87 students in 2006 to approximately 450 in 2016. Feeder colleges, such
as engineering, have also seen BS new enrollment growing from 2,395 new students in 2011 to 4,039 new students in 2015. Similarly, new enrollment in Veterinary Medicine and Agriculture and Life Sciences (Agri-Life) has also risen significantly from 2011 to 2015. To our knowledge, published data doesn’t exist to indicate the number of qualified applicant that are rejected in Ph.D. programs in pharmaceutical sciences. Informal discussions and emails with Texas Tech faculty indicate that generally more than 75% of the qualified candidates are rejected in their Ph.D. program in pharmaceutical science. At the University of Houston, in the Pharmaceutical Health Outcomes & Policies Ph.D. program, there were 39 applicants in 2015, and seven were admitted (20%). In that same year, in Pharmaceutics, out of 44 applicants, three were admitted (7%) and in Pharmacology, out of 69 applicants, seven were admitted (10%). A new Ph.D. program in PHSC is likely to provide excellent opportunities for career jobs in industry, academia, and regulatory industries. Support letters from Texas A&M deans of Engineering, Agri-Life, Veterinary Medicine, and Medicine indicate a strong support for this Ph.D. program as it provides a breadth of opportunities for their graduates as well as research collaboration opportunities for their faculty. In the year 2015, UT Austin awarded 13 Ph.D.s; University of Houston awarded 11 Ph.D.s; Texas Tech awarded 10 Ph.D.s; and Texas Southern awarded 2 Ph.D.s. To better serve South Texas, there is a dire need of a Ph.D. program in PHSC. RCOP is strategically located in two locations to cater to this need and, thus, can become the first pharmaceutical sciences Ph.D. program in South Texas.

As shown in the table above, THECB website data indicates that for 2015, the University of Texas at Austin had an enrollment of 66 Ph.D. students; the University of Houston (pharmaceutics and pharmacology) had an enrollment of 33 students; Texas Tech had an enrollment of 45 students; and Texas Southern had an enrollment of 11 students in their respective graduate programs in pharmaceutical sciences. Considering the depth of a Ph.D. program, enrollment is high and further enrollment of students is highly unlikely. Further, all Ph.D. graduates who sought employment readily found jobs in in academia, industry, and regulatory agencies. US schools of pharmacy have a combined Ph.D. enrollment of 3,294 students, and the average number of graduates each year is about 565. As shown in the table above from the AACP, a total of 61 pharmacy programs currently have Ph.D. programs in one or more disciplines of the pharmaceutical sciences.

D. Student Recruitment
Describe recruitment efforts specific to the proposed program, including plans to recruit and retain students from underrepresented groups.

The RCOP maintains a highly qualified and ethnically diverse student population. The student body (Pharm.D. Classes 2017 to 2020) is comprised of 440 students. Forty-one percent of current students hold at least a bachelor’s degree, and 35.6% are underrepresented minorities (URM). Ninety-eight percent of the student body is from the state of Texas, and 35% is from South Texas.

The RCOP ranked first in the nation in percentage of Hispanic graduates in 2010 and 2011, per the American Association of Colleges of Pharmacy (AACP). It remains among the top five programs in the nation with respect to matriculation and graduation rates of Hispanic students. In fact, the vital statistics record from AACP indicates that Texas A&M ranks third in the nation with respect to under-represented minority Pharm.D. graduation, ranking behind only Puerto Rico and the University of the Incarnate Word.

With a strong commitment to diversity, the RCOP has initiated and implemented a variety of activities (e.g., boot camps, information sessions, virtual fairs, pre-pharmacy student advisement, community and health fairs and career guidance) aimed at facilitating student engagement at all levels. In the border region of Texas, students from the under-represented demographic groups are strongly encouraged to apply and are actively recruited. Current recruitment efforts for the RCOP include annual visits to state universities and public colleges. At these venues, staff from the RCOP engage with pre-pharmacy student organizations and individual students who meet pre-pharmacy curriculum
requirements. The Office of Student Affairs also hosts informational seminars and tours for high school students from the surrounding areas. These efforts will be expanded to target interested students in undergraduate and graduate biology and chemistry departments who may be qualified to enter the Ph.D. program in PHSC.

One of the newest and most effective recruiting tools is the participation in a virtual fair that attracts several hundred potential applicants as it is coordinated through PharmCAS, the application software used for the PharmD program. Similar to PharmCAS, the RCOP intends to utilize PharmGRAD for its Ph.D. program if approved. The use of PharmGRAD will provide real-time reports of the applicant pool statistics including ethnicity. This will help the RCOP monitor its outreach to increase its diversity.

The RCOP continues to receive numerous inquiries from non-pharmacy Texas A&M students in undergraduate and graduate programs regarding the implementation of a Ph.D. program in pharmaceutical sciences. Together, the Office of Student Affairs and the Graduate Program Committee will increase efforts to attract more students from within Texas A&M University and other institutions within Texas.

Like it has successfully done in the Pharm.D. program, upon approval of the Ph.D. program in PHSC, the College’s Graduate Program Committee will work closely with the Office of Student Affairs to recruit talented and diverse students through its website, announcements in the national list of graduate programs, and announcements in professional organizations such as NIPTE, AAPS, ACS, ASPET and AACP. List-serves and the distribution of electronic and print brochures to feeder schools in all Texas universities will also be utilized.

E. Enrollment Projections

Use Table 1 to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program, including the ethnic breakdown of the projected enrollment (White, African American, Hispanic, International, Other). Include summer enrollments, if relevant, in the same year as fall enrollments. Subtract students as necessary for projected graduations or attrition. Provide explanations of how headcounts, FTSE numbers, projections for underrepresented students, and attrition were determined. Define full-time and part-time status.

<table>
<thead>
<tr>
<th>Table 1. Enrollment Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Year 1</td>
</tr>
<tr>
<td>New Students</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>African-American</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>International</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Cumulative Headcount</td>
</tr>
<tr>
<td>FTSE</td>
</tr>
<tr>
<td>Attrition</td>
</tr>
<tr>
<td>Expected Graduates</td>
</tr>
</tbody>
</table>

*FTSE for pharmacy education in an HRI is calculated by total semester credit hours divided by 18 (i.e. Year 1 has 10 students enrolled with 180 semester credit hours total. FTSE is 180/18=10).
These projections are based on the diversity of enrollment parallel to the diversity of admission in RCOP and national average enrollment in Ph.D. programs in pharmaceutical science. The ethnicity data of the enrollment projections are based on informal discussions with administrators from similar programs in Texas with graduate programs. The enrollment of 10 Ph.D. students per year for a total of 40 is based on the number of faculty available to support the dissertation research as well as the laboratory and office space availability. These projections are for full-time students who enroll in at least nine credit hours of courses in Fall and Spring, and six credit hours in Summer.

II. Academics

A. Accreditation

If the discipline has a national accrediting body, describe plans and timeline to obtain accreditation. For disciplines where licensure of graduates is necessary for employment, such as nursing, plans for accreditation are required. If the program will not seek accreditation, provide a detailed rationale explaining why.

There is no discipline-specific accreditation requirement for pharmaceutical sciences. However, Texas A&M's existing Ph.D. programs are accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). The professional pharmacy Pharm.D. program of the RCOP is accredited by the Accreditation Council for Pharmaceutical Education (ACPE).

B. Admissions Standards

Describe the institution’s general graduate admissions standards and the program-specific admissions standards for applicants of the program. The description addresses how the proposed program will seek to become nationally competitive. Explain how students will be assessed for readiness to enroll in program coursework. Include any policies for accepting students transferring from other graduate programs. Explain whether the program will accept full-time and part-time students.

The general admission standards used in Texas A&M will be followed. In line with the mission of Texas A&M and RCOP, rigorous efforts will be made with respect to identification, recruitment, retention, and successful training of highly qualified students. Prospective students may apply to the Ph.D. program in PHSC facilitated by the Texas A&M Office of Admissions. A PHSC Ph.D. Program Committee will exercise general supervision over the PHSC Ph.D. program and will make recommendations to the RCOP Vice Dean regarding admission of the students into the program, award of graduate assistantships, appointment of major advisors and advisory committees, preparation and administration of qualifying examination, and content and conduct of graduate courses. It will also serve the advisory role of students until appointment of an advisory committee has been made. The PHSC Ph.D. Program Committee will be chaired by the director of graduate programs. Once an advisory committee is appointed, it will be responsible for all aspects of doctoral candidate’s progress and compliance with all TAMU requirements with help from director of graduate program as needed.

Admissions criteria will include an evaluation of the entire record of the applicant and availability of resources. Admission will be based on:

1. Official transcripts of a 4-year or more baccalaureate degree in science or engineering, preferably pharmaceutical science, or PharmD from a college or university of recognized standing (recognized as equivalent to a baccalaureate degree or PharmD from an accredited institution in the United States), and the transcripts of any higher degrees in science or engineering.
2. Demonstration of promise of academic and intellectual ability, as evidenced by a minimum of three letters of recommendations from persons capable of judging the applicants’ capabilities, a statement of purpose essay, a GPA of >3.0 and valid GRE scores that are required to be submitted
at the time of application. A score of at least 152 each in verbal and quantitative sections is desired.

3. All international applicants must submit a transcript analysis that provides the English translation of their official transcripts as well as course-by-course listing of USA grade point equivalencies and degree statements. International students whose native language is not English are required to fulfill an English proficiency requirement through the Test of English as A Foreign Language (TOEFL), which is administered by the Educational Testing Service in over 200 centers around the world.

C. Program Degree Requirements

Describe the similarities and differences between the proposed program and peer programs in Texas and nationally. Indicate the different credit hour and curricular requirements, if any, for students entering with a bachelor’s degree and students entering with a master’s degree. Use Table 2 to show the degree requirements of the program. If requirements vary for students entering with a master’s degree or comparable qualifications, provide an explanation. Modify the table as needed. If necessary,

<table>
<thead>
<tr>
<th>Table 2: Program Degree Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Required Courses</td>
</tr>
<tr>
<td>Prescribed Electives</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td>Dissertation</td>
</tr>
<tr>
<td>Other (Specify, e.g., internships, clinical work, residencies)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

replicate the table to show more than one option.

This Ph.D. program is consistent with other Ph.D. programs in Texas A&M with respect to Texas A&M requirements and the SCH requirements for students with or without master’s degrees. Further, unlike other programs with separated disciplines of pharmaceutics, pharmaceutical chemistry, pharmacology, or pharmacy administration, the proposed program will have only one administrative unit. Regardless of the discipline interest of students, they will take the required core courses followed by a qualifying examination conducted by the PHSC Ph.D. Program Committee with help from the course instructors and advisory committees. Following the completion of six-week lab rotations, students will select mentors and an advisory committee. This advisory committee will select prescribed electives to advance the student experience and training depending upon the discipline interest; the advisory committee will work with the PHSC Ph.D. Program Committee to develop content for the qualifying examination and take part in the progress evaluation of research throughout students’ stay in the program. The advisory committee, with assistance from the PHSC Ph.D. Program Committee, ensure the general requirements of the Texas A&M graduate catalog are met. At the end of the second year, or any time prior, students will present their research proposal to the advisory committee and larger departmental audience in consultation with the major advisor. They will also take questions to demonstrate the mastery of the subject in which they are conducting dissertation research.

1 Please note that Education Code 61.059 (l) limits funding for doctoral programs to 99 SCH, unless exempted by the THECB.
Furthermore, students are required to participate in the RCOP's seminar series and make a presentation on their respective dissertation topic at least once every year.

At the end of every year, students will present their progress report to their advisory committee or present departmental seminars on research progress, and complete their dissertations at least one month before the final defense. The dissertation must be defended in an open presentation followed by in-depth questions and examination on the research content by the advisory committee. Dissertations must be submitted to the Office of Graduate and Professional Studies (OGAPS) as per their requirements.

Complete Table 3 to provide a comparison of the proposed program to existing and/or similar programs in Texas in terms of total required semester credit hours. Modify the table as needed.

| Table 3. Semester Credit Hour Requirements of Similar Programs in Texas |
|-----------------------------|-----------------|-----------------|------------------|
| Institution                 | Program CIP Code | Degree Program  | Semester Credit Hours, |
| UT Austin                   | 51.2010.00      | Ph.D.           | 30                |
| University of Houston       | 51.2003.00      | Ph.D.           | 78                |
|                             | 51.2004.00      |                 | 78                |
|                             | 51.2007.00      |                 | 70                |
| Texas Tech University HSC  | 51.2010.00      | Ph.D.           | 72                |
| Texas Southern              | 51.2010.00      | Ph.D.           | 74                |

The existing programs in Texas do not distinguish between students entering the Ph.D. program with or without master's degrees. Additionally, while their didactic course requirements are similar to proposed Texas A&M courses (e.g. Texas Tech has the didactic course requirements of 48 hours and Texas A&M has 52 hours), their dissertation hour requirement is only 12 hours. The Texas A&M proposed Ph.D. program requires a full time student enrollment of nine hours per semester until all required courses have been completed. Students would spend about two years of time for rigorous hypothesis-driven research for the dissertation, similar to other Texas A&M Ph.D. programs as per the OGAPS requirements. Therefore, the dissertation hour requirement of 44 hours is very reasonable and consistent with other doctoral programs within Texas A&M University. The UT Austin Ph.D. program requires 30 hours which is not consistent with the rigor that is required in the proposed Texas A&M program. The course work and its intensity is different in Texas A&M. As an example, within the area of pharmaceutics, the UT Austin program focus is more on the physical pharmacy, thermodynamics, and related preformulation courses, while the Texas A&M program is more focused on the development of complex dosage forms and delivery systems where the students learn to develop dosage forms of unique chemical discoveries within the Texas A&M colleges. This requires and in-depth understanding of dosage form suitability with several routes, and are being offered in Texas A&M.

D. Curriculum

Describe the educational objectives of the proposed program. If the program has a unique focus or niche, describe it in relationship to peer programs. Describe how the program would achieve national prominence. Provide an explanation of required, prescribed, and elective courses and how they fulfill program requirements.

Describe policies for transfer of credit, course credit by examination, credit for professional experience, placing out of courses, and any accelerated advancement to candidacy. Identify any alternative
learning strategies, such as competency-based education, that may increase efficiency in student progress in the curriculum. If no such policies are in place to improve student progression through a program, provide an explanation.

Complete Tables 4, 5, and 6 to list the required/core courses, prescribed elective courses, and elective courses of the program and semester credit hours (SCH). Note with an asterisk (*) courses that would be added if the program is approved. Modify the tables as needed. If applicable, replicate the tables for different tracks/options.

The educational objectives of the proposed program have been described on page 2. It is important to emphasize that the proposed program is different than other graduate programs in Pharmaceutical Sciences across the nation and in the state of Texas, in particular, which are mostly traditional Ph.D. programs with little or no emphasis on process or product development of pharmaceutical products by quality by design and process analytical technologies with chemometrics and big data management techniques. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path and cGMPs of the 21st century initiatives and the National Institute for Pharmaceutical Technology and Education’s (NIPTE) recommendations for modernization of pharmaceutical development. Specialized courses such as pediatric dosage forms, vaccine delivery, chemometrics and big data management, process and product development with PAT and QBD tools are not offered as prescribed electives or electives in other institutions. These unique courses will help modernize the pharmaceutical industry as needed by the FDA and pharm industry. Texas A&M is uniquely positioned to accomplish this because of the qualifications of the faculty in the RCOP as well as the state-of-the-art infrastructure in Texas A&M.

The faculty in the RCOP is diverse, which is a strength for the integration of knowledge required for pharmaceutical science research. The core courses represent basic fundamental knowledge required for all majors within pharmaceutical science. After the students complete these courses and laboratory rotations, they will select Ph.D. advisory committees. Depending upon the specialty areas of the major advisor and advisory committee members, appropriate electives will be suggested. Another unique feature of the program is that students will understand the drug development from a regulatory standpoint so that they develop the ability to convert basic discoveries into actual dosage forms for targeted drug delivery, controlled drug delivery, biotech and vaccine product development, transdermal and topical drug delivery, as well as herbal drugs, nanotechnology for biomedical applications, and knowledge of big data management and chemometrics.

For transfer credits, a maximum of six credit hours will be allowed after the determination of equivalency with existing courses by the PHSC Ph.D. Program Committee. For professional experience, a student may be allowed to work in a pharmaceutical industry for a maximum of six credit hours of research with consent of the major advisor and approval of the PHSC Ph.D. Program Committee.

The RCOP has well-tested teaching strategies of active learning, problem-based learning, competency-based learning, and flip-teaching that have been evaluated by American Council on Pharmaceutical Accreditation when the college recently received its accreditation for Pharm.D. degree. The RCOP will also participate in the Texas A&M pedagogy project to enhance student learning and professional experiences.

<table>
<thead>
<tr>
<th>Table 4. Required/Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prefix and Number</strong></td>
</tr>
<tr>
<td>PHSC 610*</td>
</tr>
<tr>
<td>Prefix and Number</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>PHSC 611*</td>
</tr>
<tr>
<td>PHSC 612*</td>
</tr>
<tr>
<td>PHSC 613*</td>
</tr>
<tr>
<td>PHSC 621*</td>
</tr>
<tr>
<td>PHSC 622*</td>
</tr>
<tr>
<td>PHSC 623*</td>
</tr>
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</table>

**Table 5. Prescribed Elective and Elective Courses**

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 724*</td>
<td>Principles of pharmacology and toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 725*</td>
<td>Biopharmaceutics and pharmacokinetics</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 731*</td>
<td>Process and product development or equivalent</td>
<td>2</td>
</tr>
<tr>
<td>PHSC 732*</td>
<td>Controlled and targeted drug delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 733*</td>
<td>Drug degradation and product stability or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 734*</td>
<td>Vaccine delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 735*</td>
<td>Industrial pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 736*</td>
<td>Physical pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 737*</td>
<td>Transdermal and topical drug delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 738*</td>
<td>Cosmetic development</td>
<td>2</td>
</tr>
<tr>
<td>PHSC 739*</td>
<td>Pediatric dosage forms</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 741*</td>
<td>Analytical/Bioanalytical techniques and validation</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 742*</td>
<td>High throughput training in drug discovery and screening</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 743*</td>
<td>Polymer chemistry or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 744*</td>
<td>Chemometrics and big data management or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 689*</td>
<td>Topics in pharmaceutical science</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>PHSC 752*</td>
<td>Nanotechnology for biomedical applications</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 753*</td>
<td>PK/PD and drug metabolism or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 754*</td>
<td>Toxicokinetics and predictive toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 755*</td>
<td>In-vitro/in-vivo simulations and modeling</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 5. Prescribed Elective and Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 756*</td>
<td>Advanced pharmacology</td>
<td>3</td>
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<tr>
<td>PHSC 757*</td>
<td>Herbal drugs or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 758*</td>
<td>Research in pharmaceutical science</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>PHSC 691*</td>
<td>Dissertation research</td>
<td>3</td>
</tr>
</tbody>
</table>

The courses in Table 4 are the required courses for 26 SCH for all entering students without Master of Science (M.S.) degrees and 18 SCH with M.S. degrees. They build the foundation and bring consistency to a diverse group of incoming students. It is highly likely that some of these required courses have already been completed at the graduate level by students entering with M.S. degrees. Depending upon their backgrounds, only 18 out of the 26 credits will meet the requirements. If a student enters after a M.S. degree and is found to have taken more courses or their equivalents in an accredited program, the PHSC Ph.D. Program Committee may waive the required course and substitute that course with an elective based on the students’ background and dissertation advisory committee recommendations.

E. Candidacy/Dissertation

If the proposed program requires a dissertation, describe the process leading to candidacy and completion of the dissertation. Describe policies related to dissertation hours, such as a requirement to enroll in a certain number of dissertation hours each semester. Indicate if a master’s degree or other certification is awarded to students who leave the program after completing the coursework, but before the dissertation defense.

The Ph.D. program in PHSC requires that the following conditions be met for candidacy:
- Complete all the core and prescribed electives, and other elective courses including the following requirements:
  - Complete three of the four 6-week laboratory rotations.
  - Complete at least two seminar courses with at least one seminar on the science topic of their interest.
  - A degree seeking graduate student is considered to be scholastically deficient if cumulative GPA or GPA for the courses listed on the degree plan falls below 3.00. The student will be required to bring their GPA back to 3.0 or higher in the next semester or risk dismissal from the program. More than one grade of less than B will also be a reason for dismissal or if courses are completed to fulfill the M.S. requirements, the student may be recommended for the award of M.S. degree if that degree program is approved. The M.S. degree may be awarded after completion of at least 36 SCH of required and prescribed electives in consultation with the advisor and PHSC Ph.D. Program Committee (without thesis) or 32 SCH with thesis. This M.S. degree will be without a thesis, unless the student and the major advisor agree to submit a thesis after six hours of research/dissertation credit hours. If a thesis is submitted after a defense presentation, an M.S. with a thesis option will be granted upon the advice of the PHSC Ph.D. Program Committee.
  - Select the major advisor and advisory committee comprised of at least three pharmaceutical science graduate faculty. At least one graduate faculty needs to be from other Texas A&M programs.
  - Pass the qualifying examination. If a student fails this exam, he/she will be given another exam after three months. A failure in the second attempt will be grounds for dismissal from the program or an opportunity to leave after completing the M.S. degree.
  - Defend the research proposal.
  - Continued participation in seminar courses throughout the length of study.
• Once the student completes all the above requirements, he or she will be admitted to the candidacy.

• Once the student is on candidacy, they will register continuously as a full time student as per the Texas A&M guidelines for graduate studies. Full time students would need a minimum of nine SCH in Fall and Spring semesters, and six SCH in summer sessions until they complete all the required courses on their degree plan. The candidate must conduct scholarly independent original research with evidence of new knowledge to the field. The thesis or dissertation must demonstrate the hypothesis of research, experimental plan and the mastery of the techniques of research, a detailed discussion of the experimental research, and thorough understanding of the subject matter and its background with a high degree of skill in organizing and presenting the material by following all the Texas A&M requirements.

F. Use of Distance Technologies

If applicable, describe the use of any distance technologies in the program, including a description of interactions between students and faculty, opportunities for students to access educational resources related to the program, exchanges with the academic community, and in-depth mentoring and evaluation of students. If more than 50 percent of the program content will be delivered off-campus, the institution must also submit a completed “Distance Education Doctoral Degree Proposal” form: Distance Education Doctoral Degree Proposal.

Most courses will be taught didactically within the RCOP, and many opportunities exist to take courses at both the College Station and Kingsville locations, as needed. RCOP faculty routinely teach Pharm.D. courses via TTVN (video conferencing) infrastructure that connects and supports RCOP’s one program, two location Pharm.D. program model. This TTVN technology will be utilized for team taught courses in the Pharmaceutical Sciences program. This technology has been vetted for utilization by the Accreditation Council for Pharmaceutical Education (ACPE) when they granted the accreditation in 2016. The accreditation body witnessed the demonstrations and actually participated in several electronic meetings and class room discussions before granting full accreditation. The Pharm.D. program received the longest possible accreditation period of eight years from the ACPE. When desired, didactic elective courses may be taken at the College Station or Kingsville location. Group meetings and presentations will be completed via Zoom or Skype as routinely done for Pharm.D. students at both College Station and Kingsville locations.

G. Program Evaluation

Describe how the program will be evaluated. Describe any reviews that would be required by an accreditor, and show how the program would be evaluated under Board Rule 5.52.

The 18 Characteristics of Doctoral Programs in Texas A&M are current. Texas A&M uses the characteristics for ongoing evaluation of its programs and the proposed program in pharmaceutical sciences will also be evaluated. The following link provides more details on the 18 Characteristics: http://ogaps.tamu.edu/Prospective-Students/Programs-and-Degrees/18-Characteristics-of-the-Doctoral-Programs

The Ph.D. program in PHSC will also be evaluated as instructed in Board Rule 5.52. At Texas A&M, however, the Academic Program Review (APR) process is a multi-year process that begins one year prior to the state’s required reporting deadline. The institution works with the program to develop a self-study document, identify external reviewers, and coordinate an on-site visit of the program. Specific details are available at http://provost.tamu.edu/initiatives/academic-program-review including a description of the institution’s requirements for reviewing undergraduate programs as appropriate. In addition to the State’s requirements, the institution requires the program to submit a
follow-up report with the Provost and Executive Vice President within two months of the site visit, at which time the program’s department head as well as representatives from the dean’s office meet with the Provost and the APR administrative team. Finally, as part of the institutional effectiveness plan required by SACSCOC CR 2.5, the programs provide a follow-up report one and four years after the site visit. The follow-up reports are provided to the Provost, the APR administrative team, and the external reviewers who were on-site for the APR.

H. Strategic Plan

Describe how the proposed doctoral program fits into the institution’s overall strategic plan, and provide the web link to the institution’s strategic plan. Explain how the proposed program builds on and expands the institution’s existing recognized strengths.

The proposed doctoral program aligns very well with the 60x30Tx plan of providing higher education with minimal debt and maximized job potential in a global economy to at least 60% of Texas residents between 25 and 34 year olds by the year 2030. The 60x30Tx plan includes professional and doctoral degrees. This Ph.D. degree is highly marketable in the global economy where US-based drug products are developed and sold by the global pharm industry. Additionally, the RCOP self-study demonstrates the college is recognized for the high Hispanic graduation rates with lowest debt in the State. As the number of Hispanics are likely to grow by 2030, this Ph.D. program is likely to meet the objectives of the plan well.

Texas A&M is a TIER 1 research university with 93 doctoral and 170 MS programs, 14,935 graduate students, $866,000,000 in research expenditure per year (year 2015 figures), 22 National Academy members, and three Nobel Laureates. The lack of a Ph.D. program in PHSC presents a major gap to convert their basic discoveries into practical pharmaceutical dosage forms for the benefit of patients.

Texas A&M’s strategic plan supports doctoral programs. The strategic plan is provided in the following link: http://provost.tamu.edu/initiatives/strategic-planning-2015-2020. Texas A&M’s strategic planning document Vision 2020 and road map to achieve this vision with 12 “imperatives” can be found at http://vision2020.tamu.edu/. The top two imperatives include elevation of faculty with teaching, research and scholarship, and the strengthening of graduate programs. The RCOP is already receiving solid support to hire established faculty with attractive start-up packages, equipment purchases, space for laboratories, and a new good manufacturing practice laboratory. The establishment of the proposed Ph.D. in PHSC supports the imperative of strengthening graduate programs.

This link: http://pharmacy.tamhsc.edu/strategic/research.html reflects that the Health Science Center’s strategic plan 2015-2019 lists development of graduate programs as a key objective/strategic direction to achieve the institution’s aspirations of national ranking similar to other strong programs within Texas A&M. Additionally, in the most recent faculty retreat in Spring 2016, RCOP faculty overwhelmingly voted for development of Ph.D. program in PHSC as the top priority for RCOP.

I. Related and Supporting Programs

Complete Table 7 with a list of all existing programs that would support the proposed program. This includes all programs in the same two-digit CIP code, and any other programs (graduate and undergraduate) that may be relevant. Include data for the applications, admissions, enrollments, and number of graduates for each of the last five years. Modify the table as needed. The example provided in Table 7 shows degree programs that would relate to or support an additional PhD in another area of chemistry, for example a proposal for a PhD in Forensic Chemistry (40.0510).

Table 7. List of All Existing Programs that Would Support the Ph.D. Program

Feeder Colleges and Programs 2011 to 2015
<table>
<thead>
<tr>
<th>Year</th>
<th>College of Engineering</th>
<th>Biomedical Engineering</th>
<th>Chemical Engineering</th>
<th>Department of Industrial &amp; Systems Engineering</th>
<th>Chemistry</th>
<th>College of Veterinary Medicine and Biomedical Sciences</th>
<th>Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Applications for Bachelors and Masters</td>
<td>New Admissions for Bachelors and Masters</td>
<td>New Enrollment for Bachelors and Masters</td>
<td>Number of Graduates</td>
<td>Graduation Rates</td>
<td>New Graduates</td>
<td>4yr</td>
</tr>
<tr>
<td>2015</td>
<td>17,856</td>
<td>7,282</td>
<td>4,039</td>
<td>1,739</td>
<td>764</td>
<td>41.8%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>16,662</td>
<td>7,751</td>
<td>4,111</td>
<td>1,790</td>
<td>588</td>
<td>43.6%</td>
<td>77.9%</td>
</tr>
<tr>
<td>2013</td>
<td>13,441</td>
<td>5,939</td>
<td>3,195</td>
<td>1,633</td>
<td>583</td>
<td>39.9%</td>
<td>74.8%</td>
</tr>
<tr>
<td>2012</td>
<td>11,338</td>
<td>4,812</td>
<td>2,419</td>
<td>1,602</td>
<td>636</td>
<td>39.0%</td>
<td>73.6%</td>
</tr>
<tr>
<td>2011</td>
<td>10,794</td>
<td>4,605</td>
<td>2,395</td>
<td>1,507</td>
<td>690</td>
<td>37.3%</td>
<td>72.6%</td>
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<tr>
<td>2015</td>
<td>381</td>
<td>28</td>
<td>13</td>
<td>75</td>
<td>15</td>
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<td></td>
</tr>
<tr>
<td>2014</td>
<td>339</td>
<td>35</td>
<td>19</td>
<td>81</td>
<td>11</td>
<td>48.8%</td>
<td>81.2%</td>
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<tr>
<td>2013</td>
<td>577</td>
<td>284</td>
<td>137</td>
<td>68</td>
<td>13</td>
<td>48.3%</td>
<td>79.8%</td>
</tr>
<tr>
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<td>516</td>
<td>259</td>
<td>130</td>
<td>65</td>
<td>7</td>
<td>51.9%</td>
<td>88.0%</td>
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<tr>
<td>2011</td>
<td>531</td>
<td>274</td>
<td>124</td>
<td>49</td>
<td>7</td>
<td>50.0%</td>
<td>80.5%</td>
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<tr>
<td>2015</td>
<td>710</td>
<td>133</td>
<td>65</td>
<td>103</td>
<td>6</td>
<td>42.2%</td>
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<tr>
<td>2014</td>
<td>563</td>
<td>111</td>
<td>49</td>
<td>155</td>
<td>9</td>
<td>46.8%</td>
<td>81.1%</td>
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<td>2013</td>
<td>832</td>
<td>415</td>
<td>256</td>
<td>146</td>
<td>3</td>
<td>38.6%</td>
<td>78.5%</td>
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<tr>
<td>2012</td>
<td>554</td>
<td>308</td>
<td>160</td>
<td>147</td>
<td>6</td>
<td>35.3%</td>
<td>75.0%</td>
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<tr>
<td>2011</td>
<td>619</td>
<td>318</td>
<td>165</td>
<td>113</td>
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<td>73.9%</td>
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<tr>
<td>2015</td>
<td>1,058</td>
<td>235</td>
<td>145</td>
<td>144</td>
<td>78</td>
<td>40.2%</td>
<td></td>
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<tr>
<td>2014</td>
<td>897</td>
<td>231</td>
<td>160</td>
<td>159</td>
<td>74</td>
<td>49.2%</td>
<td>80.8%</td>
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<tr>
<td>2013</td>
<td>751</td>
<td>374</td>
<td>180</td>
<td>152</td>
<td>75</td>
<td>49.4%</td>
<td>75.3%</td>
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<tr>
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<td>694</td>
<td>359</td>
<td>174</td>
<td>139</td>
<td>86</td>
<td>35.3%</td>
<td>73.9%</td>
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<tr>
<td>2011</td>
<td>609</td>
<td>324</td>
<td>163</td>
<td>107</td>
<td>108</td>
<td>43.9%</td>
<td>74.4%</td>
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<tr>
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<td>513</td>
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<td>104</td>
<td>65</td>
<td>2</td>
<td>51.9%</td>
<td></td>
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<tr>
<td>2014</td>
<td>451</td>
<td>309</td>
<td>129</td>
<td>58</td>
<td>5</td>
<td>60.2%</td>
<td>72.7%</td>
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<tr>
<td>2013</td>
<td>526</td>
<td>378</td>
<td>147</td>
<td>60</td>
<td>8</td>
<td>56.6%</td>
<td>73.7%</td>
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<tr>
<td>2012</td>
<td>644</td>
<td>466</td>
<td>140</td>
<td>46</td>
<td>4</td>
<td>53.6%</td>
<td>82.1%</td>
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<tr>
<td>2011</td>
<td>623</td>
<td>417</td>
<td>135</td>
<td>47</td>
<td>7</td>
<td>53.1%</td>
<td>75.0%</td>
</tr>
<tr>
<td>2015</td>
<td>2,039</td>
<td>1,468</td>
<td>911</td>
<td>316</td>
<td>63</td>
<td>62.1%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>1,791</td>
<td>1,380</td>
<td>907</td>
<td>316</td>
<td>47</td>
<td>64.9%</td>
<td>80.6%</td>
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<tr>
<td>2013</td>
<td>1,609</td>
<td>1,245</td>
<td>795</td>
<td>285</td>
<td>37</td>
<td>62.6%</td>
<td>78.4%</td>
</tr>
<tr>
<td>2012</td>
<td>1,694</td>
<td>1,158</td>
<td>763</td>
<td>262</td>
<td>35</td>
<td>61.2%</td>
<td>77.0%</td>
</tr>
<tr>
<td>2011</td>
<td>1,578</td>
<td>1,028</td>
<td>698</td>
<td>289</td>
<td>37</td>
<td>62.3%</td>
<td>78.5%</td>
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<tr>
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<td>2,701</td>
<td>1,542</td>
<td>514</td>
<td>232</td>
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<td>78.6%</td>
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<td>2,008</td>
<td>658</td>
<td>283</td>
<td>5</td>
<td>60.0%</td>
<td>77.1%</td>
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<tr>
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<td>2,949</td>
<td>1,671</td>
<td>536</td>
<td>271</td>
<td>1</td>
<td>61.7%</td>
<td>80.8%</td>
</tr>
<tr>
<td>2015</td>
<td>489</td>
<td>119</td>
<td>407</td>
<td>PHARM.D - 77</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>502</td>
<td>119</td>
<td>377</td>
<td>PHARM.D - 86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>647</td>
<td>86</td>
<td>347</td>
<td>PHARM.D - 86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>480</td>
<td>87</td>
<td>331</td>
<td>PHARM.D - 77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>522</td>
<td>87</td>
<td>331</td>
<td>PHARM.D - 86</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The number of new enrollments are students who applied for admission to Texas A&M University during the specified admissions cycle as either FTIC or Transfer. Numbers obtained from http://accountability.tamu.edu/All-Metrics/Mixed-Metrics/Applied,-Admitted,-Enrolled; based on search parameters: College Station, Bachelors, Masters and Department. The number of new enrollments is students who were admitted to Texas A&M as transfer students and admitted into the major as either FTIC or Transfer. Numbers obtained from http://dars.tamu.edu/Data-and-Reports/Degree/files/Degree-Profile-Five-Year-Summary-2014-15.aspx.

The existing programs in chemical engineering, biomedical engineering, industrial and systems engineering, chemistry, veterinary medicine, biology, pharmacy, horticulture sciences, and nutrition and food sciences provide the feeder programs for incoming Ph.D. students. Additionally, depending upon the incoming students’ background, faculty from the respective colleges and programs will be sought for serving on students’ advisory committees as external members. This approach will eventually invite participation in dissertation research strategies and guest lecture participation for a broader knowledge base to the Ph.D. students of PHSC. There are other programs in Texas A&M with a 51 CIP code. They include B.S. in Health, Dental Hygiene, Community Health, Public Health, and Nursing, M.S. in Oral Biology, Athletic Training, Laboratory Animal Medicine, Veterinary Public Health-Epidemiology, MSPH in Health Policy and Management, MPH in Environmental Health, MPH in Occupational Safety and Health, MHA in Health Administration, MPH in Health Policy and Management, MPH in Health Promotion and Community Health Sciences, MSN in Family Nurse Practitioner, MSN in Nursing Education, and the recently approved MSN in Forensic Nursing. These programs are not relevant to PHSC as the latter deals with physicochemical and pharmacological nature of drugs and dosage forms. It is unlikely that the graduates of these 51 CIP programs will seek admission in PHSC program or that the faculty involved in these programs will participate in the PHSC Ph.D.

**J. Existing Doctoral Programs**

Provide the web link(s) for the 18 Characteristics of Doctoral Programs for each of the institution’s existing doctoral programs. Describe how existing closely related doctoral programs would enhance and complement the proposed program.

---

THECB PHSC Graduate Program Proposal-Jan242017-ver14
Texas A&M is a major land-, sea-, and space grant institution offering a total of 93 Ph.D. programs, with many achieving top ranking and national recognition of quality by the National Research Council. It is also ranked amongst the top 20 doctoral granting institutions by the National Science Foundation, ranked 6th among US institutions of doctorates awarded to Hispanics, and ranked 8th among US institutions of doctorates awarded to African Americans by the Chronicle of Higher Education. A complete list of all the programs and their statistics can be obtained from the institutions 18-characteristics of the doctoral programs provided, which can be found here: http://ogaps.tamu.edu/Prospective-Students/Programs-and-Degrees/18-Characteristics-of-the-Doctoral-Programs

Pharmaceutical science is a multidisciplinary area of research that entails the design, action, delivery and disposition of medications. A pharmaceutical scientist is required to integrate knowledge from chemistry, engineering, Agri-Life, biomedical sciences, and statistics for the development and utilization of pharmaceutical dosage forms for optimal patient care. There will be resource sharing, leading to an understanding of molecular basis for diseases with development and optimization of formulations to enhance therapeutics outcomes. The presence of Texas A&M’s existing doctoral degrees in engineering, veterinary medicine, Agri-Life and related areas would enhance the student interaction to provide the breadth and new knowledge that would be required for their dissertation research. The students in all these doctoral programs will also have the ability to take mutual courses of interest to advance their multidisciplinary research. The RCOP hired faculty researchers with extensive experience in pharmaceutical product development fields, and these investigators have established collaboration and product development between life scientists, physicists, engineers, doctors and clinical scientists in a very powerful and scientifically successful atmosphere on the Texas A&M campus, dramatically enhancing its capacity for national prominence. At a time when discoveries in individual disciplines are rapidly expanding, the RCOP faculty’s skills and knowledge in pharmaceutics, in manufacturing, in paths to licensing and in novel technologies will provide a quantum leap in bringing Texas A&M technologies into practice. It will address Grand Challenges, particularly in the One Health area, providing expertise for product development for plant, animal, and human health. The faculty’s expertise in novel technologies such as complex product design, nanoparticulate product design, and 3D printing of pharmaceuticals will provide expertise to address precision medicine through collaboration with medicine, veterinary medicine and engineering. The faculty will partner with the National Center for Therapeutic Manufacturing (NCTM), Center for Innovation in Advanced Development & Manufacturing (CIADM), and Institute of Biosciences and Technology (IBT) within Texas A&M to move products from the University into manufacturing. The Ph.D. program in PHSC integrates the information from the programs listed above, and provides the breadth that is necessary in pharmaceutical dosage form development. Collaboration between the proposed Ph.D. program and the existing programs will be key, with all programs benefiting: the proposed Ph.D. program will benefit from the existing programs, while these programs will also benefit from the proposed Ph.D. program.

The students of pharmaceutical science will benefit by working in a very practical and highly marketable area of pharmaceutical sciences with diverse opportunities for employment. The available information from other Texas pharmaceutical science programs indicate that many graduates joined directly as faculty members in pharmacy schools in the Nation. The proposed program will help students to learn and become successful faculty members in addition to gaining employment in a variety of research opportunities. Numerous, important discoveries and inventions of scientists at Texas A&M and other universities go unnoticed for practical application. Out of every 12,000 innovative molecules that are discovered, only one is approved to enter the US market. Additionally, of the 100 products that enter clinical trials, roughly about 5% are approved for marketing in the US. Bottlenecking occurs primarily in the area of pharmaceutical sciences, and it is part of a fragmented, sequential product development approach that is currently in use. It is desired to provide a strong Ph.D. program in PHSC so that the students have the right advice and scientific bridge study to advance their discoveries for product development. This is an important area involving scientific integration of several disciplines to focus for future success of our graduates. It will provide...
tremendous leverage for NIH funding and practical biopharmaceutical product development. To provide that training, Texas A&M has brilliant, discrete units of the Texas A&M University Health Science Center IBT, Texas A&M Institute for Preclinical Studies (TIPS), Texas Institute for Genomic Medicine (TIGM), NCTM and CIADM to support various colleges. The students will learn to utilize the opportunities to learn and integrate the cutting-edge science from various disciplines of these Centers and Institutes.

A review of the list of low producing Ph.D. programs in the State of Texas shows four Ph.D. programs in Texas A&M that are at risk of being declared low-producing for the three year period. These programs include Ph.D. in poultry science, microbiology, philosophy, and applied physics. These programs are very different from the proposed pharmaceutical science program with respect to needs, course contents, and marketability. However, for both poultry science and microbiology, based on FY16 graduates, we do not expect either of them to be low-producing for a third year as enrollment and degrees are both up. In the case of philosophy and applied physics, both are expected to be identified as low-producing for a third consecutive year despite improvements in enrollment and degree production. Enrollments should allow both to meet the requirements to not be low-producing in two and one year(s) respectively. The labor gap table on page 5 shows that biophysics programs are not in demand and the supply of graduates in these areas are greater than the demand. Medical scientists that include pharmaceutical scientists are actually in a short supply with a net need of 6570 scientists.

K. Recent Graduates Employment

For existing graduate programs (master’s and doctoral) within the same two-digit CIP code in the most recent year, show the number and percentage of graduates employed within one year of graduation, and list graduates’ field of employment, location, and the employer.

The RCOP has graduated four Ph.D.s through interactions with Medical Sciences and Biomedical Sciences. All four doctoral graduates have obtained employment within one year of graduation, and are working in the United States as an Assistant Professor of Pharmaceutical Sciences in Utah College of Pharmacy or as research scientists in the pharmaceutical industry.

There are seven Ph.D. and professional programs with 51 CIP codes at Texas A&M. The Ph.D.s are in oral biology, veterinary pathology, and health services research. There are two DrPH programs: epidemiology and environmental health, and health promotion and community health services. There are four professional programs: the Pharm.D., M.D., DDS in Dentistry, and DVM in Veterinary Medicine. There are also a number of master's and graduate certificate programs, including: M.S. in Oral Biology, Athletic Training, Laboratory Animal Medicine, Veterinary Public Health-Epidemiology, MSPH in Health Policy and Management, MPH in Environmental Health, MPH in Occupational Safety and Health, MHA in Health Administration, MPH in Health Policy and Management, MPH in Health Promotion and Community Health Sciences, MSN in Family Nurse Practitioner, MSN in Nursing Education and the recently approved MSN in Forensic Nursing. These masters and certificate programs are not relevant to PHSC as the latter deals with physicochemical and pharmacological nature of drugs and dosage forms.

The available employment data from oral biology in the College of Dentistry indicates that all their graduates found employment readily after graduation within one year. They are working as post docs, orthodontics residents or in private practice. Their place of employment is UT San Antonio, University of Connecticut Health Science Center, North Carolina, Mexico, or Shanghai. The professional Pharm.D. employment data also shows 84 out of the 86 graduates in 2015 as licensed, and >90% employment as pharmacists with most practicing in the State of Texas as pharmacists. Information about the other 10% is not currently available officially, but informal knowledge through their classmate friends indicate that they are practicing in other States. For those that have reported, their place of employment include McAllen Medical Center, Hendrick Medical Center, Fort Duncan Regional Medical Center, CHRISTUS Spohn Hospital in Corpus Christi, CHI St. Luke’s Health Baylor College of Medicine,
Methodist Sugarland Hospital, Baylor Scott and White, Edinburg Regional Medical Center, Houston Methodist Hospital, Shannon Medical Center, Metroplex Hospital, Corpus Christi Medical Center Bay Area, Citizens Medical Center, CHRISTUS Spohn hospital Kleberg, Advanced Pharma Inc., Pharmapendium Services, Baylor University Hospital, almost all chain pharmacies such as that of Walgreens, H.E.B., Sam’s Club, Walmart, CVS, Kroger, Saenz Medical Pharmacy. The remaining 10% are also licensed as pharmacists but their place of employment is unknown at this time.

The 188 2015 graduates of Texas A&M College of Medicine all found residency matching within one year of graduation. Typically all students get residency matching every year. In the year 2015, 108 of the 188 graduates that matched found residency within the State of Texas. The employers included Texas Tech University, University of Texas, Ochsner Clinic Foundation, Baylor University, Scott and White at multiple locations, UT Southwestern, UT at Austin Dell, John Peter Smith Hospital, and Methodist Health System. Residency positions outside of Texas were obtained in UCLA Medical Center, Dartmouth-Hitchcock Medical Center, University of Utah, University of South Florida, University of Massachusetts, University of North Carolina, University of New Mexico, University of Colorado, Children’s Hospital in Los Angeles, Hofstra NSLIJ SOM, Lenox Hill Hospital, Henry Ford Hospital, UC Davis Medical Center, University of Hawaii, Cooper Hospital in New Jersey, St. Joseph Hospital, University of Arkansas, Southern Illinois University, University of Cincinnati, University of Florida, Loma Linda University, Duke University Medical Center, St. Louis University, University of Virginia, Glendale Adventist Medical Center, Cedar-Sinai Medical Center, Medical University of South Carolina, Billings Clinic, University of Kentucky Medical Center, LSU Health Science Center, Tulane University, UC Irvine, University of Oklahoma, Keesler Medical Center, Carolinas Medical Center, Mayo Clinic, Emory University, Navy Medical Center, Wake Forest, Darnell Army Medical Center, University of Chicago Medical Center, University of Maryland Medical Center, and Vanderbilt University.

All Ph.D. in Health Services Research graduates of Texas A&M School of Public Health in 2015 got employed with one year. Their employment titles are Medical Resident, Assistant Professor, Postdoctoral fellow, and Associate Director of Medical Services. Their employment have been in Texas A&M University, Ohio State University, University of Arkansas, Harvard University, and University of Louisville, Kentucky.

The other graduate programs with two digit 51 CIP codes at Texas A&M are very different from the pharmaceutical science programs; they are not similar in education, job needs, course work, or market potential. Pharmaceutical science is an applied area of research with practical relevance, not the basic science area of research. It is a critical area of research for pharmaceutical discoveries and development that requires integration of several areas of pharmacy.

### III. Faculty

#### A. Faculty Availability

Complete Tables 8 and 9 to provide information about core\(^2\) and support\(^3\) faculty. There should be at least four FTE faculty for a new doctoral program. Add an asterisk (*) before the names of the individuals who will have direct administrative responsibilities for the program. Add a pound symbol (#) before the name of any individuals who have directed doctoral dissertations or master’s theses. Modify table as needed.

The RCOP’s Department of Pharmaceutical Sciences has about 10 faculty with graduate mentoring experience. It is expected that when the program finally matures in five years, the student to faculty

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\(^2\) Core Faculty: Full-time tenured and tenure-track faculty who teach 50 percent or more in the doctoral program or other individuals integral to the doctoral program who can direct dissertation research.

\(^3\) Support Faculty: Other full-time or part-time faculty affiliated with the doctoral program.
ratio will range from one-to-three. This compares well with the faculty at UT Austin (24 faculty for 66 students) and Texas Tech (20 faculty for about 40 students). The faculty in the department are highly specialized in their respective areas of research. Academic workloads of faculty are balanced between teaching in professional and graduate degree programs, scholarly activities, and clinical science. Research faculty who will be involved in the PHSC program teach Pharm.D. courses minimally with some teaching only about 5 – 10 lectures per year, and their participation and engagement in the PHSC program will have minimal to no impact on the Pharm.D. program. These faculty have been hired with the expectation of performing research. Much of the dissertation and research work of Ph.D. students will be performed in these faculty members’ labs.

Table 8. Core Faculty

<table>
<thead>
<tr>
<th>Name and Rank of Core Faculty</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.: Robertson, David Assoc. Prof</td>
<td>Ph.D. in Molecular Genetics Univ. of Wisconsin-Madison</td>
<td>MG200, MG285 MG824 (Lab Only)</td>
<td>50%</td>
</tr>
<tr>
<td>*#Indra K. Reddy Professor</td>
<td>Ph.D. in Pharmaceutical Science University of Florida</td>
<td>736, 737</td>
<td>10%</td>
</tr>
<tr>
<td>*#Mansoor A. Khan Professor</td>
<td>Ph.D. in Industrial Pharmacy St. Johns University, NY</td>
<td>725, 731, 732, 735</td>
<td>50%</td>
</tr>
<tr>
<td>*#David E. Potter Professor</td>
<td>Ph.D. in Pharmacology Univ. of Kansas Medical Center</td>
<td>756</td>
<td>25%</td>
</tr>
<tr>
<td>Elmageed, Zakaria Assistant Professor</td>
<td>Ph.D. in Chemistry University of Helman, Egypt</td>
<td>754</td>
<td>50%</td>
</tr>
<tr>
<td>Rabaa Al-Rousan Assistant Professor</td>
<td>Ph.D. in Biomedical Sciences Marshall Univ. at W. Virginia</td>
<td>689</td>
<td>50%</td>
</tr>
<tr>
<td>#Hamed I. Aly-Ismail Assistant Professor</td>
<td>Ph.D. in Medicinal Chemistry and Computer Aided Drug Design Okayama University at Japan</td>
<td>742, 743</td>
<td>50%</td>
</tr>
<tr>
<td>Juan J. Bustamante Assistant Professor</td>
<td>Ph.D. in Biology Univ. of Texas at San Antonio</td>
<td>612</td>
<td>50%</td>
</tr>
<tr>
<td>Mahua Choudhury Assistant Professor</td>
<td>Ph.D. in Medical Pharmacology University of Missouri, Columbia</td>
<td>622</td>
<td>50%</td>
</tr>
<tr>
<td>#Lacy Daniels Professor</td>
<td>Ph.D. in Biochemistry Univ. of Wisconsin at Madison</td>
<td>610, 634</td>
<td>50%</td>
</tr>
<tr>
<td>Fadi Alkhateeb Associate Professor</td>
<td>Ph.D. in Economic Social, and Administrative Pharmacy University of Iowa</td>
<td>TBD</td>
<td>10%</td>
</tr>
<tr>
<td>Ayman K. Hamouda Assistant Professor</td>
<td>Ph.D. in Pharmacology and Neuroscience Texas Tech Univ. Health Science Center at Lubbock</td>
<td>612, 754</td>
<td>50%</td>
</tr>
<tr>
<td>Dongin Kim Assistant Professor</td>
<td>Ph.D. in Pharmaceutics and Pharmaceutical Chemistry Univ. of Utah at Salt Lake City</td>
<td>725, 743, 755</td>
<td>50%</td>
</tr>
<tr>
<td>*Narendra Kumar Associate Professor</td>
<td>Ph.D. in Microbial Biotechnology IIT, India</td>
<td>610</td>
<td>50%</td>
</tr>
<tr>
<td>Dai Lu Assistant Professor</td>
<td>Ph.D. in Pharmaceutical Sciences and Medicinal Chemistry Univ. of Connecticut</td>
<td>742</td>
<td>50%</td>
</tr>
<tr>
<td>Michael Miller</td>
<td>Ph.D. Health Outcomes</td>
<td>621, 689, 758</td>
<td>25%</td>
</tr>
</tbody>
</table>
Table 9. Support Faculty

<table>
<thead>
<tr>
<th>Name and Rank of Support Faculty</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program or Other Support Activity</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.: Robertson, David</td>
<td>Ph.D. in Molecular Genetics Univ. of Wisconsin-Madison</td>
<td>MG200, MG285, MG824 (Lab Only)</td>
<td>10%</td>
</tr>
<tr>
<td>Robert Hutchison</td>
<td>Pharm.D. (Pharmacy Doctorate) University of Arkansas</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Eugene P. Holder</td>
<td>Pharm.D. (Pharmacy Doctorate) University of Texas, Austin</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Mary L. Chavez</td>
<td>Pharm.D. (Pharmacy Doctorate) Purdue University</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Andrea Luce</td>
<td>Pharm.D. (Pharmacy Doctorate) University of Houston</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Jaye Weston</td>
<td>Masters in Hospital Administration University of Arkansas</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Mark Granberry</td>
<td>Pharm.D. (Pharmacy Doctorate) University of Arkansas</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Steven Peterson</td>
<td>Ph.D. in Pharmacology and Toxicology, University of California at Davis</td>
<td>612, 724, 756</td>
<td>10</td>
</tr>
<tr>
<td>Gregory Sawyer</td>
<td>Ph.D. in Pharmacology and Toxicology, University of California at Irvine</td>
<td>689</td>
<td>10</td>
</tr>
</tbody>
</table>

B. Teaching Load

Indicate the targeted teaching load for core faculty supporting the proposed program. Teaching load is the total number of semester credit hours in organized teaching courses taught per academic year by core faculty, divided by the number of core faculty at the institution the previous year. Provide an assessment of the impact the proposed program will have, if approved, on faculty workload for existing related programs at the institution.

The RCOP aspires to be a leader in pharmacy education and research. Consistent with these aspirations and the RCOP's mission and goals, faculty academic workloads are well balanced between teaching, scholarly activities, and clinical service. Most faculty are committed to teaching one professional Pharm.D. and one Ph.D./M.S. course per year. These courses are at least 3 SCH. It is recognized that some faculty will have a lower load and some, particularly those on the teaching tract, will have a higher teaching load. The presence of teaching assistants in the laboratories will free-up faculty time for
more direct teaching contact with students for increased SCH teaching responsibilities. This course load is consistent with the loads in other pharmacy schools in Texas. While this information is not publicly available to our knowledge, the faculty who joined us from Texas Tech University School of Pharmacy confirmed this teaching load of a course each in Pharm.D. and Ph.D. every year. Since research faculty are already in place with reasonably low teaching loads, the proposed program will not affect the existing Pharm.D. program. The proposed program will not have a very significant impact on the current course load of most faculty. On the contrary, it will help faculty make their Pharm.D. courses current with new research and update knowledge with the Ph.D. degree.

C. Core Faculty Productivity

Complete Tables 10 and 11 to provide information about faculty productivity, including the number of publications and scholarly activities and grant awards. Table 10 shows the most recent five years of data by core faculty, including the number of discipline-related refereed papers/publications, books/book chapters, juried creative/performance accomplishments, and notices of discoveries filed/patents issued. Table 11 shows the number and amount of external grants by core faculty.

Where relevant to performing arts degrees, major performances or creative endeavors by core faculty should be included. Examples are provided below. Do not include conference papers, reviews, posters, and similar scholarship. The format of the tables and information may vary, as long as the information is conveyed clearly. Include a list of the key journals in the field.

Table 10 shows the core faculty that will participate in the graduate program instruction as mentorship or membership in graduate committees. A combined publication of 400 manuscripts in addition to book chapters, books, and patents show the strength and preparedness of the core faculty to implement the new Ph.D. program in PHSC. Faculty who are less experienced in graduate student training and advisement are expected to serve in an advisory capacity and teach courses instead of chairing the Ph.D. advisory committee. Upon strengthening their research productivity and increasing their publications and grant records, these faculty members may also serve as major advisors. In four years, the department and the faculty will easily have the capacity to handle the 40-student enrollment with an average of two students or less per faculty member.

<table>
<thead>
<tr>
<th>Table 10: Total Faculty Publications and Other Scholarly/Creative Accomplishments for the Past Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Name</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>e.g., Mencimer, Jennifer</td>
</tr>
<tr>
<td>e.g., Walker, Guy</td>
</tr>
<tr>
<td>Mansoor A. Khan, R.Ph., Ph.D.</td>
</tr>
<tr>
<td>Alkhateeb, Fadi M.</td>
</tr>
<tr>
<td>Al-Rousan, Rabaa</td>
</tr>
<tr>
<td>Aly-Ismail, Hamed</td>
</tr>
<tr>
<td>Choudhury, Mahua</td>
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<tr>
<td>Elmageed, Zakaria</td>
</tr>
<tr>
<td>Hamouda, Ayman</td>
</tr>
<tr>
<td>Kim, Dongin (Donoven)</td>
</tr>
<tr>
<td>Kumar, Narendra</td>
</tr>
<tr>
<td>Kumar, M.N.V. Ravi</td>
</tr>
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</table>
## Table 10: Total Faculty Publications and Other Scholarly/Creative Accomplishments for the Past Five Years

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Refereed Papers</th>
<th>Book Chapters</th>
<th>Books</th>
<th>Juried Creative/Performance</th>
<th>Patents</th>
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<tbody>
<tr>
<td>Lu, Dai</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>6</td>
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<tr>
<td>Miller, Michael</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Mishra, Jayshree</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Nutan, Mohammad T.</td>
<td>5</td>
<td>0</td>
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</tr>
<tr>
<td>Palakurthi, Srinath</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
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<tr>
<td>Rahman, Ziyaur</td>
<td>52</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Zhong, Lixian</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Zhu, Lin</td>
<td>12</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

## Table 11. External Grant Awards for the Past Five Years

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Grant Source</th>
<th>Grant Subject</th>
<th>Dates</th>
<th>Total Grant Amount</th>
<th>Institutional Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g., Mencimer, Jennifer</td>
<td>National Science Foundation</td>
<td>Extragalactic Astronomy</td>
<td>2006-10</td>
<td>$5,000,000</td>
<td>$2,500,000</td>
</tr>
<tr>
<td>e.g., Walker, Guy</td>
<td>Fund for Astrophysical Research</td>
<td>Develop Astronomical Equipment</td>
<td>2007-08</td>
<td>$400,000</td>
<td>$400,000</td>
</tr>
<tr>
<td>Mansoor A. Khan</td>
<td>NIH/FDA/DoD/Industry, NIH, FDA, Bill and Melinda Gates</td>
<td>Pharmaceutical Sciences, Product formulation and bioavailability/bioequivalence studies</td>
<td>2010-2015</td>
<td>$4,850,000</td>
<td></td>
</tr>
<tr>
<td>Aly-Ismail, Hamed</td>
<td>Umm Al Qura University</td>
<td>Pharmaceutical Sciences</td>
<td>1/1/2015-12/31/2015</td>
<td>$30,000</td>
<td></td>
</tr>
<tr>
<td>Choudhury, Mahua</td>
<td>Bill and Melinda Gates Foundation</td>
<td>Flavonoid Antioxidant Embedded Solid Hydropolymer Condom</td>
<td>2014-2015</td>
<td>$100,000</td>
<td></td>
</tr>
<tr>
<td>The Morris L. Lichtenstein, Jr. Medical Research Foundation, Bill and Melinda Gates Foundation</td>
<td>Contract Between TAMHSC and The Morris L. Lichtenstein, Jr. Medical Research Foundation</td>
<td>2017-2019</td>
<td>$570,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Morris L. Lichtenstein, Jr. Medical Research Foundation, Bill and Melinda Gates Foundation</td>
<td>A sensitive epigenetic tool for prediction of pre-eclampsia</td>
<td>2012-2013</td>
<td>$55,796</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Table 11. External Grant Awards for the Past Five Years**

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Grant Source</th>
<th>Grant Subject</th>
<th>Dates</th>
<th>Total Grant Amount</th>
<th>Institutional Amount</th>
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<tr>
<td><em>Lu, Dai</em></td>
<td>NIH</td>
<td><strong>CB1 Allosteric Modulators: Molecular, Cellular and In Vivo Pharmacology</strong></td>
<td>2016-2021</td>
<td>$909,375</td>
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<tr>
<td></td>
<td>NIH</td>
<td><strong>Novel CB1 Inverse Agonists for Investigation of Constitutive Signaling Activities</strong></td>
<td>2015-2017</td>
<td>$145,000</td>
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<td></td>
<td>Texas Clinical Science and Translational Research Institute Pilot Study Grant</td>
<td><strong>Cannabinoid CB2 Receptor Selective Agonists to Improve Prognosis of Pancreatic Cancer</strong></td>
<td>2012-2013</td>
<td>$100,000</td>
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<td><em>Elmageed, Zakaria</em></td>
<td>NIH</td>
<td><strong>The role of exRNA in health disparity of prostate cancer</strong></td>
<td>2015-2017</td>
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<td></td>
<td>NIH</td>
<td><strong>Targeting tumor-derived exRNA-containing macrovesicles by high throughput screening</strong></td>
<td>2013-2016</td>
<td>$4,200,000</td>
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<td></td>
<td>Louisiana Clinical and Translational Science Center Pilot Grant Round</td>
<td><strong>Discovering the role of putative microRNA in prostate tumorigenesis</strong></td>
<td>2013-2014</td>
<td>$50,000</td>
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<tr>
<td><em>Hamouda, Ayman</em></td>
<td>National Institutes of Health</td>
<td><strong>Neuronal Nicotinic Acetylcholine Receptors (nAChRs)</strong></td>
<td>2015-2018</td>
<td>$443,269</td>
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<td></td>
<td>American Heart - South West</td>
<td><strong>Identification of positive allosteric modulator binding sites in a4β2 nicotinic acetylcholine receptor</strong></td>
<td>2015-2016</td>
<td>$139,802</td>
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<tr>
<td><em>Kumar, Narendra</em></td>
<td>DHHS-NIH-National Institute of Diabetes and Digestive and Kidney Disorders</td>
<td><strong>Role of Cytokine Signaling In Intestinal Restitution</strong></td>
<td>2009-2014</td>
<td>$127,874</td>
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<td></td>
<td>Crohn’s and Colitis Foundation of America</td>
<td><strong>Ccfa-Kumar: Role of IL-2 In Mucosal Wound Repair</strong></td>
<td>2010-2011</td>
<td>$25,000</td>
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<td><em>Kumar, M.N.V. Ravi</em></td>
<td>AM Biotechnologies, LLC</td>
<td><strong>PK/PD model for the X-Aptamer Nanosponge (XANS) antivenom</strong></td>
<td>2014-2015</td>
<td>$2,000</td>
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</tbody>
</table>
### Table 11. External Grant Awards for the Past Five Years

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Grant Source</th>
<th>Grant Subject</th>
<th>Dates</th>
<th>Total Grant Amount</th>
<th>Institutional Amount</th>
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</thead>
<tbody>
<tr>
<td>The Cunningham Trust</td>
<td>Understanding biodegradable nanoparticle toxicity: Tracking drug containing nanoparticles and factors that influence their distribution in vivo</td>
<td>2014-2015</td>
<td>$72,929</td>
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<tr>
<td>Formulating MI-peptide for better peroral delivery</td>
<td>Medimmune, Inc</td>
<td>2014-2016</td>
<td>$216,536</td>
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<td>Lu, Dai</td>
<td>NIH</td>
<td>CB1 Allosteric Modulators: Molecular, Cellular and In Vivo Pharmacology</td>
<td>2016-2021</td>
<td>$909,375</td>
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<tr>
<td>NIH</td>
<td>NIH</td>
<td>Novel CB1 Inverse Agonists for Investigation of Constitutive Signaling Activities</td>
<td>2015-2017</td>
<td>$145,000</td>
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<tr>
<td>Texas Clinical Science and Translational Research Institute Pilot Study Grant</td>
<td>Cannabinoid CB2 Receptor Selective Agonists to Improve Prognosis of Pancreatic Cancer</td>
<td>2012-2013</td>
<td>$100,000</td>
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<td>Miller, Michael</td>
<td>ASHP Research and Education Foundation</td>
<td>Pharmacy Residency Research Skills Webinar Series</td>
<td>2015-2016</td>
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<td>American College of Clinical Pharmacy</td>
<td>A Literacy-Sensitive Approach to Improving Antibiotic Understanding in a Community-Based Setting</td>
<td>2014</td>
<td>$2,000</td>
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<tr>
<td>University of Pittsburgh School of Pharmacy</td>
<td>Medications Frequently Implicated in Suicide in Older Adults: An Analysis of Poison Center Data</td>
<td>2011-2012</td>
<td>$8,000</td>
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<td>Palakurthi, Srinath</td>
<td>National Corn Growers Association</td>
<td>Development of Zein (corn Protein) Nanoparticles for</td>
<td>2012-2014</td>
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Table 11. External Grant Awards for the Past Five Years

<table>
<thead>
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<th>Faculty Name</th>
<th>Grant Source</th>
<th>Grant Subject</th>
<th>Dates</th>
<th>Total Grant Amount</th>
<th>Institutional Amount</th>
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</thead>
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<td>DHHS-Food and Drug Administration</td>
<td>Dissolution Methods for Topical Ocular Emulsions</td>
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<td>Rahman, Ziyaur</td>
<td>FDA</td>
<td>Disproportionation of Prasugrel Hydrochloride in the presence of excipients:</td>
<td>2014-2016</td>
<td></td>
<td>$165,000</td>
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<tr>
<td></td>
<td></td>
<td>analytical method development and validation for measurement of salt and free base in generic products</td>
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<td>Zhong, Lixian</td>
<td>AstraZeneca</td>
<td>Pharmaceutical Outcomes</td>
<td>2015-2016</td>
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<td>$60,000</td>
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IV. Resources

A. Student Financial Assistance

Complete Table 12 to provide the number of full- and part-time students who would be funded and the anticipated amounts for each of the first five years. Modify the table as needed to distinguish between Teaching Assistantships, Research Assistantships, and Scholarships/Grants. If student financial assistance is reliant upon grant funding, explain how funding will be consistently sustained if grant income falls short of projections.

<table>
<thead>
<tr>
<th>Table 12. Student Financial Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td># of Full-time students</td>
</tr>
<tr>
<td>Amount per student</td>
</tr>
<tr>
<td># of Part-time students</td>
</tr>
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</table>
Table 12. Student Financial Assistance

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Research Assistantships</strong></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Amount per student</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td># of Full-time students</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Amount per student</td>
<td>25k stipend plus tuition</td>
<td>25k stipend plus tuition</td>
<td>25k stipend plus tuition</td>
<td>25k stipend plus tuition</td>
<td>25k stipend plus tuition</td>
</tr>
<tr>
<td># of Part-time students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Amount per student</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td><strong>Scholarships</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Full-time students</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Amount per student</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td># of Part-time students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Amount per student</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Additionally, show how the level of student support compares to the anticipated overall student cost of tuition and fees.

For funding details, please see item G before the appendices. This level of support is comparable to other Ph.D. students’ stipends in Texas A&M. As examples, the average stipend of PhD students in veterinary medicine is $26,688 (n=9), engineering is 25k (n=18), science is 24k (n=258), and chemistry is 24k (n=126). Out-of-state graduate students who receive an assistantship will also be eligible for in-state tuition rates. This stipend should cover their fees and living expense. Tuition is also paid separately in addition to the above stipend.

B. Library Resources

Provide the library director’s assessment of both paper and electronic library resources for the proposed program. Describe plans to build the library holdings to support the program. Include the amount allocated to the proposed program.

RCOP students, faculty, and staff have access to all of the services and the online and print resources of the Texas A&M University Medical Sciences Library (MSL) in College Station, in addition to those of the general university Sterling C. Evans Library (located on the Texas A&M Main Campus in College Station), as well as from the Texas A&M-Kingsville Jernigan Library. The Evans Library has extensive collection resources in the basic science areas that would support this program, such as organic chemistry. Because the preference has long been for electronic resources, these are available online to students and faculty in Kingsville. Additionally, the library has established a purchase-on-demand plan.
with another book seller that automatically includes access to new electronic books in our catalog that are then purchased as they are used. Faculty and students at both locations enjoy a rich variety of resources and services available through the MSL, including:

- Access to thousands of clinical and research journals
- Direct delivery of articles (PDFs via email) and books (shipped to MSL at Kingsville for pick-up) through the “Get It for Me” service
- Expertise of highly-experienced medical librarian faculty and support staff

The MSL staffs and operates the library space in the RCOP building in Kingsville, managing a highly selective on-site print collection and providing reference and searching assistance for students, faculty, and staff. Students and faculty at the RCOP College Station location have access to the adjacent main MSL facility. An MSL faculty librarian serves full-time onsite in Kingsville and supervises a full-time library associate and a part-time associate; these MSL employees assist all faculty and students with information needs and requests.

The MSL is the primary library for the RCOP’s research and other scholarly and teaching activities. All faculty and students in RCOP enjoy a rich variety of resources and services, including access to 18,000 electronic journals, more than 25,000 electronic books, and more than 500 databases. Students, faculty, and preceptors have access to numerous evidence-based pharmacy and medical resources online and through mobile devices, including PubMed, Ovid MEDLINE, UpToDate, AccessPharmacy, DynaMedPlus, Epocrates Premium, Lexi-Comp, Ident-A-Drug Reference, ClinicalKey, STAT!Ref, Faculty of 1000, EMBASE, SCOPUS, Web of Science, AccessPharmacy, APhA Pharmacy Library, IPA: International Pharmaceutical Abstracts, Stat!Ref, TOXNET, CHEMnetBASE Chemical Databases, JAMAevidence, Drug Information Portal, GIDEON, Global Health, Agricola, PsycInfo, Clinical Pharmacology, uCentral eBooks for mobile devices, Joanna Briggs Institute Evidence-Based Practice Database, Essential Evidence Plus, Natural Medicines Comprehensive Database, Review of Natural Products, and The Dietary Supplements Labels Database. A special webpage, the Pharmacy LibGuide (http://guides.library.tamu.edu/pharmacy), provides convenient access to these and other resources. Electronically available required and recommended textbooks, literature databases and drug references are linked on this site. With an average of approximately 3,500 page views per month, this page consistently outranks all other University Libraries LibGuides as the most heavily-used. Micromedex, licensed by the College, is available to the faculty and students, through both the web-based resource and the mobile application. Faculty and students are encouraged to request additional resources for the collection through a form on the MSL website, through email, or by phone.

Available library holdings contain about 90% of the journals listed on the American Association of Colleges of Pharmacy (AACP) list of 2014 Basic Resources for Pharmacy Education, 88% of the e-resources, 81% of the first purchase monographs and 62% of the supplemental purchase monographs. Library personnel are dedicated to benchmarking against the list to identify purchases to update and enhance the collection relevance.

The MSL collection policy prefers electronic resources over print resources so students and faculty can access them regardless of location or hours of operation. Faculty and staff also have direct access to electronic books in the health sciences as published. Interlibrary loan and document delivery, through the MSL “Get It for Me” service, allows students and faculty to receive books and other materials from the main print collection in College Station or from other lending libraries across the U.S. In addition to these resources, the MSL partners with numerous state and regional consortia to bring a wider range of resources to our users. These collaborations include the Texas Digital Library (TDL), the South Central Academic Medical Libraries (SCAMeL) Consortium and the Health Science Center Alliance of Libraries.

The MSL’s librarian at RCOP is experienced in pharmacy library services and resources, and holds the faculty rank of Instructional Associate Professor. This librarian teaches literature searching and
evidence-based practice in several RCOP courses, serves on curriculum and other committees, and provides in-depth, targeted literature searches for pharmaceutical researchers and instructional faculty.

The Texas A&M University Libraries have a solid foundation of the information resources needed to support this new program. Major expenditures for new resources required to support the program are not anticipated. The Texas A&M University Libraries was ranked, for the 2014/2015 cycle, 13th among the Association of Research Libraries’ (ARL) 115 research libraries and 6th among ARL’s U.S. Public University Libraries. Further, among ARL U.S. Public University Libraries, the Texas A&M ranks first in both information resource and ongoing information resource expenditures. A full 57% of total funds expended by the libraries go toward information resources, compared to the University’s Vision 2020 Peers’ average of 40%.

C. Facilities and Equipment

Describe the availability and adequacy of facilities and equipment to support the proposed program. Describe plans for new facilities, improvements, additions, and renovations.

The RCOP is located at Texas A&M University (Texas A&M) in College Station and in Kingsville on the campus of Texas A&M University-Kingsville (TAMUK).

At the Kingsville location, the RCOP is housed in a three-story physical facility providing a total gross area of 63,000 square feet. The first floor houses the Dean’s administrative suite, Instructional Design and Support Services, three lecture halls, study rooms, a student lounge, social and study rooms and conference rooms. The second floor has 20 faculty offices, a lounge, Library and Drug Information Center, three laboratories (compounding, sterile products and physical assessment) and office suites for the Office of Experiential Education and the Departments of Pharmacy Practice and Pharmaceutical Sciences as well as three small group breakout/conference rooms, two small study rooms, a medium study room and a computer lab. The third floor is designated primarily for the research faculty engaged in bench research which houses 10 faculty offices, laboratories with sizes ranging from approximately 470 to 780 square feet, a common core equipment laboratory, a freezer room, cold room, a computer server room and storage room and administrative offices. Additional space is in adjacent buildings (Kleberg Hall 7,200 square feet, Rhode Hall 1,170 square feet). Kleberg Hall houses the Offices of Student Affairs, Human Resources, Development and Communication, a medium conference room, one student study room, one 90-seat classroom and one large office for student organizations. Rhode Hall houses two classrooms used for elective courses with a capacity of 30 seats each.

On the College Station campus, about 20,260 square feet of space in the Reynolds Medical Building has been designated for the RCOP. This space has an office suite comparable to the primary space in Kingsville and houses 12 offices, a large lecture hall with 148 seating capacity, one medium classroom with 40 seating capacity, an active learning laboratory, a sterile products and a compounding laboratory, six faculty research laboratories, shared instruction space that is reserved for physical assessment activities and ample student study and organization areas.

The compounding laboratories have 29 workstations on the Kingsville campus and 20 workstations on the College Station campus. The sterile products laboratory on the Kingsville campus has eight laminar cabinets; the College Station campus has five and a biological safety cabinet.

The Pharmaceutical Animal Research Facility, or Vivarium, located in Kingsville affords approximately 5,000 square feet of state-of-the-art Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC)-accredited animal research space for faculty researchers.

The Department of Pharmaceutical Sciences has common use research equipment valued at approximately $2M. Acquisition of common equipment is determined by faculty in consultation with the leadership team. Individual equipment items are located throughout the research laboratories on the
third floor of the Kingsville main building and Vivarium. The list of equipment essentially includes state-of-the-art manufacturing, analytical, on-line PAT sensors, Gas and liquid chromatographies with mass spectrometers, thermogravimetric analyzer, differential scanning calorimeters, microscopes, several cell-culture facilities, viscometer/rheometer, microfluidizer, freezers and stability chambers, dissolution and permeability equipment in addition to several basic science equipment in individual faculty laboratories. Both Texas A&M College Station and Kingsville campuses have central equipment facilities with almost all needed equipment for the Ph.D. program in Pharmaceutical Science. Additionally, a 21cfr 211 compliant current Good Manufacturing Facility is under construction and slated to be completed in October 2016 in the Reynolds Medical Sciences Building, home to the RCOP’s second campus, in College Station.

D. Support Staff
Describe plans, if any, to increase or reallocate support staff in order to provide sufficient services for the projected increases in students and faculty.

A support staff member will be hired to help the director of graduate program. If additional support staff is needed, there is a commitment from Dean to provide that help. The existing PharmD program would not be affected as the new hire would be assigned exclusively to supporting the Ph.D. program. Further, if additional staff support is needed to sustain the Ph.D. program, the RCOP would support the hiring of student assistants and interns, which would provide reciprocal opportunities for interested, potential students of the graduate program.

E. External Learning
If applicable, describe the plans for providing Internships, Clerkships, Clinical Experiences, or other required external learning opportunities. Explain the impact this new program would have, if approved, on the available number of external learning opportunities in Texas for this type of program.

All Ph.D. students will be eligible to work as summer interns in the pharmaceutical or biotech industries within the US. The students will learn practical aspects of product development and other pharmaceutical science when opportunities are provided. This experience will depend upon students ability to obtain internships. Students will find their own internships as this will not be a required activity by the program.

F. List of Potential Consultants
Provide the names and contact information for six potential consultants to review the proposed program. Consultants must come from top-ranked programs in the nation, hold the rank of full professor or senior administrator, and have no conflicts of interest relating to the proposed program. Describe concisely the qualifications of each consultant.

Institution’s Proposed Consultants:

1. Name: Thomas Abbruscato, Ph.D. 
   Title and Rank: Professor of Pharmaceutical Sciences and Department Chair
   Institution: College of Pharmacy – Texas Tech University Health Science Center
   Phone #: 806-414-9234 Email: Thomas.Abruscato@ttuhsc.edu
   Qualifications/Expertise: Pharmacology/Drug Delivery

2. Name: Sunny Ohia, Ph.D. 
   Title and Rank: Professor of Pharmacology
   Institution: Texas Southern University
Phone #: 713-313-7011           Email: seo1156@gmail.com

Qualifications/Expertise: Academic professor and former Dean (UoH) and Provost (Texas Southern)

3. Name: Michael Repka, DDS., Ph.D.            Title and Rank: Chair and Professor, Director
Institution: The University of Mississippi, Department of Pharmaceutics and Drug Delivery, Pii Center for Pharmaceutical Technology
Phone #: 662-915-1155           Email: marepka@olemiss.edu

Qualifications/Expertise: Ph.D. in Pharmaceutical Science, Academic Professor and Chair, AAPS Chair of Formulations Design and Development

4. Name: Robert Mangione, Ed.D., R.Ph.            Title and Rank: Provost and Professor of Pharmacy
Institution: St. John’s University
Phone #: 516-375-8581           Email: mangionr@stjohns.edu

Qualifications/Expertise: Has authored or co-authored over 100 publications. Professional expertise includes Pharmaceutical Care for Patients with Celiac Disease, Pediatric Pharmacotherapy, and Poverty Issues in Healthcare and Education. Served for 10 years as a professional member of the New York State Board of Pharmacy.

5. Name: Gintaras Reklaitis, Ph.D.            Title and Rank: Deputy Director
Institution: Purdue University
Phone #: 765-494-9662           Email: greklait@purdue.edu

Qualifications/Expertise: Deputy Director of National Science Foundation, Ph.D. in Chemical Engineering, Academic Professor and Founding faculty of NIPTE

6. Name: Kenneth Morris            Title and Rank: University Professor and Director
Institution: Long Island University, College of Pharmacy
Phone #: 718-246-6452           Email: kenneth.morris@liu.edu

Qualifications/Expertise: Pharmaceutical science

G. Five-Year Costs and Funding Sources Summary
On the attached forms, provide estimates of new costs to the institution related to the proposed program and provide information regarding sources of the funding that would defray those costs. Use the Program Funding Estimation Tool found on the Coordinating Board web site (www.thecb.state.tx.us/newprogramscertificates) and attach a saved copy of the completed Excel spreadsheet to your application.

H. Signature Page
Select and obtain required signatures for either the signature page entitled, “Institutional and Board of Regents Consideration by the Board” or the signature page “Board of Regents Consideration by the Commissioner.”
V. Required Appendices

A. Course Descriptions and Prescribed Sequence of Courses
B. Five-Year Faculty Recruitment Plan/Hiring Schedule
C. Institution’s Policy on Faculty Teaching Load
D. Itemized List of Capital Equipment Purchases During the Past Five Years
E. Librarian’s Statement of Adequate Resources
F. Articulation Agreements with Partner Institutions
G. Curricula Vitae for Core Faculty
H. Curricula Vitae for Support Faculty
I. Letters of Support from Peer Institutions and/or Area Employers

4 “Equipment” has the meaning established in the Texas Administrative Code §252.7(3) as items and components whose cost are over $5,000 and have a useful life of at least one year.
## COSTS TO THE INSTITUTION OF THE PROPOSED PROGRAM

*Note: Use this table to indicate the dollar costs to the institution that are anticipated from the program requested.*

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost Sub-Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
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<tbody>
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<td>Faculty Salaries</td>
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<tr>
<td>Clerical/Staff</td>
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<td>Supplies &amp; Materials (Operations)</td>
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<td>Library &amp; IT Resources*</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Identify): (Graduate Assistant Tuition)</td>
<td></td>
<td>$38,160</td>
<td>$76,320</td>
<td>$110,240</td>
<td>$144,160</td>
<td>$144,160</td>
<td>$513,040</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td>$1,872,043</td>
<td>$2,250,346</td>
<td>$2,625,795</td>
<td>$3,002,672</td>
<td>$3,058,427</td>
<td>$12,809,283</td>
</tr>
</tbody>
</table>
### ANTICIPATED SOURCES OF FUNDING

*Note:* Use this table to indicate the dollar amounts anticipated from various sources to cover any and all new costs to the institution as a result of the proposed doctoral program. Use the Non-Formula Sources of Funding form to specify as completely as possible each non-general revenue source.

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Formula Income</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$597,868</td>
<td>$597,868</td>
<td>$1,084,153</td>
<td>$2,279,889</td>
</tr>
<tr>
<td><strong>II. Other State Funding</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>III. Reallocation of Existing Resources</strong></td>
<td>$1,779,937</td>
<td>$1,824,335</td>
<td>$1,670,065</td>
<td>$1,717,167</td>
<td>$1,665,682</td>
<td>$8,657,186</td>
</tr>
<tr>
<td><strong>IV. Federal Funding</strong> (In-hand only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>V. Other Funding: Tuition, Fees, and grants</strong></td>
<td>$59,425</td>
<td>$296,809</td>
<td>$491,002</td>
<td>$635,194</td>
<td>$735,194</td>
<td>$2,217,624</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$1,839,362</strong></td>
<td><strong>$2,121,144</strong></td>
<td><strong>$2,758,935</strong></td>
<td><strong>$2,950,229</strong></td>
<td><strong>$3,485,029</strong></td>
<td><strong>$13,154,699</strong></td>
</tr>
</tbody>
</table>

*Use the Formula Funding Calculation Tool on the Coordinating Board web site to estimate income from the State. See also the *Guidelines for Institutions Submitting Proposals for New Doctoral Programs* document found on the Coordinating Board website for additional information.*
### NON-FORMULA SOURCES OF FUNDING

*Note: Use this table to specify as completely as possible each of the non-formula funding sources for the dollar amounts listed on the Anticipated Sources of Funding form.*

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>Non-Formula Funding Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>II. Other State Funding</strong></td>
<td>#1</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
<tr>
<td><strong>III. Reallocation of Existing Resources</strong></td>
<td>#1 [Texas A&amp;M Irma Lerma Rangel College of Pharmacy/Health Science Center Funds to support salaries]</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
<tr>
<td><strong>IV. Federal Funding</strong></td>
<td>#1 [Anticipated Grant Funding to support graduate stipends]</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
<tr>
<td><strong>V. Other Funding</strong></td>
<td>#1 [Federal and Non-Federal Grants to support graduate stipends]</td>
</tr>
<tr>
<td></td>
<td>#2 [Tuition and Fees]</td>
</tr>
</tbody>
</table>
**Budget Summary**

In the first two years of the graduate program (FY19-20) formula funding is not available, therefore the expenses will be supported through a reallocation of existing RCOP/HSC funds, grant funds and tuition and fees. The formula funding begins in year three (FY21) and the minimum anticipated revenue from grant funding is approximately $350,000. An additional $100,000 of RCOP/HSC funds will be reallocated from existing sources to support the remaining expenses for FY21. In year four (FY22), as the student headcount continues to rise and the formula funding has not increased, as it is based on the previous biennium, expenses are higher than in FY21. The program will utilize $100,000 of reallocated RCOP funds, in addition to the anticipated minimum grant funding of $450,000 to support the expenses. In year five (FY23) the formula funding has increased based on the headcount and the minimum anticipated grant funding has increased to $550,000. No additional funds will be needed to sustain the program.

Faculty salaries for years one through five (FY19-23) are reallocated from existing RCOP funds. The program administration stipend is supported by tuition and fees in years one through five (FY19-23). Staff salaries are supported by tuition and fees, and in part through a reallocation of existing RCOP funds in years one and two (FY19-20), and by formula funding and tuition and fees in years three through five (FY21-23). Other operations are supported by a reallocation of existing RCOP funds in years one and two (FY19-20), and by formula funding and tuition and fees in years three through five (FY21-23).

**Graduate Assistantships**

Funding for year one (FY19) graduate assistantships ($250,000) is covered by reallocated RCOP/HSC funds. Funding for year two (FY20) graduate assistantships ($500,000) is supported by reallocated RCOP/HSC funds ($300,000) and grant funding ($200,000). Funding for year three (FY21) graduate assistantships ($750,000) is generated from a combination of grant funding ($350,000), and formula funding and tuition and fees ($400,000). Funding for year four (FY22) graduate assistantships ($1,000,000) is generated from a combination of grant funding ($450,000), formula funding and tuition and fees ($500,000) and RCOP reallocated funds ($50,000). Funding for year five (FY23) graduate assistantships ($1,000,000) is generated from a combination of grant funding ($550,000), and formula funding and tuition and fees ($450,000). The previous year’s deficit is covered through the steady state funding level in year five (FY23).

In addition to stipends, the college will cover the tuition (State, Differential and Designated) for PhD students that receive assistantships.

**Alternative Funding**

In addition to grant funding, the college will continuously and actively seek alternative funding sources for graduate assistantships through development opportunities, industry partnerships and scholarship opportunities. Should grant funding and alternative fund sources fall short or not materialize to support graduate assistantships, the college will reallocate existing funds from various fund sources to cover the budget shortfall until additional funds can be secured to sustain the program.
H. Institutional and Board of Regents
Signature Page for Board Consideration

1. **Adequacy of Funding** – The chief executive officer shall sign the following statement:

   *I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.*

   _______________________________                      __________________
   Chief Executive Officer                      Date

2. **Reimbursement of Consultant Costs** – The chief executive officer shall sign the following statement:

   *I understand that the doctoral proposal process includes the use of external consultants. In the event that one or more consultants are contracted to review a doctoral proposal put forward by my institution, I understand that my institution will be required to reimburse the Texas Higher Education Coordinating Board for costs associated with the use of such consultants. By signing, I agree on behalf of my institution to provide reimbursement for consultant costs.*

   _______________________________                      __________________
   Provost/Chief Executive Officer                      Date

3. **Board of Regents Certification of Criteria for Board Consideration**  -- The Board of Regents or designee must certify that the new program has been approved by the Board of Regents and meets the fourteen criteria under Texas Administrative Code (TAC) Section 5.46.

   *On behalf of the Board of Regents, I certify that the new program meets the fourteen criteria specified under TAC Section 5.46 and has been approved by the Board of Regents.*

   _______________________________                      __________________
   Board of Regents (Designee)                      Date
H. Board of Regents
Signature Page for Commissioner Consideration

4. **Board of Regents Certification of Criteria for Commissioner or Assistant Commissioner Consideration** – Typically doctoral programs are approved by the Board, supported with a recommendation for approval by the Commissioner. Under very limited circumstance a program may be approved by the Commissioner. In this case only, the Board of Regents or designee must certify that the new program meets the criteria under Texas Administrative Code (TAC) Section 5.50 (b) and (c).

TAC §5.50(b) The program:

(1) has a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
(2) has sufficient clinical or in-service sites, if applicable, to support the program;
(3) is consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
(4) attracts students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
(5) does not unnecessarily duplicate existing programs at other institutions;
(6) does not be dependent on future Special Item funding;
(7) has new five-year costs that would not exceed $2 million.

TAC §5.50 (c)The program:

(1-2) is in a closely related discipline to an already existing doctoral program(s) which is productive and of high quality;
(3) has core faculty that are already active and productive in an existing doctoral program;
(4) has a strong link with workforce needs or the economic development of the state; and
(5) the institution has notified Texas public institutions that offer the proposed program or a related program and resolved any objections.

*On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b and c) and has been approved by the Board of Regents.*

_____________________________                      __________________
Board of Regents (Designee)                      Date
Submitted by: Michael K. Young, President
Texas A&M University

Subject: Approval of Two New Graduate Degree Programs with a Major in Pharmaceutical Sciences, and Authorization to Request Approval from the Texas Higher Education Coordinating Board

Proposed Board Action:

Approve the establishment of two new graduate degree programs at Texas A&M University (Texas A&M) leading to a Doctor of Philosophy (Ph.D.) and a Master of Science (M.S.) degree in Pharmaceutical Sciences (PHSC), authorize the submission of these degree programs to the Texas Higher Education Coordinating Board (THECB) for approval and certify that all applicable THECB criteria have been met.

Background Information:

Pharmaceutical science has dramatically changed in the last decade with globalization and generic product development leading to 88% of our prescriptions being filled with generic products. Scientific innovations with a multidisciplinary approach is the key to maintaining a global competitive edge in this one trillion-dollar pharma industry in the United States. The proposed Ph.D. in PHSC will utilize the extraordinary strengths of the various programs of Texas A&M to converge their scientific discoveries into actual dosage forms or delivery systems that patients, animals, or plant species use. Consistent with the Food and Drug Administration’s (FDA’s) white paper and guidance on pharmaceutical current good manufacturing practice (cGMP) of the 21st Century, Process Analytical Technologies (PAT), Quality by Design (QbD), and the Critical Path Initiative, the Ph.D. in PHSC aims to provide strong foundation, education and research training in drug discovery and pharmaceutical product development.

The proposed Ph.D. program will provide education and research training for a comprehensive knowledge base required for translational research from bench to bedside, and to identify product quality issues that cause post-marketing adverse drug events and recalls that lead to dose and medication changes by physicians. It will prepare the students to fill the voids of pharmaceutical scientists and executives in academia, research, education, government, industry, and related fields. The M.S. program will serve primarily those students who do not complete the Ph.D. degree.

A&M System Funding or Other Financial Implications:

The estimated 5-year cost for this program, fully borne by the Ph.D. degree is estimated to $12,809,283. The 5-year revenue and reallocation is estimated to be $13,154,699.
Members, Board of Regents
The Texas A&M University System

Subject: Approval of Two New Graduate Degree Programs with a Major in Pharmaceutical Sciences, and Authorization to Request Approval from the Texas Higher Education Coordinating Board

I recommend adoption of the following minute order:

“The Board of Regents of The Texas A&M University System approves the establishment of two new graduate degree programs at Texas A&M University leading to a Doctor of Philosophy and a Master of Science in Pharmaceutical Sciences.

The Board also authorizes submission of Texas A&M University’s new degree program requests to the Texas Higher Education Coordinating Board for approval and hereby certifies that all applicable criteria of the Coordinating Board have been met.”

Respectfully submitted,

Michael K. Young
President

Submission Recommended

Carrie L. Byington, M.D., Vice Chancellor for Health Services
Dean, College of Medicine and Senior Vice President
Texas A&M University Health Science Center

Approval Recommended:  

John Sharp
Chancellor

Approved for Legal Sufficiency:

Ray Bonilla
General Counsel

Billy Hamilton
Executive Vice Chancellor and
Chief Financial Officer

James R. Hallmark, Ph.D.
Vice Chancellor for Academic Affairs
Texas A&M University

Doctor of Philosophy and Master of Science in Pharmaceutical Sciences
(CIP 51.2010.00)

Program Review Outline

BACKGROUND & PROGRAM DESCRIPTION

Administrative Unit: Irma Lerma Rangel College of Pharmacy

The goal of the Ph.D. degree in Pharmaceutical Sciences (PHSC) is to provide education and research training to graduates for a comprehensive knowledge base that leads to drug discovery, design, and development of pharmaceutical dosage forms through basic and applied research in pharmaceutical sciences. The unique feature of the program is that the students would understand the drug development from a regulatory perspective so that they develop the ability to convert basic discoveries into actual dosage forms for targeted drug delivery, controlled drug delivery, biotech and vaccine product development, transdermal and topical drug delivery, herbal drugs, and nanotechnology for biomedical applications with knowledge of big data management and chemometrics. The students will complete 96 semester credit hours (SCH) if they enter the program after a B.S. degree, or 64 SCH if they enter after a M.S. degree. The M.S. program will primarily serve those students who do not complete Ph.D. degrees, and this program will require 32 SCH (with thesis) and 36 SCH (without thesis).

Despite enormous strength of outstanding programs at Texas A&M University (Texas A&M), our pharmaceutical product development pipeline needs improvement. It requires an integration of chemistry, engineering, life sciences, and clinical sciences for small, as well as biotech, molecules for human, veterinary, and plant products. Too many valuable Texas A&M discoveries have been hindered for a practical development from bench to bedside, or have gone unnoticed. Patients do not take our discovered drugs as chemicals. They take them as dosage forms such as tablets, injections, transdermal patches among others. At the present time, Texas A&M has no provisions for formulations training to promote successful development of our drug discoveries.

An important milestone has recently been achieved at Texas A&M by the recent expansion of the Irma Lerma Rangel College of Pharmacy (RCOP) in College Station. We now have the faculty with knowledge to comprehensively understand and link the essential components of all dosage forms and delivery systems from colleges across Texas A&M. Development of dosage forms require the most modern understanding of drugs, excipients, processes, products, environment and stability, bioavailability and bioequivalence, and finished dosage form quality with all applicable laws. Additionally, the pharmaceutical product development requires process scale-up and modernization of all unit operations with process analytical technologies, quality by design, and continuous manufacturing through collaborations. Together with our engineering, veterinary, and agriculture programs, we have the potential to be nationally and internationally recognized for pharmaceutical and biopharmaceutical product development for human and animal use, and to serve the state and federal governments as advisors on policy development with targeted research.

The proposed implementation date is fall 2018.
Texas A&M certifies that the proposed new doctoral degree program meets the criteria under 19 Texas Administrative Code, Chapter 5, Subchapter C, Section 5.46, and the new masters degree program meets the criteria under Chapter 5, Subchapter C, Section 5.45, in regards to need, quality, financial and faculty resources, standards and costs.

I. NEED

A. Employment Opportunities

Ph.D. graduates in PHSC are readily employable in academia, industry, and regulatory agencies in the state of Texas and across the nation. All Texas universities that have this degree are operating at full capacity and the demand is not being met by existing graduates. Based on the employment figures from other Texas institutions, all Ph.D. graduates in pharmaceutical science are readily employed. The Bureau of Labor Statistics in 2014 indicated that there is a gap of 6570 medical scientists between the demand and supply. Medical scientists include pharmaceutical scientists. The Texas Biotech industry report, 2016, indicates that these scientists earn an average salary of $90,688. Additionally, the number of pharmacy schools in the nation have gone up from 79 in early 2000 to about 132 in 2016, requiring more advanced degrees for teaching and research. There are numerous vacancies for faculty appointments in pharmaceutical sciences.

Graduate programs in PHSC across the nation and in the state of Texas in particular are mostly traditional Ph.D. programs with little or no emphasis on process or product development for innovations, post-marketing corrections, and cost reduction of medications. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path initiative and the National Institute for Pharmaceutical Technology and Education’s (NIPTE) recommendations for graduate education.

Texas A&M has been strong in basic and engineering research programs, and has recently made significant advances in creating infrastructure to support product development and drug delivery research. Developing a Ph.D. program in PHSC will be a timely endeavor, which allows bridging the gap between the basic sciences and product development, and advancing the institutional research mission. The RCOP is unique in terms of its two teaching locations, one in College Station and another in Kingsville. This provides the RCOP a unique opportunity of developing highly qualified workforce through its presence in College Station at the main campus and also through its south Texas presence in Kingsville with an opportunity to serve and develop much needed representation of Hispanic and minority workforce.

Since the introduction of FDA’s position paper on cGMPs of the 21st century in 2005, research strategies have changed dramatically and continually in the pharmaceutical industry. Drug discovery and drug development are more intertwined as the identification of optimal pharmaceutical properties of the biologically active molecules becomes more important, necessitating the integration of product formulations knowledge into the drug discovery process. One of the greatest challenges of pharmaceutical industry today is rapid, seamless translation of biomedical discoveries into drug products. To accommodate such a dramatic shift in the research enterprise, development of new drug discovery and delivery technologies, methodologies for modernization of manufacturing processes with process analytical technologies, Quality by Design (QbD), emerging technologies, in vitro/in vivo simulation models, and understanding of regulatory issues with sustained supply of qualified interdisciplinary scientists are critically needed. However,
according to the ‘Path Forward’ report of the Educational Testing Service and Council of Graduate Schools, the percent of graduate students with US pharmacy degrees has declined sharply in the past decade leading to paucity of appropriately trained investigators.

A significant need for the continued success of the profession of pharmacy is the availability of well-qualified professors in the pharmaceutical sciences who will continue to educate and provide the new generation of pharmacy professors and researchers. Academically sound schools and colleges of pharmacy provide suitable courses at the professional and doctoral levels to establish a pipeline of basic, applied, and clinical faculty who are well qualified to meet the demand and fill the pharmaceutical sciences void in a broad range of settings, including academic pharmacy, industry, regulatory, clinical, community, compounding, marketing, and consultancy.

B. Projected Enrollment

Ten new students are projected per year with a cap of 40 students in the year 2022, as shown below. Attrition is not expected.

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>New students</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total enrollment</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>40*</td>
</tr>
</tbody>
</table>

*10 students are expected to graduate.

C. Existing State Programs

There are three existing Ph.D. programs in Pharmaceutical Science in the state of Texas: the University of Texas at Austin, Texas Tech University, and Texas Southern University. The University of Houston has Ph.D. programs in pharmaceutics, pharmacology, and outcomes research which are subsets of the comprehensive pharmaceutical science program that is being proposed. All interested graduates over the past five years at these institutions were employed in academia, industry, or regulatory agencies immediately after graduation.

II. QUALITY & RESOURCES

A. Faculty

The RCOP currently has 46 faculty to teach and/or serve as mentors to the Ph.D. and M.S. students. No new faculty are expected to be hired specifically for this program.

B. Program Administration

A faculty member will serve part-time as the Director of Graduate Program.

C. Other Personnel

One clerical/staff person will be hired to support the program.
D. Supplies, Materials

Supplies and material required for courses and recruitment are expected to cost $620,510 over the first five years of the program.

E. Library

No additional library resources are anticipated.

F. Equipment, Facilities

No additional equipment and facilities are needed.

G. Accreditation

No program-specific accreditation will be sought.

III. NEW 5 YEAR COSTS & FUNDING SOURCES

<table>
<thead>
<tr>
<th>NEW FIVE-YEAR COSTS</th>
<th>SOURCES OF FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>$7,857,186</td>
</tr>
<tr>
<td>Program Administration</td>
<td>$318,547</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>$3,500,000</td>
</tr>
<tr>
<td>Supplies &amp; Materials</td>
<td>$620,510</td>
</tr>
<tr>
<td>Library &amp; IT Resources</td>
<td>$0</td>
</tr>
<tr>
<td>Equipment, Facilities</td>
<td>$0</td>
</tr>
<tr>
<td>Other - Graduate Assistant Tuition</td>
<td>$513,040</td>
</tr>
<tr>
<td>Estimated 5-Year Costs</td>
<td>$12,809,283</td>
</tr>
</tbody>
</table>

| Estimated 5-Year Revenues    | $13,154,699              |
| Source of Funding            |                          |
| Formula Income               | $2,279,889               |
| Statutory Tuition            | $121,000                 |
| Reallocation                 | $8,657,186               |
| Designated Tuition           | $80,600                  |
| Other Funding:               |                          |
| Student Fees                 | $268,824                 |
| Differential Tuition         | $197,200                 |
| Grant funds                  | $1,550,000               |
### APPENDIX A – Course Descriptions

#### Table 4. Required/Core Courses

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required/Core Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 610*</td>
<td>Biotech drugs and vaccine products</td>
<td>4</td>
</tr>
<tr>
<td>PHSC 611*</td>
<td>Drug delivery and formulations</td>
<td>4</td>
</tr>
<tr>
<td>PHSC 612*</td>
<td>Principles of drug actions</td>
<td>4</td>
</tr>
<tr>
<td>PHSC 613*</td>
<td>Laboratory rotations</td>
<td>3 + 3</td>
</tr>
<tr>
<td>PHSC 621*</td>
<td>Biostatistics or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 622*</td>
<td>Professionalism and ethics in research or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 623*</td>
<td>Seminar</td>
<td>1+1</td>
</tr>
</tbody>
</table>

#### Table 5. Prescribed Elective and Elective Courses

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 724*</td>
<td>Principles of pharmacology and toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 725*</td>
<td>Biopharmaceutics and pharmacokinetics</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 731*</td>
<td>Process and product development or equivalent</td>
<td>2</td>
</tr>
<tr>
<td>PHSC 732*</td>
<td>Controlled and targeted drug delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 733*</td>
<td>Drug degradation and product stability or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 734*</td>
<td>Vaccine delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 735*</td>
<td>Industrial pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 736*</td>
<td>Physical pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 737*</td>
<td>Transdermal and topical drug delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 738*</td>
<td>Cosmetic development</td>
<td>2</td>
</tr>
<tr>
<td>PHSC 739*</td>
<td>Pediatric dosage forms</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 741*</td>
<td>Analytical/Bioanalytical techniques and validation</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 742*</td>
<td>High throughput training in drug discovery and screening</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 743*</td>
<td>Polymer chemistry or equivalent</td>
<td>3</td>
</tr>
</tbody>
</table>
### Table 5. Prescribed Elective and Elective Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 744*</td>
<td>Chemometrics and big data management or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 689*</td>
<td>Topics in pharmaceutical science</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>PHSC 752*</td>
<td>Nanotechnology for biomedical applications</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 753*</td>
<td>Pk/PD and drug metabolism or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 754*</td>
<td>Toxicokinetics and predictive toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 755*</td>
<td>In-vitro/in-vivo simulations and modeling</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 756*</td>
<td>Advanced pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 757*</td>
<td>Herbal drugs or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 758*</td>
<td>Research in pharmaceutical science</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>PHSC 691*</td>
<td>Dissertation research</td>
<td>3</td>
</tr>
</tbody>
</table>

The courses in Table 4 are the required courses for 26 SCH for all entering students without Master of Science (M.S.) degrees and 18 SCH with M.S. degrees. They build the foundation and bring consistency to a diverse group of incoming students. It is highly likely that some of these required courses have already been completed at the graduate level by students entering with M.S. degrees. Depending upon their backgrounds, only 18 out of the 26 credits will meet the requirements. If a student enters after a M.S. degree and is found to have taken more courses or their equivalents in an accredited program, the PHSC Ph.D. Program Committee may waive the required course and substitute that course with an elective based on the students’ background and dissertation advisory committee recommendations.

**Course Sequence:**

Semester 1: PHSC 610, 611, and 613  
Semester 2: PHSC 612, 621, 613, and 623  
Semester 3: Prescribed electives/Electives depending on sub-specialty (9SCH)  
Semester 4: Prescribed electives/Electives depending on sub-specialty (9SCH)  
Semester 5 until graduation: Electives and/or PHSC 691 after candidacy
Indra K. Reddy, Ph.D.

Work:
Irma Lerma Rangel College of Pharmacy
Texas A&M University Health Science Center
1010 West Avenue B
Kingsville, Texas 78363
Tel.: (361) 221-0601
Fax: (361) 221-0790
E-mail: ireddy@tamhsc.edu
Website: http://pharmacy.tamhsc.edu

Home:
46 East Bar-Le-Doc Drive
Corpus Christi, Texas 78414
Tel.: (361) 533-6517
E-mail: ikreddyi@aol.com

Personal Information:
US Citizen
Wife – Neelima; Two Children

EDUCATION

1989 Ph.D. in Pharmaceutical Sciences, College of Pharmacy, University of Florida, Gainesville. Dissertation: Design, Evaluation and Preformulation of Rate-Controlled, Site-Specific Chemical Delivery System to the Eye for the Treatment of Glaucoma

1984 M.S. in Pharmacy (Pharmaceutics), Dr. Harisingh Gour University, Sagar, India. Thesis: Polymeric Ophthalmic Drug Delivery Systems

1981 B.S. in Pharmacy (B.Pharm.), College of Pharmaceutical Sciences, Kakatiya University, Warangal, India

TRAINING


6/05 – 7/05 Management Development Program (MDP), Harvard Institutes for Higher Education, Cambridge, Massachusetts

1/90 – 6/90 Postdoctoral Research Fellow, Center for Drug Design and Delivery, University of Florida, Gainesville

1/87 – 12/87 Certified Training in Clinical Pharmacokinetics, College of Pharmacy, University of Florida, Gainesville

1/87 – 7/87 Certified Training in Using Rodents, Rabbits and Dogs: Animal Housing, Handling and Lab Techniques, Department of Animal Resources at University of Florida, Gainesville

1/85 – 6/85 Graduate Research Fellowship, Division of Pharmaceutics, Oregon State University, Corvallis
AREAS OF SPECIALIZATION AND RESEARCH INTERESTS

Convergence of Life Sciences, Physical Sciences, and Engineering for Biopharmaceutical Product Development

Design of Novel Ocular Drugs and Delivery Systems

Development, Preformulation and Evaluation of Controlled, Targeted and Site-Specific Chemical Delivery Systems

Drug Product Development and Optimization

Development of *In Vitro* Models Alternative to Animal Testing

Enantioselective Transdermal and Ocular Permeation

Self-Emulsifying Drug Delivery Systems (SEDDS)

Surface Phenomenon in Pharmaceutical Technology

Pedagogical Methods and Active-Learning

Assessment of Learning Outcomes and Instructional Effectiveness

ACADEMIC EXPERIENCE AND POSITIONS HELD

2/04 – Present Professor and Founding Dean, Irma Lerma Rangel College of Pharmacy, Texas A&M University Health Science Center (HSC), Kingsville and College Station

6/05 – Present Joint Professor in the Department of Medical Pharmacology and Toxicology, College of Medicine, Texas A&M University Health Science Center, College Station

7/01 – 8/05 Adjunct Professor of Ophthalmology, Jones Eye Institute, College of Medicine, University of Arkansas for Medical Sciences (UAMS), Little Rock

7/01 – 1/04 Professor of Pharmaceutical Sciences and Vice Chair, Department of Pharmaceutical Sciences, College of Pharmacy, University of Arkansas for Medical Sciences, Little Rock

7/99 – 6/01 Professor of Pharmaceutics, Department of Pharmaceutical Sciences, School of Pharmacy, Texas Tech University Health Sciences Center (TTUHSC), Amarillo

7/98 – 6/99 Pfizer Endowed Professor of Pharmaceutics, School of Pharmacy, University of Louisiana at Monroe (ULM)
Curriculum Vitae
Indra K. Reddy, Ph.D.

1/95 – 6/98  Associate Professor of Pharmaceutics, Division of Basic Pharmaceutical Sciences, College of Pharmacy and Health Sciences, University of Louisiana at Monroe

7/90 – 12/94  Assistant Professor of Industrial Pharmacy, College of Pharmacy and Allied Health Professions, St. John’s University, Jamaica, New York

1/90 – 6/90  Postdoctoral Research Fellow, Center for Drug Design and Delivery, College of Pharmacy, University of Florida, Gainesville

7/85 – 8/89  Graduate Research Fellow and Teaching Assistant, College of Pharmacy, University of Florida, Gainesville

PROFESSIONAL AFFILIATIONS

Member and Fellow, American Association of Pharmaceutical Scientists (AAPS), 1987 – present

Member and Fellow, American Pharmacists Association (APhA), 2004 – present

Member, American Association of Colleges of Pharmacy (AACP), 1990 – present

Member, American Society of Health-System Pharmacists (ASHP), 2004 – present

Member, National Association of Boards of Pharmacy/AACP District VI, 2004 – present

Executive Member, Texas Pharmacy Congress (TPC), 2004 – present

Member, Texas Pharmacy Association, 2004 – present

Member, Texas Society of Health-System Pharmacists (TSHP), 2005 – present

Member, American College of Clinical Pharmacy (ACCP), 2006 – present

Member, Academy of Managed Care Pharmacy (AMCP), 2007 – present

Phi Delta Chi Professional Pharmacy Fraternity (inducted in 1996)

Rho Chi Academic Honor Society (inducted in 2008)

Phi Lambda Sigma Pharmacy Leadership Society (inducted in 2009)

Member, Texas Optometric Association, 1999 – 2007

Member, Association for Research in Vision and Ophthalmology (ARVO), 1991 – 2005

Member, Arkansas Pharmacists Association, 2001 – 2004
Curriculum Vitae
Indra K. Reddy, Ph.D.

American Association of University Professors (AAUP)
  St. John’s University Chapter, 1990 – 94
  University of Louisiana at Monroe Chapter, 1996 – 99
  Texas Tech University Chapter, 1999 – 2001
  University of Arkansas for Medical Sciences Chapter, 2001 – 2004

Louisiana Pharmacists Association (LPA), 1996 – 2001


Fifth District Pharmacy Association of Louisiana, 1996 – 1998

AWARDS, HONORS, AND RECOGNITIONS

Ten Year Outstanding Service Award
Texas A&M University Health Science Center, 2015

Outstanding Pharmacy Alumnus Award, 2014
College of Pharmacy, University of Florida

Outstanding Alumnus Award, 2012
Kakatiya University, Warangal, India

Fellow, 2010
American Pharmacists Association (APhA)

Research Achievement Award in Pharmaceutical Sciences, 2010
Academy of Pharmaceutical Research and Science (APRS) – APhA

Fellow, 2009
American Association of Pharmaceutical Scientists (AAPS)

Senior Fellow, 2004
Universities and Health Related Institutions
Texas Higher Education Coordinating Board, Austin

Outstanding Service Award, 2001
Texas Optometric Association, Austin

Member of Teaching Team of the Year, 2000
School of Pharmacy, Texas Tech University Health Sciences Center, Amarillo

CenturyTel Accent on Excellence Award, 2000
Sponsored by CenturyTel, Inc., Monroe, LA
Curriculum Vitae
Indra K. Reddy, Ph.D.

Outstanding Professor, 1999
Alumni Association
College of Pharmacy and Allied Health Sciences, University of Louisiana at Monroe (ULM)

Pfizer Endowed Professorship, 1998
ULM College of Pharmacy

Community Service Award, 1998
Wal-Mart, Inc., Northeast Louisiana

Best Teacher of the Year, 1997 – 98
Phi Delta Chi Chapter
ULM College of Pharmacy

Best Manuscript Award (Reddy I. K. et al., Journal of Ocular Therapeutics), 1996
Mary Ann Liebert Publishers, Inc.

School of Pharmacy, St. John’s University, Jamaica, New York

Student Government Association
School of Pharmacy, St. John’s University, Jamaica, New York

Excellence in Graduate Research Award Sponsored by Proctor & Gamble Co., 1988
American Association of Pharmaceutical Scientists, Orlando, Florida

Excellence in Graduate Research Award, 1988
College of Pharmacy, University of Florida, Gainesville

Extracurricular:
First Degree (Shodan), 1981
Judo Federation of India

Black Belt in Karate (Gojuru), 1980
National Karate Association (NKA), Warangal, India
Grand Master: Sensei Jacob Prathap (5th Dan Black Belt)

ELECTED OFFICES, POSITIONS, AND PROFESSIONAL ACTIVITIES

Chair, International Commission, Accreditation Council for Pharmacy Education (ACPE), February 2016 – February 2017

Curriculum Vitae
Indra K. Reddy, Ph.D.

Commissioner, International Services Program, ACPE, appointed by the ACPE Board, 2013 – 2019

Member, Bio Section Task Force, American Association of Colleges of Pharmacy (AACP), 2016

Chair, American Association of Pharmaceutical Scientists (AAPS), National Fellows Selection Committee, 2015 – 2016

Chair-Elect, AAPS, National Fellows Selection Committee, 2014 – 2015

Member, Leadership Development Special Interest Group Leadership Toolkit Task Force, AACP, 2014 – 2015

Chair, AAPS Fellows Selection Committee, Formulation and Drug Delivery (FDD) Section, 2012 – 2014

Chair, AAPS – FDD Section Strategic Planning Committee, 2010 – 2011

Co-Chair, AAPS FDD Section, Strategic Planning Committee, 2009 – 2010

Member, AAPS FDD Section Fellows Selection Committee, 2009 – 2010

AACP Administrative Delegate, Texas A&M Rangel College of Pharmacy, 2004 – present

President, Optometry Health Care Advisory Committee (OHCAC), State of Texas, 2000 – 2006

AACP Faculty Delegate, UAMS College of Pharmacy, 2003 – 2004

President-Elect, Optometry Health Care Advisory Committee (OHCAC), State of Texas, 1999 – 2000

Member at Large, Program Coordination Committee, AAPS, 2000 – 2001

General Chair, AAPS Midwest Regional Meeting, Chicago, Illinois, 1999 – 2000

Vice Chair, Programming Task Force, AAPS, 1999 – 2000


AACP Faculty Delegate, ULM School of Pharmacy, 1998 – 1999

AACP Faculty Alternate, ULM School of Pharmacy, 1997 – 1998

Chair, AACP Faculty Mentoring Program-Pharmaceutics, 1997 – 1998
PROFESSIONAL ORGANIZATIONS COMMITTEE EXPERIENCE

Member, Texas Pharmacy Congress (TPC), 2004 – present

Member, National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy (NABP-AACP), District VI, 2004 – present

As a member of site visit teams, participated in several accreditation visits by the Accreditation Council for Pharmacy Education (ACPE) since 2005

Member, AACP Electronic-Based Instructional Resources Special Interests Group, 1996 – present

Member, United States Pharmacopeia (USP) Expert Panel, 2011 – 2013

Co-Chair, National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy (NABP-AACP), Districts VI, VII, and VIII Annual Meeting, 2010

Co-Chair, Organizing Committee, NABP-AACP District VI, 2009 – 2010

Member, Nominations Committee, AACP, 2009 – 2010

Chair, Awards Committee, FDD Section, AAPS, 2008 – 2009

Member, Awards Committee, Pharmaceutics and Drug Delivery (PDD) Section, American Association of Pharmaceutical Scientists (AAPS) 2004 – 2005

Member, Scientific Section Abstract Screening Committee, PDD Section, AAPS, 2002 – 2004

Member and UAMS Liaison, Research Committee for the Technology Resources Foundation (TRF), June 2003 – 2005

Co-Chair, AACP Faculty Mentoring Program, 2003 – 2005

Member, AAPS Task Force, Ophthalmic Drug Delivery, 2003 – 2004

Member, AACP Curriculum Committee Chairs – Special Interests Group, 1997 – 2003

Member, Programming Task Force, AAPS, 1998 – 99

Member, Optometry Health Care Advisory Committee (OHCAC), Austin, Texas, 1998 – 99

Member, Program Coordination Committee, AAPS National Meeting, 1998 – 99

Program Chair, AAPS Midwest Regional Meeting, 1998 – 99
Curriculum Vitae
Indra K. Reddy, Ph.D.

Founding Member and Chair, AAPS – Southern Regional Discussion Group (SRDG), 1998 – 99

Chair, Pharmaceutical Technology (PT) Planning Committee, AAPS Midwest Regional Meeting, Chicago, Illinois, 1997 – 98

Chair-Elect, AAPS – Southern Regional Discussion Group (SRDG), AAPS, 1997 – 98


Member, AACP Faculty Mentoring Program in Pharmaceutics Discipline, 1996 – 97

Vice Chair, Pharmaceutical Technology (PT) Planning Committee, AAPS Midwest Regional Meeting, Chicago, Illinois, 1996 – 97

Moderator, Joint Session on Drug Delivery, AAPS Midwest Regional Meeting, Chicago, Illinois, May 1996 – 97

Judge, Graduate Poster Competition, AAPS Midwest Regional Meeting, Chicago, Illinois, May 1997

Member, Planning Committee, AAPS Midwest Regional Meeting, Chicago, Illinois, 1996

Member, Advisory Board, Southern Regional Economic Development (SRED), 1996 – 1999

UNIVERSITY COMMITTEE EXPERIENCE

Member, Executive Committee, Texas A&M University Health Science Center (HSC), 2006 – present

Member, Council of Deans, HSC, 2006 – present

Member, Council of Deans, Texas A&M University (TAMU), 2013 – present

Member, Appointment, Promotion and Tenure (APT) Committee, HSC, 2006 – present

Member, Distance Education Task Force, HSC, 2006 – present

Member, Dean’s Search Committee, TAMU Baylor College of Dentistry, 2010 – 2011

Member, Director’s Search Committee, HSC Institute of Biosciences and Technology, 2010 – 2011

Member, Dean’s Search Committee, HSC College of Nursing, 2009 – 2010
Member, President’s Circle, Texas A&M University – Kingsville (TAMUK), 2004 – present

Member, Advisory Committee, National Natural Toxins Research Center, TAMUK, 2005 – present

Member, Academic Deans’ Council (ADC), TAMUK, February 2004 – 2006

Member, University Strategic Committee on Research Excellence, TAMUK, 2004 – 2005

Member, Computer Utilization Committee, College of Pharmacy, University of Arkansas for Medical Sciences (UAMS), Little Rock, 2002 – 2004

Member, Curricular Affairs Committee, UAMS College of Pharmacy, 2001 – 2004

Member, Assessment and Outcomes Committee, UAMS College of Pharmacy, 2001 – 2004

Member, Strategic Planning Committee, UAMS College of Pharmacy, 2001 – 2004

Member, Executive Committee, UAMS Department of Pharmaceutical Sciences, 2001 – 2004

Chair, Curricular Affairs Committee, School of Pharmacy, Texas Tech University Health Sciences Center (TTUHSC), Amarillo 1999 – 2000

Chair, TxPharm (non-traditional pharmacy program in Texas) Curricular Affairs Committee, TTUHSC School of Pharmacy, 1999 – 2000

Member, Research Advisory Committee, TTUHSC School of Pharmacy, 2000 – 2001

Member, Graduate Program Committee, TTUHSC School of Pharmacy, 1999 – 2001

Chair, Curriculum Committee, School of Pharmacy, University of Louisiana at Monroe (ULM), 1997 – 1999

Chair, Space Utilization Committee, ULM School of Pharmacy, 1996 – 1999

Chair, Good Manufacturing Practices (GMP) Committee, ULM School of Pharmacy, 1998 – 1999

Chair, Education Program Self-Study Committee, ULM School of Pharmacy, 1998 – 1999

Chair, Commencement Committee (summer graduation), ULM School of Pharmacy, 1999

Chair, Accreditation Task Force, ULM School of Pharmacy, 1998 – 1999

Chair, Delegation on Pedagogical Changes for ULM at the AACP Institute, Leesburg, Virginia, May 29 – June 2, 1998
Member, Graduate Studies Committee, ULM School of Pharmacy, 1997 – 1999

Member, University-Wide Curriculum Committee, ULM, 1995 – 1999

Member, School of Pharmacy Admissions Committee, ULM, 1995 – 1999

Chair, *Ad hoc* Committee on Faculty Criteria for Tenure and Promotion, ULM School of Pharmacy, 1997

Member, *Ad hoc* Committee on Graduate Studies, Division of Basic Sciences, ULM School of Pharmacy, 1997

Member, Promotion Committee, ULM School of Pharmacy, 1996 – 1998

Member, Tenure and Promotion Committee, Division of Basic Pharmaceutical Sciences, ULM School of Pharmacy, 1995

Member, Good Manufacturing Practices (GMP) Committee, ULM School of Pharmacy, 1995 – 1998

Chair, Faculty Development Committee, School of Pharmacy, St. John’s University (SJU), Jamaica, New York, 1993 – 94

Chair, M.S. Self-Study Committee for the Accreditation of New York State Department of Education, SJU School of Pharmacy, 1993 – 94

Member, University Coordinating Committee, Annual Pharmacy Congress, SJU School of Pharmacy, 1992 – 94

Member, Awards Committee, SJU School of Pharmacy, 1992 – 94

Member, Needs Assessment and Advisory Committee for Continuing Education, SJU, 1993 – 94

Member, Committee on Physical and Clinical Facilities, Equipment and Instructional Resources, SJU School of Pharmacy, 1991 – 92

Member, Graduate Admissions & Academic Standing Committee, SJU, 1991 – 92

Member, Speaker's Bureau, SJU, 1991 – 94

Member, American Council of Pharmaceutical Education (ACPE) Self-Study Committee on Faculty and Teaching, SJU School of Pharmacy, 1994
INSTITUTIONAL SERVICE

Dean Mentor and Panel Member, AACP Academic Research Fellows Program, 2014 – 2015


Dean Mentor, Leadership Institute, University of Houston, 2012 – 2015

Faculty Member, Student National Pharmaceutical Association, 2003 – 005

Faculty Advisor, Phi Delta Chi, UAMS College of Pharmacy, 2001 – 2004

Faculty Advisor, Phi Delta Chi, TTUHSC School of Pharmacy, 1999 – 2001

Participant, NAPLEX Review, TTUHSC School of Pharmacy, August 2000

Faculty Advisor for Beta Beta Chapter of Phi Delta Chi Professional Pharmacy Fraternity, ULM School of Pharmacy, 1996 – 1999. During Dr. Reddy’s tenure as advisor, this student organization won the Outstanding Student Organization Awards twice in a row and was named the Best Student Chapter by the Governor of Louisiana, Mr. Mike Foster.

Advisor, Student Senate, ULM School of Pharmacy, 1998 – 99

Coordinator, NAPLEX Review Sessions, Sponsored by the Louisiana Pharmacists Association (and University of Louisiana at Monroe: January 3-4, 1998; June 11-12, 1997: January 11-12, 1997; September 7-8, 1996; June 1-2, 1996

Coordinator, Doctoral Seminar Program, Division of Pharmaceutics, ULM School of Pharmacy, 1995 – 1997

Delegate, Interphex-96, Jacob Javits Convention Center, New York, April 23 – 25, 1996

Judge, Patient Counseling Competition, APhA – Academy of Student Pharmacists, 1995

Pharmaceutical Manufacturers Association (PMA) Visiting Scientist, American Cyanamid Company (Lederle), Pearl River, NY, July 24 – August 6, 1994

Organizer and Moderator, 36th Annual Pharmacy Congress, Garden City Hotel, May 4, 1994

Chair, Ad hoc Committee on Continuing Education, St. John’s University, 1993. Also organized fundraising campaign and raised a sum of $28,250 towards the 35th Annual Pharmacy Congress.

Moderator, 35th Annual Pharmacy Congress, Garden City Hotel, April 21, 1993

Coordinator, Doctoral Seminar Program, College of Pharmacy & Allied Health Professions, St. John’s University, 1991 – 93
Curriculum Vitae
Indra K. Reddy, Ph.D.

Course Coordinator and Speaker, Short Course on Ocular Drug Delivery, Sponsored by Technomic Publishing Co., Meadowlands Hilton Hotel, Secaucus, New Jersey, October 19 – 20, 1995

Organizer, Workshop on Pharmaceutical Biotechnology, St John’s University, March 16, 1994 (Dr. Ajay K. Banga, Professor, Mercer University coordinated this event)

Coordinated the Glaucoma Drug Development Workshop and Ocular Pharmacology Symposium, Novi, Michigan, August 7 – 10, 1993

Co-Director, Intensive Training Course in Surface Science in Pharmaceutical Technology, University of Florida, Gainesville, January 22 – 24, 1992 (presented three lectures)

Graduate Faculty Marshal, 123rd Commencement, Fall Graduation, St. John’s University, September 20, 1992

POST-DOCTORAL AND GRADUATE STUDENT TRAINING

Doctoral Students (Chairman/Co-Chairman/Member, Supervisory Committee):
Abdul Zahir\textsuperscript{a,e}
Anees A. Karnachi\textsuperscript{b,e}
Ashlesh Seth\textsuperscript{a,e}
Chia-Lung Hsiao\textsuperscript{a,e}
Deepak Saraiya\textsuperscript{a,e}
Deepika Talla\textsuperscript{d}
Gerald P. Frunzi\textsuperscript{a,e}
Hungyu Lin\textsuperscript{a,e}
Jane Feldhouse\textsuperscript{b,e}
Kanta S. Peswani\textsuperscript{a,e}
Kommuru T. Rao\textsuperscript{b,e}
Mansoor A. Khan\textsuperscript{a,e}
Mashukur Rahman\textsuperscript{a,e}
Padma Venkataraman\textsuperscript{b,e}
Parwin Rahman\textsuperscript{a,e}
Rao Tatapudy\textsuperscript{a,e}
Sami Nazza\textsuperscript{b,c,e}
Sanjeev K. Gupta\textsuperscript{a,e}
Shailesh K. Singh\textsuperscript{b,e}
Shih-Yu Lee\textsuperscript{a,e}
Sivakumar Vaithiyalingam\textsuperscript{b,c,e}
Spiros S. Spireas\textsuperscript{a,e}
Srikonda V. Sastry\textsuperscript{b,e}
Vadlapatla, Rajesh\textsuperscript{d}
Venkat. R. Goskonda\textsuperscript{b,e}
Vikas Agarwal\textsuperscript{b,c,e}
Xian (Andrew) Chen\textsuperscript{a,e}
Zabeena Sheik\textsuperscript{d}

Master’s Students (Chairman/Member, Supervisory Committee):
Charitha Madiraju\textsuperscript{b,e}
Deepak Tiwari\textsuperscript{a,e}
Jeevan R. Kunta\textsuperscript{b,e}
Khalid Mahmood\textsuperscript{a,e}
Kristina Demarco\textsuperscript{d}
Lyndsey Bryant\textsuperscript{d}
Mahua Dutta\textsuperscript{a,e}
Priya Jambhekar\textsuperscript{a,e}
Shu-Fen Chen\textsuperscript{a,e}
Zihong Li\textsuperscript{a,e}

Post-Doctoral Fellows:
Abdel A. Zaghloul\textsuperscript{c}
Mohsen I. Afouna\textsuperscript{d}
Harnath K. Vaddi\textsuperscript{f}
CONSULTING SERVICES

Leiner Health Products, Carson, California, 2000 – 2004
Vela Pharmaceuticals, Inc, New Jersey, 1999 – 2000
Murty Pharmaceuticals, Lexington, Kentucky, 1995 – 2000
Kimberly-Clark, Neenah, Wisconsin, March 1998 – 2000

TEACHING EXPERIENCE/COURSES TAUGHT

Pharm.D. Courses
Ambulatory Care - MTM (Team-teaching)
Musculoskeletal System
Rheumatology
Novel Drug Delivery Systems
Drug Delivery Systems I, II, and III
Pharmaceutical Calculations
Parenteral Therapy
Homogenous Dosage Forms
Heterogeneous Dosage Forms
Physical Pharmacy
Pharmaceutical Care
Pharmaceutics I
Pharmaceutics II

Graduate (M.S. and Ph.D.) Courses
Ocular Drug Delivery
Targeted Drug Delivery
Pharmaceutical Technologies
Industrial Pharmacy
**Curriculum Vitae**

**Indra K. Reddy, Ph.D.**

Novel Drug Delivery Systems  
Drug Design and Development  
Biopharmaceutics (team teaching)  
Surface Science and Engineering (guest lectures)

**Non-Traditional Pharm.D. Courses (via Distance Learning)**  
Rheumatology  
Musculoskeletal Systems

**Telecourses/Web CT Courses**  
Pharmacology and Pharmaceutics of Glaucoma Medications (for Optometric Glaucoma Specialist Certification), 1999-present  
WebCT Pharmaceutics I (UAMS local web portal)  
WebCT Pharmaceutics II (UAMS local web portal)

**CRITICAL SCIENTIFIC REVIEW**

**Editor/Editoial Board:**  
Member, Editorial Board, Journal of Drug Delivery Science and Technology, 2007 – present

Member, Advisory Board, International Journal of Pharmaceutical Sciences and Nanotechnology, 2008 – present

Member, Editorial Advisory Board, Journal of Pharmacy Teaching, 1999 – present

Member, Editorial Board, Journal of Critical Reviews in Therapeutic Drug Carrier System, 2005 – present


Series Editor, CRC Press, Pharmaceutical Sciences Series, 2000 – 2005

Consulting Editor, Pharmaceutical Division, Technomic Publishing Co., PA, 1996 – 2000

Member, Editorial Advisory Board, Journal of Pharmaceutical Care, 1999 – 2005

**Manuscript Referee:**  
Journal of Controlled Release

Journal of Pharmaceutical Research

Journal of Pharmaceutical Sciences

International Journal of Pharmaceutics
Curriculum Vitae
Indra K. Reddy, Ph.D.

International Journal of Pharmaceutical Compounding

Journal of BioDrugs

U.S. Pharmacist

Pharmacy Times

Drug Store News

American Journal of Pharmaceutical Education

Journal of Pharmacy Teaching

Journal of Pharmaceutical Care

External Reviewer for Tenure/Promotion:
Oregon State University College of Pharmacy, Corvallis, Oregon

University of South Florida School of Pharmacy, Tampa, Florida

Nova Southeastern University, College of Pharmacy, Ft. Lauderdale, Florida

Auburn University Harrison School of Pharmacy, Auburn, Alabama

St. John’s University College of Pharmacy and Allied Health Professions, Jamaica, New York

The University of Mississippi School of Pharmacy, Oxford, Mississippi

Virginia Commonwealth University College of Pharmacy, Richmond, Virginia

Xavier University of Louisiana College of Pharmacy New Orleans, Louisiana

Midwestern University, Chicago College of Pharmacy, Chicago, Illinois

Mercer University School of Pharmacy, Atlanta, Georgia

University of Tennessee College of Pharmacy, Memphis, Tennessee

The Hebrew University of Jerusalem, Jerusalem, Israel

Madurai University, Chennai, India

External Review for Research Grant Proposals:
National Center for Complementary and Alternative Medicine (NCCAM), National Institutes of Health, Bethesda, Maryland, 2002 – 2003
Curriculum Vitae
Indra K. Reddy, Ph.D.

The National University of Singapore, Singapore (contact: Prof. Lee Tong Heng)

Kuwait University, Kuwait (contact: Prof. Asad Ismaeel and Prof. Abdel Majeed Ali Safer)

Kumamoto University, Japan (contact: Prof. Masaki Otagiri)

Madurai University, Madurai, India (contact: Dr. M. Ganesan)

EPSCoR (North Dakota) Grants, 1996 – 99

AACP Young Investigator Grants, 1998 – 2000

PUBLICATIONS AND PRESENTATIONS

Books: (author/co-author/editor)


Peer-Reviewed Publications:


Curriculum Vitae
Indra K. Reddy, Ph.D.


TEACHING-RELATED PRESENTATIONS AND WORKSHOPS

Presentations:
1. Reddy IK. “Problem-Based Life-Long Learning,” Ophthalmic Technologies Program, Jones Eye Institute, Little Rock, Spring 2003

2. Reddy IK. “Teaching Strategies for Active, Ability-Based Education,” New Faculty Orientation, UAMS, Fall 2002


5. Reddy IK. “Active Learning: Problem-Based Learning (PBL) Model,” Teaching and Learning Center (TLRC), University of Louisiana at Monroe, April 15, 1998


7. Reddy IK. “Active Learning through Problem Solving,” sponsored by Teaching and Learning Resource Center, ULM, Monroe, LA, October 20, 1999


**Workshops:**


3. Reddy IK. “Paradigm Shift: From Instructional Paradigm to Learning Paradigm,” workshop to Teachers Honors Colloquium, sponsored by Teaching and Learning Center, University of Louisiana at Monroe, April 1999

4. Reddy IK and Adams R. “Active Learning in Basic and Applied Sciences,” sponsored by Teaching and Learning Resource Center, ULM School of Pharmacy, Monroe, LA, October 20, 1999

5. Reddy IK and MacLaughlin E. “Functioning As An Instructional Team,” New Faculty Orientation, Texas Tech School of Pharmacy, August 2000

Presentations at Professional Meetings:


38. Goskonda VR, Madiraju C, Khan MA, Hutak CM and Reddy IK. “Characterization of the Rabbit Corneal Cell Line (SIRC) as an In Vitro Model for Corneal Drug Transport Studies,” AAPS-MWR, Chicago, IL, May 1998. (Mr. Goskonda won the Best Poster Award for this presentation).


64. Reddy IK. “Active Learning in Large Classes using Quick-Thinks and Case-Based Learning,” 11th Annual Meeting, AACP, San Diego, CA, 2000


74. Reddy IK et al. “Longitudinal Model of IPPEs: Moving from IPPEs to APPEs,” AACP Annual Meeting Abstracts, Boston, MA, July 2009


INVITED PRESENTATIONS AND LECTURES


2. “Ocular Drug Delivery: Chemical Drug Targeting,” Rutgers, the State University of New Jersey, Piscataway, New Jersey, October 7, 1993


8. “Irrigating Solutions, Artificial Tear Formulations and Contact Lens Solutions: Theory and Formulation Considerations,” Ocular Drug Delivery Symposium; Seacacus, New Jersey, October 20, 1995

10. “Soft Drugs and Chemical Delivery Systems for the Eye,” Ocular Drug Delivery Symposium; Seacacus, New Jersey, October 20, 1995


14. “Clinical Management of Glaucoma,” Department of Biological Sciences, Grambling State University, Grambling, LA, February 27, 1997


25. Invited Speaker, International Conference on Molecular Chirality, Kumamoto, Japan, July 6, 2002

26. “Teaching Strategies for Active, Ability-Based Education,” New Faculty Orientation, UAMS, Fall 2002

27. “Problem-Based Life-Long Learning,” Ophthalmic Technologies Program, Jones Eye Institute, Little Rock, Spring 2003

28. Invited Speaker, Department of Pharmacology and Toxicology, Texas A&M Health Science Center, College Station, September 2004

29. “Assessment of Student Learning,” Annual Assessment Conference, Texas A&M University, College Station, February 2004

30. “Student Engagement in the Classroom,” Conference on the Scholarship of Teaching and Learning, Texas A&M University-Kingsville, Kingsville, April 2005


32. “New Education Paradigm – Challenges and Opportunities,” 61st Indian Pharmaceutical Congress, Ahmedabad, India, December 2009

33. Keynote Speaker, Annual Conference of the AAPS-Southern Regional Discussion Group (SRDG), The University of Mississippi, Oxford, May 2010


35. “Institutional Assessment – Opportunities for Programmatic Advancement,” NOVA Southeastern University College of Pharmacy, January 2012


GRANTS AND CONTRACTS

Dr. Reddy received in excess of $5M in extramural grants and contracts. Selected grants and contracts are listed below:

1. Grant Award for Scholarships for Disadvantaged Students (SDS) at Texas A&M Rangel College of Pharmacy, Health Resources and Services Administration (HRSA), Rockville, MD, ($2.4M), 2012-2016

2. University Research Awards, Texas A&M University-Kingsville, Kingsville, TX ($27,600) Role of Oxidative Stress and Skin Membrane Barrier Disruption in Ozone Induced Cardiovascular Alterations Co-Investigator, 2006

3. CV Therapeutics, Palo Alto, CA ($75,000) Development of IP Portfolio for Ranolazine 500 MG Sustained Release Tablets Principal Investigator, 2005

4. Food and Drug Administration, Division of Product Quality Research, Office of Testing and Research (through CRADA), CDER Bethesda, MD ($150,000) Creation of “Design Space” For Novel Targeted Dosage Forms Principal Investigator, 2005

5. Centers for Disease Control, Atlanta GA ($290,000) Development and Bioequivalence Estimation of Folic Acid Transdermal Delivery Systems Co-Investigator, 2004

6. The Research to Prevent Blindness Foundation, New York, NY ($15,000) Bioreversible Derivatives of Selective β2-Agonists as Potential Antiglaucoma Agents Principal Investigator, 2002

7. Alcon Labs Inc., Fort Worth, TX ($65,500) Effect of Brinzolamide on the Ocular Absorption of Concurrently Administered Topical Ophthalmic Medications Co-Investigator, 2002
8. Merck Co., West Point, PA ($62,000)
   Effect of Brinzolamide on the Ocular Absorption of Timolol
   Co-Investigator, 2002

9. American Health Assistance Foundation, National Glaucoma Research Grant, ($132,000)
   Novel Nonpeptide SST4 Agonists: Role in Glaucoma,
   Co-Investigator, 2001-2003

10. The Glaucoma Research Foundation, San Francisco ($60,000)
    Design of SST4 Agonists: Formulations Issues
    Principal Investigator, Grant-in Aid, 2001

11. Nutramax, Baltimore, MD ($33,106)
    Development of Oral Dosage Forms for Controlled-Drug Delivery
    Co-Investigator, 2001

12. Tishcon, Long Island, NY ($35,000)
    Bioavailability Assessment of Nutraceutical Products
    Principal Investigator, 2001

13. Tishcon, Long Island, NY ($75,000)
    Bioavailability of two Coenzyme Q10 Products: A Comparative Assessment
    Principal Investigator, 2000

14. Tishcon, Long Island, NY ($18,000)
    Transdermal Product Development and Evaluation
    Principal Investigator, 2000

15. Education and Cultural Bureau, Government of Egypt, Cairo, Egypt ($25,000) Postdoctoral
    training grant, October 1999

16. Nutramax Laboratories, Maryland, ($35,000)
    Development of Novel Solid Oral Dosage Forms for Controlled Drug Delivery
    Co-Investigator, 1999

17. BF Goodrich Co., Brecksville, Ohio ($65,000)
    Transdermal Permeation and Preformulation Characterization of Ketoprofen and Piroxicam
    from Formulations Containing Carbopol Gels
    Co-Investigator, 1998

18. BF Goodrich Co., Brecksville, OH ($39,000)
    Preparation and Stability Characterization of Controlled Release Formulations with Carbopol 971P
    Co-Investigator, 1997

19. Nutramax Laboratories, Baltimore, MD ($18,600)
Curriculum Vitae
Indra K. Reddy, Ph.D.

Bioavailability/Bioequivalence Studies of Coenzyme Q10
Co-Investigator, 1996

20. Nutramax Laboratories, Baltimore, MD ($30,000)
   Method Development for the Quantitative Estimation of Coenzyme Q10 in Plasma
   Principal Investigator, 1995

21. Optico, Inc., Research Triangle Park, NC ($20,000)
   Ocular Hypotensive Effects of Topically Administered Tetracyclines. II. Assessment by
   Chemical Delivery Approaches
   Principal Investigator, 1993

22. American Cyanamid Co., Pearl River, NY ($13,222)
   Establishment and Validation of In Vitro Cell Cultures to Study Drug Transport, Metabolism,
   and Preliminary Toxicity Screening of Drug Formulations
   Principal Investigator, 1993

23. Optico, Inc., Research Triangle Park, NC ($10,150)
   Ocular Hypotensive Effects of Topically Administered Tetracyclines. I. Assessment by
   Formulation Approaches
   Principal Investigator, 1992
PERSONAL INFORMATION

US Citizen
Wife - Rehana; Three children

EMPLOYMENT

Food and Drug Administration, Maryland, USA, May 2004 to present
Director, Division of Product Quality Research, Center for Drug Evaluation and Research
SBRS Scientist, August 2005 to present

Texas Tech University Health Sciences Center, School of Pharmacy:

September 2000 to May 2004
Professor of Pharmaceutics (Tenured) and Director of Graduate Program

August 1998 to August 2000
Associate Professor of Pharmaceutics and Director of Graduate Program

University of Louisiana at Monroe

July 1996 to July 1998
Associate Professor of Pharmaceutics (Tenured)

June 1992 to June 1996
Assistant Professor of Pharmaceutics

Pharmaceutical R & D

St. John's University, New York; September 1987- May 1992
Teaching and Research Fellow in Pharmaceutics

Biological Evans Pharmaceutical Company; Sept 1985- July 1986
Research and Development Scientist
EDUCATION

Ph.D. in Pharmaceutics (focus on industrial pharmacy and biopharmaceutics), May 1992, St. John's University, College of Pharmacy and Allied Health Professions, New York.


M.S. in Pharmaceutics (focus on physical pharmacy and drug delivery systems), January 1988, Idaho State University, Idaho.

M.S. in Pharmaceutical Technology, June 1984, Andhra University, India

B.S. in Pharmacy, July 1982, Kakatiya University, India.

PROFESSIONAL LICENSURE

Registered Pharmacist. NY State Lic. # 44017 - Active

SEMESTER-LONG COURSES TAUGHT

Advanced Pharmaceutics, Industrial Pharmacy (Manufacturing Science), Product Formulation, Biopharmaceutics, Pharmacokinetics, and Drug Stability to MS and Ph.D. students.

Biopharmaceutics/Pharmacokinetics, Pharmaceutical and Clinical Calculations, Pharmaceutics (1, 2, and 3), and Pharmaceutics and Compounding Laboratories to Pharm.D. students.

PEER-REVIEWED MANUSCRIPTS (*indicates corresponding author)


189-198.
terbutalone in rabbits. *Drug development and industrial pharmacy*, 27(2), 137-141.


110. Nutan M.T., Soliman, M.S., Taha, E. I., & Khan, M. A. *. Optimization and


145. Yang, Y., Faustino, P. J., Progar, J. J., Brownell, C. R., Sadrieh, N., May, J. C., ... &


152. Xiang, D., Berry, J., Buntz, S., Gargiulo, P., Cheney, J., Joshi, Y., ... & Khan, M. A. *. Robust calibration design in the pharmaceutical quantitative measurements with near-infrared (NIR) spectroscopy: Avoiding the chemometric pitfalls. *Journal of pharmaceutical sciences*, (2009), 98(3), 1155-1166.


170. Yang, Y., Gupta, A., Carlin, A. S., Faustino, P. J., Lyon, R. C., Ellison, C. D., ... &


183. Wu, H., & Khan, M. A. *.* Quality-by-design: An integrated process analytical


196. Rahman, Z., Zidan, A. S., Berendt, R. T., & Khan, M. A. *.


198. Zidan, A. S., Rahman, Z., & Khan, M. A. *


200. Xu, X., Khan, M. A. *, & Burgess, D. J.


THz spectroscopy: An emerging technology for pharmaceutical development and pharmaceutical Process Analytical Technology (PAT) applications. *Journal of Molecular Structure*, 1020, 112-120.


208. Khan, M. A*.
FDA: Contribution to developing pediatric formulations and transatlantic collaboration. *International journal of...*
pharmaceutics, 435(2), 146-148.


(0), 1-5.


267. Xu, X., Al-Ghabeish, M., Rahman, Z., Krishnaiah, Y. S., Yerlikaya, F., Yang, Y.,


BOOKS


BOOK CHAPTERS


**INVITED ORAL PRESENTATIONS IN NATIONAL/INTERNATIONAL CONFERENCES**


8. Optimization Approach for Experimenters; A Case Study. Seminar in the Division of Pharm/Tox. and Med. Chem/Pharmaceutics at Northeast Louisiana University.


10. Development and Bioavailability Studies of a Photolabile Solid Oral Dosage
Form. Seminar presented at the Nutramax Laboratories, Maryland, 1997.


18. Preparation and Optimization of Aqueous-Based Cellulose Acetate Coatings For Pharmaceutical Systems, Texas Tech University School of Pharmacy, 2000


20. Aqueous-Based Dispersions in Pharmaceutical Product Development: A Case Study. Department of Chemical Engineering, School of Engineering, Texas Tech University, Lubbock, TX. 2002


25. Oral Delivery of Proteins with Ovomucoids: A Case Study. Presented at Texas Medical Center, Houston in April 2003


28. A Dual Controlled Release Formulation of Insulin with Ovomucoids: Presented
in the Annual Research Day, School of Pharmacy, Texas Tech University on June 2, 2003.


31. Nanoparticles and CMC Challenges, Nanoparticles Expert Working Group, FDA, 2004

32. cGPM Initiatives and Critical Path Research, University of Rhode Island, Nov, 2004

33. Science-Based Regulatory Environment in FDA: Modern Approaches, Texas A&M University, 2005

34. Identification of critical factors in product development, PDA national meeting, Washington D.C., 2005

35. Fundamentals of design space, Chemometrics working group, FDA, 2005


37. Failure Mode Effect Analysis of controlled release products. Evaluation of Dose Dumping with alcohol. FDA/CDER/OPS, 2005

38. Research in OTR for Product/Process Understanding, FDA Pharmaceutical Inspectorate, Office of Regulatory Affairs2005

39. Regulatory Perspectives on Particle Size Distributions, Bioavailability, and Meaningful Specifications. AAPS National meeting roundtable, Nashville, Tennessee, 2005

40. Pharmaceutical coating operations: Challenges and opportunities in the changing regulatory paradigm. AiChE Annual Meeting, Nov, 2005

41. Product Quality Research in DPQR. Oncology Drug Product Review Divisions, OND, FDA. 2005

42. Fundamentals of Quality by Design. Office of New Drug Quality Assessment, CDER, FDA., Dec, 2005


46. Repackaging of Unit Dose Products: Scientific and Regulatory Concerns: Office of Compliance. 2006

47. Quality by Design – Science and Regulatory Issues. Center for Veterinary Medicines. 2006

48. The science of quality by design. Office of Pharmaceutical Sciences. FDA. April 2006 changes

49. Quality by Design in the 21st Century – The science and regulatory
perspectives: Novartis Pharmaceuticals, May 2006
55. Dose dumping with alcohol, Science Rounds, Center for Drug Evaluation and Research, Food and Drug Administration
56. Shelf Life Extension of Critical Products, Office of Commissioner, Food and Drug Administration,
57. Consequences of Repackaging on Stability, Office of Compliance, Food and Drug Administration, Sept 25, 2006
59. Pharmaceutical Research in FDA, Division of Biostatistics, FDA
60. The role excipient in bioavailability changes, AAPS National Meeting, San Antonio, TX, November, 2006
64. Product quality research perspectives: OPS DD, Center for Drug Evaluation and Research, December 1, 2006
68. Controlled release microparticulates for parenteral administration, Controlled release society workshop, San Diego, CA, July 2007
69. Quality by Design and Specification Perspectives, International Meeting at
76. A Quality by Design Perspective to Prevent Dose Dumping, University of Maryland at Baltimore Seminar Series, December 5, 2007.
77. Drug Shelf-life, Expiration Date, and SLEP, CDER Science Rounds by Office of Counter Terrorism and Emergency Coordination, December 12, 2007.
81. FDA functions and needs for critical path research, Sept 2008, Hacettepe University, Turkey.
82. The NDA trends: Importance of FDA initiatives, Controlled Release Society Workshop, July 12, New York.
85. The science and regulatory perspectives of Quality by Design, Center for Veterinary Medicine, FDA, June 11, 2008.
86. Multi-particulates systems versus single units, a regulatory perspective and preferences, April 28, 2008, Orlando, Florida.
87. Science and regulatory perspectives of poorly soluble compounds, Charles Jarowski Industrial Pharmacy Symposium, St. John’s University, NY, June 2008.
88. Describing Design Space Concept, Nov 14, AAPS/CRS workshop in Atlanta,
90. Dose dumping with alcohol: Some pharmacokinetic simulations: AAPS short course on modeling and design of dosage forms, Nov 11, 2008, Atlanta, Georgia.
91. Pharmaceutical nanoparticles: Current design concepts and regulatory challenges, AAiPS National Meeting, Atlanta, Georgia, 2008
92. Formulation Design and Development, Goals and Strategies. AAPS National Meeting, Atlanta, Georgia, 2008,
93. Regulatory aspects of sterile controlled release long acting products,
94. Linking Drug Product Quality to Clinical Performance, Drug Information Agency Workshop, Bethesda, Maryland, Feb 17, 2009
95. Quality by Design, FDA perspectives on control strategy, University of Wisconsin LandOLake Annual Workshop, June 2009, Committed.
103. Design of experiments. Inspectorate training for level 3. FDA/CDER, March 2010
106. Research related to formulations and product stability, Advisory Committee for pharmaceutical sciences, April 14, 2010
108. Pharmaceutical innovations in the 21st century. Some science and regulatory perspectives. SRDG-Malto in Olemiss, MS
109. Protein formulations: Some science and regulatory perspectives, AAPS Eastern Regional Discussion Group, April, 2010
110. The FDA point of view on quality by design, Vienna, Austria, May 19, 2010
111. Pediatric formulations: Some physicochemical and pK considerations in
FDA:NIH collaboration, Vienna, Austria, May 20, 2010
112. Hot Melt Extrusion: An FDA perspective on product and process understanding,
113. Applications of Innovative Technologies in Advanced Drug Delivery and
Formulations. Invited. International Pharmaceutical Technology Symposium,
Antalya, Turkey, 2010.
114. The Science and Regulation of Lyophilization: An FDA Perspective, IQPC
Conference, Brussels, Belgium, Jan 24, 2011.
115. Evaluation and Characterization of Tannate Containing Products for Extended
Release: Office of Compliance, FDA White Oak, Jan 28, 2011.Boston, March 14
116. Some challenges and design of novel pediatric dosage forms, CDER Case
Scientific Seminar, April 6, 2011
117. Regulatory Research program in the Division of Product Quality Research, OTR
Science Day, April 7, 2011.
118. Process Understanding for Protein Products Via QBD Application: An FDA
Perspective, AAPS National Biotech Symposium, May 18, 2011
119. DOE, Pharmaceutical Inspectorate, Rockville, June 8
120. Quality by Design: Science and Regulatory Aspects: 5th Annual Charles
Jarowski Symposium, St. Johns University, NY, June 20, 2011.
121. Critical Path Research for Process Scale-up and Stability – Background for a
Gabapentin Case Study, NIPTE Conference, Maryland, June 15, 2011.
122. Division of Product Quality Research Program and Opportunities for
Collaborations: DPA St. Louis, June 27, 2011
123. Tacrolimus Products: A Product Quality Review and Laboratory Research:
Office of Generic Drugs, Postmarketing Safety Team, July 11, 2011
124. DPQR Research to Support the Office of Generic Drugs, Advisory Committee
for Pharmaceutical Science and Clinical Pharmacology, FDA, July 26, 2011
125. Evaluation of the effect of tableting variables on drug stability: A case study with
gabapentin: FIP International Conference, Hyderabad, India, Sept 3-8, 2011
126. Tablet Splitting: Implications of compositional and compressional factors on
dose variability.
127. FDA: Contribution to developing pediatric formulations and transatlantic
collaboration: EUPFI, Strasbourg, France, Sept 22, 2011
128. Novel Formulations: An FDA perspective on the design and development, AAPS
129. Scientific Approach for the Development of Pediatric Formulations, NIH/NICHD
Workshop, Bolger Center, Maryland, Nov 1-2, 2011.
130. Formulation strategies for the pediatric dosage forms, FDA/CDER case
workshop, Maryland, Nov 7, 2011.
131. Pediatric formulations update: NIH BPCA Conference, Rockville, Nov 8-9,
2011.
134. Chemistry and manufacturing challenges of nanoformulations, AAPS Arden House Conference, March 11-14, West point, NY.
135. Regulatory Research Program in the DPQR. ORA/CDER retreat, March 30, FDA Silver Spring, MD.
136. Highlights of the selected research projects in DPQR. OPS/OTR presentation, April 6, 2012, Silver Spring, MD.
137. Advancing pediatric formulations: An FDA perspective: AAPS Student Chapter, University of Tennessee, Memphis, TN., April 9, 2012.
138. FDAs role in product development. Texas A&M, College Station, TX- April 18, 2012.
140. DPQR research on medical counter measures. BARDA, Washington DC, May 14, 2012.
142. Safety and efficacy challenges in Excipient Substitutions in Drug Formulations, NIPTE Research Conference, Maryland, June 13, 2012
144. Risk management for concomitant administration of ER dosage forms with alcoholic beverages – The issue and resolutions; Montreal, Canada, July 14-15, 2012
145. Challenges and opportunities of developing pediatric products: An FDA perspective. EUPFI Keynote presentation, Prague, Czech Republic, Sept 19-20, 2012
147. Role of dissolution testing in the regulating agencies: New ideas; AAPS Workshop, Chicago, IL., Oct 13-14, 2012
2012


162. Some Challenges and Opportunities for Future Pharmacists, Plenary Speaker, R-Chi Inititation, St. Johns University, New York, May 24, 2013.

163. FDA Research in Pharmaceutical Sciences and Collaborative Opportunities with Academia, Distinguished Speaker Presentation, Texas Tech University Health Science Center, June 7, 2013


172. Some recent examples of product and process understanding in CDER, IFPAC, 2014
173. Enhanced product and product understanding for better therapeutic outcomes: A FDA perspective, Garnet Peck Symposium at Purdue University, March 8, 2014
174. OPQ Transition team: Product Quality and Failure Modes of Several products, Feb 18, 2014.
175. Abuse Deterrent Formulations- Science-Based Policy Development- OND staff, Jan 17, 2014.
176. Challenges of a stockpiled pediatric product. Feasibility studies with pediatric product of oseltamivir phosphate: Medical countermeasures regulatory science symposium, June 2, 2014
177. Particle engineering and particle size; A FDA perspective, LandOLake Conference, Wisconsin, June 12, 2014.
178. Abuse deterrent formulations: Briefing to Commissioner Hamburg: June 5, 2014
179. PQFact: Connecting warfarin dots for patient safety: Center Director Briefing, Aug 8, 2014.
183. Regulatory perspective for development of oral formulation for special populations, AAPS National Meeting, San Diego, Nov 2014
185. Formulations science to support regulatory actions: CDER Science Day, Feb 3, 2015, FDA Headquarters, Silver Sprongs, MD.
187. Enhancing confidene in pharmaceutical, biological, and therapeutic equivalence NIPTE Annual Meeting, Shady Grove, April 30, 2015
188. Pediatric formulations and new excipients: Excipientfest at Puerto Rico, April 28 2015
189. Formulation science to support innovations and therapeutic outcomes: Texas A&M Health Science Center, Rangel College of Pharmacy, College Station,
March 5, 2015


192. 3D Printed tablets – Review and inspection experience. FDA Emerging Technology Team Meeting, June 23, 2015

193. Lyophilization – Modernization with FDA internal research: Presented to Center for Biological Evaluation and Research (CBER) on June 30, 2015, FDA Headquarters, Silver Springs, MD


POSTER PRESENTATIONS


35. Siddiqui A, Rahman Z, Khan M. A. Application of the quality by design approach to evaluate nimodipine crystallization from the ternary co-solvent system. *Annual Meeting of AAPS, San Antonio, USA, Nov 10-14, 2013*


39. Krishnaiah Y.S.R., Yongsheng Y., Carlin A.S, Khan K. M, Vera M. D, Yuping N., Vilayat S. A, Khan M. A., In vitro binding capacity of colesevelam hydrochloride tablets with sodium salts of glycocholic acid (GC), glycochenodeoxycholic acid (GCDA) and
taurodeoxycolic acid (TDCA), *AAPS Annual meeting and Exposition, Chicago, IL, USA, October 14-18, 2012*


49. Xu. X, **Khan M. A.**, and Burgess D., Quality by design approach to understand formulation and processing variability of tenofovir liposomes. *AAPS Annual Meeting, Washington DC, October 24-27, 2011*


58. Xu X., Khan M. A., and Burgess D, Application of QbD concepts to the development of liposome formulations containing a hydrophilic API. UConn-Peking University Summer Study Abroad Program, Peking University, May 28th, 2010.


**US PATENTS**

4. Dual Controlled Release Formulation of a Protein and Inhibitor. US Patent pending. (TTU D-0316 Khan)

**RESEARCH GRANTS**

**Grants Funded as Principal Investigator:**
Over ten million dollars worth of peer- and non-peer reviewed grants, contracts, and equipment have been obtained from federal government, Texas Higher Education Coordinating Board, pharmaceutical and excipient industries, and the Texas Tech University. The industries supporting our publishable research included Wyeth-Ayerst, BFGoodrich (Novean Inc.), DeGussa, Novartis, Pfizer, Alcon, BASF/Knoll, Nutramax, CV Therapeutics, and Plumcreek Pharmaceuticals. Some of the grants are listed below:

1. Evaluation of Several Factors for the Release of a Model Protein from Gel Formulations Prepared with Novel Polymers, Advanced Technology Group, Novean Inc. (formerly BFGoodrich Company), Brecksville, Ohio, USA.
2. Development of Novel Solid Oral Dosage Forms for Controlled Drug Delivery, Nutramax Laboratories, Maryland, USA

3. Surface Roughness Quantification of Pharmaceutical Dosage Forms, ATP/ARP, Texas Higher Education Coordinating Board. Ranked 11 out of 4000 proposals, Funding Rate 14%
4. Preparation and Evaluation of Super-Disintegrating Naloxone Tablets for Compounding Use, Plumcreek Pharmaceuticals, Texas, USA
5. Transport and Permeation Studies of Salmon Calcitonin for Oral Drug Delivery, Center for Osteoporosis. TTUHSC, Texas, USA
6. Dosage Form Development of Alternate Product Based on Process Variable Studies for Ranolazine SR Tablet, CV Therapeutics, CA. USA
7. Intellectual Property Development of Ranolazine 500 SR tablets, CV Therapeutics,
11. Absorption Enhancement of a Model Protein/Polypeptide from the Gastrointestinal Tract of Rats, BF Goodrich Co., Brecksville, Ohio.
13. Center for Advanced Drug Delivery and Formulations, Texas Tech University Health Sciences Center
14. Co Principal Investigator of four recent grants from Office of Women’s Health and the Office of Translational Science in the US FDA.
15. Co-Principal Investigator: Implications of tablet splitting. US FDA
18. FDA Principal Investigator: Development of guidance elements for quality by design of liposome preparations. US Food and drug Administration, Critical Path Grant. 2008, Direct costs: 250k
20. FDA Principal Investigator: Department of Health and Humans Services. Comparative Evaluation of the Quality and Bioavailability of Complex Products: Direct Costs: $350k
21. FDA Principal Investigator: Approach to the understanding and predicting excipient properties and functionality, 2010: Direct Costs: $240k
22. FDA Principal investigator: Technologies for drug safety risk assessment modeling and simulation. US Food and Drug Administration, Office of generic Drugs, 2010, Direct Costs: $457k
25. FDA Principal Investigator: Development of QBD guidance elements on design
space specifications across scales with stability considerations: Influence of physics of tablet compression, 2010. Direct Costs: $99.5 k

26. FDA Principal Investigator: Application of concepts of process analytical technology and quality by design of mammalian cell culture production bioreactor unit operation utilized for production of human therapeutics, 2010: Direct Costs: $99.5k

27. Principal Investigator: Development of Pediatric Platforms, NIH/NICHD, Direct costs: 525 k, 2010-2012


30. Manufacturing and analytical infrastructure to support product quality requirements for drug products that treat internal radioactive metal contamination, pandemic flu, and acute radiation syndrome or other crisis incident. MCM Grant, US Food and Drug Administration. Direct Costs: 884k

31. Principal Investigator: MCM Grant, US Food and Drug Administration, Development of infrastructure for the development of emergency medical counter measures: Direct costs, $ 1.3 million, 2011-2013


35. Collaborator: Impact of controlled ice nucleation during freezing on lyophilized monoclonal antibody products quality. RSR Grant, US Food and Drug Administration, Direct Costs, 19k


37. Collaborator: Quantification of drug retained in the skin after removal of estradiol transdermal drug delivery systems used in hormone replacement therapy, US Food and Drug Administration, Direct Costs, 99.8k
AWARDS AND HONORS IN FDA

FDA/CDER 2014: Regulatory Science Excellence Award. Chemometric methods for tacrolimus crystallinity

FDA 2013: FDA Group Recognition Award. Unapproved Cough, Cold, and Allergy Enforcement Group

FDA 2013: FDA Group Recognition Award. CDER QBD and PAT Workshop Planning and Advisory Committee

FDA 2012, CDER Team Excellence Award for development of Post Approval Chewable Tablet Policies

FDA/CDER 2012, Team Excellence Award for size of beads in products labelled for sprinkle

FDA/CDER 2012: Team Excellence Award: Phthalates as excipients in CDER regulated products

FDA 2012, FDA Group Recognition Award for the creation and launching of FDA’s Strategic Plan for Regulatory Science

FDA 2010, CDER Team Excellence Award for development of a new dissolution method to demonstrate bioequivalence of Vancomycin hydrochloride to allow submissions of ANDA

FDA 2008, CDER Center Director’s Special Citation for exemplary performance in providing innovative and emerging science to CDER

College of Pharmacy Excellence Award, 2008, Texas A&M Health Science Center.

FDA 2007 CDER Team Excellence Award for outstanding efforts in identifying the impact of tablet splitting on product stability (June 8, 2007)

Outstanding ALUMNUS award for career achievements at St. John’s University, New York convocation held in July 2007

Sigma Xi Outstanding Poster Winner (Coauthor) in FDA “Imaging-Based Algorithms for Determining the Uniformity of Drug Products and Blends.” (April 20, 2006).

Team Excellence Award for outstanding efforts in identifying a potentially fatal alcohol related adverse reaction with Palladone in CDER, FDA (2005).

Team Excellence Award for outstanding performance in CDER Visiting Professor Lecture Series, CDER/FDA, 2005

FDA Member/Representative

Serve as FDA representative to EMA (pediatric working group, and pediatric formulations committee), WHO (generic product quality and pediatric guidelines committee), USP (expert panel on dosage forms, FIP (Program chair and Keynote Speaker), DOD/DARPA (continuous manufacturing advisory panel) and grant evaluations panel, Clinton HIV/AIDS panel (dosage forms expert), NIH (PI in the FDA:NIH IAG) and several study sections, and NASA (PI of the recent FDA:NASA Research Collaboration Agreement).

Novartis-FDA Cooperative Research Agreement for a Case Study in Quality by Design (Principal Investigator), 2006-2010

Investigator for the FDA:Pfizer CRADA on Process Analytical Technologies

FDA Liaison/Principal Investigator for National Institute of Pharmaceutical Technology and Education (NIPTE, Director Prabir Basu). Helped form NIPTE at its inception

FDA Liaison for Engineering Research Center (ERC) at Rutgers University; Helped for this group with participation in their first NSF Grant, (Director, Fernando Muzio),

FDA representative to the Center for Pharmaceutical Processing Research (Consortium of several universities), and several other University contracts

Several workshops in USA, Switzerland, London, France, Germany, Austria, Czech Republic, Canada, China, India, and Turkey (Served as Chair or Member of Planning Committees or speaker).

EDITORIAL ADVISORY BOARD

International Journal of Pharmaceutics
AAPSPharmSciTech
Controlled Release Society Journal
Pharmaceutical Technology
Advisory Panel, Drug Delivery 2006

MANUSCRIPT REVIEWER

International Journal of Pharmaceutics
Pharmaceutical Research
Journal of Pharmaceutical Sciences
Journal of Controlled Release
Pharmaceutical Technology
Journal of Biopharmaceutics and Drug Disposition
Pharmaceutical Development and Technology
Journal of Microencapsulation
Journal of Pharmacy and Pharmacology
International Journal of Obesity
Drug Development and Industrial Pharmacy
Biomaterials
Journal of Clinical Research and Regulatory Affairs
European Journal of Pharmaceutical Sciences
American Pharmaceutical Association (APhA)
Chemometrics and Intelligent Laboratory Systems
Journal of Colloid Science
AAPS Journal
AAPSPharmSciTech
Chemometrics and Intelligent Laboratory Systems

REVIEWER/INTERNATIONAL EXAMINER

DARPA Pharmacy on Demand, BAA-DARPA-11-05
DARPA Biologically-Derived Medicine on Demand BAA-DARPA-12-37
Bill and Melinda Gates Foundation
NIH, New Zealand
University of Dunedin, Otago, New Zealand
National Institute of Pharmaceutical Education and Research, Chandigarh, India
Al-Azhar University, Alexandria, Egypt
Andhra University, India

FDA Courses Completed
Investigational New Drugs (INDs) Review Course
New Drug Application (NDA) Review Course
Basic Drug Law
Pharm Inspectorate Certification-
Generic Drugs Review: February
US Government Project Officer Certification
Leadership Skills Course
Introduction to CBER Premarket Review Program
Good Manufacturing Practices
Enterprise Search
Equal Opportunity Employee Training
Gastro-Plus/Admet Predictor
FDA Biologic Drug Laws
Design of Experiments
U-Metrics (for multivariate statistical process control)
Several others..

LIST OF PODIUM/POSTER PRESENTATIONS IN NATIONAL MEETINGS


44. S. Nazzal and M. Khan, Optimization of Controlled Release Coenzyme Q10 Self-Nanoemulsified Tablet Dosage Form, AAPS Annual Meeting, Toronto, 2002.


98. Quality-by-Design (QbD), Part II: An Integrated Multivariate Approach for the


114. Xu X., Khan M. A., and Burgess D., A Quality by Design (QbD) approach to understand liposomal formulations containing a hydrophilic compound. Globalization of Pharmaceutics Education Network (GPEN) Meeting, University of North Carolina at Chapel Hill, NC, Nov 10-12, 2010

115. Xu X., Khan M. A., and Burgess D, Application of QbD concepts to the development of liposome formulations containing a hydrophilic API. UConn-Peking University Summer Study Abroad Program, Peking University, May 28th, 2010


140. Xu X., Gupta A., Sayeed V., and **Khan M. A.,** Process Analytical Technologies to Understand the Disintegration Behavior of Alendronate Sodium Tablets. *FDA Science Day Poster Session, Silver Spring, MD, September 17, 2013*


149. Siddiqui A, Rahman Z, Khan M. A. Application of the quality by design approach to evaluate nimodipine crystallization from the ternary co-solvent system. *Annual Meeting of AAPS, San Antonio, USA, Nov 10-14, 2013*


LEADERSHIP IN PROFESSIONAL ORGANIZATIONS

1. NIH Study Section, Eunice Kennedy Shriver NICHD, ZHD1 DSR-K (PT), 2009, 2010, and 2011, BTSS section, 2013
2. DARPA Peer review Committee; 2012
3. DARPA Advisory Committee for continuous monitoring
4. Program Co-Chair, Tableting Variables, FIP International Conference
5. Planning Committee Member and Moderator, Charles Jarowski Sympoium, ST. Johns University, NY, June 2010
6. AAPS awards committee member, 2014.
7. Fellows Committee Chair, FDD, AAPS, 2010
8. Fellows Committee Member, AAPS National Committee, 2010
9. Panel Member, Quality by Design Workshop, European Compliance Agency, Austria, May, 2010
10. Member planning committee for the AAPS/FDA workshop on simulations, Bethesda, MD, 2010
11. Member, planning committee for international workshop on excipients by United States Pharmacopoea, 2009
12. Moderator and Co-Chair, AAPS Workshop on Quality by Design in Analytical Sciences, 2008
13. Moderator and C0-Chair, FIP International workshop in Basel, Switzerland, 2008
16. Moderator and Co-Chair, Charles Jarowski Symposium, St. Johns University, NY, June 2008
17. Moderator and C-Chair, International Pharmaceutical Technology Symposium (IPTS), Antalya, Turkey, Sept 2008
18. Moderator, AAPS Round Table on Quality by Design, AAPS National Meeting, November 13, 2007
20. Elected Chair of the Pharmaceutics and Drug Delivery Section of the AAPS, 2007.
21. Founding Chair, AAPS Formulations Design and Delivery Section, 2008
22. Planning Committee Member, Controlled Release Society Workshop, CA, 2007
23. Planning Committee Member, AAPS Workshop on Stability, 2007
24. International Federation of Pharmacy (FIP), Organizing committee member, 2006
25. AAPS National Distance Learning Committee, 2004-2006
29. Chair, AAPS Symposium on "Current trends in Aqueous-Based Coating Dispersions", AAPS National Meeting, Indianapolis, 2000
31. AAPS Task Force, 1999
33. General Chair, AAPS Midwest Regional Meeting at Chicago for 1998.
34. Vice General Chair, AAPS Midwest Regional Meeting at Chicago, 1997.
35. PT (Pharmaceutical Technology) Chair, AAPS Midwest Regional Meeting at Chicago in 1996.
36. PT (Pharmaceutical Technology) Vice Chair, AAPS Midwest Regional Meeting at Chicago in 1995.
37. Moderator and Poster Judge, AAPS Midwest Regional Meeting at Chicago in 1995.
38. PT (Pharmaceutical Technology) Section Member, AAPS Midwest Regional Meeting at Chicago in 1994.

MAJOR ADVISOR FOR DISSERTATION/THESIS RESEARCH

Ph.D. Graduates/ Students

1. Vijay K. Tammara, 1993. Vijay has successfully completed his Ph.D. and is currently employed as a Vice President of EnronBiotech, USA. Prior to that he was Director at Merck, PA.
2. Anees A. Karnachi, 1992-1996. Anees has graduated in May 1996 and is currently employed as a Principal Scientist in R&D at Johnson and Johnson, NJ
3. Shailesh K. Singh, 1992 to 1996. He was the PI of first QBD application that was submitted and got approved in FDA from Wyeth.
4. Srikonda V. Sastry, 1993 to 1997. Srikonda has graduated in December 1997. He is currently working as a Director of Xenoport, CA.
5. Vikas Agarwal, 1996-2001. Vikas is currently a Director in a start-up company in Boston. Prior to that, he was an Associate Director at Cima Laboratories, Minneapolis.
6. Siva Vaithyalingam, 1997-2001. Siva is currently working as a director at Teva Pharmaceuticals in NJ. Prior to that, he worked as Reviewer in FDA.
7. Sami Nazzal, 1997-2002. Sami’s research involved a novel eutectic-based self-nanoemulsifying drug delivery system of an extremely lipophilic model compound. He is an Associate Professor of Pharmaceutics at University of Louisiana at Monroe.
10. Mohammed Nutan. 2000-2004. Nutan’s project involved the development and application of starch acetate as a film forming agent for controlled drug delivery. Currently employed as an Associate Professor of Pharmaceutics at the Texas A&M College of Pharmacy.

Served and/or continue to serve as the on-site advisor for graduate students (Crystal
Spinks, Meghan Durette, Ahmed Zidan, Vikas Moolchandani, Blessing Enagbare, Jarrod Collier, David Awotwee, Xiaoming Xu, and Antonio Costa) and several post docs (Robert Berendt, Ahmed Zidan, Ziyaur Rahman, Kuangshi Wu, David Awotwee, Srikant Bykadi, Stuart Cantor, Akhtar Siddiqui, Xiaoming Xu, Manar Al-Ghabeish, Himanshu Gupta, Prashant Mande, Naresh Paravula, Lijang Yang, Yang Zhao, and Maxell Keobang).

**Master's Student**
Poonam A. Manji, M.S. in 1993. Poonam is currently employed by the Bristol-Myers Squibb Company in the Pharmaceutical Research and Development Division

**CO-ADVISOR FOR DISSERTATION/THESIS RESEARCH**
Several MS and Ph.D. students in University of Louisiana at Monroe, Texas Tech. Howard University, University of Rhode Island, and University of Connecticut.

**Committees at FDA**

- Office of Pharmaceutical Quality Transition Team
- CDER Knowledge Management Team
- CDER OGD Life Cycle Management Board
- CDER Emerging Technology Team
- CDER Opioid Task Force
- OPS Risk Assessment Audit Team
- ORA-CDER Strategic Compliance Science Team
- CDER representative on Broad Agency Announcement Proposal Evaluations
- Office of Pharmaceutical Science Coordinating Committee
- Manufacturing Science Committee, Office of Pharmaceutical Science
- Office of Pharmaceutical Science Division Directors Committee
- Committees for regulatory action on several products
- Council of Scientific Enhancement (CASE), Center for Drug Evaluation and Research
- Chemometrics working group
- Reviewer and Inspectors Training
- Safety evaluation of transdermal patches
Nanotechnology working group
Career planning and promotion committee (in CDER and CDRH)
Dose dumping working group
Split tablet working group
Chewable Tablet working group
Sprinkled products working group
ORA:CDER Strategic visioning group
Shelf-life Extension Program (SLEP)
Research Scientists Peer Review Committee
Levothyroxine working group in CDER
Tannate Products Working Group
Repackaging Products Working Group
Postmarketing Safety Working Group.
Serving as lead reviewer to review an emerging technology application
Serving as a tertiary reviewer for generic Abuse Deterrent Formulations
# CURRICULUM VITAE

**NAME:**  
David Edward Potter, Ph.D., FARVO

**HOME ADDRESS:**  
976 E FM 628.  
Riviera, TX 78379

**OFFICE ADDRESS:**  
Department of Pharmaceutical Sciences  
1010 W. Ave B, MSC 131  
Kingsville, TX 78363

**DATE:** August 20, 2015

**PHONES:**  
770-316-1743 (M)  
361-297-5154 (H)

**CITIZENSHIP:** United States

## EDUCATION:

<table>
<thead>
<tr>
<th>Institution/Location</th>
<th>Years</th>
<th>Degree/Date</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Lubbock, TX</td>
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<tr>
<td>Kansas City, KS</td>
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## FACULTY APPOINTMENTS:

<table>
<thead>
<tr>
<th>Years</th>
<th>Rank</th>
<th>Institution</th>
<th>Department</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>1969-1970</td>
<td>Instructor</td>
<td>University of Texas Medical Branch, Galveston, TX</td>
<td>Pharmacology/Toxicology</td>
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</tr>
<tr>
<td>1970 - 1975</td>
<td>Assistant Professor</td>
<td>University of Texas Medical Branch, Galveston, TX</td>
<td>Pharmacology/Toxicology</td>
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</tr>
<tr>
<td>1975 - 1976</td>
<td>Associate Professor</td>
<td>University of Texas Medical Branch, Galveston, TX</td>
<td>Pharmacology/Toxicology</td>
<td></td>
</tr>
<tr>
<td>1976 - 1981</td>
<td>Associate Professor</td>
<td>Texas Tech University Health Sciences Center, Lubbock, TX</td>
<td>Pharmacology/Therapeutics</td>
<td></td>
</tr>
<tr>
<td>1981 - 1985</td>
<td>Professor</td>
<td>Texas Tech University Health Sciences Center, Lubbock, TX</td>
<td>Pharmacology/Toxicology</td>
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<tr>
<td>1985 - 1987</td>
<td>Adjunct Professor</td>
<td>University of California at Irvine, Irvine, CA</td>
<td>Ophthalmology</td>
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<tr>
<td>1987 - 1990</td>
<td>Adjunct Professor</td>
<td>Baylor College of Medicine, Houston, TX</td>
<td>Biotechnology</td>
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<tr>
<td>1991 - 2002</td>
<td>Adjunct Professor</td>
<td>Clark Atlanta University, Atlanta, GA</td>
<td>Biology</td>
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<tr>
<td>1990 - 2002</td>
<td>Professor</td>
<td>Morehouse School of Medicine, Atlanta, GA</td>
<td>Pharmacology/Toxicology</td>
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<tr>
<td>2002 - 2007</td>
<td>Professor</td>
<td>Medical University of SC, Charleston, SC</td>
<td>Ophthalmology</td>
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<tr>
<td>2007-2013</td>
<td>Professor Emeritus</td>
<td>Medical University of SC, Charleston, SC</td>
<td>Ophthalmology</td>
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<tr>
<td>2011</td>
<td>Instructor</td>
<td>Technical College of the Low Country, New River Campus, SC</td>
<td>Anatomy/Physiology</td>
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<tr>
<td>2013-Present</td>
<td>Professor</td>
<td>Rangel College of Pharmacy, Kingsville, TX</td>
<td>Pharmaceutical Sciences</td>
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## OTHER EXPERIENCE:

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<tr>
<td>1960 - 1964</td>
<td>Research Assistant</td>
<td>Parke Davis and Co., Ann Arbor, MI</td>
<td>Pharmacology</td>
</tr>
<tr>
<td>1964 - 1965</td>
<td>Junior Scientist</td>
<td>Alcon Laboratories, Fort Worth, TX</td>
<td>Pharmacology</td>
</tr>
<tr>
<td>1981 - 1985</td>
<td>Director of Undergraduate</td>
<td>Texas Tech University Health</td>
<td>Administration</td>
</tr>
<tr>
<td>1985 - 1987</td>
<td>Director of Biological Sciences</td>
<td>Allergan Pharmaceuticals, Irvine, CA</td>
<td>Administration</td>
</tr>
<tr>
<td>1987 - 1990</td>
<td>Vice President/Director of Ophthalmic Research</td>
<td>Houston Biotechnology Inc., The Woodlands, TX</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>1991 - 1999</td>
<td>Director of Graduate Biomedical Education</td>
<td>Morehouse School of Medicine, Atlanta, GA</td>
<td>Administration</td>
</tr>
<tr>
<td>1990 - 2002</td>
<td>Chairperson</td>
<td>Morehouse School of Medicine, Atlanta, GA</td>
<td>Pharmacology/Toxicology</td>
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<tr>
<td>2013 - Present</td>
<td>Chair</td>
<td>Rangel College of Pharmacy</td>
<td>Pharmaceutical Sciences</td>
</tr>
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</table>

## MEMBERSHIPS IN PROFESSIONAL/SCIENTIFIC SOCIETIES:

- American Society for Pharmacology & Experimental Therapeutics (Elected)
- Sigma XI
- Society for Experimental Biology & Medicine
- The Endocrine Society (Elected)
- Association for Research in Vision & Ophthalmology (Gold Fellow, FARVO)
- Research Society on Alcoholism (Elected)
- International Society for Eye Research (Elected)
- Western Pharmacology Society
- International Society of Ocular Toxicology
- American College of Clinical Pharmacology
- American Association of Gravitational Biology
- American Association of Pharmaceutical Scientists

## GRANTS/AWARDS:

**University of Texas Medical Branch**

07/01/69 - 08/31/72
NS07700-05, $ (Co-I: Biochemical nature of action of epinephrine)

01/01/72 - 10/31/73
DHEW SOI-RR-05427, $ (Pl: Characterization of the adrenergic receptor for glucagon release in normal and alloxan-diabetic rabbits)

05/01/74 - 06/01/75
Smith, Kline and French, $ (Co-I: Evaluation of the baboon as a model for man in drug-induced metabolic responses)

02/01/75 - 06/01/75
Smith, Kline and French, $ (Co-I: Human asthmatic subjects and the evaluation of metaproterenol and carbuterol)

**Texas Tech University Health Sciences Center**

10/01/76 - 02/129180
AA02371 NIAAA (NIH), $71,964 (Pl: Alteration of pancreatic endocrine function by ethanol)

04/01/77 - 08/31/79
EY02156 NEI (NIH), $54,193 (Pl: Ocular effects of selective Beta-adrenergic drugs)

07/01/78 - 06/30/79
National Council on Alcoholism, $7,000 (Pl: Alteration of pancreatic endocrine function by ethanol)

07/01/79 - 06/30/81
EY05403 NEI (NIH), National Research Service Award $30,800 (Sponsor of J.M. Rowland: Ocular effects of selective Beta-adrenergic drugs)

07/01/79 - 06/30/82
EY02156 NEI (NIH), $54,193 (Pl: Ocular effects of selective Beta-adrenergic drugs)

1981 - 1985
TTUHSC Institutional Equipment Grant, $7,195 (Pl: Ocular effects of selective Beta-adrenergic drugs)

02/01/83 - 11/30/86
EY04843 NEI (NIH), $120,833 (Pl: Dopamine agonists: Potential anti-glaucoma drugs)
University of California at Irvine
01/01/85 - 09/12/90  EY06338 NEI (NIH), $318,160 (PI: Dopamine and alpha-2 agonists: Potential antiglaucoma drugs)

Baylor College of Medicine
09/13/1987 - 09/12/90  EY06338 NEI (NIH), $318,160 (PI: Dopamine and alpha-2 agonists: Potential antiglaucoma drugs)

Morehouse School of Medicine
08/01/91 - 07/31/94  EY06338 NEI (NIH), $385,341 (PI: Dopamine and a-2 agonists: Potential antiglaucoma drugs)
02/01/92 - 01/31/94  EY06338-S1 NEI (NIH), $99,860 (PI: Dopamine and a-2 agonists: Potential antiglaucoma drugs)
09/01/92 - 08/31/94  GM08248 NIGMS, $66,777 (PI: Opioid receptors and ocular hydrodynamics)
08/01/94 - 07/31/98  EY06338 NEI (NIH), $749,117 (PI: Dopamine, a-2 and 11 agonists: Potential antiglaucoma drugs)
12/01/94 - 11/30/96  T9019060103 EPA - MAI, $150,000 (PI: Minority institution traineeship program)
1994 - 1996  Smith Kline Beecham Clinical Laboratories, $300,000 (PI: Performance-enhancing drugs)
1994 - 1996  Atlanta Committee for the Olympic Games, $1,000,000 (PI: Olympic drug testing)
1996 - 1997  CIBA-Vision, $66,000 (Co-PI: Research gift for ophthalmic research)
1996 - 1998  NCCW00831996-00, National Space and Aeronautics Administration, $163,486 (Collaborator: Beta-agonists as countermeasures for microgravity-induced atrophy of muscle and bone)
08/01/97 - 07/31/99  NASA-971 NASA, $400,000 (PI: Effects of microgravity on the disposition and biotransformation of therapeutic agents used in space flight: Clenbuterol as a model)
2000 - 2001  ICAgen, $24,392 (PI: Research gift for ophthalmic research)
2001 - 2002  Pharmacia, $18,000 (PI: Research gift for ophthalmic research)
12/01/97 - 11/30/01  EY11977 NEI (NIH), $726,539 (PI: Ocular hydrodynamics: Modulation by opioids)
08/01/00 - 07/31/01  NIGMS, $150,000 (Co-I: MBRS - Atrial natriuretic peptides in the eye)
08/01/00 - 07/31/03  R01EY13159 NEI (NIH), $753,859 (Co-I: Dopamine (D3) receptor agonists: Potential antiglaucoma agents)
08/01/00 - 07/31/05  R01EY12807 NEI (NIH), $1,153,911 (PI: Ocular natriuretic activity: Modulation by drugs) (Transferred to MUSC)
04/01/02 - 03/31/06  R01EY11977 NEI (NIH), $745,792 (PI: Ocular hydrodynamics: Modulation by opioids) (Transferred to MUSC)

AWARDS, HONORS, MEMBERSHIP IN HONORARY SOCIETIES:
1958  Red Raider Athletic & Scholarship Award (Texas Tech University Health Sciences Center)
1965 – 1969  National Institutes of Health Predoctoral Fellowship (Kansas University Medical Center)
1969  Comprehensive Oral for Doctorate, with Honors (Kansas University Medical Center)
1979, '80, '82, '84, '86  Outstanding Basic Sciences Teaching Award (Texas Tech University Health Sciences Center)
1984 – 1985  President's Award for Excellence in Teaching (Texas Tech University Health Sciences Center)
1993, 1996  Faculty Recognition Award for Outstanding Service & Achievement (Morehouse School of Medicine)
2009  Elected Gold Fellow (FARVO [Association for Research in Vision and Ophthalmology])

PATENTS FILED/GRANTED:
1. Therapeutic use of biologically active compounds in retinal and optic nerve degeneration (Crosson CE, Potter DE)
2. Neurotrophic factor (Wallace TL, Potter DE, Crosson CE)
3. Therapeutic use of dihydropyrimidones and benzazephines in retinal and optic nerve degeneration
   (Crosson CE, Potter DE, Ondetti MA, Floyd DM, Aberg G)

4. Calcium nanoparticles as ocular drug delivery devices (Bell, S, Chu, T-C, Potter DE)

**ACADEMIC COMMITTEE/BOARD ACTIVITIES (during academic career @ MSM):**

**Morehouse School of Medicine**

1990 - 2002 Academic Policy Council
1990 - 2002 Basic Science Advisory Council
1991 - 1998 Graduate Education in the Biomedical Sciences Committee, Director
1991 - 2001 Graduate Medical Education Committee
1991 - 2001 Internal Review Subcommittee for Graduate Medical Education, Chairman
1992 - 1994 LCME Task Force Committee
1995 - 1999 Faculty Appointment and Promotion Committee, Chairman
1995 - 2002 Institutional Facilities Planning Committee
1995 - 1999 Minority Issues Committee (Association for Research in Vision & Ophthalmology)
1996 - 1999 Institutional Effectiveness Committee, Chairman
1996 - 2002 Research Infrastructure for Minority Institutions (Spelman College)
1997 Glaucoma Panel, National Eye Institute
1997 - 1998 Search Committees for Chairperson of Microbiology/Immunology, Medicine
1998 - 2000 Association for Ocular Pharmacology & Therapeutics, Secretary/Treasurer
1998 - 2002 Minority Committee (American Society for Pharmacology & Experimental Therapeutics)
2000 - 2003 Association for Ocular Pharmacology & Therapeutics, Vice President

**Rangel College of Pharmacy**

2013 Academic Leadership Team
2013 Executive Committee
2013 Credentialing Committee
2013 Research Advisory Committee
2013 Outcomes Assessment Committee

**LECTURES and PRESENTATIONS** (Selected Examples of Presentations at National/International Meetings):

**Podium Presentations (Partial Listing):**


**Poster Presentations (Partial Listing):**


**PUBLICATIONS:**

**Peer-Reviewed Journal Articles:**


33. Rowland JM, Potter DE. The effects of topical prazosin on normal and elevated intraocular pressure.
59. Potter DE, Burke JA, Ogidigben MJ. Ocular inhibitory effects of a DA2 agonist (HA 118) in cats and


75. Chu TC, Socci RR, Potter DE. Lisuride acts at multiple sites to induce ocular hypotension and

Books/Chapters in Scholarly Books and Monographs:
PROFESSIONAL INFORMATION

Office Address: Texas A&M Health Science Center
Department of Pharmaceutical Sciences
Rangel College of Pharmacy
1010 West Ave. B, MS 131
Kingsville, TX 78363
Citizenship: USA
Office phone: (361) 221-0733
Email: elmageed@tamhsc.edu

EDUCATION AND TRAINING

- Postdoctoral training, Urology Department, Tulane University School of Medicine, USA, 2009 to 2011
- Postdoctoral training, Division of Endocrinology, Johns Hopkins School of Medicine, USA, 2008-2009
- Postdoctoral training, Pathology Department, LSU Health Sciences Center, School of Medicine, USA, 2006-2008
- Ph.D. Degree in Biology and Biochemistry, Helwan University, 2004
- Master of Science in Physiology, Helwan University, 1999
- Bachelor of Science with Honor, Biology, Cairo University, 1995

PERSONAL STATEMENT

- With more than 10 years of teaching experience, I have taught medical, biomedical and basic sciences for under- and postgraduate students in multiple disciplines. I have taught human Physiology, Anatomy, Biochemistry, Cell Biology and Molecular Biology courses.
- During my research training, I had a very good opportunity to join prostate cancer research group which was focusing on the cross-talk between stem cells and prostate cancer progression. This was suggested by the release of exosomes which alter the steroidal hormone receptor signaling.
- With a current NIH funding, my research focus is on the role of microvesicles “exosomes” in altering the tumor microenvironment and dysregulating multiple metabolic pathways for promoting tumor progression and metastasis in patients with prostate cancer and melanoma.
- In our basic and translational research, we utilizing molecular and cell biology and therapeutic approaches using in vitro and in vivo mouse model in addition to human specimens.
- I have published over 47 articles in peer-reviewed journals in basic and translational sciences, active member in several scientific associations and serving as ad hoc reviewer in a large number of peer-reviewed journals. I have mentored over 14 Master and PhD students in the field of cancer signaling, biomarkers and pharmacology and managed large scale trainees as well as overseeing many research projects.
- My objective is to study the underlying molecular mechanisms by which tumor cells acquire resistance and aggressive behavior by transferring specific cargo of Exosomes to their target cells using combination of in vitro and in vivo approaches and patient samples. My long term goal is to create mechanism-derived treatment strategies for cancer disease.

PROFESSIONAL APPOINTMENTS

2016-date  Assistant Professor (Tenure-Track), Department of Pharmaceutical Sciences, Rangel College of Pharmacy
Pharmacy, Texas A&M Health Science Center, College Station/Kingsville, TX, USA

2015-2016 Assistant Professor, Departments of Surgery and Otolaryngology, Tulane University School of Medicine, New Orleans, LA, USA

2015-2016 Member, Tulane Biomedical Sciences (BMS) graduate program, Tulane University.

2014-2016 Director of Oncology Research, Surgery and Otolaryngology, Tulane University School of Medicine, New Orleans, LA, USA

2014-2015 Research Scientist, Departments of Surgery and Otolaryngology, Tulane University School of Medicine, New Orleans, LA, USA

2012-current Member, Tulane Cancer Center, Cell Signaling Program, Tulane Cancer Center, Tulane University School of Medicine, New Orleans, LA, USA

2012-2014 Research Instructor, Department of Urology, Tulane University School of Medicine, New Orleans, LA, USA

2004-2008 Lecturer of Physiology, Department of Biology, Faculty of Science, Helwan University

2000-2004 Instructor of Biology, Department of Biology, Faculty of Science, Helwan University

1996-1999 Teaching Assistant, Department of Biology, Faculty of Science, Helwan University

1995-1996 Research Assistant, Department of Molecular Biology, Division of Genetic Engineering, National Research Centre (NRC), Cairo

GRANTS
Active
• R21CA194750. The role of exRNA in health disparity of prostate cancer. Abd-Elmageed ZY (PI). Funding: 2 years. 07/01/2015-06/30/2017. The objective for this study is to elucidate the pro-oncogenic activity of exosomes-associated microRNAs and their clinical use as a surrogate in health disparity of prostate cancer.

Completed
• Louisiana Clinical & Translational Science Center (LaCaTS) Pilot Grant Round I. Title: Discovering the Role of Putative MicroRNAs in Prostate Tumorigenesis. Abd Elmageed ZY (PI). Funding: 03/29/2013 to 04/28/2014. This study focused on discovering the role of new identified upregulated microRNAs in the exosomes released from prostate cancer cells and investigating their contribution to tumorigenesis of prostate cancer.

PATENTS
• In vitro and in vivo Tetracycline inducible fluorescently-tagged protein expression system. Inventor: A Ouhtit (PI), Abd Elmageed, ZY (Co-PI), M Zerfaoui (Co-PI). Invention serial number: 60/956,437. LSU Health Sciences Center, LA, 2010.

HONORS AND AWARDS
2016 Scientific Judge in the AACR Career Development and Mentoring Committee during the Eleventh Annual AACR Undergraduate Student Caucus and Poster Competition. April 16, 2016, New Orleans, LA.

2015  R21 NCI/NIH Award. Title: The role of exRNA in health disparity of prostate cancer (PI: Abd-Elmageed ZY)

2013  Louisiana Clinical & Translational Science Center (LaCaTS) for translational research (PI: Abd-Elmageed ZY). Title: Discovering the role of putative microRNAs in prostate tumorigenesis.

2013  National Center for Advancing Translational Sciences (NCATS) Award ($4.2 million grant). Abdel-Mageed AB (PI), Mondal D (Co-I) and Abd-Elmageed ZY (Co-I).

2013  Oral presentation-Academic Surgical Congress, February 4-7th. Title: Simultaneous suppression of the MAP kinase and PI3K/Akt pathways in aggressive thyroid cancer. Li X, Abd-Elmageed ZY, Kandil E.

2013  Oral presentation-Academic Surgical Congress, February 4-7th. Title: CD146-Latexin crosstalk and their potential role in thyroid tumorigenesis. Abd-Elmageed ZY et al.

2013  One of the top 10 abstracts at the 19th Annual Fall Scientific Meeting of the Sexual Medicine Society of North America. The award resulted in an oral presentation. See Invited Talks. Oral presentation and Title: Early combined treatment with Avanafil and adipose tissue-derived stem cells promotes recovery of erectile function in a rat model of postprostatectomy induced erectile dysfunction. Gokce A, Abd-Elmageed ZY, et al.

2011  First place Award-Poster presentation-American Association of Head and Neck Surgery, Chicago

2006  Fellowship Award for Postdoctoral training- Ministry of Higher Education, Cairo.

2005  Teaching Faculty Award-Faculty of Science-Helwan University

AFFILIATIONS

2010-current  American Association for the Advancement of Science (AAAS)

2009-current  American Association for Cancer Research (AACR)

2008 to 2011  American Heart Association (AHA)

2008 to 2011  American Physiological Society (APS)

EDITORIAL BOARDS AND JOURNAL REVIEWER

Editorial Board Member
1. Scientific Reports
2. Molecular Diagnostics (Frontiers in Molecular Biosciences)
3. Journal of Prostate Cancer
4. Journal of Thyroid Cancer
5. Austin Biomarkers & Diagnosis
6. JSM Biomarkers

Ad Hoc Reviewer
1. Cancer Research
2. BMC Genomics
3. Epigenetics
4. Tumor Biology
5. Andrology
6. Cancer Biology and Therapy
7. Oxidative Medicine and Cellular Longevity
8. Integrative Biology
9. Molecular Biosystems
10. Metallomics
11. World J. Surgical Research
12. Biomaterials Science
13. Clinical and Experimental Pharmacology and Physiology
14. World Journal of Gastroenterology
15. J. Nanoparticle Research
16. Mediators of inflammation

INVITED SPEAKER
2016 Speaker in the Department of Pharmaceutical Sciences, Rangel College of Pharmacy, Texas A&M Health Science Center. Patients Derived Adipose Stem Cells Promote Prostate Cancer Progression through Exosomes-Associated Mechanisms. April 27, 2016.


2013 Oral presentation-Academic Surgical Congress, February 4-7th. Title: CD146-Latexin crosstalk and their potential role in thyroid tumorigenesis. Abd Elmageed ZY et al.

2013 Oral presentation-Academic Surgical Congress, February 4-7th. Title: Simultaneous suppression of the MAP kinase and PI3K/Akt pathways in aggressive thyroid cancer. Li X, Abd Elmageed ZY, Kandil E.

2012 Tulane University School of Medicine, New Orleans, LA. The cross-talk between adipose stem cells and prostate cancer: Is that a Friend or a Foe? Summer Research Day

2011 Tulane University School of Medicine, New Orleans, LA. Estrogen-ERβ Axis in the Progression of Prostate Cancer. Summer Research Day

2010 Department of Urology, Tulane University School of Medicine, New Orleans, LA. Patient Derived Adipose Stem Cells and Prostate Cancer Progression

2007 Louisiana Cancer Research Center (LCRC) for Breast/Ovarian Cancer Group Series, LSU Health Science Center & Tulane Cancer Centre, New Orleans, LA. The role of Cell Adhesion Molecule CD146 in suppressing breast tumor progression

2007 Stanley S. Scott Cancer Centre Seminar Series, LSU Health Science Center, New Orleans, LA. Early dysfunction of the p16/Rb pathway and identification of novel p16-target genes associated with UV-induced melanoma

2006 Pathology Department Seminar Series, LSU Health Science Center at New Orleans, LA. Dysregulation of p16INK4a and its role in the development of melanoma

2005 SIRA Institute for Molecular Biology, Cairo, in collaboration with the University of Florida. New concepts of Molecular Biology Techniques in Cancer Therapy

ACADEMIC COMMITTEES
2016-date Student Admission Committee, Rangel College of Pharmacy, Texas A&M Health Science Center, College Station/Kingsville, TX

2015-2016 Director of Oncology Research, Department of Surgery and ENT, Tulane University School of Medicine, New Orleans, LA.

2005-2006 Senate member, University Committee for Postgraduate Studies and Research Development, Helwan University (Only two faculty members per each College are selected).

2004-2006 Member, Faculty Committee for Chemical and Instruments Supply, Helwan University
2004-2006 Member, Faculty of Science Council for Undergraduate Student Affairs and Technical University Official Support (TUOS), Helwan University

RESEARCH EXPERIENCE

**In Vitro Model**

- Gene cloning
- Flow cytometry
- Cell signaling and gene targeting
- Nucleic acid extractions, PCR and gene mutations
- Western Blot and Immunoprecipitation
- Luciferase assay, EMESA & ChIP assays
- Fluorescence & Confocal microscope
- Cell culture
- Cell functional assays
- Isolation of cells from human tissues using Laser capture microdissection (LCM).
- Proteomics and tumor markers approach
- microRNA expression analyses, microRNA arrays and microRNA-target genes
- Stem cells and their cross-talk to cancer cells
- Microvesicles “Exosomes” and high throughput assays
- Drug resistance to BRAF inhibitors in melanoma and thyroid cancers

**Animal Model**

- Investigating the neoplastic transformation of human Adipose-derived stem cells to prostate cancer-like cells using SCID mice
- Examining the role of cell adhesion molecules CD44 and CD146 in breast cancer metastasis using SCID mouse model
- Elucidating the role of IGFR in restoring vasculogenesis in Type-II diabetes using hind-limb ischemia mouse model
- Studying the role of Tregs (CD4-CD25) in coronary arteriolar endothelial dysfunction in angiotensin II-dependent hypertensive mice

**Translational Research**

- Targeting multiple signaling pathways in melanoma and thyroid cancer such as BRAF/MAP kinase and PI3K/Akt pathways
- Screening of new drugs with anti-tumor activity using in vitro and in vivo models and dissecting their signaling pathways using high throughput approach.
- Discovering new tumor diagnostic and prognostic markers in prostate patients and their clinical outcomes using miRNA arrays and proteomic approaches

TEACHING EXPERIENCE

2015-2016 Human Anatomy and Physiology (Biol-161, 3 credit hours) and human Biology (Biol-141, 3 credit hours), Department of Science and Math, Delgado, New Orleans, LA

2014-2016 Participating in teaching graduate students Cell Signaling course (3 credit hours), Department of
Pharmacology and Experimental Therapeutics, LSU Health Sciences Center, School of Medicine, New Orleans, LA
2009-2014 Pharmacology and Molecular biology of cancer disease, graduate students and laboratory fellows at Tulane University School of Medicine, New Orleans, LA
2006-2008 Molecular biology for medical students, School of Medicine, LSU Health Sciences center
2004-2006 Radiation Biology and Toxicology, Faculty of Science, Helwan University
2004-2006 Cell Biology, Faculty of Science, Helwan University
2004-2006 Medical parasitology and immunology (Undergrads), Faculty of Science, Helwan University
2004-2006 Physiology and Anatomy (Undergrads), Faculty of Science, Helwan University, Cairo.
2000-2004 Teaching Instructor, Faculty of Science, Helwan University, Cairo.
1996-1999 Teaching Assistant, Faculty of Science, Helwan University, Cairo.

Current research Team Members (2 members)
1. Hamdy E.A. Ali, PhD. Senior Postdoctoral Research Fellow in molecular genetics
2. Shaimaa Gad, MS. PhD candidate in cancer biology

MENTORING AND SUPERIVSORY ROLE (13 Trainees)

Robert Moore, MD 2015-2016
MD candidate, Department of Surgery, Tulane University School of Medicine, LA. Project title: The link of Metadherin expression and metastatic lymph nodes in thyroid cancer patients. Currently, Dr. Moore is a Pathology Resident at Johns Hopkins University. Role: Supervisor

Eric Katz, MD 2014 to 2015
MD candidate, Department of Urology, Tulane University School of Medicine, LA. Project title: Pioglitazone enhances survival and regeneration of pelvic ganglia neurons after cavernosal nerve crash in the rat. Currently, Dr. Katz is a Urology Resident at Boston Medical Center, Boston, MA. Role: Supervisor

A Moustafa, PhD 2013 to 2016
PhD candidate, Department of Urology, Tulane University School of Medicine, New Orleans, LA. Project title: Discovering the Role of Putative MicroRNAs in Prostate Tumorigenesis. Currently, Dr. Moustafa is Lecturer of tumor biology at Helwan University. Role: Committee member.

Manish Ranajan, PhD 2012 to 2015
PhD candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University School of Medicine, New Orleans, LA. Project title: Stem Cell-Based Selective Delivery of Alpha-Keto Reductases for Therapeutic Targeting of Residual Androgens in Metastatic Prostate Cancer. Currently, he is doing his postdoctoral training in Feinberg School of Medicine, Chicago, IL. Role: Research Supervisor.

Nobel Bhasin, PhD 2012 to 2015
PhD candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University School of Medicine, New Orleans, LA. Project title: Selective Membrane Expression of DAD1 is Associated with Survival of Prostate Cancer Cells. Dr. Bhasin is currently pursuing her Postdoctoral training at University of Chicago School of Medicine, Chicago, IL. Role: Committee member.

Sarmad Salem, MD, MS 2013-2014

Zack Abd Elmageed, PhD
Master of Science candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University School of Medicine, New Orleans, LA. Project title: The differential Expression of microRNAs in Exosomes Derived from Prostate Cancer Patients. Biomedical Sciences Program, Role: Research Supervisor.

Hala Taha, MD 2012-2013

One year Research training, Department of Urology, Tulane University School of Medicine, New Orleans, LA. Project title: Using of onco-microRNAs as tumor markers in the prostate cancer. Role: Research Supervisor.

Aditi Mathur, PhD 2009-2013

PhD candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University of Medicine, New Orleans, LA. Project title: Simultaneous targeting of endoplasmic reticulum stress and AKT pathways as a novel chemo sensitization approach against castration resistant prostate cancer. Role: Technical assistance. Currently Dr. Mathur is completing her Postdoctoral training at Loyola University Chicago, IL.

Amrita Datta, PhD 2007-2012

PhD candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University School of Medicine, LA. Project title: Modulatory effect of Alpha-naphthoflavone on Doxorubicin resistance in MCF7 human breast cancer cells. Currently Dr. Datta is pursuing a Postdoctoral Fellowship at Tulane University, New Orleans, LA. Role: Technical assistance.

A Gokce, MD 2011-2013

Associate Professor, Two-year research program, Department of Urology, Tulane University School of Medicine, New Orleans, LA. Project title: Adipose-derived stem cells in treatment of rat model of Peyronie’s disease. Currently Dr. Gokce is Associate Professor of Clinical Urology, Sakarya University, Turkey. Role: Collaboration and technical assistance.

Mallory Hitt, MA 2010-2011

Master of Science candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University School of Medicine, New Orleans, LA. Project title: “Estrogen-ERβ axis in prostate cancer progression”. Role: Research Supervisor.

Vilija Vailaitis, MA 2009-2010

Master of Science candidate, Department of Pharmacology, Biomedical Sciences Program, Tulane University School of Medicine, New Orleans, LA. Project title: Thymoquinone in Treatment of Breast Cancer. Currently Ms. Vialaitis is an MD candidate at Louisiana State University School of Medicine, New Orleans, LA. Role: Research Supervisor. Currently, she is MD candidate in LSU Medical School, LA.

AH. Amin, PhD 2008-2010

PhD candidate and Two-year visiting scholar, Department of Physiology, Tulane University School of Medicine, New Orleans, LA. Project title: Therapeutic applications of Stromal Stem cells in ischemic hind-limb of type II diabetic mouse model. Role: Research Supervisor. Currently, Dr. Amin is an Assistant Professor in the Faculty of Science, Mansoura University.

PUBLICATIONS, 61 peer-reviewed publications


**Conferences and Abstracts (59 conference posters and/or abstracts)**


8. Gupta I, Ouhtit A, Fernando A, **Abd Elmaged Z**. CD146/Akt/NF-kappa-B/Latexin, a novel pathway suppressing breast tumor growth. Annals of Oncology. 05/2015; 26 (suppl 3). DOI: 10.1093/annonc/mdv121.05


13. Moustafa A.A., Taha H, Abdel-Mageed AB, **Abd Elmaged ZY**. Discovering the role of putative microRNAs in prostate tumorigenesis. 25th Annual Health Sciences Research Day held on April 2-3, 2014, Tulane University School of Medicine, New Orleans, LA.


26. Taha H, Abdel-Mageed AB, **Abd Elmageed ZY**. Discovering the role of putative microRNAs in prostate tumorigenesis. Louisiana Clinical and Translational Sciences (LA-CATs) Research Day held on Sept. 16, 2013, LSU Health Science Center, New Orleans, LA.


35. Li X, **Abd Elmageed ZY**, Kandil E. Simultaneous suppression of the MAP kinase and PI3K/Akt pathways in aggressive thyroid cancer. Academic Surgical Congress meeting. New Orleans, LA, February 4-7th, 2013.


38. Ma J, **Abd Elmageed ZY**, Li X, Abdel-Mageed AB, Mondal D, Kandil E. Simultaneous suppression of the MAP kinase and PI3K/Akt pathways by AZD-6244 and GDC-0941 synergistically inhibits thyroid cancer cells. LCRC Retreat. Xavier University, New Orleans, LA. March 10-11th, 2012.


Jose Josue Hernandez, Ph.D.
University of Puerto Rico School of Pharmacy
Department of Pharmacy Practice
PO Box 365067
San Juan, PR 00936-5067
(787) 513-2892 (phone)
email: jose.hernandez38@upr.edu

EDUCATION

PhD Phmacoepidemiology, University of Maryland, 2007
MSc Epidemiology and Preventive Medicine, University of Maryland, 2007
MPH Epidemiology and Biostatistics, University of Puerto Rico, 2001
BSPharm Pharmacy (Magna Cum Laude), University of Puerto Rico, 1999
BSc Chemistry (Magna Cum Laude), University of Puerto Rico, 1996

EMPLOYMENT

UNIVERSITY OF PUERTO RICO SCHOOL OF PHARMACY
Faculty Director, Center for Drug Information and Research August 2008-present

WAL-MART PHARMACY
Clinical Pharmacist January 2004-June 2007

UNIVERSITY OF MARYLAND MEDICAL SYSTEM
Clinical Pharmacist August 2001-December 2003

AUXILIO MUTUO HOSPITAL
Clinical Pharmacist August 1999- June 2001

AWARDS

2015 Evidence-Based Medicine Development Award, PharmaPlus Care Inc.
2014 Drug Information Excellence Award, UPR Medical Science Campus.
2013 Distinguished Public Health Investigator Award. Administration of Health Insurance Services of Puerto Rico.
2009 American Public Health Association, Medical Care Section, Service Award.
2008 Faculty Development Award, University of Puerto Rico School of Pharmacy.
2007 University of Maryland, Dr. Arthur Schwartz Award.
2006  Student Research and Travel Award. Consortium between the University of Maryland School of Pharmacy and Chulalongkorn University School of Pharmacy in Bangkok, Thailand. Mentor: Dr. Ilene Zuckerman.
2005  Student Research and Travel Award. Sponsored by Pfizer Global Epidemiology in Barcelona, Spain. Mentor: Dr. Susana Perez-Gutthann.
2004  University of Maryland, Program Enrichment Fellowship.
2002  University of Maryland School of Pharmacy Graduate Student Award.
2000  Student Research Award/Fellowship. Center for Drug Evaluation and Research of the U.S. Food and Drug Administration. Mentor: Dr. David Graham

GRANTS AND COLLABORATIVE PROJECTS

“Implementation of the Center for Drug Information and Research at the University of Puerto Rico School of Pharmacy (UPR-SOP)” Self-Sustained Academic Center; Principal Investigator.

“Implementation of an Intramural Medication Therapy Management Clinic at the University of Puerto Rico Medical Sciences Campus” Source: University of Puerto Rico Central Administration 2010-2015; average yearly profit = $50,000 (co-Investigator; Principal Investigator = Edna Almodovar, PharmD).

“Burden of Hypertension and Diabetes in the Adult Population of the San Juan Metropolitan Area of Puerto Rico”. Source: Novartis Task Order EBMUSR9062 2011; $178,015 (co-Investigator; Principal Investigator = Myriam Allende, MD).

“Puerto Rico Medicare and Medicaid: Central Office for Quality Control and Health Outcomes Research”. Source: PR Medicare and Medicaid Office 2010-2015; Collaborative Agreement to Develop and Implement Quality Control and Health Outcomes Research on Beneficiaries of the Puerto Rico Medicaid Health Plan; Principal Investigator.

“Collaborative Teaching Grant between The University of Puerto Rico School of Pharmacy and the Universidad Autonoma de San Luis de Potosi in Mexico” Source: Mexican Government Department of Higher Education 2010; Principal Investigator.

PROFESSIONAL PUBLICATIONS


Curriculum Vitae: José Josué Hernández- January 2016 2


PROFESSIONAL PRESENTATIONS


Arriga Y, Ayala P, Rondón K, Quiles N, Hernández JJ. Conocimientos de los estudiantes de la Escuela de Farmacia del RCM-UPR acerca de las alternativas de tratamiento disponibles para el manejo de la adicción a opiáceos, su receptividad a


Morales C, Ortiz E, Torres S, Maldonado W, Hernández JJ, García H. The Incidence of Reported Allergic Reactions to Anti-Infective Agents in Pediatric Inpatients. Poster
Presentation. University of Puerto Rico, School of Pharmacy, Annual Research Day.
University of Puerto Rico, Medical Science Campus, San Juan, Puerto Rico, May 13, 2009.


SERVICE ACTIVITIES - UNIVERSITY OF PUERTO RICO SCHOOL OF PHARMACY

Faculty Director, Center for Drug Information and Research – 2008-present
Research Coordinator, PharmD Research Projects 3rd & 4th Year Students- 2007-Present
Research Methods and Biostatistics Course Coordinator – 2007-present
Pharmacoconomics Lectures – 2007-present
Pharmacoepidemiology Lectures – 2007-present
Health Models in Social Sciences Lectures-2007-present
Preceptor, 4th year Advance Practice in Drug Information Services – 2009-present
Preceptor, 1st year Introductory Practice in Drug Information Services – 2013-present
Preceptor, VA PGY1 Residents – 2010-present
Preceptor, Community Pharmacy PGY1 Residents – 2013-present
Program Planner, UPR-SOP PharmD Projects Research Day – 2008-present
President, Informatics and Technology Committee – 2010-2013
President, Graduate Program Committee – 2008-2013
Member, MTM Services Program Committee – 2012-present
Member, Admissions Committee - PharmD 2012 - 2015
UPR Assessment Focus Group 2008, 2009
UPR Working Group 2009-2010
UPR Committee (ad hoc) 2008-2010 Research and Graduate Education Committee
UPR-Medical Sciences Campus-IRB Panel Consultant – 2012 –present

SERVICE ACTIVITIES - EXTERNAL

Ad hoc Proposal Reviewer, PR Health Insurances Administration Office - 2013-present
Research Consultant, Puerto Rico Department of Health – 2012-present
Program Planner, APHA Medical Care Section Annual Meeting - 2009-2012
Abstract Reviewer, APHA Medical Care Section Annual Meeting - 2009-2014
Abstract Reviewer, ISPE Annual Meeting - 2010-2013
P&T Consultant, PR Health Insurances Administration Office – 2008-2012
Research Consultant, Universidad Autonoma de San Luis de Potosi, Mexico – 2012-2013
Member, Consortium of Schools of Pharmacy Project, Bangkok, Thailand – 2004-2005

JOURNAL REVIEWS

Puerto Rico Health Sciences Journal, Reviewer 2011-present
American Journal of Geriatric Pharmacotherapy, Reviewer 2007-2012
Journal of the American Geriatrics Society, Reviewer 2010-present
Managed Care, Reviewer 2001-2012-present
Journal of Managed Care & Specialty Pharmacy, Reviewer 2013-present
Puerto Rico Pharmaceutical Journal, Editorial Board and Reviewer, 2009-present

Curriculum Vitae: José Josué Hernández- January 2016 8
CURRENT MEMBERSHIP IN HONORARY AND PROFESSIONAL ORGANIZATIONS

American Public Health Association
American Pharmacist Association
International Society for Pharmacoepidemiology
International Society for Pharmaco economics and Outcomes Research
American Association of Colleges of Pharmacy
Rho Chi Pharmacy Honor Society
International Association of Athletic Federations
United States Track and Field Federation
United States Swimming Federation
United States Triathlon Federation

PHARMACIST LICENSES

Puerto Rico  #4898
Maryland      #16171
Texas         #57204

SPECIFIC SKILLS

Proficient in primary, secondary and tertiary electronic medical literature review tools.
Excellent skills in generating literature search algorithms for systematic reviews and meta-analysis.
Complete understanding of all the components of a research article (i.e. background, methods, results, discussion and references).
Proficient in electronic references manager softwares: EndNote, RefWork and Mendeley.
Seasoned experience in the reviewing process for journals at the national and international level.
Proficient in statistical programming softwares: SAS, STATA and SPSS.
Proficient in pharmaco-economic evaluation softwares (e.g. TreeAge).
Proficient in Microsoft Office software elements: Word, Excel, Power Point, Outlook and Access.
Broad knowledge in medical and pharmacy claims dataset manipulation.
Broad knowledge on several software tools for long distance learning and peer-to-peer communication.
Fully bilingual, written and spoken, English and Spanish.
Excellent organizational and leadership skills.
CURRICULUM VITA
RABAA M. AL-ROUSAN, R.PH, PH.D.

Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
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Kingsville, TX 78363
Phone: (361)-221-0741
Cell: 304-380-5813
Fax: (361)-221-0793
alrousan@pharmacy.tamhsc.edu

EDUCATION

Ph.D.  Marshall University School of Medicine, Huntington, WV  January 2010
Biomedical Sciences Concentration in Pharmacology & Toxicology

M.S.  University of Iowa College of Medicine, Iowa city, IA  May 2007
Molecular Physiology and Biophysics

B.S  Jordan University of Science & Technology, Irbid, Jordan  January 2004
Pharmacy

PHARMACY LICENTURE AND CERTIFICATION

Pharmacist (Active), Illinois State  # 051.293231
Pharmacist (Active), West Virginia State  # RP0008009

WORK EXPERIENCE

Texas A&M Health Science Center, Kingsville, TX  Oct 2013 - present
Assistant Professor of Pharmacology
Rangel College of Pharmacy, Department of Pharmaceutical Sciences

University of Charleston, Charleston, WV  Jan 2010 - Sep 2013
Assistant Professor of Pharmacology
Robert C. Byrd Center for Pharmacy Education, Department of Pharmaceutical & Administrative Sciences

Marshall University, Huntington, WV  Aug 2007 - Jan 2010
Graduate Teaching & Research Assistant
School of Medicine

University of Iowa, Iowa city, IA
Research Assistant
College of Medicine, Department of Physiology & Biophysics

TEACHING EXPERIENCE

Marshall University
   Human Physiology: 4 credits
      (Role: Instructor)

University of Charleston
   Pharmacology I: 4 credits
      (Role: Course coordinator & Instructor)

   Pharmacology II: 4 credits
      (Role: Course coordinator & Instructor)

   Pathophysiology: 4 credits
      (Role: Instructor)

   Professional Awareness and Preparation Seminar: 1 credits
      (Role: Instructor)

   Journal Club: 1 credit
      (Role: Instructor)

   Pharmacology for Physician Assistant (PA) students: 3 credits
      (Role: Instructor)

Texas A&M University
   Principles of drug action I: 3 credits
      (Role: Course coordinator and instructor)

   Integrated pharmacotherapy IV (IPT IV): Neurology and Pain Management: 3 credits
      (Role: Instructor)

   Integrated pharmacotherapy VII (IPT VII): Infectious diseases: 5 credits
      (Role: Instructor)

   Integrated pharmacotherapy VIII (IPT VIII): Oncology, Transplant and Genomics: 3 credits
      (Role: Instructor)
HONORS AND AWARDS

**Best Academic Performance Award**, Marshall University, Huntington, WV, 2008

**CDDC Symposium Poster Award**, Marshall University, Huntington, WV, 2008

**STAR Symposium Poster Award**, Charleston, WV, 2009

**Teacher of the Year Award**, University of Charleston School of Pharmacy, Charleston, WV, 2012

**Teaching team of the year award**, Texas A&M University College of Pharmacy, Kingsville, TX, 2013/2014 and 2014/2015.

PUBLICATIONS

**Journal Publications**


Al-Rousan RM, Satyanarayana P, Laurino JP, Kakarla SK, Gutta AK, Walker EM,


**Peer-Reviewed Proceedings/Presentations**


Hamouda AK, **Al-Rousan RM**, Alkhateeb FM. Challenges and Successes of twenty years of Pharmacy Education in the Palestinian Territories. AACP Annual Meeting, Grapevine, TX, July 26-30, 2008.


PROFESSIONAL AFFILIATIONS

Member, American Association of Colleges of Pharmacy (AACP)

Member, Cell Differentiation and Development Center, Marshall University

Member, American Association for the Advancement of Science

Member, American College of Clinical Pharmacy (ACCP)

Member, Jordan Pharmaceutical Association (JPA)

COMMITTEE INVOLVEMENT

University of Charleston

Faculty Advisor, Professional Year 1, 2, 3 and 4 Students

Member, Academic affairs committee (2010/2011)

Chair, Academic affairs committee (2011/2012)

Chair, e-portfolio project subcommittee (2011-2012)

Member, Student interview committee 2010-2013

Member, Faculty affairs committee (2012/2014)
Faculty advisor, Class of 2016 (2012/2014)

Student Affairs Committee (2012-2014)

Member, Quality Assurance, Accreditation & Assessment committee (2011-2014)

Member, University Assessment Committee (2011-2013)

Member, Ambulatory Care & Community Pharmacy Practice Faculty Search Committee (2012/2013)

Texas A&M University

Member, Credentialing Committee (2013/2014)

Member, Pharmaceutical Science Faculty Search Committee (2014)

Member, Strategic plan development committee (2013-2014)

Chair, Strategic plan -education subcommittee (2013-2014)

Member, Student interview committee (2013-2014)

PROFESSIONAL INVOLVEMENT & SERVICE

Member, 7th Annual IPPE health fair poster Judging committee , Texas A&M Health Science Center, Rangel College of pharmacy, Kingsville, TX, Nov., 2013

Member, Knowledge Skills Training Assessment Research (KSTAR) program, Texas A&M Health Science Center, Bryan, TX, July, 2014

Member, the Rangel College of Pharmacy Journal and Data Club, Texas A&M Health Science Center, Kingsville, TX, July, 2014

Member, the Rangel College of Pharmacy Self-Study Retreat, Cesar Kleberg Wildlife Center, Kingsville, TX, February, 2014 and April, 2015.

TRAINING & CERTIFICATION WORKSHOPS

NABP Item Writing workshop for the Foreign Pharmacy Graduate Equivalency Examination (FPGEE) & Pharmacy Curriculum Outcomes Assessment (PCOA), NABP Headquarters, Chicago, IL, Oct.,2013.

Objective Structured Clinical Examination (OSCE) Certificate, Texas A&M Health Science Center, Rangel College of pharmacy, Kingsville, TX, Nov. 2013
NIH Grant Writing Workshop: Write Winning Grant Proposals, Texas A&M Health Science Center, Rangel College of pharmacy, Kingsville, TX, Jan., 2014

Active Learning Using Lecture Tools Workshop: Finding the Pedagogical Prescription to Increase Student Engagement. Texas A&M Health Science Center, Rangel College of pharmacy, Kingsville, TX, Feb., 2014

Objective Structured Clinical Examination (OSCEology) Certificate, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Canada, June 2014

Faculty Technology Forum, Faculty Experience of Administering ExamSoft. Texas A&M Health Science Center, Rangel College of Pharmacy, Kingsville, TX, June, 2014.

Faculty Development Workshop, Engaging Students in a Videoconference Environment. Texas A&M Health Science Center, Rangel College of Pharmacy, Kingsville, TX, July, 2014.
HAMED ISMAIL ALY ISMAIL

Assistant Professor

Rangel College of Pharmacy; Texas A&M University-Health Science Center.
1010 West Avenue B; Kingsville, TX 78363-8202, USA
E-mail: alyismail@pharmacy.tamhsc.edu
Web: http://pharmacy.tamhsc.edu/directory/bios/aly.html
Cell: (361)-960-5082

EDUCATION

            College of Pharmaceutical Sciences, Okayama Univ., JAPAN
1996-2001  M.S. in Pharmaceutical Chemistry
            College of Pharmacy, Helwan Univ., Cairo, Egypt.
1983-1988  B.S. Pharmacy, (Valedictorian)
            College of Pharmacy, Tanta Univ., Tanta, Egypt

PROFESSIONAL EXPERIENCE

8/2015- Present  Assistant Professor; Rangel College of Pharmacy of Pharmacy, Texas A&M Univ.
             Health Science Center, USA.
     Assistant Professor (Instructional); Rangel College of Pharmacy of Pharmacy, Texas
8/2014- Present  A&M Univ. Health Science Center, USA.
     Lecturer; Dept. of Pharmaceutical Sciences, Rangel College of Pharmacy of Pharmacy, Texas A&M Univ.
1/2014-5/2014  Health Science Center, USA.
     Instructor; Dept. of Pharmaceutical Sciences, Rangel College of Pharmacy, Texas A&M Univ.
8/2013-10/2013  Health Science Center, USA.
     Adjunct Faculty; Dept. of Chemistry, College of Arts and Sciences, Texas A&M Univ.
     Fall 2013  Health Science Center, USA.
     (TAMUK), USA.
1/2013-12/2013  Postdoctoral Research Associate; Rangel College of Pharmacy, Texas A&M Univ.
     Health Science Center, USA.
     2013-Present  Health Science Center, USA.
     Associate Professor (Sabbatical); College of Pharmacy, Helwan Univ., Cairo, Egypt.
     2010-2012  Assistant Professor; College of Pharmacy, Umm Al-Qura Univ., KSA.
     2009-2010  Assistant Professor; College of Pharmacy, Omar Al-Mukhtar University.
     2008-2009  Adjunct Faculty; College of Pharmacy, Univ. of Modern Sciences and Arts (MSA),
     6th October City, Egypt
     2007-2009  Adjunct Faculty; College of Pharmacy, Misr International Univ. (MIU), Cairo, Egypt.
     2007-2009  Lecturer; College of Pharmacy, Helwan Univ., Cairo, Egypt.
     2001-2003  Assistant Lecturer; College of Pharmacy, Helwan Univ., Cairo, Egypt.
     1995-2001  Instructor; College of Pharmacy, Helwan Univ., Cairo, Egypt.
LEADERSHIP EXPERIENCE

2011-2012  **Head of Dept. of Clinical pharmacy;** College of Pharmacy, Umm Al-Qura Univ., KSA.
1996- P  **Pharmacy Manager/Registered Pharmacist;** Cairo, Egypt

SPECIAL TECHNICAL SKILLS

- Strong experience in multistep Pharmaceutical Syntheses, overlapped with intensive protocols of various drug design approaches.
- Strong experience in handling Accelrys Discovery Studio Molecular Modeling program versions (1.1~3.5) software, Accelrys Inc., San Diego, CA, USA. With two training courses 2005 in Osaka and 2006 in Okayama Univ.
- Expertise in handling MOE and Cache and Biomed Cache program pro version 6.1.10
- Strong experience in Virtual Screening to get best hits and optimized to get Lead compound involving different Computational Chemical Methods, in addition to Homology modeling techniques.
- Strong experience in AutoDock 3.05, 4.2, and Vina; a Grid-Based Docking program; for docking of flexible ligand into rigid or flexible protein. Involving both of Linux, and Windows OS.
- Strong experience in operating and interpreting JASCO FT/IR, Varian VXR and Bruker 300 and 500 MHz $^1$H and $^{13}$C NMR spectrometers, and Yanaco CHN Corder MT-5 apparatus for Microanalysis.
- Strong experience in operating GOLD 5.1 for docking of flexible ligand into rigid or flexible protein. Involving both of Linux, and Windows OS.
- Strong experience in operating CobiFlash Rf (TeleDyne ISCO) for automatic column chromatographic separation of synthesized compounds.

RESEARCH & ENHANCEMENT GRANTS AWARDED

Current Funded Projects

2015-present  **Title:** "Computer Aided Drug Design and Synthesis of Hybrid Flavin Analogs with Flexible Moieties as Potent Antitumor Agents"
**Fund:** 30,000 USD, Grant was transferred from Umm Al Qura Univ. to Rangel College of Pharmacy, TAMHSC, USA.
**Role:** PI

2015-present  **Title:** "Recent approach in cancer treatment: Design, synthesis and biological evaluation of novel pyrrolizine derivatives as potential multi-target kinase inhibitors".
**Fund:** 533,000 USD, by King Abdul-Aziz City for Science and Technology (KACST), KSA.
**Role:** Consultant

2012-present*  **Title:** "Bioinformatics and Biotechnology Enhanced Drug Design and Synthesis of Flavin Analogs as Novel Potent Antitumor Agents"
**Fund:** 530,000 USD, by King Abdul-Aziz City for Science and Technology (KACST), KSA;
**Role:** PI

*This project is currently frozen due to my leave to USA.
Title: "Preparation and development through computer-aided molecular drug design of isoxazolidine nucleosides and isoxazolindinyl nucleosidyl podophyllotoxin derivatives with potential antiviral and anticancer activities"
Fund: 535,000 USD, by King Abdul-Aziz City for Science and Technology (KACST), KSA;
Role: CO-I.

Title: "Plants with Potential Anti-cancer Effect: Phytochemical, Biological and Mechanistic Studies. Development of the Production of Active Natural Compounds in vitro and the Optimization of the Biological Activity by Chemical Modifications".
Fund: 535,000 USD, by King Abdul-Aziz City for Science and Technology (KACST), KSA.
Role: CO-I

Title: "Computer Aided Drug Design and Synthesis of Hybrid Flavin Analogs with Flexible Moieties as Potent Antitumor Agents"
Fund: 80,000 USD, by Institute of Scientific Research, KSA.
Role: PI

*This project was partially transferred to Rangel College of Pharmacy, TAMHSC for collaboration by synthesis of biologically active derivatives.

Title: "Safe anti-inflammatory: design, synthesis and biological evaluation of some novel pyrrolizine derivatives as anti-inflammatory agents"
Fund: 43,000 USD, by Institute of Scientific Research, KSA.
Role: CO-I

Completed Funded Projects

2011-2012 (Completed) Title: "Antibacterial and antifungal activity of two types of Saudi propolis for oral microorganisms".
Fund: 50,000 USD, by Institute of Scientific Research, KSA.
Role: CO-I; Group leader in drug design implementation team.

2010-2012 (Completed) Title: "Computer aided drug design and synthesis of potent anti-HCV benzimidazoles and quinoxalines".
Fund: 460,000 USD, by Science and Technology Development Fund (STDF), Egypt.
Role: Group leader in drug design implementation team.

2011-2014 (Completed) Title: "Anticancer Drug approach: Computer-aided drug design, Synthesis and Preclinical Evaluation of New Benzimidazoles as Checkpoint Kinase 2 (chk2) Inhibitor".
Fund: 305,000 USD, by Science and Technology Development Fund (STDF), Egypt.
Role: Group leader in drug design implementation team.
Pending Research Projects

Opportunity # PA-13-313
Academic Research Enhancement Award (Parent R15)
Fund: 300,000 USD/ 3 years, by NIH (National Institutes of Health)
Role: PI

2015 Title: “Design, synthesis and biological evaluation of novel pyrrolizine derivatives with estimation of their antitumor activity”
Fund: 300,000 USD, by King Abdul-Aziz City for Science and Technology (KACST), KSA.
Role: Consultant.

HONORS AND AWARDS

2015 Honors: “Teaching Team of the Year” for the Infectious Disease Course. Irma Lerma Rangel, College of Pharmacy, Texas A&M University, Health Science Center.

2014 Honors: “Teaching Team of the Year” for the Infectious Disease Course. Irma Lerma Rangel, College of Pharmacy, Texas A&M University, Health Science Center.


2012 Outstanding Researcher Award, College of Pharmacy, Umm Al-Qura Univ., KSA.

2010 OMSA Merit Award, Okayama Student Association of Okayama Univ., Japan.

2009 Best Lecturer Merit Award, Omar Al-Mukhtar Univ., College of Pharmacy, Al-Beida-Libya.

2008-2009 Doctor of the Year Award, elected by students, Helwan Univ., Egypt.

2003-2007 National Egyptian Governmental Scholarship for the Ph.D. degree in Japan

2008 First Place in poster presented in the 1st Scientific Conference of College of Pharmacy, Cairo Univ., Egypt

1988 Award for The Valedictorian position for five years continuously in college of Pharmacy, sponsored by Egyptian Syndicate of Cairo pharmacists.

LIST OF PUBLICATIONS AND PATENTS

PEER REVIEWED PUBLICATIONS
* Corresponding author


**PEER REVIEWED PUBLICATIONS IN PROCESS**


**PATENT**


**LIST OF PRESENTATIONS at NATIONAL, REGIONAL, & LOCAL MEETINGS**


ACADEMIC SERVICES

Rangel College of Pharmacy, TAMHSC, USA

Feb 6, 2015  Interviewer in Admission Committee for new applicants for Pharm-D program Class 2019
Feb 12, 2015  Interviewer in Admission Committee for new applicants for Pharm-D program Class 2019

College of Pharmacy, Umm Al-Qura Univ., KSA

2011-2012  Head of Department of Clinical Pharmacy, and chair for Pharm-D module Accreditation.
2012-2013  Member of the Curriculum Committee.
2011-2012  Team Leader in the Department of Clinical Pharmacy, Self-Study Committee for Accreditation
2012-2013  Faculty Advisor for Pharm-D Program for Accreditation
2011-2012  Member of the College of Pharmacy and Graduate Affairs Committee.
2012-2013  Chair of the scientific committee, Department of Pharmaceutical Chemistry
2012-2013  Chair of the Student affair committee, Clinical Pharmacy Program (Pharm D)

College of Pharmacy, Helwan Univ., Cairo, Egypt

2008-2009  Unit Coordinator for the International Computer Driving license (ICDL), Helwan Univ.
2008-2009  Chair of the Scientific committee
2007-2008  Supervisor for the student union election, 3rd year pharmacy students.
2008-2009  Supervisor of Helwan Univ. student hostel in collaboration with the building manager
2007-2009  Member for committee of course specification for B-Pharm undergraduate students
2007-2009  Member for committee of course specification for B-Pharm undergraduate students and the pharmaceutical chemistry modules
2008-2013  Main supervisor for eight master pharmacy students, six of them have completed, and two are in progress.

1. Duaa’ Mohamed Sami Helmy (Molecular modeling based design and synthesis of potential
antitumor fused pteridine derivatives), (Completed; 2011).

2. Ahmed Mohamed Abdel Fattah (Molecular modeling and synthesis of benzo pteridin-eanlogs of prospected biological activity), (Completed; 2012).

3. Sawsan Ahmed Shawkey (Design and synthesis of 5-deaza-alloxazine and their analogs of prospected biological activity based on computer aided drug design), (Completed; 2012).


5. Ahmed M. Abbas Temirak (Drug design and synthesis of 2-heteroaryl benzimidazole derivatives of potential pharmacological activity); (Completed; 2014).

6. Mohamed Khatab Fathy Khatab (Synthesis and docking studies of new 2-phenylbenzimidazole of expected pharmacological activity); (Completed; 2013).

7. Mona Abdullah Abdullahziz Mahmoud (Drug design and synthesis of new 2-furyl benzimidazoles of expected pharmacological activity); (In progress).


SCIENTIFIC JOURNAL AND RESEARCH PROJECT REVIEWER

1. European Journal of Medicinal Chemistry
   ▪ Manuscript Number: EJMECH-D-13-02240 (2014)
   ▪ Manuscript Number: EJMECH-D-14-00155 (2014)
   ▪ Manuscript Number: EJMECH-D-14-01914 (2014)
   ▪ Manuscript Number: EJMECH-D-14-02048.(2014)
   ▪ Manuscript Number: EJMECH-D-14-02465.(2014)
   ▪ Manuscript Number: EJMECH-D-14-01343). (2014)
   ▪ Manuscript Number: EJMECH-D-13-01845 (2013)
   ▪ Manuscript Number: EJMECH-D-13-01638 (2013)
   ▪ Manuscript Number: EJMECH-D-12-00759 (2012)

2. Bioorganic & Medicinal Chemistry
   Manuscript Number: BMC-D-12-00365 (2012)

3. Egyptian Pharmaceutical Journal [EPJ]
   Manuscript Number: EPJ 122 13 2013.

4. Journal of Taibah University for Science
   Manuscript Number: JTUSCI-D-14-00104 (2014)

5. Al-Taif University, KSA
   ▪ Proposal No. 1-433-1828 (2011)
   ▪ Proposal No. 1-433-1769 (2011)

6. Al-Dammam University, KSA.
   Title of project: Alerts for drug- drug interaction: 10 year trend and factors associated with clinician override in an inpatient setting. in an academic teaching hospital. (2011)
PHARMACY LICENTURE AND CERTIFICATION

2008-2009  Member of the committee of Helwan syndicate of pharmacists, Cairo, Egypt
1988-Present  Registered Pharmacist in Cairo, Egypt.

TEACHING EXPERIENCES

I. UNDERGRADUATE/PROFESSIONAL (Pharm. D. and B-Pharm) COURSES

1. Rangel College of Pharmacy, Texas A&M Univ. Health Science Center, USA.

   Below is the list of courses that I taught over the past several years. I have an extensive experience in teaching all topics of Medicinal Chemistry, Drug Design, Drug Metabolism, Drug Interactions in professional curriculum of Pharm-D program. I also participated in recitations, pre-exam reviews, post-exam reviews, exams and other assessments in these courses.

   PHAR611  (PharmY1)  Principles of Drug Action II (9 hrs. + Pre- and Post-exam Recitations)

   PHAR712  (PharmY2)  IPT III: Endocrinology and Metabolic Diseases: Corticosteroids (2 hrs.)

   PHAR713  (PharmY2)  IPT IV: Neurology and Pain Management
   Anti-Seizures, NSAIDs, Opioid analgesics (4 hrs. + Post-exam Recitations)

   PHAR810  (PharmY3)  IPT V: Psychiatry and Addiction: Sedatives, Hypnotics, and Anxiolitics (2 hrs),
   Antidepressants (2 hrs), Attention-deficit hyperactivity disorder drugs (ADHD) (1 hr),
   and Antischizophrenic drugs (2 hrs).

   PHAR811  (PharmY3)  IPT VI: GIT, Pulmonary, Rheumatic, Ophthalmology: urinary Incontinence (1 hr),
   Peptic ulcer disease (pud), and gastroesophageal reflux disease (GERD) (1 hr),
   asthma, COPD and allergic rhinitis (2 hrs) and osteoarthritis, rheumatoid arthritis, and
gout (2 hrs).

   PHAR812  (PharmY3)  IPT VII: Infectious Diseases: Antibiotics (all classes), Antiviral, Anti-tuberculosis,
   Antifungal, Antiprotozoal (12 hrs. + Pre- and Post-exam Recitations)

   PHAR627  (PharmY1)  Biochemistry (28 hrs. + Pre- and Post-exam Recitations)
   Foundations of Biochemistry, Water, Amino acids, peptides, proteins,
   Protein Functions-Binding, Protein Functions-Catalysis, Carbohydrates, Nucleotides
   and Nucleic Acids, DNA-Based Information Technology, Lipids, Biological membranes
   and transport, Biosignaling, Bioenergetics, Glycolysis, gluconeogenesis, & the pentose
   phosphate, The Citric Acid Cycle, Fatty Acid Catabolism, Amino Acid Oxidation and
   Production of Urea, Oxidative Phosphorylation, Peptidoglycan Biosynthesis.

2. College of Arts and Sciences, Texas A&M Univ., Kingsville, USA (see Graduate Courses)

3. Misr International Univ. (MIU), College of Pharmacy, Egypt
Hamed I. Aly, B.Pharm, Ph.D.; C.V.

PHC 331 Chemotherapeutic agents (21 hrs., Spring 2009)
Antibiotics, Anti-Infective Agents, Antifungal antibiotics, Urinary Tract Anti-infective agents, Anti-T.B. Agents, Antiviral Agents, Antiprotozoal Agents, Anticancer Drugs

PHC432 Central Nervous & Autonomic Nervous System Drugs, Analgesic drugs (14 hrs., Fall 2008)
(Narcotic & NSAIDs), Steroidal Hormones, Cardiovascular Drugs, Vitamins

PHC 433 Practical pharmaceutical Pharmacopeial assays (7 hrs., Spring 2008)

PHC 433 Drug Design & Drug Metabolism: (Total 44 hrs., Fall, Spring and Summer: 2008-2009).
Drug development by molecular manipulation, Quantitative structure activity relationship (QSAR), Soft & Hard drugs, Pro-drug (Drug Latentiation), Molecular modeling, Drug Biotransformation.

4. College of Pharmacy, Univ. of Modern Sciences and Arts (MSA), Egypt

PC-331 Chemotherapeutic agents (15 hrs., Spring 2009)
Anti-infective Agents, Urinary tract Antiseptics, Sulfonamides, Antiviral chemotherapeutics, Anti-mycobacterial drugs, Antifungal agents, Antiprotozoal Agents, Antibiotics, Histamine and antihistaminic Agents, Antineoplastic agents

PC431 Centrally Acting Drugs (CNS Depressants & CNS Stimulants), Local (15 hrs., Summer 2008) Anesthetics, Autonomic Nervous System, Centrally Acting Analgesics, NSAIDs, Cardiovascular Drugs, Steroidal Hormones

PC531 Drug Design & Drug Metabolism; (40 hrs., Fall, Spring 2008-2009)
Drug Development By Molecular manipulation, Quantitative Structure Activity Relationship (QSAR), Soft & Hard drugs, Pro-drugs, Molecular modeling, Drug Biotransformation.

RS502 Graduation Research Project;(10 hrs., Spring 2009)
Synthesis & Molecular Docking Study of 2-deoxy-2-methylthioalloxazin-5-oxide, including Synthesis and computer aided drug design

5. College of Pharmacy, Umm Al Qura Univ., Saudi Arabia

Antibiotics (β -Lactams, Amino-glycosides, Tetracyclines, Macrolides); Synthetic antibacterial (Quinolones and fluoroquinolones; sulphonamides); Anti-myo-bacterial drugs; Antiviral drugs and anti-AIDS

Antineoplastic agents; CNS stimulants; CNS depressants; Local anesthetics; Cardiovascular drugs; Diuretics; Adrenergic drugs; Cholinergic drugs; Analgesics (Opioid analgesics and NSAIDs); H1-receptor antagonists; H2-receptor antagonists; Antiulcer drugs.

Med. Chem.III Hormonal regulating Drugs (14 hrs., Fall 2012)
Drugs for metabolic diseases and endocrine functions; Steroid hormones: Female sex hormones; Male sex hormones and Adrenocorticoids; Insulin and anti-diabetic drugs;

Med. Chem. IV Drug metabolism; Oil and water soluble vitamins; (10 hrs., Fall 2012)
& Q.C.(1805528) Clinically relevant medicinal chemistry; Quality control.
6. **College of Pharmacy, Omar Al-Mukhtar Univ., Libya**

   Clinical Pharmacy  
   **Clinical Pharmacy & Therapeutics**: (40 hrs.; 2009-2010)  
   Cardiology & Cardiovascular Drugs, Hematology, Endocrinology, Diabetes Mellitus, Thyroid Disorders, Rheumatoid Arthritis, Chronic Obstructive Pulmonary Disease, Asthma, Dermatology, Acne, Scabies.

   Drug Interaction  
   **Drug Interaction & Drug Monitoring**: (26 hrs.; 2009-2010)  
   Pharmacodynamics& Pharmacokinetic Interactions, Drugs & Elderly, Drug Food Interactions, Herbal-Drug Interactions, Drug Disease Interactions, Drug-Laboratory Interactions, Drug-Drug Interactions, Therapeutic Drug Monitoring

7. **College of Pharmaceutical Sciences, Okayama Univ., Japan**

As a Teaching Assistant to demonstrate the techniques and assist students in the laboratory routines.

   TA  
   Practical Synthetic Organic Chemistry (22-24 hrs./year; 2003-2007)

   TA  
   Practical Pharmaceutical Chemistry (22-24 hrs./year; 2003-2007).

8. **College of Pharmacy, Helwan Univ., Cairo, Egypt**

As a Teaching Assistant, Instructor, Lecturer, and then Associate Professor

   Pharm.Chem.1  
   Antineoplastic agents, Tetracycline antibiotics, Antiviral drugs, Anti-tuberculous agents, Anti-leprotic agents. (18 hrs.; Spring 2008, 2009)

   Pharm.Chem.2  
   Drug Development By Molecular manipulation, Quantitative Structure Activity Relationship (QSAR), Hard And soft drugs, Prodrugs, Molecular modeling, Drug Biotransformation (22 hrs.; Fall 2008, 2009).

   Pharm.Chem.3  
   NSAIDs, Narcotic Analgesics, Local Anesthetics, Antihistaminic Drugs (12 hrs.; Fall & Spring 2008, 2009)

   Pharm.Chem.4  
   Autonomic Nervous System, Anti-parkinsonian drugs, Centrally Acting Drugs (CNS depressants & CNS Stimulants), Cardio Vascular Agents (10 hrs.; Spring 2009)

   Org. Chem 1, 2  
   Practical Organic chemistry (24 hrs.; fall & Spring 1995-1999)

   Anal. Chem. 2  
   Practical Analytical Chemistry (72 hrs.; fall & Spring 1997-1999)

9. **College of Pharmacy, Tanta Univ., Egypt**

   As a Teaching Assistant, to demonstrate techniques and assisted students in every day laboratory routines and graded laboratory write-ups.

   Pharm.Chem.1, 2  
   Practical Pharmaceutical Chemistry1,2 (36 hrs.; fall & Spring 1991-1994)

   Drug Des.4  

   Bioch.1, 2  
   Practical Biochemistry (36 hrs.; fall 1992-1993)

   Org. Chem1, 2  

   Anal. Chem  

   Fron. Chem  
   Practical Forensic Chemistry (24 hrs.; fall 1991-1994)
II. GRADUATE/PROFESSIONAL COURSES

For graduate students I taught topics in advanced Medicinal Chemistry, drug design and targeting, QSAR, and Pro-drugs, in addition to Modern techniques of drug discovery.

Master students

College of Arts and Sciences, Texas A&M Univ., Kingsville, USA
Graduate Level Pharmaceutical Chemistry Course (9 hrs., 2013 Spring)
Drug Action, Drug Discovery, Drug Design and Development By Molecular manipulation, Quantitative Structure Activity Relationship (QSAR), Soft & Hard drugs, Pro-drugs.

Master students

College of Pharmacy, Helwan Univ., Cairo, Egypt (12 hrs.; Spring 2009)
Advanced medicinal chemistry, Drug design, computer aided Drug design:

Ph.D. students

College of Pharmacy, Helwan Univ., Cairo, Egypt (16 hrs.; Spring 2009)
Advanced medicinal chemistry, Drug Discovery, Drug design, Computational Chemistry (16 hrs.; Spring 2009).

RELATED EXPERIENCES

1993-1995 Research Project, Faculty of Pharmacy, Tanta Univ. “Design, synthesis, and tissue localization studies of certain iodinated xanthines as potential cardiac function testing agent”

UNIVERSITY BOOK CHAPTERS

2009-2010 Drug Design for 5th year students (MSA Univ.).
2007-2008 Pharmaceutical chemistry I for 4th year pharmacy students, 1st semester. (Helwan Univ.).
2007-2008 Pharmaceutical chemistry II for 4th year pharmacy students, 2nd semester. (Helwan Univ.)
2008-2009 Pharmaceutical chemistry III for 5th year pharmacy students, 1st semester. (Helwan Univ.)
2007-2008 Lab. manual of Pharmaceutical chemistry II for 4th year pharmacy students, 1st semester (Helwan Univ.)
2008-2009 Lab. manual of Pharmaceutical chemistry III for 5th year pharmacy students, 1st semester. (Helwan Univ.)

WORKSHOPS/PROFESSIONAL TRAINING

2-3 Oct., 2014 NIH Grant Writing Workshop
6-9 Aug., 2014 Women and Underrepresented Postdoc, Graduate Student, and Early Career Faculty Institute at Texas A&M University; Texas A&M University, Health Professional Education Building (HPEB), College of Medicine, Bryan, TX, 77807
24 Jul., 2014 Faculty Development Workshop: “Engaging Students from Start to Finish” Presented by: The Teaching Learning Resource Center
10 Jul., 2014 Workshop of “Engaging Students in a Videoconference Environment” sponsored by Rangel College of Pharmacy, Texas A&M University,
26-28 Jul., 2011 Conference organization
2-8 Aug., 2011 Time and Conference Management
14-16 Aug., 2011 Effective presentation skills
Hamed I. Aly, B.Pharm, Ph.D.; C.V.

21-23 Aug., 2011 Effective Communication Skills
23-25 Aug., 2011 Student Evaluation
21-23 Jan., 2013 Use of Technology in Teaching

LANGUAGES

English Proficiency:
TOEFL: 217 (CBT), 553 (PB)
IELTS 5.5
GRE 1240 (3 Parts)
Primitive German, and Japanese languages

PROFESSIONAL AFFILIATIONS

American Association of Pharmaceutical Scientists (AAPS), member ID: 223287
American Chemical Society (ACS), member No. 30640786
American Association for Cancer Research (AACR), member ID: 316397
General Syndicate of Pharmacists, Egypt
Cairo Pharmacists Syndicate, Egypt
Curriculum Vitae

Juan Jose Bustamante, Ph.D.

PERSONAL INFORMATION

Present position: Assistant Professor

Working Address: Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
1010 West Avenue B, MSC 131,
Kingsville, TX 78363

Home Address: 818 E. Ragland
Kingsville, TX 78363

Telephone numbers: (361) 221-0735 (office); (361) 221-0736 (laboratory)

Fax number: (361) 221-0793

EDUCATION

2003 University of Texas-San Antonio
Department of Biology
Ph.D., Biology
Advisor: Luis Haro, Ph.D.
Dissertation: Purification and Characterization of a Glycosylated 24 kDa Human Growth Hormone Molecular Variant

1989 University of Texas-San Antonio
Department of Biology
B.S., Biology

RESEARCH TRAINING

2007 (May-Oct) University of Kansas Medical Center, Kansas City, KS
Department of Pharmacology, Toxicology & Therapeutics
Postdoctoral Fellow, laboratory of Bryan Coople, Ph.D.
Research focus: Examine the role hypoxia inducible factor (HIF) in liver regeneration.

2003-2007 (April) University of Kansas Medical Center, Kansas City, KS
Institute of Maternal-Fetal Biology
Department of Pathology and Laboratory Medicine
Postdoctoral Fellow, laboratory of Michael J. Soares, Ph.D.  
*Research focus:* Examine the influence of pregnancy on spleen and liver growth and gene expression.

**1996-2003**  
**University of Texas-San Antonio, San Antonio, TX**  
Department of Biology  
Graduate Student, laboratory of Luis Haro, Ph.D.  
*Research focus:* Isolation of a Glycosylated 24 kDa Human Growth Hormone Molecular Variant and determine its primary structural, oligosaccharide structure, receptor-binding kinetics and biological activities.

**1990-92**  
**Southwest Research Institute, San Antonio, TX**  
1994-95  
Department of Chemistry  
*Job Description:* Extraction and analysis of chemical compounds (i.e. pesticides and herbicides) from various materials.

**1988-1989**  
**University of Texas-San Antonio, San Antonio, TX**  
Department of Biology  
Undergraduate Student, laboratory of Andrew T. C. Tsin, Ph.D.  
*Research focus:* Analysis of the visual cycle in the retina and retinal pigment epithelium of the chicken and bovine eye.

**ACADEMIC POSITIONS**

<table>
<thead>
<tr>
<th>Position</th>
<th>Institution</th>
<th>Title</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Professor</td>
<td>Irma Lerma Rangel College of Pharmacy</td>
<td>November, 2007 to present</td>
<td>Assistant Professor</td>
<td>Department of Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Interim Laboratory Animal Care Manager</td>
<td>Irma Lerma Rangel College of Pharmacy</td>
<td>December, 2013 to August, 2014</td>
<td>Interim Laboratory Animal Care Manager</td>
<td>Department of Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Faculty Research Liaison</td>
<td>Irma Lerma Rangel College of Pharmacy</td>
<td>May, 2015 to present</td>
<td>Faculty Research Liaison</td>
<td>Department of Pharmaceutical Sciences</td>
</tr>
</tbody>
</table>
## FUNDING AND FELLOWSHIPS:

<table>
<thead>
<tr>
<th>Date</th>
<th>Organization, College of Pharmacy, Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</th>
<th>Investigator(s)</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2015</td>
<td>Texas A&amp;M HSC College of Pharmacy, Bridge Fund: Juan Bustamante (PI), 5/15-4/16, $6,000.</td>
<td>Juan Bustamante (PI)</td>
<td>$6,000</td>
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<tr>
<td>March 2014</td>
<td>Target, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
<td>$1,500</td>
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<tr>
<td>Sept. 2013</td>
<td>B.C. and Addie Brookshire Foundation, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
<td>$2,500</td>
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<tr>
<td>Oct. 2013</td>
<td>Target, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
<td>$2,000</td>
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<tr>
<td>Sept. 2012</td>
<td>Alice Kleberg Reynolds Foundation, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
<td>$7,500</td>
</tr>
<tr>
<td>June 2012</td>
<td>Behmann Brothers Foundation, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
<td>$5,000</td>
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<td>Sept. 2012</td>
<td>B.C. and Addie Brookshire Foundation, Target, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
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<td>Oct. 2012</td>
<td>Target, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Juan Bustamante (PI)</td>
<td>$2,000</td>
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<tr>
<td>Oct. 2011</td>
<td>Target, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Joan Everett-Houser (PI) and Juan Bustamante (Co-PI)</td>
<td>$4,000</td>
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<td>Aug 2011</td>
<td>B.C. and Addie Brookshire Foundation, Target, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Joan Everett-Houser (PI) and Juan Bustamante (Co-PI)</td>
<td>$5,000</td>
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<tr>
<td>June 2011</td>
<td>Behmann Brothers Foundation, College of Pharmacy-Literacy, Eating, Activity &amp; Decision-making Skills (COP-LEADS):</td>
<td>Joan Everett-Houser (PI) and Juan Bustamante (Co-PI)</td>
<td>$5,000</td>
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<tr>
<td>Nov. 2007</td>
<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy, Juan Bustamante (PI); Start-Up Funds; $100,000.</td>
<td>Juan Bustamante (PI)</td>
<td>$100,000</td>
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<tr>
<td>May 2007</td>
<td>National Institutes of Health, “Role of Early Growth Response Factor-1</td>
<td>Joan Everett-Houser (PI) and Juan Bustamante (Co-PI)</td>
<td>$5,000</td>
</tr>
</tbody>
</table>
Oct 2007  **in Cholestatic Liver Injury-Supplement**, 3R01DK073566-01A2S1, Principal Investigator, Bryan L. Copple, $164,640  (total direct costs).

2003-2007  **National Institutes of Health, “Trophoblast Differentiation Supplement”**, RO1-HD20676-S1, Principal Investigator, Michael J. Soares, $230,000  (total direct costs).

2000  **Hispanic Scholarship Fund ($1,500)**, San Francisco, California.

1999  **University Small Grants Award ($300)**, The University of Texas at San Antonio, Division of Life Sciences, San Antonio, Texas.

1996-2002  **National Institutes of Health Trainee**, Minority Biomedical Research Support Program (Ph.D. Student), University of Texas at San Antonio, San Antonio, TX.

1992-1993  **National Institutes of Health Trainee**, Minority Biomedical Research Support Program (Graduate Student), University of Texas at San Antonio, San Antonio, TX.

1988-1990  **National Institutes of Health Trainee**, Minority Biomedical Research Support Program (Undergraduate Student), University of Texas at San Antonio, San Antonio, TX.

**HONORS AND AWARDS**

2009  **NIDDK Excellence in Research, Oral Presentation Award**, NIDDK Network of Minority Research Investigators West Regional Workshop, San Diego, CA.

2006  **Travel Award** from **FASEB MARC PROGRAM** to attend the 39th Annual Meeting of the Society for the Study of Reproduction, Omaha, Nebraska.

2005  **Travel Award** from **FASEB MARC PROGRAM** to attend the 87th Annual Meeting of the Endocrine Society, San Diego, CA.

2004  **Travel Award** from **FASEB MARC PROGRAM** to attend the 37th Annual Meeting of the Society for the Study of Reproduction, Vancouver, British Columbia.

2003  **Travel Award ($500)** from **The Endocrine Society and FASEB MARC PROGRAM** to attend the 85th Annual Meeting of the Endocrine Society, Philadelphia, PA.
2002 Travel Award from FASEB MARC PROGRAM to attend the 84th Annual Meeting of the Endocrine Society, San Francisco, CA

1999 Excellence in Endocrinology Award, The Endocrine Society Minority Affairs Committee/ Society for Advancement of Chicanos and Native Americans in Science (SACNAS), Annual Conference of the Society for Advancement of Chicanos and Native Americans in Science, Portland, OR

1999 Travel Award from The University of Texas at San Antonio (San Antonio, Texas) to attend the Thirteenth Symposium the Protein Society, Boston, MA

1999 Travel Award from Biophysical Society/Minority Affairs Committee to attend the 41st Annual Meeting of the Biophysical Society, New Orleans, LA

1997 Travel Award from American Society for Biochemistry and Molecular Biology to attend the 17th International Congress of Biochemistry and Molecular Biology, Annual Meeting of The American Society of Biochemistry and Molecular Biology, August 27-29, San Francisco, CA

1995 Who’s Who Among Students in American Universities & Colleges

INVITED SPEAKER:


Mini-Colloquium, TAMHSC COP and TAMUK, College of Pharmacy, Kingsville, TX, October 8, 2012.

“A Novel Mouse Model to Study Maternal Hepatic Growth during Pregnancy and the Effects of Fatty Liver”. Purdue Lipid Club, Department of Biological Science, Purdue University, West Lafayette, IN., April 28, 2011.

“From the UTSA MBRS Program to a Career in Science”, Center for Research and Training in Science, University of Texas at San Antonio, San Antonio, Feb. 18, 2011.


“A Novel Mouse Model to Investigate Liver Growth”. Texas A&M Health Science Center College of Pharmacy Research Colloquium, Kingsville, Texas 2010.

“Maternal Hepatic Growth Response to Pregnancy”. Texas A&M Health Science Center College of Pharmacy Research Symposium, College Station, Texas 2010.
“A Novel Mouse Model to Investigate Hepatocyte Proliferation and Liver Growth: Maternal Hepatic Growth Response to Pregnancy in the Mouse”. Department of Reproductive Medicine, University of California, La Jolla, California (2010).

“South Texas Culture and Experience”. Transculturation Program, Texas A&M University at Kingsville, April 29, 2009.


“South Texas Culture and Experience”. Transculturation Program, Texas A&M University at Kingsville, April 29.

Endocrine Presentation, Clinical Endocrinology Update (CEU) Student Day Program, Endocrine Society, Crowne Plaza Riverwalk Hotel, San Antonio, Texas (2007)


“Pregnancy and Lactation Modulate Hepatic Growth and Gene Expression.” Department of Biology, University of Texas at San Antonio, San Antonio, Texas (2006).

Lecturer for a Shortcourse in Endocrinology at Our Lady of the Lake University. 2 Lectures and 1 seminar; “Introduction into Endocrinology and Diabetes” “Hormones of the Gastrointestinal Tract (Cholecystokinin)” and “Pregnancy and Lactation Modulate Hepatic and Splenic Growth and Gene Expression.” Sponsored by The Endocrine Society, Department of Biology, Our Lady of the Lake University, San Antonio, Texas (2005).


PROFESSIONAL AFFILIATIONS:

Endocrine Society, 1997
Society for Advancement of Chicanos and Native Americans in Science 1997
Federation of American Societies for Experimental Biology, 2003
Scientist Center for Animal Welfare 2013
Manuscript Reviewer

Ad hoc reviewer for Electrophoreses
Ad hoc reviewer for Proteomics

PUBLICATIONS (Manuscripts):


**PUBLICATIONS (Abstracts):**


TRAINEES

Undergraduate Students:

Shannon Rodriquez (2009 - 2011)
Victoria Cantu (2008-2009)
Beba Troung (Summer 2009)

Professional Students

Amanda Saenz (Spring 2014)
Arlis Hamann (2012)
Jaime Lee (Fall 2011)
Michael Herrera (2010)
Esperanza Guevara (Spring 2010)
TAMUK Masters Students

Fang Xie (Spring 2012)
Alexandra Calderon (2010)

Graduate Student

Shadae Foster (Spring & Summer 2014)

TEACHING EXPERIENCE

Teaching

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Fall 2008</td>
<td>PHAR 610 Principles of Drug Action I</td>
</tr>
<tr>
<td>Spring 2008</td>
<td>PHAR 611 Principles of Drug Action II</td>
</tr>
<tr>
<td>Fall 2008 – current</td>
<td>PHAR 626 Human Physiology</td>
</tr>
<tr>
<td>Spring 2008-current</td>
<td>PHAR 712 Endocrine Metabolic Disease</td>
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<tr>
<td>Spring 2008-current</td>
<td>PHAR 715 Recitations/Rounds II (Rounds on Endocrine)</td>
</tr>
<tr>
<td>Spring 2008-current</td>
<td>PHAR 727 Obesity Epidemic (elective)</td>
</tr>
<tr>
<td>Fall 2010-current</td>
<td>PHAR 811 GI, Pulmonary, Rheumatic, Ophthalmology, and Dermatology</td>
</tr>
<tr>
<td>Fall &amp; Spring 2011-2014</td>
<td>PHAR 789 COP LEADS (elective)</td>
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</table>

Note: contact hour ranged from 89 – 146 contact hours per year

COURSE COORDINATOR

Fall Courses

<table>
<thead>
<tr>
<th>Year/Course</th>
<th>Courses</th>
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<tbody>
<tr>
<td>2008–current</td>
<td>PHAR 626 Human Physiology</td>
</tr>
<tr>
<td>2010–current</td>
<td>PHAR 811 GI, Pulmonary, Rheumatic, Ophthalmology, and Dermatology (Co-Coordinator)</td>
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<tr>
<td>2013-current</td>
<td>PHAR 810 Psychiatry and Addiction</td>
</tr>
<tr>
<td>2013</td>
<td>PHAR 610 Principles of Drug Action I</td>
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<td>2013</td>
<td>PHAR 627 Biochemistry</td>
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Spring Course

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<th>Year/Course</th>
<th>Courses</th>
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<tr>
<td>2008-current</td>
<td>PHAR 712 Endocrine Metabolic Disease</td>
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<tr>
<td>2008-current</td>
<td>PHAR 727 Obesity Epidemic (elective)</td>
</tr>
<tr>
<td>2014-current</td>
<td>PHAR 812 Infectious Diseases</td>
</tr>
<tr>
<td>2014</td>
<td>PHAR 726 Microbiology/Immunology</td>
</tr>
<tr>
<td>Fall &amp; Spring 2011-2014</td>
<td>PHAR 789 COP LEADS (elective)</td>
</tr>
</tbody>
</table>

Teaching Awards

Teaching Team of the Year Award for 2010-2011, IPT III: Endocrinology and Metabolic Diseases, Coordinator and Instructor.
Teaching Team of the Year Award for 2011-2012, IPT III: Endocrinology and Metabolic Diseases, Coordinator and Instructor.

Teaching Team of the Year Award for 2013-2014, IPT VII: Infectious Disease, Co-Coordinator.

Teaching Team of the Year Award for 2014-2015, IPT VII: Infectious Disease, Co-Coordinator.

Teacher of the Year Award 2014-2015.

HSC COP Students

HSC COP Academic Counseling
I am the Official Advisor for 10-25 students per year.

COMMITTEES AND SERVICE

Contribution to professional organizations

<table>
<thead>
<tr>
<th>Committee member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainee Development Committee of The Endocrine Society: Liaison to Student Affairs Committee, member 2005-2007.</td>
</tr>
<tr>
<td>Minority Affair Committee of The Endocrine Society Minority Affair Committee, member 2008-2014.</td>
</tr>
<tr>
<td>The Endocrine Society, Inter-Committee Planning Group for the Health Disparities Summit, member, 2011-2014.</td>
</tr>
</tbody>
</table>

Service

Mentor and Facilitator at the Minority Mentoring Reception. The Endocrine Society’s 82nd Annual Meeting, Toronto, Canada (2000).

Panelist at ENDO ’05 Minority Student Day. The Endocrine Society’s 87nd Annual Meeting, San Diego, CA (2005).


Peer Mentor and served on a panel “Meet the Experts: A Panel Discussion of the Joys, Challenges, and Rewards of Careering as a Doctoral Scientist” at the MARC Student Day at Experimental Biology 2008, Experimental Biology, San Diego, CA.

Peer Mentor for the Annual Biomedical Research Conference for Minority Students (ABRCMS) 2008, Orlando FL.

Endocrine Society’s Minority Affair Committee, member, develop programs that increases the recruitment, participation and retention of underrepresented minorities within the field of basic and clinical endocrinology. Attended SACNAS (Advancing Hispanic/Chicanos & Native Americans in Science), Dallas, Texas to recruit members 2009.

Peer Mentor, panelist and poster judge for Endo 2009 Minority Mentoring and Poster Reception, Washington, DC.

Peer Mentor, MARC Student Day at Experimental Biology 2009, Experimental Biology, New Orleans, LA.

Peer Mentor, panelist and poster judge for Endo 2010 Minority Mentoring and Poster Reception, San Diego, CA.

Poster judge for Endo 2011 Minority Mentoring and Poster Reception, The Endocrine Society 93rd Annual Meeting, Boston, MA.


**Chair of National Meeting Session (invited only)**


**National Meeting Symposia development**

Endocrine Society Minority Affairs Committee developed an “Endocrine Health Disparities Symposium, Biological Mechanisms for Global Disparities in Type 2 Diabetes and it Complications: Controversies and Advances”, The Endocrine Society 93rd Annual Meeting, Boston, MA, 2011.

Endocrine Society Minority Affairs Committee developed an “Endocrine Health Disparities Symposium, Biological Mechanisms for Global Disparities in Type 2 Diabetes and it Complications: Controversies and Advances”, The Endocrine Society 94th Annual Meeting, Houston, TX, 2012.

**National Health Disparities Summit**


**National Mentoring Programs**

As a member of the Endocrine Society Minority Affairs committee and FASEB MARC Program Advisory Board, I have help in the development of currently funded society mentoring programs such as the recently announced FLARE (Future Leaders Advancing Research in Endocrinology) Program.

**ADMINISTRATIVE SERVICE**

**Institutional (HSC or Texas A&M University System)**

Texas A&M University-Kingsville Institutional Animal Care and Use Committee (IACUC), **member**, 2008-present, appointed.

Texas A&M University-Kingsville Institutional Radiation Safety Committee, **member**, charged with continually radiation safety and protocol of the TAMUK and COP, 2009-present, appointed.

Texas A&M University-Kingsville Project Hazard Assessment Committee, **member**, 2012 – present, appointed.

HSC Research Compliance Task Force, Animal Compliance, **member**, 2010-2011, appointed.

HSC Institute of Biosciences & Technology (IBT) Institutional Animal Care and Use Committee (IACUC) for IBT and COP, **Vice Chair**, 2010-present, appointed.

TAMHSC Environmental Health and Safety Committee, **member**, 2013-present,
appointed.

TAMU Research Compliance Committee, **member**, 2014-present, appointed.

TAMU Diversity Leadership Team, **member**, 2014-present, appointed.

**Component (College of Pharmacy)**

**COP Faculty Representative**, 2012 - 2014.

**Committees**

Admission Committee, **Chair**, 2008-2014, appointed.


Working group as *Ad hoc* Advisory Committee for Integrated Pharmacotherapy (IPT) Course Coordination, **Co-Chair**, 2008-2010, appointed.

Library and Learning Resources Committee, **member**, 2009-2010, appointed.

*Ad Hoc* Graduate Program Development Committee, **member**, 2009-2010, volunteer.

Research Advisory Committee, **member**, 2010-2011, appointed.

2012 Silver Star Gala Planning Committee, **member**, 2011, appointed.

Assigned to participate in OSCE activities at the College of Pharmacy, **member**, 2013-2014, appointed.

COP Advisory Benchmark I and II Subcommittee, **member**, 2013, appointed.

Ad hoc Diversity Leadership Council, **Chair**, 2014, appointed.

**Search Committees**

Physiology Instructor search committee, **Chair**, 2008-2009, appointed.

Pharmacology Faculty search committee, **Chair**, 2008-2009, appointed.

Molecular Biology Faculty search committee, **Chair**, 2008-2009, appointed.

Director of Admissions Search Committee, **member**, 2009, appointed.

Pre-Pharmacy Coordinator Search Committee, **member**, 2009, appointed.
Pharmaceutical Research Facility Manager Search Committee, **member**, 2010, appointed.

Admission Counselor Search Committee, **member**, 2010, appointed.

Administrative Assistant-Office of the Dean Search Committee, **member**, 2011, appointed.

Veterinary Technician Search Committee, **member**, 2011, appointed.

Director of Institutional Advancement Search Committee, **member**, 2012, appointed.

Pre-Pharmacy Coordinator Search Committee, **member**, 2012, appointed.

Pharmacology Faculty Search Committee, **member**, 2011-2012, appointed.

Associate Professor and Assistant Dean of Student Affairs Search Committee, **member**, 2013, appointed.

Pharmacology Faculty Search Committee, **member**, 2013, appointed.

Laboratory Animal Care Manager Search committee, **member**, 2014, appointed.

Veterinary Technician Search Committee, **member**, 2014, appointed.

Social & Behavioral Science Faculty Search Committee, **member**, 2014, appointed.

Pre-Pharmacy Coordinator Search Committee, **member**, 2015, appointed.

Social & Behavioral Science Faculty Search Committee, member, 2015, appointed.

Veterinary Technician Search Committee, **member**, 2015, appointed.

**Focus Group/Task Force**

Instructional technology working group to critique programs, WIMBA (12/13/07) and Angel (12/20/07), for College of Pharmacy. Angel is a program similar to WEBCT and WIMBA is a program used for distance learning, **member**, appointed.

Task Force on a Secondary College of Pharmacy Campus, **member**, 2008, appointed.

ePortfolio focus group, **member**, select ePortfolio system for the college, 2008-2009, appointed.

Focus group for design of HSC website, **member**, 2009, appointed.
### Accreditation

Accreditation Council for Pharmacy Education (ACPE) Comprehensive site visit for reaffirmation, **representative of Student Affairs & Curriculum Committee**, April 14-15, 2009, volunteer.

Accreditation Council for Pharmacy Education (ACPE) Comprehensive site visit for reaffirmation, **representative of Student Affairs**, April 14, 2010, volunteer.

AAALAC Accreditation Review of IBT and COP site visit, **representative of COP animal facility**, review of program for accreditation (Accreditation Granted), November 8, 2011.

Accreditation Council for Pharmacy Education (ACPE) Comprehensive site visit for reaffirmation, **representative of Student Affairs**, February 15, 2012, volunteer.

Southern Association of Colleges and Schools (SACS) Reaffirmation Committee site visit, **representative of COP Admissions Committee**, March 5, 2012, volunteer.

Enterprise Risk and Opportunity Management (EROM) Advisory Ad hoc Committee member, **member**, 2013, appointed.

Rangel College of Pharmacy Self-Study Committee, prepare Self-Study for ACPE accreditation, **member**, 2014-present, appointed.

Rangel College of Pharmacy Self-Study 2015 Facilities & Resources Subcommittee, Co-Chair, prepare Self-Study for ACPE accreditation, 2014–present, appointed.

### Service

Interview process: student interviewer (3 full days), grade assays and recommendation letters, 2008-present, volunteer.

Evaluate and grade student midterm OSCE (Objective Structured Clinical Examination) for PHAR 672 Introduction to Patient Care (5 contact hours) in the Fall semester, 2008-present, volunteer.


2011 Silver Star Gala, event volunteer, 2011.

Post Occupancy Evaluation, Perkins Will, Group 4 Discussion –Teaching Faculty, October 14, 2011.

Meet and provide tours of the COP and PRF to visitors such as JCIP attendees, administrators, advising committees, speakers and faculty candidates, 2013-present.
**Community**

Community Mixer at COP, short speech on Current Research in the COP, November 17, 2011.

Legislative campus visit, representative of COP, tour of vivarium, November 29, 2011.

State Representative Meet and Greet, representative of COP, July 17, 2012

**COP Scholarship Fund Raising**

Scholarship Fund Raising of $25,000 for the Texas A&M Health Science Center Foundation, Martin Farias, III Scholarship Fund, 2009-present.

**Department/Unit**

Oversee Core Lab/Common equipment installment, maintenance, and usage, appointed, 2008-present.

Working group as *Ad hoc* Animal Committee, **member**, oversee the building of animal facilities and locate temporary animal housing at Texas A&M University Kingsville campus for current researchers, 2007-2011, volunteer.

Oversee animal facilities and research compliance, 2011-present.

Decommission of labs, assist new faculty with start-up lab and equipment, IACUC, BSL2, and radiation protocols.

**Outreach programs for college students (career counseling, recruitment, mentoring)**

TAMUK-STEP May-semester
2 new Texas A&M University-Kingsville students
Kingsville, Texas
May 2009
Mentor
Two week research lab projects and discussion of career paths

**Outreach programs for high school, junior high school, and elementary school students (career counseling, recruitment, mentoring)**

East Central High School Career Day
San Antonio, Texas
February 2008
Mentor and speaker
Discussion of career paths in pharmacy and research
Ben Bolt-Palito Blanco ISD Career Day
Ben Bolt, Texas
October 10, 2008
Mentor and poster presentation on physiology
Discussion of career paths in pharmacy and research

Lyndon B. Johnson High School Career Day
Laredo, Texas
December 17, 2009
Mentor and speaker
Discussion of career paths in pharmacy and research

Cubs Scouts
Tiger and Wolf Den leader for Pack 140
2008-present
Kingsville, Texas 78363.
CURRICULUM VITAE

Mahua Choudhury, Ph.D.

Texas A&M Health Sciences Center, Irma Lerma Rangel College of Pharmacy, Texas

Contact address: mchoudhury@tamhsc.edu

http://pharmacy.tamhsc.edu/labs/choudhury/

Education

2008 Ph. D. (Medical Pharmacology), University of Missouri Columbia, USA

2001 MS (Molecular Biology, Biophysics, & Genetics), University of Calcutta, India

1999 BS (Zoology, Botany, Chemistry), University of Calcutta, India

Research and Teaching Experience

11/2014-present Morris L Lichtenstein Jr. Medical Research Scientist

9/2012 – present Tenure Track Assistant Professor, Department of Pharmaceutical Science, Texas A&M Sciences Center, College of Pharmacy

7/2014 – present Assistant Professor, Nutrition and Food Science Department, Texas A & M University

9/2011 - 9/2012 Research Instructor, Department of Pediatrics, Neonatology, University of Colorado, Aurora, CO

8/2008-8/2011 Postdoctoral Fellow, Department of Pediatrics, Neonatology, University of Colorado, Aurora, CO

8/2006 - 7/2008 Graduate Research Assistant, Department of Physiology, University of Missouri Columbia, MO

8/2004 - 7/2006 Graduate Teaching Assistant, Department of Physiology, University of Missouri Columbia, MO

8/2002 - 7/2004 Graduate Teaching Assistant, Department of Biomolecular Science, University of Central Florida, Orlando, Florida

9/ 2001-7/2002 Lecturer, Department of Microbiology, University of Calcutta, India

Honors and Awards

November, 2014 Morris L Lichtenstein Jr. Medical Research Scientist

August, 2014 One Health Initiative Award

May, 2014 Bill & Melinda Gates Grant Challenge Award

December, 2013 PESCA Award, Texas A&M University

October, 2013 Abstract accepted for plenary session of Society of Maternal-Fetal Medicine (8 were chosen out of 1781)

June, 2013 Nomination for Mallinckrodt Grant Award submission from TAMHSC

January, 2013 TAMUK-TAMHSC Collaborative Grant Initiative Award

February, 2012 Nomination from Neonatology Section for Basil O’Connor Starter Scholar Research Award
January, 2012  Nomination from University Vice Chancellor for Ellison Research Scholar Award
April, 2011    Bill & Melinda Gates Grant Challenge Award
August, 2008  American Diabetes Association Mentor-Based Postdoctoral Fellowship
August, 2009  Kern Aspen Lipid Conference, Winner of the Early Career Investigator Travel Stipend Award and Winner of Best Poster Presenter
2009          The Colorado Biological Mass Spectrometry Society, co-author of First Prize Winner Poster
2009          Association of Biomolecular Resource Facilities - Recipient co-author of the ABRF Student/Post- Doc Poster Awards
March, 2008   University of Missouri, Graduate Student Travel Scholarship
April, 2008   University of Missouri, Graduate Professional Council Travel Scholarship
March, 2008   University of Missouri, Graduate Education Committee Travel Scholarship
April, 2008   University of Missouri, ORG Travel Scholarship
March, 2007   University of Missouri, Graduate Professional Council (GPC) Travel Scholarship
2007          University of Missouri, Professional Presentation Travel Scholarship
March, 2007   University of Missouri, Graduate Education Committee Travel Scholarship
2007          University of Missouri, Molecular Biology Travel Award
February, 2007 University of Missouri, ORG Travel Scholarship
2006          University of Missouri, ORG Travel Scholarship
April, 2006   University of Missouri, Graduate professional Council (GPC) Travel Scholarship
2006          University of Missouri, Graduate Education Committee Travel Scholarship
2002          Lt. Col. A. N. Bose scholarship for pursuing PhD in USA
1999          National Scholarship Bachelor of Science Examination
1995          National Scholarship for the Higher Secondary Examination
1993          National Scholarship for the Secondary Examination

Honors and Awards (Role-Mentor)
March, 2015   Walgreens Diversity Scholarship (Student-Jason Chau)
February, 2015 Mayo Clinic Summer Scholarship (Student-Sasha Cruz)
August, 2014  Hungarian Campus Scholarship (Research Scientist-Szabo Zsuzsanna)
May, 2014     Kosciuszko Foundation Scholarship (Research Scientist-Malgorzata Wegner)
May, 2014     TSHP Research and Education Scholarship (Student-Sasha Cruz)
December, 2013 Guy Charles Howard Scholarship (Student-Sasha Cruz)
October, 2013 Proposal accepted for Hungarian Fulbright Award Interview (Postdoc- Szabo Zsuzsanna)
December, 2013 HSF/ CVS Caremark Scholarship (Student-Sasha Cruz)
November, 2013 Bexar County Pharmacy Association Endowed Scholarship (Student- Sasha Cruz)
June, 2013    South Texas 2013 Research Colloquium, 2rd place at Poster Competition (Student-Jason Chau)
June, 2013    South Texas 2013 Research Colloquium, Honorable Mention (Student-Andrix Argüelles)
2013          Upward Bound Math and Science - Urban 2013, 3rd Prize (high school students)
**Ongoing Research Support**

**CONACYT- TAMU Collaborative Research Grant Program ($24,000)**
Plastic in diabesity-an epigenetic investigation  
Role: Principal Investigator  
9/1/2015-8/31/2016

**Bill & Melinda Gates Foundation ($100,000)**
Create a Flavonoid embedded hydro-polymer Contraceptive  
Role: Principal Investigator  
05/14 - 10/31/15

**Morris Lichtenstein Medical Research Foundation ($426,060+ a clinical nurse effort)**
The purpose of this support is to study the transgenerational epigenetic effects under modern diet and collection of saliva samples from healthy, pre-diabetic, and diabetic children and their mothers. This funding supports PI's lab research consumable.  
Role: Principal Investigator  
11/1/14- 12/1/17

**Mitsubishi, Japan (Gif Award) ($8,000)**
Role of PQQ in modulation of Sirt3 and adipogenesis  
Role: Principal Investigator  
03/14 – 12/31/15

**Texas A&M Health Sciences Research Funding for interdisciplinary research ($100,000)**
A Sensitive Epigenetic Tool for Prediction of Preeclampsia  
Role: Principal Investigator  
6/1/15-5/31/16

**One Health Initiative ($50,000)**
Diabesity Research and One health organization work  
Role- Principal Investigator of Obesogen project (*in vitro experiment*)  
9/1/14-8/31/15

**Hungary campus scholarship ($ 1000)**
Fellowship to a Hungarian Scientist to work in the lab  
Role: Principal Investigator and Mentor

**Kosciuszko Foundation Scholarship ($14,100)**
Fellowship to a Polish Scientist to work in the lab  
Scientist was unable to join lab due to family situation  
2/1/15-07/15/15

**Completed Research Support**

**March of Dimes ($1301.26)**
2014 Chapter Community Award  
Educate the community about Folic acid and distribution  
Role: Faculty Advisor  
2014

**Program to Enhance Scholarly and Creative Activities ($18,000)**
Texas A&M University  
A research initiative to improve the health of mother and unborn child  
Role: Principal Investigator  
05/01/14 - 04/30/15

**Connecticut Institute for Clinical and Translational Science ($24,480)**
Cardiometabolic Clinical and Heritable Biomarkers Targeted for the Antihypertensive Effects of Exercise  
Role: Co-Investigator  
12/13 - 06/31/14

**American Diabetes Association ($180,000)**
Mentor Based Post-doctoral Fellowship  
Sirtuin3 function in obesity and fatty liver disease.  
Role: Postdoctoral Fellow  
8/4/08-6/31/12
Bill & Melinda Gates Foundation Grand Challenge Award ($100,000)  05/11-04/31/13
*Epigenetic Biomarker of Preeclampsia*
Role: Principal Investigator

TAMHSC-TAMUK Collaborative Research Grant Initiative ($15,000)  01/01-08/01/13
*Epigenetic biomarker for the prediction of preeclampsia*
Role: Principal Investigator

TAMUK ($2,000)  05/10/13- 07/01/13
Science and Math Summer Research Program
This award supports an introductory training program in scientific studies for high school students.
Role: Principal Investigator

**Patents/Invention Application**

First Trimester Epigenetic and microRNA biomarkers for predicting preeclampsia. IP disclosed in TAMUS 3994

**Professional Affiliations**
American Association of College of Pharmacy
American Heart Association
American Association for the Study of Liver Disease
American Society for Pharmacology and Experimental Therapeutics
Research Society on Alcoholism

**Professional Activities**

2014  *Reviewer in Diabetes Care*
2014  Editor in JSM Clinical Pharmaceutics
2014  *Reviewer in Journal of Developmental Origins of Health and Disease*
2013  *Reviewer in Cardiovascular Toxicology*
2012  *Reviewer in Plos One*
2012  *Reviewer in Clinical and Experimental Hypertension*
2012  *Reviewer in Diabetes*
2012  *Reviewer in Nature Reviews Endocrinology*
2011  *Reviewer in Molecular and Cellular Endocrinology*
2011  *Reviewer in British Journal of Pharmacology*
2011  *Reviewer in Epigenetics Journal*
2011  Mentored Scholarly Activity of School of Medicine - Judge
2011  Denver Metro Regional Science & Engineering Fair – Judge
2010  25th Annual Student Research Forum-Judge

**Invited Presentation**

Choudhury M (2014) Environment, Epigenetics and Endocrine Disorder (Nutrition and Obesity Research Symposium), College Station
Choudhury, Mahua

**Choudhury M (2014)** Role of an epigenetic regulator, Sirt3, in diabesity- a contemporary view (Nutrition Graduate Seminar Series), College Station

**Choudhury M (2014)** Phthalates- an invisible epigenetic and microRNA modulator (Interdisciplinary Faculty of Toxicology), College Station


**Choudhury M (2013)** First trimester biomarkers in pre-eclampsia- a novel epigenetic and micro-RNA regulation, Sixth International Epigenomics, Sequencing & SNiPs-2013 Meeting, Harvard Medical School

**Choudhury M (2013)**- First trimester biomarkers in pre-eclampsia- a novel epigenetic and micro-RNA regulation, South Texas 2013 Research Colloquium, Texas A & M University

**Choudhury M (2012)**- Complications in Pregnancy-Epigenetics takes the blame! Presented at Perinatal Research Conference, Colorado

**Choudhury M (2012)** - Sirtuins in Aging. Presented at Metabolomics Group Meeting, Colorado

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at University of Connecticut

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at Michigan Technological University

**Choudhury M (2012)** – Sleep, Headache and Migraine. Presented at Michigan Technological University

**Choudhury M (2012)** – Pregnancy-another metabolic event. Presented at Georgia Health Sciences University

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at Winthrop University Hospital

**Choudhury M (2012)** – Human and Hormone. Presented at Texas A&M University

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at Texas A&M Health Science Centre

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at University of Minnesota

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at Wayne State University

**Choudhury M (2012)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at Texas Tech Health Science Centre

**Choudhury M (2011)** - Reduced Mitochondrial Function in Obesity- Associated Fatty Liver: SIRT3 takes on the fat. Presented at Endocrinology Research Conference, Colorado

**Choudhury M (2011)** – Complications in Pregnancy-Epigenetics takes the blame! Presented at Vanderbilt University
Student, Research Assistant, & Postdoc Training

Postdoctoral Research Associate:

2015-Present  Catherine Powell, Texas A & M University
2015-Present  Ravi Sonkar, Texas A & M University
2014 – Present Jian Zhang, Texas A & M University
2013 – Present Sunitha Meruvu, Texas A & M University
Jan – July 2013 Nicole J Poritsanos, Texas A & M University
2011-2012  Kristen Boyle, Department of Nutrition, University of Colorado

Research Assistant:

2015-present  Komal Bhakta, Texas A & M University
2015-present  Lois Kim, Texas A & M University
2013 – 2015  Yudhishtar Singh Bedi, MS, Texas A & M University
2008 – 2012  Karalee Baquero, Department of Pediatrics, University of Colorado
2004 – 2008  Daniel Jackson (Lab Assistant), Department of Medical Pharmacology and Physiology, University of Missouri

PhD and MS Candidate:

2011  Emily Busta (PhD candidate), Department of Reproductive Science, University of Colorado
2008 – 2012  Margaret Heerwagen (PhD candidate), Department of Reproductive Science, University of Colorado
2008 – 2010  Agnieszka Kendrick (MS student), Department of Biochemistry, University of Colorado
2005 – 2008  Taryn James (PhD candidate), Department of Medical Pharmacology and Physiology, University of Missouri

PharmD Candidate:

2014-Present  Hitaji Sanford, Megan L Whitley, Honey Patel, Diana J Zapata, Thomas, Tincy, Minh Lee, Hein Vo (P1), [Texas A & M University]
2014  Arjun U Mehta, Xinru S Chen (P1), [Texas A & M University]
2013 – Present  Sasha Cruz (P2), Texas A & M University
2013  Shannon White, Benjamin V Trinh (P1), Texas A & M University
2012 – Present  Jason Chau, Andrix Arguelles, Adam Villarreal (P3), Texas A & M University
2012 – 2014  Christine Kim (P2-P4), Texas A & M University

High School Students:

2013  6 High School Students (Iliana Suarez, Joseph Rivera, David Rodriguez, Genesis Soto, Gabriel Sifuentes, Lupita Ramos)
Peer-Reviewed Publications

Jian Zhang, Sunitha MeruvU, Yudhishter Singh Bedi, Jason Chau, Andrix Arguelles, Robert Rucker, **Choudhury M**. Pyrroloquinoline Quinone: Role in Sirtuin 1 and 3 Activation. *Corresponding Author* Accepted at Nutrition Research, 2015

Malgorzata Wegner, Adrianna Mostowska, Aleksandra Araszkiewicz, **Choudhury M**, Maria Piorunnska Stolzmann, Dorota Zozulinia Ziołkiewicz, Bogna Wierusz Wysocka, Pawel P. Jagodzinski Association investigation of BACH2 rs3757247 and SOD2 rs4880 polymorphisms with the type 1 diabetes and diabetes long-term complications risk in the Polish population; February 10, 2015, Biomedical Reports.

David E. Potter and **Choudhury M**. 'Ketamine: Repurposing and Redefining a Multifaceted Drug'. *Drug Discovery Today* (2014) PMID: 25224017 *Corresponding Author*

Rahman SM, **Choudhury M**, Janssen RC, Baquero KC, Miyazaki M, Friedman JE. CCAAT/enhancer binding protein β deletion increases mitochondrial function and protects mice from LXR-induced hepatic steatosis. *Biochim Biophys Res Commun*. 2013 PMID: 23159614

Ishtiaq Qadri, **Choudhury M**, Mizanoor Rahman, Trina a Knotts, Rachel c Janssen, Mieko Iwashashi, Livia Puljak, Francis R Simon, Gordan Kilic, Gregory J Fitz and Jacob E Friedman. Increased PEPCK Gene Expression During Hepatitis C Virus (HCV) Subgenome Replication: Role of NS5A and C/EBPβ *JBC* 2012*Co-first Author* PMID: 22955269

Suter MA, Chen A, Burdine MS, **Choudhury M**, Harris RA, Lane RH, Friedman JE, Grove KL, Tackett AJ, Aagaard KM. A maternal high fat diet modulates fetal sirt1 histone and protein deacetylase activity in non-human primate. *FASEB* 2012 PMID: 22982377

Shaikh Mizanoor Rahman, Rachel C. Janssen, **Choudhury M**, Karalee C. Baquero, Becky A. de la Houssaye, Susan Majka, and Jacob E. Friedman. CCAAT/enhancer binding protein beta (C/EBPβ) expression regulates dietary- induced inflammation in macrophages and adipose tissue in mice. *JBC* 2012 PMID: 22902781

**Choudhury M** & Jacob E. Friedman. Epigenetics and micro-RNAs in Preeclampsia. *Clinical and Experimental Hypertension* 2012 PMID: 22468840 *Corresponding Author*


**Choudhury M**, Karen R. Jonscher, and Jacob E. Friedman. Reduced mitochondrial function in obesity-associated fatty liver: SIRT3 takes on the fat. *Aging (Albany NY)* 2011; 3(2):175-8. PMID: 21386135

**Choudhury M**, Pandey RS, Clemens DL, Davis JW, Lim RW, Shukla SD. Knock down of GCN5 histone acetyltransferase by siRNA decreases ethanol-induced histone acetylation and affects differential expression of genes in human hepatoma cells. *Alcohol* 2011 PMID: 21367571


**Choudhury M**, Park PH, Jackson D, Shukla SD. Evidence for the role of oxidative stress in the acetylation of histone H3 by ethanol in rat hepatocytes. *Alcohol* 2010; 44(6):531-40. PMID: 20705415

**Choudhury M**, Shukla SD. Surrogate alcohols modify histone H3 acetylation via histone acetyl
transferase (HAT) and also sensitize ethanol induced acetylation in rat hepatocytes. *Alcoholism: Clinical and Experimental Research* 2008;32(5):829-39 PMID:18336638


**Book Chapter**


A Novel Epigenetic Regulator Sirt1- Is It a Magic Tool to Prevent Cardiovascular Disease! Catherine Powell, John D Bowman, Jian Zhang, Choudhury M* IGI Global Publication (2016). *Corresponding Author*

**Publications Currently in Review/Revision/Preparation**

1. **Choudhury M**. Epigenetics is a Perpetrator in Developmental Origin of Health and Disease: A New Mirror of Living (*Nature Review Endocrinology*)


3. Andrix Arguellous, Bowman John, **Choudhury M**. Epigenetic Drug-are we there yet? (Drug Discovery Today) *Corresponding author*

4. Powell C, **Choudhury M**. First trimester histone and micro-RNA biomarkers of preeclampsia: preventive or indicative of breast cancer? (Journal of Clinical Investigation) *Corresponding author*

5. **Choudhury M***, Hua Li, Sean Harshman, Michael Freitas, Lorraine Dugoff. Epigenetics and microRNA as a unifying mechanism in severe preeclampsia. *Corresponding Author*

**Conference Publication**

1. **Choudhury M***, Hua Li, Sean Harshman, Michael Freitas, Lorraine Dugoff. Epigenetics and microRNA as a unifying mechanism in severe preeclampsia American Journal of Obstetrics & Gynecology 210, Issue 1, Supplement, Page S5, 2014 * Corresponding Author


3. **Choudhury M**, Ishtiaq Qadri, Mizanoor Rahman, Trina a Knotts, Rachel c Janssen, Mieko Iwahashi, Lívia Puljak, Francis R Simon, Gordan Kilic, Gregory J Fitz and Jacob E Friedman Hepatitis C virus (HCV) associated steatosis and increased gluconeogenic gene expression in Huh8 cells: essential role of NS5A and C/EBPâ. FASEB Journal 2010


5. **Choudhury M**, Pil Hoon Park, Shukla SD. Oxidative stress and ethanol induced histone acetylation in primary rat hepatocytes The FASEB Journal 2008
6. **Choudhury M,** Shukla SD. Different chain length alcohols modify histone H3 acetylation via histone acetyl transferase (HAT) and also sensitize ethanol induced acetylation in rat hepatocytes. The FASEB Journal 2007; 21:730.13


**Presentations at Conference**

1. **Choudhury M,** Hua Li, Sean Harshman, Michael Freitas, Lorraine Dugoff. Epigenetics and microRNA as a unifying mechanism in severe preeclampsia. Society of Maternal Fetal Medicine, New Orleans (Plenary Session speaker)


3. Pescatello L; (Ash G, **Choudhury M**) Is it because of my genes that my designer jeans don’t FITT?: Integrating the omics to understand the control of activity and weight (ACSM annual meeting, Orlando, 2014


6. Andrix Arguelles, Nicole J Poritsanos, Jason Chau, Robert B Rucker, **Choudhury M.** Mitochondrial Respiratory chain complex- old fact, new idea from an upcoming researcher! (South Tx Res Coll, 2013) Honorable Mention

7. Jason Chau, Nicole J Poritsanos, Andrix Arguelles, Robert B Rucker, **Choudhury M** Apoptosis, Autophagy, and Antioxidants- an innovative perspective from a novice researcher (South Tx Res Coll, 2013) Second Prize Winner Poster

8. Iliana Suarez, Genesis Soto, David Rodriguez, Joseph Rivera, Gabriel Sifuentes, Guadalupe Ramos, Andrix Arguelles, Jason Chau, Nicole Poritsanos, **Choudhury M.** What is lab? A Big Picture Texas A&M Health Science Center and Upward Bound Math and Science - Urban 2013 Third Prize Winner Poster

9. Karen Jonscher, **Choudhury M,** Virginia Lea Ferguson, Michael J. Pecaut, Daila S. Gridley. Of Mice and Microgravity: Does SIRT3 play a role in oxidative stress-induced metabolic dysfunction? (1st Annual International Space Station Research and Development Conference)

10. Shaikh Mizanoor Rahman, **Choudhury M,** Karalee C. Baquero, Rachel C. Janssen, Becky A. de la Houssaye, Susan Majka, and Jacob E. FriedmanCCAAT/enhancer binding protein beta (C/EBPβ) is a major regulator of inflammation, ER stress, and cytokine production in obesity (Keystone 2011)

11. **Choudhury M,** Ishtiaq Qadri, Mizanoor Rahman, Trina a Knotts, Rachel c Janssen, Mieko Iwahashi, Livia Puljak3, Francis r Simon2, Gordan Kilic3, Gregory j Fitz3 and Jacob E Friedman1 Hepatitis C virus (HCV) associated steatosis and increased gluconeogenic gene expression in Huh8 cells: essential role of NS5A and C/EBPα (EB2010)

12. Shaikh Mizanoor Rahman , Rachel C. Janssen, **Choudhury M, B.A. de la Houssaye and Jacob E. Friedman.** C/EBPβ knockdown prevents fatty acid induced inflammatory gene progression, macrophage infiltration and insulin resistance in vivo and in vitro (EB 2009)


20. **Choudhury**, M, Shukla SD. Different chain length alcohols modify histone H3 acetylation via histone acetyl transferase (HAT) and also sensitize ethanol induced acetylation in rat hepatocytes. (FASEB 2007)


22. Shukla SD, Youn Ju Lee, M. Bhadra, U. Bhadra, **Choudhury**, M, A. Aroor and R.W. Lim Site specific epigenetic modifications in histone by ethanol (symposium in RSA 2007)

23. **Choudhury**, M, Shukla SD. Differences in acetylation of histone H3 by increasing carbon chain alcohols in hepatocytes (Research Society of Alcoholism 2006)

**Teaching in Classroom**

**Texas A & M Health Science Center Pharmacy School (2012-present)**

1. Instructor of Pharmacy 610, Principles of Drug Action I (3 credits, 121 PharmD students)

2. Instructor of PHAR 813 IPT VIII: Oncology, Transplant & Genomics (3 credits, 87 PharmD students)

3. Instructor of Phar 712 Endocrine and Metabolic Diseases (3 credits, 87 PharmD students)

4. Instructor of IPT VI: Critical Care, GI, Pulmonary, Rheumatic, Ophthalmology & Dermatology (5 credits, 87 PharmD students)

5. Instructor of Phar 785 Independent Study (3 credits, 2 students)
University of Missouri Medical School (2008-2010)
Teaching Assistant Physiology (BS) (3 credits, 45 students)

University of Central Florida (2002-2004)
Teaching Assistant of Biology (BS) (3 credits, 150 students)

University of Calcutta (2001-2002)
Lecturer in Microbiology Department (3 credits, 42 students)

Institutional and Professional Service

Departmental Level
2013 Member, Pharmaceutical Sciences Faculty Search Committee
2014 Member, Medicinal Chemistry Faculty Search Committee

School Level
2012 – Present Member, Library and Learning Resources Ad hoc Committee
2014 – 2019 Member, Strategic Plan Task Force Research and Scholarship Committee
2014 - 2015 Member, Research Advisory Ad hoc Committee
2014 - 2015 Member, Development Advisory Ad hoc Committee
2015 On the HILL Day –Meet with Texas Legislatures

University Level
2014- Present Member, Academic and Civil Rights Investigation Committee

Community Level
2014 Faculty Advisor in March of Dimes Community Chapter activities
2013 Speaker at the Golf Tournament for Diabetes Research

Organization committee (University Level)
Obesity and Nutrition Research Symposium
One Health Initiative
FACULTY RECORD

A. Name: Lacy Daniels

B. Rank: Professor

C. Education:

<table>
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<th>Year</th>
<th>Degree</th>
<th>Institution</th>
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<td>1972</td>
<td>B.A. cum laude</td>
<td>University of Texas, Austin (Biology)</td>
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<tr>
<td>1974</td>
<td>M.S. (Bacteriology)</td>
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<td>1978</td>
<td>Ph.D. (Bacteriology)</td>
<td>University of Wisconsin, Madison</td>
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<tr>
<td>3/78 – 10/78</td>
<td>Postdoctoral Fellow</td>
<td>University of Nijmegen, Nijmegen, The Netherlands, with Professor G. D. Vogels.</td>
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<tr>
<td>12/78 – 12/79</td>
<td>Postdoctoral Fellow</td>
<td>Department of Biochemistry, University of Wisconsin, Madison, with Dr. W. H. Orme-Johnson.</td>
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D. Professional Appointments

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<td>11/2010-Present</td>
<td>Interim Chair</td>
<td>Department of Pharmaceutical Sciences, Texas A&amp;M Health Sciences Center College of Pharmacy, Kingsville, Texas</td>
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<tr>
<td>5/2010-Present</td>
<td>Professor (Tenured)</td>
<td>Department of Pharmaceutical Sciences, Texas A&amp;M Health Sciences Center College of Pharmacy, Kingsville, Texas</td>
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<tr>
<td>5/2006-5/2010</td>
<td>Professor (non-tenured)</td>
<td>Department of Pharmaceutical Sciences, Texas A&amp;M Health Sciences Center College of Pharmacy, Kingsville, Texas</td>
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<td>8/2005-4/2006</td>
<td>Professor (non-tenured)</td>
<td>Texas A&amp;M-Kingsville College of Pharmacy, Kingsville, Texas</td>
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<tr>
<td>7/94-8/2005</td>
<td>Professor (tenured)</td>
<td>Department of Microbiology, College of Medicine, University of Iowa, Iowa City, IA</td>
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<tr>
<td>7/87-6/94</td>
<td>Associate Professor (tenured)</td>
<td>Department of Microbiology, College of Medicine, University of Iowa, Iowa City, IA</td>
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E. Teaching Performance:

1. Table of courses taught, and summary of contact hours per year

Teaching at the University of Iowa

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<th>Year</th>
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<th>Course Type</th>
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<th># Students</th>
<th>% of lectures or course</th>
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**Summary for Year, 2006:** 60 contact hours (60 in lecture)
Summary for Year, 2007: 90 contact hours (84 in lecture, 6 in lab)
Summary for Year, 2008: 108 contact hours (99 in lecture, 3 in lab, 6 in research)
Summary for Year, 2009: 136 contact hours (121 in lecture, 3 in lab, 12 in research) [some still in progress, to be completed by November 2009]

Formal student advising:
2006-2007: 11 students, 1 hour each
2007-2008: 14 students, 1 hour each
2008-2009: 14 students, 1 hour each
Fall, 2009: 10 students, ½ hour each

2. Quality of Teaching (Data is only provided for teaching at the College of Pharmacy; however, teaching at the University of Iowa was typically evaluated highly by students and faculty.)

a. Teaching Evaluation Ratings, College of Pharmacy

<table>
<thead>
<tr>
<th>Instructor Evaluation Ratings, College of Pharmacy</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Teaching Evaluation Ratings for the College of Pharmacy, for Comparison</th>
<th>25th Percentile</th>
<th>Median (50th Percentile)</th>
<th>75th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 - 2007</td>
<td>4.07</td>
<td>4.49</td>
<td>4.73</td>
</tr>
<tr>
<td>2007 - 2008</td>
<td>4.04</td>
<td>4.43</td>
<td>4.62</td>
</tr>
<tr>
<td>2008 - 2009</td>
<td>4.06</td>
<td>4.48</td>
<td>4.72</td>
</tr>
</tbody>
</table>

Faculty Name: Dr. Lacy Daniels

<table>
<thead>
<tr>
<th>Course (Name &amp; number)</th>
<th># Students</th>
<th>Year</th>
<th>Responsibility</th>
<th>SCH</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 627 Biochemistry*</td>
<td>76</td>
<td>06 - 07</td>
<td>Coordinator &amp; Instructor</td>
<td>3</td>
<td>4.88</td>
</tr>
<tr>
<td>PHAR 628 Research Methods / Biostatistics</td>
<td>76</td>
<td>06 - 07</td>
<td>Coordinator &amp; Instructor</td>
<td>2</td>
<td>4.76</td>
</tr>
<tr>
<td>Course</td>
<td>SCH</td>
<td>Year</td>
<td>Rating</td>
<td>Role</td>
<td>SCH</td>
</tr>
<tr>
<td>--------</td>
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<td>------</td>
<td>--------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry**</td>
<td>77</td>
<td>07 - 08</td>
<td>Coordinator &amp; Instructor</td>
<td>3</td>
<td>4.78</td>
</tr>
<tr>
<td>PHAR726 Microbiology &amp; Immunology**</td>
<td>76</td>
<td>07 - 08</td>
<td>Coordinator &amp; Main Instructor</td>
<td>3</td>
<td>4.81</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>86</td>
<td>08 - 09</td>
<td>Coordinator &amp; Main Instructor</td>
<td>3</td>
<td>4.89</td>
</tr>
<tr>
<td>PHAR726 Microbiology &amp; Immunology</td>
<td>74</td>
<td>08 - 09</td>
<td>Coordinator &amp; Main Instructor</td>
<td>3</td>
<td>4.89</td>
</tr>
<tr>
<td>PHAR 729 Tuberculosis &amp; Other Mycobacterial Diseases</td>
<td>10</td>
<td>08 - 09</td>
<td>Coordinator &amp; Instructor</td>
<td>2</td>
<td>4.90</td>
</tr>
</tbody>
</table>

*Ranked as the highest instructor evaluation for the academic year
**Ranked as the two highest instructor evaluations for the academic year

**Notes**

a. **Rating:** These are the ratings for all faculty members in the College of Pharmacy by academic year teaching in a didactic or laboratory course. The first rating shown is the 25<sup>th</sup> percentile score for all faculty (i.e., 75% of the faculty members rank above and 25% rank below that score). The second rating is the 50<sup>th</sup> percentile or median score for all faculty (i.e., one-half of the faculty members rank above and one-half rank below that score). The third rating is the 75<sup>th</sup> percentile for all faculty, where 25% of the faculty rank above the score shown. Data used for calculation of these numbers come from the average of the scores for all Instructor questions on the Course and Instructor Evaluation Form for an individual faculty member.

b. **Responsibility:** course coordinator, course lecturer, lab instructor, etc.

c. **SCH:** semester credit hours

d. **Mean:** Average of the scores for the faculty member using all of the Instructor’s questions on the Course and Instructor Evaluation Form

**b. Teaching Awards, College of Pharmacy:**

2008: American Association of Colleges of Pharmacy Teacher of the Year Award from the College of Pharmacy

2009: Teacher of the Year Award from the College of Pharmacy

2010: American Association of Colleges of Pharmacy Teacher of the Year Award from the College of Pharmacy

2012-2013: Teaching Team of the Year for the Infectious Disease Course

**c. Peer Teaching Evaluation:**

Below I provide an exact retyping of two Peer Teaching Evaluations written by the Chair of Pharmaceutical Sciences (Dr. Anna Ratka).
November 20, 2006, Biochemistry

“Lecture was a continuation of previously started material on RNA metabolism. Dr. Daniels started his lecture with announcements related to recitation. Then he proceeded with a summary of the material covered during previous lecture.

The new material taught by Dr. Daniels included RNA transcription, processing and splicing. Lecture material was very well organized. The instructor was very professional and competent and used clear explanations and graphics. During the lecture, the instructor stopped many times to allow students to ask questions. Student questions were not always repeated to the rest of the group. At the end of the lecture, Dr. Daniels provided some information about the upcoming end of semester exam. There was not much student participation during the lecture. Approximately half of the students seemed to not be involved in the presented lecture (as observed from the back of the lecture room).”

[Note: After this semester, the classes were equipped with student-activated microphones, allowing student questions to be well-heard by all.]

April 1, 2008, Microbiology

“The lecture was a continuation of parasitology that included organisms such as Entamoeba histolytica, Giardia, Cryptosporidium, Trichomonas, Leishmania. Epidemiology, pathology, the diseases caused by these parasites, and treatment options were also presented and discussed. For each presented disease, Dr. Daniels emphasized aspects of etiology, demographics, pathology-pathophysiology, symptoms, and health care-related aspects that were relevant to pharmacy students. In transition to a new topic, the instructor gave a mini-introduction to the new topic. Frequent verbal summaries were given during the lecture. The presentation was supported by effective and relevant photographs and diagrams to facilitate student learning. Examples given during the lecture were relevant and interesting. Many helpful applications of the newly presented concepts were provided. Students were given information on additional learning resources, e.g. websites, to expand the information provided during the lecture. Dr. Daniels was very comfortable giving this lecture, kept good pace, and interacted with the students asking many questions. The students were engaged in this lecture, answered instructor’s questions, and asked many questions during the class.

General comment: This lecture was very well organized, effectively delivered, with active student participation.”
Below, I provide direct quotes on teaching performance taken from the Chair’s Annual Evaluation letter for 2008 (written by Dr. Anna Ratka):

“The comments from students about you as an instructor are consistently very positive and complementary. They describe you as excellent, top notch, enthusiastic, wonderful, very helpful, clear and concise. Chair peer evaluations concur with student evaluations and comments. I think you are a model teacher and a great example to other faculty members in the College. You have applied innovative methods to enhance student learning (i.e. the quizzes to re-teach difficult concepts). I would like to suggest that you consider preparing your experience for dissemination as a poster and/or scholarly paper; your effective instruction/assessment methods can benefit others. … [You] have demonstrated an exemplary performance as an instructor and as a course coordinator.”

3. Course Coordination (only for College of Pharmacy, not the 24 years at Iowa)

As Course Director of Biochemistry, and of Microbiology/Immunology, in the past nine years I have coordinated the courses with another faculty member who gives some of the lectures. I currently coordinate one team-taught course, Drug Action.

4. Curriculum and/or Course Development (only for College of Pharmacy, not the 24 years at Iowa)

I have not participated in formal curriculum development.

Biochemistry, Research Methods & Biostatistics, and Tuberculosis & Other Mycobacterial Diseases are courses that I developed here at the College of Pharmacy. The Biochemistry course closely follows the accompanying textbook, but I have introduced a significant amount of additional material to highlight the relevance of biochemistry to human medicine and pharmacy. The Research Methods course was based on a combination of a small textbook on
research methods, and a collection of pharmaceutically-relevant scientific journal articles and writing a research proposal. My Tuberculosis elective course was based on clinical TB treatment guidelines and a short course provided by the CDC, a series of research articles and chapters, and a textbook on tuberculosis.

Microbiology & Immunology was adapted from the Health Sciences Microbiology course that I taught at the University of Iowa for more than 10 years to Dentistry, Physician Assistant and Pharmacy students, and significantly updated and modified here. It follows the textbook fairly closely, but is significantly supplemented with material of particular contemporary relevance to pharmacists.

5. Teaching Materials Developed (only for College of Pharmacy, not the 24 years at Iowa)

My teaching materials are pretty standard, including PowerPoint presentations, in-class exams and quizzes, homework exercises and occasional reading to accompany the lecture material.

6. Continuing Education Courses Given:

For 8 years, Director of a 4-day long lab and lecture short course at the American Type Culture Collection (the ATCC, in Rockville, MD). This course, which I originally was invited to develop in 1987, was presented in Bandung, Indonesia in 1989 and at Connaught Laboratories in Toronto, Canada, in 1993. Attendees were typically industrial and government scientists, with a few individuals from academic institutions.

None at the College of Pharmacy.

7. Student/Trainee Supervision

Since 2007, I have supervised between 1 and 3 postdoctoral researchers in my research laboratory, who have been assembling the equipment, setting up the lab, and conducting research on the molecular biology and metabolism of *Mycobacterium smegmatis*. Dr. Sandford Jaques has been here for almost two years, and Dr. Mahbuba Rahman and Dr. Rubayet Hasan were here for about 8 months. I am currently trying to recruit a second postdoc.

Since 2008, I have supervised non-lab “disease treatment” research by one PharmD student for one semester (Tram Duong), and a second PharmD student (Avery Ritter) is currently working in my lab on a research project.

However, before undertaking my tasks as a faculty member working toward the start-up of the College of Pharmacy, I was a Professor at the University of Iowa with a record of training a wide variety of students and researchers, as described below.
a. Fellows/Postdoctoral/Residents/Visiting Scientists.

**Postdoctoral students at Iowa, 1985-2003:**

Barbara Bryan, Postdoctoral Fellow. (Later employed at Kraft Foods Research and Development, North Chicago, Illinois.)

B. S. Rajagopal, Postdoctoral Fellow. (Later Researcher at 3M Corporation, Minneapolis, Minnesota.)

Ramaraj Boopathy, Postdoctoral Fellow. (Was Research Associate at the University of Notre Dame, and Scientist at Argonne National Labs, but is now Professor in the Department of Biology at Nicholls State University, Thibodaux, Louisiana.)

Kwang-Pil Choi, Postdoctoral Fellow (Now a scientist at International Flavors and Fragrances in New Jersey)

Young-Min Bae, Visiting Assistant Professor (Now at Changwon University in Korea, where he is an Associate Professor in the Department of Microbiology)

Aimin He, Short-term Postdoctoral Student (Later, Postdoc at MIT)

Milind Deshpande, Postdoctoral Fellow (Now Technical Director, Center for Biocatalysis & Bioprocessing at the University of Iowa)

**Postdoctoral students at Texas A&M, 2007-2009:**

Sandford Jaques, Postdoctoral Scientist

Rubayet Hasan, short-term Postdoctoral Scientist (Now a Postdoctoral Student at Canada’s Michael Smith Genome Sciences Center, in Vancouver)

Mahbuba Rahman, short term Postdoctoral Scientist (Now a Postdoctoral Student at the University of British Columbia, in Vancouver)

Mukti Mishra, Postdoctoral Scientist

**Visiting scientists at Iowa, 1988-2003:**

R. Mohanraju, CAS in Marine Biology, Porto Novo, Tamil Nadu, India; May-August, 1988.
K.Y. Jung, Agricultural Research Institute, Suweon, S. Korea; September, 1988-June, 1989.
R. Kasturi Bai, Madurai Kamaraj University, Madurai, India, October-December, 1989.
Bokang He, Chengdu Gas Research Institute, Chengdu, China, Jan.-Dec., 1990.
Jeneng Tarigan, IKIP Medan, Medan, Indonesia, 1990.
Retno Sunarminingsih, University of Gadjah Mada, Indonesia, May-Sept., 1990.
Robert Krieger, Postdoc from Yale University (January 2003)

b. Thesis/Dissertation Committees

1) Chair/Mentor

**Masters Degree at Iowa:**

Mukhopadhyay, Biswarup, Department of Microbiology, 1983-87
Lambert, David, Department of Microbiology, 1985-87
Purwantini, Endang, Department of Microbiology, 1989-1991
Isabelle, Dale, Department of Microbiology, 1998-2001
Kendrick, Nathan, Department of Microbiology, 1998-2001

**PhD Degree at Iowa:**

Sparling, Richard, Department of Microbiology, 1983-88
Mukhopadhyay, Biswarup, Department of Microbiology, 1987-93
Belay, Negash, Department of Microbiology, 1989-95
Kim, B. K., Department of Microbiology, 1989-94
Purwantini, Endang, Department of Microbiology, 1992-97
Hammad, Mohammad, Department of Microbiology, 1989-1995
Bair, Tom, Department of Microbiology, 1996-2001
Simpson, Randy, Department of Microbiology, 1998-2005

2) Member

Masters Degree committees while at Iowa:

Bakhiet, Nouna, Department of Microbiology, 1983
Johnson, Randy, College of Dentistry, 1985-86
Niebower, James, Department of Civil and Environmental Engineering, 1985-87
Hammad, Mohammed, Department of Periodontics, 1987-88
Carlson, Jane, Department of Civil and Environmental Engineering, 1988
Mares, Rosalee, Department of Microbiology, 1990-91
Ismangil, IUC Biotechnology, Gadjah Mada University, Indonesia, 1991-95
Nuñez, Rafael, Department of Microbiology, 1991-92
Emerson, Charles, Department of Geography, 1993-94
PhD Degree committees while at Iowa:

Dingman, Doug, Department of Microbiology, 1983
Boonkitacharoen, Vipa, Department of Radiation Research, 1983-84
Purcell, Bret, Department of Microbiology, 1984-86
Gould, John, Department of Biochemistry, 1984-88
Chiang, Amur, Department of Civil and Environmental Engineering, 1984-88
Bakhiet, Nouna, Department of Microbiology, 1987-89
Ye, Steve, Department of Chemical Engineering, 1987-1989
Lynch, Nancy, Department of Civil and Environmental Engineering, 1987-1989
Huang, Shirly, Department of Microbiology, 1988-91
Suen, Wen chen, Department of Microbiology, 1988-91
Menn, Fu Min, Department of Microbiology, 1988-91
Burkhead, Karen, Medicinal and Natural Product Chemistry (Pharmacy), 1990
Mohanraju, R., Annamalai University, Porto Novo, India, 1990-91
Satiawihardja, Budiatman, Department of Biotechnology, University of New South Wales, Australia, 1990
Wilbur, Greg, Department of Civil and Environmental Engineering, 1990-91
Harris, Bill, Department of Civil and Environmental Engineering, Iowa-State University, 1990-92
Noben, Nancy, Department of Microbiology, 1990-92
Ness, Nancy, Department of Microbiology, 1990-93
Sung, Shihwu, Department of Civil and Environmental Engineering, Iowa State University, 1990-94
Retno, Sunarminingsih, IUC Biotechnology, Gadjah Mada University, Indonesia, 1991-95
Perrotta, Joe, Department of Microbiology, 1992
Kwack, Kyubum, Department of Microbiology, 1992-94
Maillacheruvu, Kris, Department of Civil and Environmental Engineering, 1992-93
Weathers, Len, Department of Civil and Environmental Engineering, 1992-94
Lee, Kyoung, Department of Microbiology, 1993-96
Zerr, Marvin, Joint Microbiology - Endodontics PhD Program, 1994-96
Novak, Paige, Department of Civil & Environmental Engineering, 1994-97
Peters, Eugene, Department of Microbiology, 1995-96
Buranathai, Chantanee, Department of Microbiology, 1996-1997
Adamson, Dave, Department of Civil & Environmental Engineering, 1997-2000
Parrish, Ken, Department of Microbiology, 1998
Hawkins, Andrew, Department of Microbiology, 1998-2003
Harrison, Faith, Department of Microbiology, 1999-2004
Farid, Inas, Medicinal and Natural Product Chemistry (Pharmacy) 2000-2001
Rodriguez, Nilda, Department of Microbiology, 2000-2005
He, Aimin, Medicinal and Natural Product Chemistry (Pharmacy) 2002-2003
McCarthy, Travis, Department of Microbiology, 2002-2006
Rey, Federico, Department of Microbiology, 2003-2005
McDonald, Heather, Department of Civil & Environmental Engineering, 2004-2005
Seshadri, Ramya, Medicinal and Natural Product Chemistry (Pharmacy), 2004-2005

c. Pre-Doctoral Dental/Medical (non-degreed and Professional (other than listed in 7a)

**PharmD students at Texas A&M HSC ILR College of Pharmacy:**

Tram Duong, P3, research on clinical literature project (gathering information on how TB is treated in Texas), 2008
Avery Ritter, P3, research in laboratory (conducting phenotypic microarray microbiology work on *Mycobacterium smegmatis*), 2009
Jessie Jang, P2, survey clerical work (conducting a teaching resource allocation project of relevance to teaching Microbiology and Immunology at a College of Pharmacy), 2009

d. Undergraduate

**Iowa undergraduate students who have conducted research in my lab:**

Kenneth Ominobous
Robert Anderson (now practicing dentist)
Willy Fisher (now MS nurse anesthesist)
Katie Post (now practicing dentist)
Cat Vinh (unknown)
Ryan Dunlay (medical school, UI)
Holly Wisniewski (MHA/MBA, UI)
Peter Cho (dental school, UI)
Stephanie Wilson (medical school, Des Moines University)
Janet Cheong (dental school, Harvard University)
Hailyn Nielsen (MD-PhD Program, Washington University Medical School)
Jennifer Paisley (medical school, UI)

**Visiting undergraduates from other universities who have conducted research in my lab at Iowa:**

Keith Harmon, Biology Major from Amherst College, summer, 1984 (later attended Harvard Medical School, and is now a practicing physician in New Jersey)
Arden Beachy, Chemistry Major from North Dakota State University, summer, 1993. (later attended the University of Michigan Medical School, and is now a practicing physician in Minnesota)
Stephanie Miller, Biology Major from MIT, summer, 1994.
Christine Edson, Biology Major from St. Olaf College, Summer, 1995 (NSF).
Christine Joseph, Chemistry Major from SUNY, summer, 1997 (NSF).
Ignacio Muñoz, Biology Major from CUNY, summer, 1998 (NSF).
Tanya Anderson, Biology Major from Rush College, summer, 1999 (NSF).
David Rusinak, Microbiology Major from University of Illinois, summer 2000 (Hughes).
Lucas Beversdorf, Biology Major from Marian College, Fond du Lac Wisconsin, summer 2001 (Hughes). (now PhD student at the University of Wisconsin)
Hailyn Nielsen, SSTP student (summer 2001) (Now at the Washington University College of Medicine)
Tim Biagini, Biochemistry Major from Knox College (summer 2002), now MD and GI resident in Illinois
Kari Anderson, Chemistry Major from St. Olaf College, summer 2004 (NSF)

e. Graduate student supervision (other than 7a and 7b)

Currently supervising a portion of the MS research in my lab by a TAMUK Chemistry graduate student, Sweety Vadlamudli, in collaboration with Dr. John Perez of the Natural Toxins Research Center.

f. Supervisor of Practicum

g. Other

8. Graduate Faculty Membership

I was a member of the graduate faculty at the University of Iowa for 24 years. When I came to the Texas A&M College of Pharmacy, I applied for and received Temporary Membership in the Graduate Faculty at Texas A&M-Kingsville, but the relevance of that is unclear since we came under management by the Texas A&M Health Science Center soon thereafter. I now have membership in the Graduate Faculty at the Texas A&M HSC.

9. Teaching Awards

College of Pharmacy:

2008: American Association of Colleges of Pharmacy Teacher of the Year Award from the College of Pharmacy
2009: Teacher of the Year Award from the College of Pharmacy
2010: American Association of Colleges of Pharmacy Teacher of the Year Award from the College of Pharmacy
2012-2013: Teaching Team of the Year for the Infectious Disease Course

10. Academic Counseling (other than those listed under E7)

At the University of Iowa, I was an undergraduate advisor for about 8 to 12 Sophomore, Junior or Senior students per year for about 15 years, providing them advice on which courses to sign up for, addressing problems with performance in the classroom, and providing advice on career paths beyond the undergraduate program in Microbiology.

At the Texas A&M College of Pharmacy, I have been the official Advisor for 10 to 14 students per year since we started the program in 2006. This responsibility involves an annual lunch with new advisees, a formal meeting with each student individually at the end of each semester, grading their Portfolio each semester, and meeting with them when they face difficulties in any class.

11. Teaching Consultantships

12. Other Indices of Teaching

F. Research and Scholarly Activities

1. Areas of research and scholarship

Since I became a postdoctoral student at the University of Wisconsin in 1978, I have studied electron transfer reactions and enzymes, especially those which use coenzyme F_420_. I studied a variety of F_420_-dependent processes in methanogenic archaea from 1978 until the mid-1990’s, along with other processes that methangens participate in, but since about 1993 I have shifted attention to F_420_-dependent reactions and other metabolic processes in mycobacteria.

Our lab was the first to report an F_420_-dependent enzyme in *Mycobacterium* (F_420_-dependent glucose-6-P dehydrogenase, Fgd; Purwantini & Daniels, 1996; Purwantini et al. 1997). We subsequently described its stereochemistry and its gene (Klein et al. 1996; Purwantini & Daniels, 1998). We later determined that mycobacterial coenzyme F_420_ structure varied significantly from the structure of methanogen F_420_, and described methods suitable for its purification from mycobacteria (Bair et al. 2001, Isabelle et al. 2002). Perhaps the most significant findings we have made so far arise from studying mutants of *Mycobacterium smegmatis* or *Mycobacterium bovis* BCG that have genes for Fgd or for F_420_ biosynthesis knocked out. This has allowed us to discover the first three genes involved in F_420_ biosynthesis (*fbiA*, *fbiB* and *fbiC*), to deduce that Fgd and thus F_420_ are essential for the activation of an experimental anti-TB drug (PA-824), and determine that Fgd is involved in protective response to some forms of oxidative stress (Choi et al. 2001, 2002; Manjunatha et al. 2006; Guerra-Lopez
et al. 2007). Most recently, we have examined the role of glucose-6-P accumulation and the presence of Fgd and F420 in an anti-oxidant defense system (Hasan et al. submitted).

My current research support is an NIH grant for the study of phenotypic arrays as a tool to identify gene function in M. smegmatis. We are using the Biolog phenotypic microarray system to examine a set of knockout mutants of M. smegmatis for their ability to degrade or grow on certain compounds, and their response to a set of inhibitors. Thus far, the F420 related mutants have shown no interesting surprises, and are more sensitive to two oxidative stress agents (menadione and plumbagin) that we had previously discovered by other means (Guerra-Lopez et al. 2007). However, the most exciting result for us has been that we have determined that a gene of previously unknown function, annotated as a putative sugar transporter, is actually involved in trehalose transport. Trehalose is a disaccharide shown by others previously to be important for the virulence of Mycobacterium tuberculosis, and the homologous gene in M. tuberculosis (at that time of unknown function) has been reported to be important for virulence. Thus, our discovery is relevant to understanding this aspect of TB virulence. We have cloned the entire gene cluster containing this gene, and are in the process of analyzing the functions of the component genes.

In a project with a PharmD student, we are also extending the use of the Biolog phenotypic array inhibitor plates to attempt to identify candidates for “new” anti-TB drugs. Our approach is to screen the effect of two inhibitors of bacterial efflux pumps (which are also current older clinical drugs used for psychotic disorders, thioridazine and chlorpromazine) on the ability of all the compounds available in the Biolog inhibitor plates to inhibit M. smegmatis. So far, we have interesting and promising results with two unexpected drugs used clinically for other non-Mycobacterium applications.

In the near future, I will prepare an NIH proposal to extend our phenotypic array work. With the publication of the trehalose paper (the lab work is still underway) we will have demonstrated its utility in discovery of gene function in M. smegmatis. Thus, I hope to convince NIH that this approach is a good way to identify functions of dozens of genes with previously unknown function in M. tuberculosis, using M. smegmatis as a model organism. On the F420 side of my research, we are most interested in determining the mysterious route by which reduced F420 (F420H2) is normally used by the cell, and how PA-824 is activated. We have concrete ideas how to pursue these projects, and plan to prepare grant proposals to do so, following the upcoming accreditation visit in April. We are very encouraged about the fundability of our work, given the recent findings that PA-824 has done well in Phase II clinical trials without causing safety issues in patients.

2. Invited presentations


Daniels, L. 2003. Coenzyme F420 and Fgd in Mycobacterium. Seminar at NIH lab of Dr. Clifton Barry, Rockville, MD.

Daniels, L. 2004. Analysis of the fgd gene cluster in Mycobacterium bovis, and its role in activation of the anti-tuberculosis drug PA-824. Seminar at University of South Dakota, Department of Chemistry.


3. Non-invited talks without published abstracts.

**Posters presented since arriving at Texas A&M College of Pharmacy in 2005:**

American Society for Microbiology, Texas & South Central Branch Annual Meeting, Austin, Texas.


4. Grants

a. Funded

**Federal**

1. Carbon and electron transfer in methanogenic bacteria
   2. NIH, RO1
   3. $219,925
   4. 7/1/82-6/30/85
   5. PI

1. Production of chemicals and fuels from synthesis gas using biocatalysis
   2. NSF
   3. $68,869
   4. 6/1/82-12/1/83
   5. PI

1. Biocatalytic production of chemicals from synthesis gas
   2. American Chemical Society PRF Type AC
   3. $44,800
   4. 9/1/82-8/31/85
   5. PI

1. Acquisition of large scale fermentation facility
   2. NSF, Common use large equipment grant
   3. $65,165
   4. 8/1/84-7/31/85
   5. PI
1. Acquisition of fermentor facilities
2. NIH, Common use large equipment grant
3. $51,000
4. 12/1/84-11/30/85
5. PI

1. An examination of the metabolism of sulfur containing compounds by archaebacteria
2. Office of Naval Research
3. $157,932
4. 9/1/84-8/31/87
5. PI

1. Methanogenic bacteria in subgingival dental plaque
2. NIH
3. $15,000
4. 9/1/86-8/31/87
5. PI

1. Archaebacterial involvement in microbial metal corrosion: Metabolism of S° and Fe°
2. Office of Naval Research
3. $257,791
4. 12/1/87-1/30/90
5. PI

1. Ethane production; component of Fermentation Waste Project between UI, ISU and Cedar Rapids
2. USDA
3. $79,904
4. 11/88-12/93
5. PI

1. Methanogen component of Fermentation Waste Project
2. USDA
3. $115,447
4. 4/91-3/94
5. PI

1. Copper resistance in methanogens
2. USDA
3. $281,385
4. 4/95-3-98
5. PI
1. Recovery of F$_{420}$ from actinomycetes
2. USDA
3. $69,645
4. 5/98-5/99
5. PI

1. Coenzyme F$_{420}$ biosynthesis in Mycobacterium
2. NIH, RO1
3. $281,632
4. 6/1/98– 5/31/01
5. PI

1. Developing markets for F$_{420}$: Enzymes and intermediates in F$_{420}$ biosynthesis
2. USDA
3. $63,645
5. PI

1. Development of deletion mutant vaccines for Johne’s Disease
2. USDA
3. $39,182
5. Co-PI

1. Developing markets for F$_{420}$: Enzymes and intermediates in F$_{420}$ biosynthesis
2. USDA
3. $66,000
5. PI

1. Role of FbiA and FbiC in F$_{420}$ production
2. USDA
3. $67,000
5. PI

1. Improved sources of F$_{420}$
2. USDA
3. $67,000
5. PI
1. NSF-funded Research Experience for Undergraduates Site in Microbiology at the University of Iowa
2. NSF, Funds about 10 students each summer
3. $359,141
4. 5/01/2001-04/30/2006
5. Program Director 2003-2005; Participant all years until 2006

1. Pilot scale production of coenzyme F420 from anaerobic digestor sludge
2. USDA
3. $67,000
5. PI

1. Improved production of coenzyme F420 and F420H2
2. USDA
3. $40,000
5. PI

1. Improved production of coenzyme F420 and F420H2
2. USDA
3. $39,987
5. PI

1. Use of Phenotypic Microarray to study *Mycobacterium* and *Nocardia*
2. NIH, General Medical Sciences 2R42GM073965-02A1
3. $244,728 direct costs, $101,341 indirect costs
4. 09/01/2007-08/31/2010 (one-year no-cost extension to 8/2011)
5. PI on STTR subcontract with Biolog Inc

**State**

1. Electron and one carbon transfer reactions in methanogenic bacteria
2. University of Iowa
3. $5,000
4. 10/1/81-9/31/82
5. PI

1. Production of acetic acid for CMA deicer
2. Iowa Department of Transportation
3. $15,000
4. 5/87-12/87
5. Co-PI with Paul Peterschmidt, College of Engineering

1. Methane production in tropical agricultural soils
2. Iowa Center for Global and Regional Environmental Research
3. $9,800
4. 1992
5. PI

1. Development and testing of phenotypic arrays to identify gene function in Mycobacterium
2. Advanced Research Program of the Texas Higher Education Coordinating Board
3. $98,810
4. 8/2006-7/2008
5. PI

Industrial and Other

1. Microbiological production of the 6-deoxyhexoes L-fucose and L-rhamnose
2. Firmenich, S.A., Geneva, Switzerland
3. $101,979
4. 7/1/84-3/30/86
5. Co-PI with Bob Linhardt, College of Pharmacy

1. Microbial production of rhamnose with Pseudomonas
2. Firmenich, S.A., Geneva, Switzerland
3. $37,292
4. 9/1/86 8/31/87
5. Co-PI with Bob Linhardt, College of Pharmacy

1. Microbial production of commercially useful enzymes from microbial sources
2. Bio Research Products, North Liberty, Iowa
3. 1/86-10/88
4. $62,440
5. PI

1. Biotechnology Coordinator Budget for MUCIA WB 17 Indonesia Project
2. World Bank/Government of Indonesia/Midwest University Consortium for International Activities
3. $366,519 (largely non-research)
4. 1/27/87-12/31/92
5. Equivalent of PI in project management; Biotechnology Coordinator
1. Examination of methanogenic bacteria able to produce ethane, propane and butane
2. Iowa Corn Promotion Board
3. 5/1/88-4/30/90
4. $38,500
5. PI

1. Comparison of production of ethanol and methane as starch-derived energy sources
2. Iowa Corn Promotion Board
3. $11,300
4. 4/91-3/92
5. PI

1. Production of sophorolipid
2. Vista Chemical Company
3. $4,471
4. 1992
5. PI

b. Pending

None

c. Not Funded

This information is not available. At the University of Iowa, we were not encouraged or required to keep such information. As of the date of the preparation of this CV, I will start collecting this information.

5. Manuscript Review

a. Since arriving at the Texas A&M College of Pharmacy, based on my hard copy folder, I have reviewed several manuscripts, including papers submitted to Proceedings of the National Academy of Sciences – USA, Enzyme and Microbial Technology, and Applied Microbiology and Biotechnology.

However, historically, this information is not available. At the University of Iowa, we were not encouraged or required to keep such detailed information. As of the date of the preparation of this CV, I will start collecting this information. Based on my previous CV for 1981-2005, I was a reviewer for papers in several journals, including J. Bacteriol., J. Amer.
b. Editorial Boards

Journal of Bacteriology (1990-1993)
Antonie van Leeuwenhoek (1986-1995)

c. Editorship

Managing Editor, USA, for Antonie van Leeuwenhoek, 1993-95

6. Grant Reviews

a. Study Section, Review Panel, Special Emphasis Panel

Grant Review Panel, Office of Naval Research, 1985-86

Invited participant and Section Chairman, NSF Workshop on Environmental Chemistry and Chemical Processes, September, 1987

Invited participant, Office of Naval Research Workshop on Biocorrosion, Bethesda, Maryland, 21 April, 1988

Chairman, Department of Energy Review Panel, examining "Biological Methanogenesis" Program; Washington, D.C., September, 1993

NIH Study Section, National Institute of Diabetes and Digestive and Kidney Diseases, 1997.

b. Ad hoc

Occasional reviewer for several granting agencies, including NSF, NIH, DOE, USDA, and Iowa Corn Promotion Board.

7. Professional and Scholarly Societies

American Society for Microbiology Member since 1973

8. Contribution to professional organizations
Secretary Treasurer, North Central Branch of the American Society for Microbiology, 1987

Selection Committee for Carski Award for Undergraduate Teaching, American Academy for Microbiology, 2002-2005

9. Participation on national or regional board examination committee, certification or accreditation committee

10. Meeting where chaired session (invited only)

Session Chairperson at 1984 Gordon Conference on Methanogens

Discussion Leader, 1987 Gordon Conference on Molecular Aspects of Methanogenesis

Discussion Leader, EPA Workshop on "Microbial Production and Consumption of Radiatively Important Trace Gases", University of Georgia, Athens, 14-16 November 1989.

Served as Session Chair at American Society for Microbiology, North Central Branch Annual Meeting, Iowa City, October, 1995.

Served as Session Chair at American Society for Microbiology, Texas & South Central Branch Annual Meeting, Austin, Texas, November, 2008.

11. Programs and symposiums organized

Session Chairperson (Physiology of Methanogens) at 1987 American Society for Microbiology (ASM) Meeting (Primary organizer, about 100 attendees)

Session Chairperson (Biochemistry of Methanogenesis from Methyl containing Substrates) at 1992 Annual Meeting of the ASM (Primary organizer, about 100 attendees)

12. Awards

Elected Fellow, American Academy of Microbiology, 1998
Elected into Membership of Rho Chi, 2011

G. Institutional Service to the HSC

1. Component Committees

Ad Hoc Common Use Equipment Committee (Chair), Department of Pharmaceutical Sciences, 2005-Present
Block Faculty Search Committee, College of Pharmacy, December 2005-July 2006
Self Study Committee, Faculty & Staff section, College of Pharmacy, 2006-2009 (Chair of section, 2006-2008)
Appointment, Promotion and Tenure Committee, College of Pharmacy, 2006-2009 (Chair, 2006-2008)
Self Study Review & Steering Committee, College of Pharmacy, 2006-2007
Credentialing Committee (Chair), College of Pharmacy, 2006-2007
Scholarship Committee, College of Pharmacy, 2006-2007
Outcomes Assessment Committee (Chair), College of Pharmacy, 2007-2009
Ad Hoc Graduate Program Planning Committee, 2007
Faculty Search Committee for Immunologist and Molecular Biologist, Department of Pharmaceutical Science, 2007
Faculty Search Committee for Physiologist and Molecular Biologist, Department of Pharmaceutical Science, 2008
Substitute for several meetings of Scholarship Committee, 2008, 2009
Faculty Advisor, Staff Awards Committee, 2008-2009
Search Committee for Director of Admissions, 2008
Faculty Search Committee for Molecular Biologist, Department of Pharmaceutical Science, 2009
Search Committee for Secretary, Department of Pharmaceutical Sciences, 2009
Ad hoc Space Utilization Advisory Committee, 2009

2. Other Component Service

**Vice-Chair of Department of Pharmaceutical Sciences, May 2008-Present**

**Benchmark Assessment Exams, 2007-2009:** Organize, coordinate question contribution, prepare, edit, grade and interpret Benchmark I, Benchmark II and Benchmark III exams (as part of my duties as the Chair of the Outcomes Assessment Committee). These exams are given at the end of each year to all of our students, and cover much of the material they have been exposed to in the program so far. The exams have separate written, practical and OSCE components, and occur over a two-day period for each class.

3. HSC Committees

HSC Faculty Senate, 2006, representing the College of Pharmacy

Appointment, Promotion & Tenure Committee, Health Sciences Center, 2006-2009

Co-Chair, Faculty Search Committee for Joint Positions in College of Pharmacy in association with the Center for Microencapsulation and Drug Delivery at College Station, 2009

4. Other HSC Service
5. Texas A&M University System Committees

6. Other Texas A&M University System Service

7. Patient Care

8. Consultant to accrediting and other boards

9. Outreach Programs for college students

10. Outreach programs for high school students

Presented a talk entitled “The Importance of Coenzyme F420 to Mycobacterium” to high school students in 2006 at West Oso High School and the Incarnate Word Academy, both in Corpus Christi, Texas. The talk focused on the importance of basic research and the value of a college education in the biomedical sciences, broadly defined.

Prepared, administered and graded tests for the Heredity and Forensic sections of the Feb. 24, 2007, South Texas Regional Science Olympiad, held on the TAMUK campus.

Worked with eight high school students for four weeks (about 8 h per week) in the summer of 2007 on a bioinformatics research project, as part of their Upward Bound program at TAMUK.

Prepared, administered and graded tests for the Fermi Equation section of the Feb., 2008, South Texas Regional Science Olympiad, held on the TAMUK campus.


11. Awards

12. Other

I provide here a direct quote from my Annual Evaluation for the year 2007 by my departmental Chair, Dr. Anna Ratka:

“Your service activities to the Department, the College, and the HSC were very critical and valuable. You chaired three standing committees – assessment, credentialing, and APT. Your pioneering and tireless work on the very first Benchmark assessment was very impressive, successful, and greatly appreciated. You played a critical role in preparation of the ACPE self-study document, leading efforts on one of the sections of this document. Numerous faculty and staff search committees benefitted greatly from your involvement. You represented the faculty on the HSC APT committee. You have dedicated service time to the community by sharing your expertise with and mentoring high school students. Your service in 2007 was exemplary.”
H. Patents or Commercialization of Research

1. Invention disclosures


2. Patent applications pending

3. Licensing of technology

4. Collaboration with other faculty, leading to product development/licensing and commercialization

I. Publications

1. Refereed Papers


2. Non-refereed Papers


Belay, N., and L. Daniels. 1988. A study of Al⁰, Zn⁰, Sn⁰, V⁰, Ti⁰, Co⁰ or Fe⁰ as sole electron sources for methanogenesis, and the effects of organotins on methanogenic bacteria. Biodeterioration II.


3. Review Articles


4. Abstracts

These are not available from before 2008. At the University of Iowa, a record was not kept of these, and their use in the official CV was not required. I have placed below presentations leading to abstracts since my arrival at Texas A&M College of Pharmacy.


5. Books Authored

6. Book Chapters


7. Books Edited

8. Manuscripts Already Submitted

9. Table Clinics
CURRICULUM VITA
FADI M. ALKHATEEB, BSPharm, M.B.A., Ph.D.

Business:
Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
1010 West Avenue B, MSC 131
Kingsville, TX 78363
Phone: (361)-221-0608
Fax: (361)-221-0790
alkhateeb@pharmacy.tamhsc.edu

Home:
6541 Macarena Dr
Corpus Christi, TX 78414
Phone: (304)-380-4381 (Cell)

EDUCATION

<table>
<thead>
<tr>
<th>Dates attended</th>
<th>Institution</th>
<th>Field of study</th>
<th>Degree obtained</th>
<th>Date degree awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2011</td>
<td>Aspen University, Denver, CO, USA</td>
<td>Pharmaceutical Marketing &amp; Management (GPA: 3.83)</td>
<td>M.B.A.</td>
<td>2011</td>
</tr>
<tr>
<td>2003-2007</td>
<td>University of Iowa College of Pharmacy, Iowa city, IA, USA</td>
<td>Pharmaceutical Socioeconomics (GPA: 3.73)</td>
<td>Ph.D.</td>
<td>2007</td>
</tr>
</tbody>
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FELLOWSHIP

2013 – 2015 Commission on Accreditation of Health Care Management Education (CAHME) Fellow

PROFESSIONAL & ACADEMIC POSITIONS

Feb 2013 – present Director of Assessment & Associate Professor of Economic, Social & Administrative Pharmacy, Irma Lerma Rangel College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX (tenure track)

Alkhateeb FM - 1
Jun 2011–Aug 2014  Adjunct Associate Professor of Pharmaceutical Marketing & Management, MBA Program, School of Business, Aspen University, Denver, CO

Sep 2011–Sep 2013  Director of the EMBA with a Concentration in Pharmaceutical & Healthcare Management Program (PHM), School of Business, University of Charleston, Charleston, WV

July 2011–Feb 2013  Associate Professor of Economic, Social & Administrative Pharmacy, School of Pharmacy, University of Charleston, Charleston, WV

July 2007–June 2011  Assistant Professor of Economic, Social & Administrative Pharmacy, School of Pharmacy, University of Charleston, Charleston, WV

July 2003–July 2007  Graduate Teaching & Research Assistant, College of Pharmacy University of Iowa, Iowa city, IA

July 2011–Dec 2002  Hospital Pharmacist, Jordan University Hospital, Amman, Jordan

**Teaching Experience**

*University of Charleston School of Pharmacy*

Phar 616: **Humanistic & Pharmacoeconomics Outcomes**  
(Role: Course coordinator & Instructor)

Phar 629: **Communications & Ethics in Health Care**  
(Role: Course coordinator & Instructor)

Phar 715: **Pharmacy Management**  
(Role: Course coordinator & Instructor)

Phar 725: **Pharmaceutical Marketing**  
(Role: Course coordinator & Instructor)

Phar 524: **Clinical Research Methods**  
(Role: Instructor)

Phar 510: **Introduction to Pharmacy Practice & Law**  
(Role: Instructor)
Psychosocial Aspects of Medical Care  
(Role: Instructor) 

Medication Errors & Patient Safety  
(Role: Instructor) 

Texas A&M Rangel College of Pharmacy 

Phar 656: US Healthcare Systems  
(Role: Course coordinator & Instructor) 

Phar 657: Pharmacy Law & Ethics  
(Role: Course coordinator & Instructor) 

Distance Education / Aspen University Courses 

HTH583 Pharmacy Management and Leadership 
HTH562 Pharmaceutical Ethics 
HTH582 Advanced Concepts in Managed Care 
HTH572 Pharmaceutical Portfolio and Career Planning 
CAP799 Graduate Capstone 
MM100 Contemporary Issues in Health Care 

Doctoral of Pharmacy Students Rotations 

Jennifer M. Snell, “Pharmacy Administration Research”, Oct 25 to Dec 3, 2010 
Rachel Adkins, “Pharmacy Administration Research”, Jan 3 to Feb 3, 2012 

Masters of Business Administration & Leadership (MBAL) Students Advised 

Will Liu, “Wal-Mart Pharmacy”, Sep 19 to Dec 10, 2011 

Executive Master of Business Administration with a Concentration in Pharmaceutical 
& Healthcare Management (EMBA-PHM) Students Advised 

Latifa Ahmed, RPh, Aug 2012- April 2013 
Brandon Shinaberry, BS, Aug 2012- April 2013 

RECOGNITION, HONORS AND AWARDS 

WINNER in the Texas A&M 2013 CARE Fair Poster Competition in the category 2013 of “Best use of critical thinking (CT) or evidence based teaching (EBT) in research by faculty” 2013 

AACP Walmart Scholar Program Recipient 2011
Teacher of the Year Award at University of Charleston 2008/2009
Teacher of the Year Award at University of Charleston 2011/2012
Best Student Poster Presentation Award Interdisciplinary Health Research Conference/ University of Iowa 2006

Elected Offices, Positions, & Professional Activities

*Editor-In-Chief for Journal of Pharmaceutical Care & Health Systems (JPCHS) (2014-present)

Secretary of the American Association of Colleges of Pharmacy Assessment Special Interest Group (SIG) (2014-2016)

2015-2016 AACP Institutional Research and Assessment Committee

2014 AACP Annual Meeting Program Organizing Committee Member (2013-14)*

2015 AACP Interim Annual Meeting Program Organizing Committee Member

Member, Consortium of Assessment Officers from Colleges of Pharmacy in the Southeastern Conference and UNC (2013-Present)

Member, 14th Annual Texas A&M Assessment Conference Assessment Conference Committee (Feb 16-18, 2014, College Station, TX)

Member, 15th Annual Texas A&M Assessment Conference Assessment Conference Committee (Feb 16-18, 2015, College Station, TX)

American Association of Colleges of Pharmacy (AACP) Faculty Delegate, University of Charleston School of Pharmacy (2010/2011)

Continuing Pharmacy Education (CPE) Advisory Committee /Coastal Bend Health Education Center (2013-2015)

Member, NABP /FPGEE / PCOA Curricula Survey Project (2014/2015)

Publications

Journal Publications


Doucette WR, Witry M, Alkhateeb FM, Farris KB, Urmie JM. Attitudes of Medicare Beneficiaries toward Pharmacist Provided Medication Management Activities as Part of


Veronin M, Alkhateeb FM, Everett-Houser J. Patient-centered Health Care Delivery Uniting MTM, EHRs and Patients: Opportunities for Pharmacists. *J Pharma Care Health Sys (JPCHS)*. 2014; 1(3).


Alkhateeb FM, Alameddine S, Attarabeen OF, Latif DA, Osolin S. Khanfar NM, Al-Rousan RA. Pharmacy Students’ Use of Social Media Sites and Perception toward...

Journal Papers in Review

Alkhateeb FM, Attarabeen O, Alameddine S, Latif DA. Assessment of pharmacists' attitude, behaviors, and preferences related to continuing pharmacy education. AJPE

Non Peer-Reviewed Publications


Peer-Reviewed Proceedings/Presentations

Alkhateeb FM, Doucette WR, Urmie JM. Influences on Consumer Spending for Herbal Products, Midwest Pharmacy Administration Conference, West Lafayette, IN, July 30, 2004


Khanfar NM, Loudon D, Alkhateeb FM. *Dr. Abdul-Aziz.* North American Case Research Association (NACRA) meeting, Santa Cruz, California, October 29-31, 2009.

Alkhateeb FM. *Targeting e-Detailing to the right audience: Understanding the needs of different physician segments is critical for effective e-Detailing.* 4th Annual of eCommunication & Online Marketing Summit, 2009 November 3-4, Philadelphia, PA, USA.

Khanfar NM, Alkhateeb FM, Loudon D. *Physicians' Adoption of Pharmaceutical E-Detailing: Application Of Rogers' Innovation-Diffusion Model.* International Academy of


Alkhateeb FM. *Factors Associated with the Decision of Physician to See Pharmaceutical Sales Representatives (PSRs)*. Beirut Arab University First International Pharmacy Conference. May 6-7, 2010, Beirut, Lebanon.


Clauson KA, Alkhateeb FM. *Concurrent use of an audience response system by pharmacy students at three educational sites*. ASHP Midyear Clinical Meeting, Anaheim, CA, December 5-9, 2010.


Anglos, CA.


Herdman ML, Bailey A, Acree L, Alkhateeb FM. *Pharmacy Student and Faculty Attitudes Toward and Utilization of Extra-credit Opportunities.* American Association of Colleges of Pharmacy (AACP) Annual Meeting, Chicago, IL, July 13-17, 2013.


Alkhateeb FM. *Academic Accreditation Process for Pharmacy Programs in the USA.* 3rd Annual meeting for Deans of Pharmacy Colleges in the Kingdom of Saudi Arabia titled “Pharmacy Education: Reality and Future”. May 14, 2014 at Salman bin Abdulaziz University, Alkhairj, Saudi Arabia.


Alkhateeb FM. *Assessment of the Health Sciences Reasoning Test (HSRT) as a tool to aid in the admissions process in a pharmacy program.* 15th Annual Texas A&M Assessment Conference, College Station, TX, February 22-24, 2015.

Alkhateeb FM. *Economic, Social and Administrative Pharmacy (ESAP) as a field of study: The needs, challenges and opportunities for improving pharmacy practice in Gulf Cooperation Council (GCC) Countries.* Dubai International Pharmaceuticals and Technologies Conference and Exhibition (DUPHAT), Dubai, UAE, March 8-10, 2015.

Alkhateeb FM. *Sharing insights, best practices, and strategies to study Clinical Pharmacy in the USA.* Dubai International Pharmaceuticals and Technologies Conference and Exhibition (DUPHAT), Dubai, UAE, March 8-10, 2015.

National Harbor, Maryland, July 11-15, 2015.


Alkhateeb FM. Assessment & Quality Improvement in Pharmacy Education: Current State and Future Directions. Kuwait University College of Pharmacy. June 16, 2015


Alkhateeb FM. Adopting the Canadian Council for Accreditation of Pharmacy Programs (CCAPP) and the Accreditation Council for Pharmacy Education (ACPE) International Certification in the Middle East: what is the evidence that the benefits justify the costs? ” (ZTIPC 2015) 21-23 October 2015, Al-Zaytoonah University of Jordan, Amman.

Alkhateeb FM. Using Readiness for Interprofessional Learning Scale (RIPLS) for assessing Pharmacy students’ attitude toward Interprofessional Education (IPE). The First Middle Eastern Conference on Interprofessional Education, Doha, Qatar 4-6 December 2015

BOOKS AND BOOK CHAPTERS


PRESENTATIONS AND INVITED LECTURES

Alkhateeb FM. Economic, Social and Administrative Pharmacy (ESAP) as a field of study: The needs, challenges and opportunities for improving pharmacy practice in Gulf Cooperation Council (GCC) Countries. Dubai International Pharmaceuticals and Technologies Conference and Exhibition (DUPHAT), Dubai, UAE, March 8-10, 2015

Alkhateeb FM. Sharing insights, best practices, and strategies to study Clinical Pharmacy in the USA. Dubai International Pharmaceuticals and Technologies Conference and Exhibition (DUPHAT), Dubai, UAE, March 8-10, 2015
Alkhateeb FM. Academic Accreditation Process for Pharmacy Programs in the USA. 3rd Annual meeting for Deans of Pharmacy Colleges in the Kingdom of Saudi Arabia titled “Pharmacy Education: Reality and Future”. May 14, 2014 at Salman bin Abdulaziz University, Alkharg, Saudi Arabia.

Alkhateeb FM. Targeting e-Detailing to the right audience: Understanding the needs of different physician segments is critical for effective e-Detailing. 4th Annual of eCommunication & Online Marketing Summit, 2009 November 3-4, Philadelphia, PA, USA.


**Grants**


Clauson KA (PI), Elrod S, Eckardt PA, Alkhateeb FM, Garcia AS, Sherman EM. (2010-2011) Pilot study to assess the impact of SMS/text messages on medication adherence for T2DM. Funding: McKesson Foundation Mobilizing for Health Grant. ($57,763.62)

Alkhateeb FM. (2013/2014). A Comparison of between California Critical Thinking Skills Test & Health Sciences Reasoning Test for benchmarking, program assessment and directing curricular change in a College of Pharmacy. Texas A&M Health Science Center Teaching Learning Resource Center (TLRC), ($800.00).

Alkhateeb FM. (2014). Pharmacists’ Continuing Education Needs in South Texas. Coastal Bend Health Education Center (CBHEC), $3236.00

Alkhateeb FM. Prince Sattam Bin Abdulaziz University (PSAU) College of Pharmacy /Saudi Arabia: Assessment and Accreditation consultation and training (2015) ($80,000.00)

**Not Funded:**

Alkhateeb FM. Brozick A, De Leon M, Demps E., Everett-Houser J. Initiative to
improve health outcomes in the Hispanic community. 2014. *CVS Health.* ($365,000.00)

**Alkhateeb FM, Hamouda A.** Arab and Israeli academicians' perceptions toward opening the branch of Texas A&M University at Nazareth (Peace Campus). *Program to Enhance Scholarly and Creative Activities (PESCA)* 2014. ($18,000.00)

**PROFESSIONAL AFFILIATIONS**

- Member, American Pharmaceutical Association (APhA)
- Member, International Society for Pharmacoeconomics & Outcomes Research (ISPOR)
- Member, Rho Chi Honor Society
- Member, American Association of Colleges of Pharmacy (AACP)
- Member, Association for Institutional Research (Air)
- Member, Jordan Pharmaceutical Association

**CRITICAL SCIENTIFIC REVIEW**

**Editor/Editorial Board:**

- Associate Editor, *Pharma Scientist Journal*, (July 2011-July 2012)
- A member of the Editorial Advisory Board for the *International Journal of Management, Economics & Social Sciences (IJMESS)* (March 2013-Present)
- A member of the Editorial Advisory Board for the *World Journal of Pharmaceutical Sciences* (June 2013-Present)
- A member of the Editorial Advisory Board for the *Insight Pharmaceutical Sciences* (June 2013-Present)
- A member of the Editorial Advisory Board for the *Journal of Medical Biomedical and Applied Sciences* (June 2013-Present)
- A member of the Editorial Advisory Board for the *Innovative Journal of Business and Management [IJBM]* (June 2013-Present)
- A member of the Editorial Advisory Board for the *JSM Clinical Pharmaceutics* (June
2013-Present)

A member of the Editorial Board the Journal of Pharmaceutical Care & Health Systems (June 2014-Present)

**Manuscript Referee:**

Research in Social & Administrative Pharmacy (2010-present)

**External Reviewer for Tenure/Promotion:**

Pacific University School of Pharmacy, Hillsboro, OR

**Abstract, Book and Chapter Reviewer:**

American Association of Colleges of Pharmacy (AACP) Annual Meeting Poster Presentation, Social & Administrative Pharmacy Section, Spring, 2009-2012.


**Posters Judge**

2013 Texas A&M Health Science Center Research Colloquium, June 27-28, 2013

**TRAINING & CERTIFICATION WORKSHOPS**

**National**

OSCEology workshop, Leslie Dan Faculty of Pharmacy at the University of Toronto. Toronto, ON, Canada, June 10 – 12, 2015.

Association of Accrediting Agencies of Canada (AAAC) - Canadian Council for Accreditation of Pharmacy Programs (CCAPP) Certified Field Evaluator (July, 2013).

Distance Education and Training Council: DETC Evaluator Training Tutorial (March, 2014)

Accreditation Council for Pharmacy Education (ACPE) Continuing Pharmacy Education
(CPE) Field Reviewer (January, 2013).

Local

Texas A&M HSC Rangel College of Pharmacy Preceptor Training (June 1, 2013)

Texas A&M HSC Rangel College of Pharmacy Objective Structured Clinical Examination (OSCE) Training Workshop (November, 2013)

PROFESSIONAL INVOLVEMENT & SERVICE

Member, AACP Social & Administrative Sciences (SAS) Section Awards Committee (2013/2014)

Member, AACP Assessment SIG Communications Committee (2013/2014)

Chair, AACP Assessment SIG Communications Committee (2014/2015)

Member, AACP Assessment SIG Executive Committee (2014/2015)

University of Charleston Board of Trustees Graduate Faculty Representative (2012/2013)

AACP Social & Administrative Sciences (SAS) Graduate Program Committee (2012-13)

ACCREDITATION & ASSESSMENT APPOINTMENTS & POSITIONS


Accreditation Council for Pharmacy Education (ACPE) Field Reviewer

Accreditation Council for Pharmacy Education (ACPE) Continuing Pharmacy Education Reviewer

ACPE /International Services Program (ISP) Consultant

NABP Item Writer for the Foreign Pharmacy Graduate Equivalency Examination (FPGEE) & Pharmacy Curriculum Outcomes Assessment (PCOA)

Canadian Council for Accreditation of Pharmacy Programs (CCAPP) Certified Field Evaluator (2013-present)

University of Charleston School of Pharmacy Residency Program Accreditation Advisory Committee (2012-2013)

UNIVERSITY OF CHARLESTON AND SCHOOL OF PHARMACY COMMITTEE INVOLVEMENT

Member, Portfolio Roundtable Taskforce (Establishment and guidance on evaluation of...
portfolio’ courses, including professionalism, ethics, and communications 2007/2008)

**Chair**, Faculty Affairs Committee (UCSOP, 2009/2010) Member,

Quality Assurance Committee (UCSOP, 2009/2010)

Faculty Adviser & Liaison, National Community Pharmacists Association (NCPA)
/University of Charleston (2008-2011)

*Application Reviewer and Candidate Interviewer*, Admissions Committee / Student Affairs Committee, UCSOP, 2008 – 2009

*Faculty Advisor*, Professional Year 1, 2, and 4 Students, UCSOP, 2007 – 2012 Member,

Faculty Affairs Committee (UCSOP, 2010/2011)

Member, Professional Standards and Conduct Council (UCSOP, 2010/2011)

Member, Ad Hoc Committee for the faculty annual performance evaluation. Rep from the Pharmacy School (2010/2011)

Member, University of Charleston School of Pharmacy (UCSOP) Visioning Committee Task Force (2011/2012)

Member, UC SOP Academic Affairs Committee (2011/2012, 2012/2013) Member,

Pharmacy Practice Chair Search Committee (UCSOP, 2012)

**TEXAS A&M HEALTH SCIENCE CENTER (HSC) & RANGEL COLLEGE OF PHARMACY (RCOP) COMMITTEE INVOLVEMENT**

Member, RCOP Administrative Leadership Team (2012/2013), (2013/2014)


Member, RCOP Admission (2014/2015)

*Ex officio*, RCOP Outcomes Assessment Committee (OAC) (2012/2013), (2013/2014)

**Chair**, RCOP Outcomes Assessment Committee (OAC) (2014/2015)

Member, RCOP Quality Enhancement Plan (QEP) Advisory Ad Hoc (2012/2013), (2013/2014)

Member, RCOP Faculty Grievance Committee (2013/2014) (2014/2015)

Member, Texas A&M HSC Critically Appraise Relevant Evidence (CARE) Committee
(2012/2013), (2013/2014)

Member, Texas A&M HSC Academic Assessment Committee (2012/2013), (2013/2014)

**Co-Chair**, Self-Study for ACPE Site Visit in Fall 2015 (2014/2016)

**Co-Chair**, Texas A&M Rangel College of Pharmacy Strategic Planning (2014-2019)

**Co-Chair**, Assistant/Associate Dean for Experiential Program Search Committee (2014-2015)

Member, Texas A&M Assessment Liaisons (2014-2015)

**SCIENTIFIC MEETINGS, WORKSHOPS, & SYMPOSIA ATTENDED**

NABP Item Writer for the Foreign Pharmacy Graduate Equivalency Examination (FPGEE) & Pharmacy Curriculum Outcomes Assessment (PCOA) workshop in Chicago, IL (April, 2013)

Colleges & Schools ACPE Self-Study Workshop Chicago, IL (August, 2013)

The 2013 Fall CAHME Council Meeting Charlotte, NC (October, 2013)

14th Annual Texas A&M Assessment Conference Assessment Conference (February 16-18, 2014, College Station, TX)

2014 AACP Interim Meeting Arlington, Virginia (February, 2014)

PCOA Forum in Chicago, IL (April, 2014)

2014 AACP Institute CAPE Educational Outcomes 2013, Leesburg, Virginia (May, 2014)

15th Annual Texas A&M Assessment Conference Assessment Conference (February 16-18, 2015, College Station, TX)

PCOA Forum in Chicago, IL (April, 2015)

**OTHER**

American Citizenship
Curriculum Vitae
Ayman K. Hamouda, BPharm, PhD
Department of Pharmaceutical Sciences
Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
hamouda@tamhsc.edu

EDUCATION
1998 B.Pharm. (with Honors)
College of Pharmacy-Al-Azhar University-Gaza, Gaza Strip
2007 Ph.D. (GPA=4.0)
Pharmacology & Neuroscience (with a minor in Physiology)
Texas Tech University Health Sciences Center (TTUHSC), Lubbock, Texas
2007-2009 Research Fellow-Dr. Jonathan B. Cohen’s laboratory
Department of Neurobiology-Harvard Medical School

FACULTY APPOINTMENTS
2009-2013 Instructor, Department of Neurobiology
Harvard Medical School
2013- Assistant Professor, Department of Pharmaceutical Sciences
College of Pharmacy-Texas A&M HSC
2014- Assistant Professor, Department of Neuroscience and Experimental Therapeutics
College of Medicine-Texas A&M HSC

HONORS AND AWARDS
2003-2004 Fulbright Foreign Student Scholarship
2005 Who’s Who among Students in American Universities
2005 2nd Place (Doctoral Category) in Research Poster Competition
Annual Student Research Day, TTUHSC
2006 1st Place (Doctoral Category) in Research Poster Competition
Annual Student Research Day, TTUHSC
2006 Society for Neuroscience Graduate Student Travel Award
2006 Chancellor’s Scholarship, Texas Tech University
2007 Alexander D. Kenny Outstanding Graduate Student Award, Department of Pharmacology & Neuroscience, TTUHSC
2007 GSBS Outstanding Graduate Student Award, Graduate School of Biomedical Sciences, TTUHSC
2007 Convocation speaker, Graduate School of Biomedical Science–TTUHSC
2009  Seminar, Dept. of Neurobiology, Harvard Medical School, Boston, MA
2010  Seminar, Dept. of Neurobiology, Harvard Medical School, Boston, MA
2011  Invited speaker, Dept. of Cell Physiology and Molecular Biophysics, TTUHSC.
2011  Invited speaker, Center for Membrane Protein Research Workshop, TTUHSC
2011  Seminar, Dept. of Neurobiology, Harvard Medical School, Boston, MA
2014- Member, Texas A&M Institute of Neuroscience, Texas A&M University.
2014  Invited speaker, International Brain Research Organization (IBRO)-MENA Neuroscience Conference, Doha, Qatar.
2014- Member, Graduate Faculty, Texas A&M University.
2015  Invited speaker, Dept. of Biology Nona Symposium, Texas A&M University.
2015  Invited speaker, Research Initiative for Scientific Enhancement (RISE) program, University of Puerto Rico.

RESEARCH SUPPORT

2004-2007  Graduate Student Research Assistant, TTUHSC
Structural studies with affinity-purified muscle and neuronal nAChR.

2007-2013:  National Institute of Health  P01 GM58448
(PIs KW Miller and JB Cohen; Role, Investigator)
Locating general anesthetic sites in acetylcholine receptors and GABA-A receptors.

2013 -2016:  Texas A&M Health Sciences Center Faculty Development Fund
(Role, PI; $200,000).
Nicotinic acetylcholine receptors structure and pharmacology

2015 - 2017:  American Heart Association-15GRNT25890003
(Role, PI; $139,802; Funded then relinquished to accept NIH R15).
Identification of Positive Allosteric Modulator Binding Sites in α4β2 Nicotinic Acetylcholine Receptors.

2015 - 2018:  National Institute of Health-1R15 NS093590-01
(Role, PI; $435,781; Funded).
Neuronal nicotinic acetylcholine receptors (nAChRs)

2015 - 2017:  Texas Alzheimer’s Research and Care Consortium-IGP #354810
(Role, PI; $120,000; Scored: 2 “Outstanding”; Pending council decision)
Deconstruction and Lead Optimization of Desformylflustrabromine.
TEACHING EXPERIENCE:

1998 –2002  Teaching Assistant and Laboratory Instructor, College of Pharmacy, Al-Azhar University-Gaza.

2006-2007  Small group conferences
Medical Physiology (GPHY-5803)
Department of Cell Physiology and Molecular Biophysics-TTUHSC

2012-2013  Instructor - minicases tutorial
Principles of Pharmacology (IN757)
Harvard Medical School

2013-       Integrated Pharmacotherapy (IPT)
IPT IV (PHAR713): Neurobiology and Pain Management
IPT V (PHAR810): Psychiatry and Addiction
College of Pharmacy-TAMHSC

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

The American Association of College of Pharmacy (AACP)
The American Society for Pharmacology and Experimental Therapeutics (ASPET)
American Chemical Society
Biophysical Society
Society for Neuroscience
Protein Society

JOURNAL REVIEWER:

Ad hoc reviewer for Journal of Biological Chemistry (JBC), Biochemistry, the Biophysical Journal, Journal of Neuroscience Research.

Review editor of Systems Biology section of Frontiers in Neuroscience and Frontiers in Physiology

PUBLICATIONS: (All in peer review journals)


*Corresponding Author


*Equal contribution.


*Equal contribution.


**CONFERENCE PRESENTATIONS:**


Dongin “Donoven” Kim, Ph.D.
Assistant Professor
Department of Pharmaceutical Sciences
Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
Reynolds Medical Building, Room 371, Mail Stop 1114
College Station, Texas 77843-1114
Email: Dongin.Kim@pharmacy.tamhsc.edu
www.pharmacy.tamhsc.edu
Phone: 979-436-0561, Fax: 979-436-0087, Cell: (801) 574-6823
Status: Permanent Resident in USA

Professional Position

2015 – Present  Assistant Professor in Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M Health Science Center, College Station, TX

2014 – 2015  Associate Research Scientist in Biomedical Engineering, Internal Medicine, and Yale Translational Research Imaging Center (Y-TRIC), Yale University, New Haven, CT

2011 – 2014  Postdoctoral Fellow in Biomedical Engineering, Internal Medicine, and Y-TRIC Yale University, New Haven, CT (NIH T32 training program recipient)

2010 – 2011  Postdoctoral Fellow in Translational and Molecular Imaging Institute Icahn School of Medicine at Mount Sinai, New York, NY

2009 – 2010  Postdoctoral Fellow in Biomedical Engineering Georgia Institute of Technology/Emory University, Atlanta, GA

Education

2009  Ph.D. in Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah, Salt Lake City, UT

2002  M.S. in Department of Materials Science and Engineering, University of Florida, Gainesville, FL

1999  B.S. in Department of Applied Chemistry, Ajou University, Suwon, South Korea

Professional Skills

- Chemistry: organic synthesis, monomer synthesis, polymerization, conjugation, dendrimer conjugation, antibody conjugation
• Formulation: emulsion nanoparticle, drug-ligand conjugates, polymeric micelle, hybrid nanoparticle, liposome, nanolipogel, iron oxide nanoparticle, particle size, zeta-potential, drugs (anticancer drug, cytokine, protein, fluorescent dye) encapsulation and release, SEM, TEM, TGA, systemic delivery nanoparticle, orally delivered nanoparticle, FRET, hydrogel

• Biology: cell culture, cytotoxic assay, confocal microscopy, flow cytometry, 3-dimensional tumor steroid, ELISA, western immunoblotting, histology, in vivo imaging instrument (IVIS, Bruker), in vivo tumor models (tumor implantation, biodistribution, pharmacokinetics, survival study, anti-tumor efficacy, anti-tumor immune response), animal handling (tail vein intravenous injection, jugular vein injection, intraperitoneal injection, intraocular injection, oral delivery), statistical analysis

Publication

• Journal Citation (papers, book chapter, patents): 1496
• h-index: 16
 (*Google Scholar Citations: Search Term = Dongin (Donoven) Kim)

Peer Reviewed Journal


6. U.Y. Lee, Y.T. Oh, D. Kim, E.S. Lee. Multimeric grain-marked micelles for highly
efficient photodynamic therapy and magnetic resonance imaging of tumors *Int. J. Pharm.* 2014, 471: 166-172


**Book Contributions**

**Manuscripts in Submission and in Preparation**

Zhuang, A. Sinusas, T. Fahmy. Simultaneous enhancement of CT contrast and reduction of CT dose index through iodine nanoconfinement Nat. Biotech. 2015 Submitted


**Patents and Disclosures**


4. “Methods of composition enabling cell attraction and imaging of localized stents or injectable hydrogels in vivo” (Patent disclosure applied) (2014)


**Abstract Presentations**

- 2015 The 12th International Conference on Alzheimer’s and Parkinson’s Diseases and Related Neurological Disorders (AD/PDTM 2015), Nice, France
- 2014 AAPS (American Association of Pharmaceutical Scientists) Annual Meeting & Exposition, San Diego, CA
- 2013 Alzheimer’s Association International Conference, Boston, MA
- 2013 Gordon Research Conference for “Cancer Nanotechnology”, West Dover, VT
- 2013 Annual Retreat Immunobiology, Hancock, MA
- 2013 16th International Symposium on Recent Advances in Drug Delivery Systems, Salt Lake City, UT
- 2012 1st Annual IEEE Healthcare Innovation Conference, Houston, TX
- 2012 Third Annual Retreat Human and Translational Immunology Program, Yale University, New Haven, CT
- 2008 GPEN (Globalization of Pharmaceutical Education Network), Leuven, Belgium
- 2008 AAPS (American Association of Pharmaceutical Scientists) National Biotechnology
Awards

- Certificate of Reviewing Award for Colloids and Surfaces B: Biointerfaces in 2015
  ELSEVIER
- Certificate of Reviewing Award for International Journal of Pharmaceutics in 2014
  ELSEVIER
- Outstanding Reviewer Award for International Journal of Pharmaceutics in 2014
  ELSEVIER
- Innovative Research Award in 2008 AAPS (American Association of Pharmaceutical
  Scientists) National Biotechnology Conference in Toronto, Canada
- Genentech Travelship Award in 2008 AAPS (American Association of Pharmaceutical
  Scientists) National Biotechnology Conference in Toronto, Canada
- GPEN Travelship Award in 2008 GPEN (Global Pharmaceutical Education Network)
  (Belgium)
- Outstanding Academic Achievement Award in 2000 University of Florida (Florida)

Educational Activities

Teaching

- Graduate Teaching Assistant University of Utah, Salt Lake City, Utah (Jan. 2004 – May
  2004)
  - Assisted a Homogeneous and Heterogeneous Equilibria in Pharmaceutical and
    Biological Systems courses
  - Graduate Teaching Assistant University of Florida, Gainesville, Florida (Jan.
    2001 – May 2001)
- Assisted a Material Chemistry course in Material Science and Engineering
  - Taught undergraduate students and conducted various chemical experiments

Mentoring

  - (Amity Regional High School, Woodbridge, CT, USA) received following awards
    Fair” sponsored by Alexion Pharmaceuticals
  - Graduate student in Yale University
• Patrick Han: Jan. 2013 – Present
  – Graduate student in Yale University
• Andrew Qi: Jan. 2014 – Present
  – Undergraduate student in Yale University
• Cleo Kyriakides: May 2014 – Present
  – High school student
• Philip Kong: August 2014 – Present
  – Graduate student in Yale University

**Journal and Grant Referee**

*Bioconjugate Chemistry (1), Chemical Communications (1), Colloids and Surfaces B (3), Current Pharmaceutical Design (1), International Journal of Pharmaceutics (10), Journal of the American Chemical Society (1), Journal of Bioactive and Compatible Polymers (1), Nanomedicine: Nanotechnology, Biology, and Medicine (1), Polymer Chemistry (1), RSC Advances (1), Therapeutic Delivery (1), The terry fox foundation research proposal (1)*

Total # of Journals/Grant Review = 12

Total # of Review = 23
Narendra Kumar PhD

1010 W. Ave B; MSC-131
Kingsville, TX-78363

Telephone (Work): 361-221-0743
(Cell): 901-246-5036
(Fax): 361-221-0793
Email: nkumar@tamhsc.edu

CAREER HISTORY

A. Faculty Appointments
Associate Professor with Tenure, Pharmaceutical Sciences; Rangel College of Pharmacy; Texas A&M University HSC, Kingsville, Texas
Sept 2014- Present

Associate member of Graduate faculty, Texas A & M University Kingsville
Aug 2011-Present

Associate member of Graduate faculty, Texas A & M HSC; School of Graduate Studies
Aug 2011-Present

Assistant Professor, Department of Pharmaceutical Sciences; Irma Lerma Rangel College of Pharmacy Texas A & M Health Science Center Kingsville, Texas.
Mar 2008-Aug 2014

Instructor of Pediatric Gastroenterology, Department of Pediatrics; College of Medicine, University of Tennessee Memphis, Tennessee.
Sept 07- Feb 08

Instructor of Physiology, Department of Physiology; College of Medicine, University of Tennessee Memphis, Tennessee.
Mar 05- Feb 08

B. Academic Training
Postdoctoral Research Trainee, Department of Physiology University of Tennessee, Memphis, Tennessee.
Feb 02-Mar 05

Postdoctoral Research Fellow, Department of Biological Sciences, University of Delaware, Newark, Delaware.
July 01-Feb 02

Senior Graduate Research Fellow, Indian Institute of Technology (IIT), Kharagpur, West Bengal
Jan 97-Jun 01
MS Research Trainee, May 95-May 96
Department of Marine Biotechnology, Goa University, Talegaon Plateau, Goa

MS Summer Research Trainee, Apr 95-May 95
CSIR Center for Biochemical Technology, New Delhi.

EDUCATION:

PhD June 2001
Indian Institute of Technology (IIT), Kharagpur India, Microbial Biotechnology

Master of Sciences July 1996
Goa University, Talegaon Plateau Goa, India, Marine Biotechnology

Bachelor of Sciences August 1994
Ranchi University, India Chemistry Honors

AWARDS & HONORS:

A. Research:

1. NIH Early Career Reviewer (ECR) May 2015-present
   National Institute of Health (NIH)

2. NIH-KO1 Award Sept 2009-May 2015
   National Institute of Health (NIH)

3. NIH-SBIR Award July 2014-May 2016
   National Institute of Health (NIH)

4. CCFA Career Development Award Jan 2009-Dec 2012
   Crohn’s and Colitis Foundation of America (CCFA).

5. AGA Research Scholar Award 2009-2011(finalist)
   American Gastroenterology Association (AGA, Institute).

   Crohn’s and Colitis Foundation of America (CCFA).

B. Other Awards/Certificates
7. Faculty Service Awards
   Texas A&M University Corpus Christi; April, 2015.

8. Faculty Service Awards
   Texas A&M University Health Science Center; Feb, 2015.

9. Nominated for Gamma Mu Chapter
   Phi Lambda Sigma Pharmacy Leadership Society; March, 2014.

10. Faculty Mentor Award (McNair Scholar Program)
    Texas A&M University, Kingsville October 18, 2012.

11. Certificate of Appreciation
    (For securing highest federal grant);
    ILR College of Pharmacy, Texas A&M HSC August 19, 2009.

12. Certificate of Felicitation (speakership)

13. Faculty Mentor Award (UBMS program)
    Texas A&M University, Kingsville July 12, 2012.

   **C. Postdoctoral Travel Awards:**

14. AGA Travel Award
    American Gastroenterology Association February 9-10, 2007

15. CCFA Travel Award
    Cleveland Clinic Foundation (CCF) and
    Crohn’s and Colitis Foundation of America (CCFA) October 4-7, 2006

16. Stem Cells Travel Scholarship
    AGA Institute and British Society of Gastroenterology September 8-9, 2006

17. CCFA Travel Award
    Crohn’s and Colitis foundation of America May 10-11, 2005

   **D. Doctoral Research Awards:**

18. Doctoral Research Scholarship Award
    The Department of HRD, Govt. of India Jan 1997- June 2001

19. DST Foreign Travel Award
    The Department of Science and Technology, Govt. of India July 1999

   **E. Pre-Doctoral Research Scholarship:**

20. DBT Student Scholar Award
    The Department of Biotechnology, Govt. of India July 1994- June 1996
21. All India Graduate Aptitude Test in Engineering (GATE) Certificate of Merit (94.73 percentile) at the national level
   The Department of HRD, Govt. of India 1998

**PROFESSIONAL MEMBERSHIPS:**

2005-2013: Member, American Gastroenterology Association (AGA)

2006-2013: Member, American Society of Cell Biology (ASCB)

2008-2009; Member, American Association for College of Pharmacy (AACP)

2010-2012; American Neurogastroenterology and Motility Society (NGM)

2007-Present; Member, American association for Biochemistry and Molecular Biology society (ASBMB).

2011-Present; American Physiological Society (APS)

**RESEARCH EXPERIENCE:**

A. Current Research Support:

1. **7 K01DK081661-05** (Kumar: PI) 09/01/09- 05/31/14 (NCE: 05/31/16)
   NIH
   Role cytokine signaling in intestinal inflammation
   Direct cost $632,391
   The major goals of this project are to determine the role of Jak3 in cytoskeletal remodeling, mucosal restitution, and epithelial homeostasis, during normal physiology and during experimental colitis
   Overlap: none

2. **2 R43GM109528-01** (Kumar: PI on univ sub-award) 06/05/14- 05/31/16
   NIH
   Development of Novel ELISA kit for screening potential Jak3 inhibitors
   Direct cost: $678,000.00
   This project is based on our recently filed patent application US61/960652 and the major goal of the project is to develop high-throughput screening kit to find out previously unknown Jak3-directed inhibitors and biomolecules. (Principle awardee: 21st Century Therapeutics Inc.; Shaw: PI)
   Overlap: None

B. Research Support (completed)

1. **3 CCFA Grant#2188** (Kumar: PI) 01/01/09-06.30.12
   Crohn’s & Colitis Foundation of America (CCFA)
   Role of IL-2 signaling during intestinal inflammation.
   Direct Cost: $256,686.00.
The major goals of this project were to determine the role of Jak3 in mucosal physiology and predisposition to colitis.

2. **3 CCFA Grant#1351 (Kumar: PI) 04/01/05-12.31.08**
   Crohn’s & Colitis Foundation of America (CCFA)
   *Role of villin-Jak3 interaction in intestinal restitution.*
   Direct Cost: $168,750.00.
   The major goals of this project were to determine the structural determinants for Jak3 interactions with cytoskeletal proteins and their effects in intestinal signaling during inflammation.

3. **Department of Pharmaceutical Sciences: 03/01/08-01/31/10**
   Total direct cost: $100,000.00
   Title: Role of Jak3 induced cytoskeletal remodeling in intestinal restitution.
   (Narendra Kumar: PI)

4. **Department of Physiology: 01/01/06-12/31/06**
   Total direct cost: $2000.00
   Title: Role of villin induced cytoskeletal remodeling in intestinal restitution.
   (Narendra Kumar: PI)

5. **Department of Physiology: 06/01/07-2/28/07**
   Total direct cost: $5000.00
   Title: Role of Jak3 in intestinal restitution.
   (Narendra Kumar: PI)

6. **American Gastroenterology Association (AGA) Foundation Travel Grant**
   Organization: AGA Foundation for Digestive disease (AGADD)
   Total direct cost: $750.00; Purpose: To attend the 2007 Academic skill workshop held at Miami FL. (Narendra Kumar: PI)

7. **AGA Institute and British Society of Gastroenterology (BSG): Stem Cells Travel Scholarship**
   Total direct cost: $500.00. Purpose: To present research work at the “Stem Cells in Gastrointestinal Development, Regeneration and Neoplasia Symposium” held at Tyson Corner, VA. (Narendra Kumar: PI)

8. **Cleveland Clinic Foundation (CCF) & Crohn’s and Colitis Foundation of America (CCFA): CCF and CCFA Travel Grant**
   Total cost ($ value not known): The entire cost of attending the summit. Purpose: To attend the “Inflammatory Bowel Disease Summit” held at the Inter-Continental Hotel & MBNA Conference Center Cleveland, Ohio. (Narendra Kumar: PI)

9. **Crohn’s and Colitis foundation of America: CCFA Travel Award**
   Total direct cost: The entire cost of attending the summit ($ value not known). Purpose: To attend “Junior Faculty Symposium on Inflammatory Bowel Disease” held at the Johns Hopkins University, Baltimore. (Narendra Kumar: PI)
10. **Graduate Aptitude Test in Engineering** (GATE): Research Scholarship Award
   By the Department of Human Resource Development, Government of India.
   Title: For graduate studies at the Indian Institute of Technology Kharagpur, India.
   Total direct cost: The entire cost of graduate studies. (Narendra Kumar: PI)

11. **The Department of Science and Technology**, Govt. of India; DST Foreign Travel Award
   Purpose: To present research at the “9th European Congress on Biotechnology (ECB9)”
   Brussels, Belgium. Total cost: Rs.35000.00; (Narendra Kumar: PI)

12. **The Department of Biotechnology**, Govt. of India; DBT Scholar Award
   Purpose: To cover study cost for Masters of Sciences in Marine Biotechnology.
   Total cost: Rs.12, 600.00; (Narendra Kumar: PI)

C. Research Support (pending):

1. NIH R01
   Funding Agency: National Institute of Health
   Title: Gut, low-grade inflammation and metabolic syndrome
   Proposed Funding Period: Nov 2015- Oct 2020
   Status: scored in 1st round, under revised submission
   Total Cost Requested: $1,801,069.00; (Kumar: PI)

2. NIH R43 (Phase 2) (Kumar: PI on univ sub-award) 06/05/16- 05/31/18
   NIH (development stage)
   *Development of Novel ELISA kit for screening potential Jak3 inhibitors*
   Direct cost: $2,150,000.00
   This project is on phase 2 of our SBIR and based on patent application US61/960652.
   (Principle awardee: 21st Century Therapeutics Inc.; Shaw: PI)
   Overlap: None

D. Research Support (in preparation/revision not funded):

1. AAF Scholar Award
   Funding Agency: American Asthma Foundation
   Title: The role of nasopharyngeal microbiome in airway epithelial restitution
   Proposed funding period: June 1 2013-May 2016
   Total Direct cost: $450,000.00; (Narendra Kumar: PI)

2. NIH R01
   Funding Agency: National Institute of Health
   Title: Collaborative and Tailored Interventions to Promote the Research Careers of
   Underrepresented Students in Biomedical Sciences
   Proposed Funding Period: July 2013- August 2017
   Total Direct Cost: $1,455,331.00: (Narendra Kumar: PI)

3. NIH R03 limited submission
   Funding Agency: National Institute of Health
   Title: Tyrosine kinase in colonic differentiation and barrier functions
   Proposed Funding Period: June 2013- May 2016
Total Direct Cost: $127,741.00: (Narendra Kumar: PI)

4. Senior Research Award
   Funding Agency: Crohn’s and Colitis Foundation of America
   Title: Tyrosine kinase in colonic differentiation and barrier functions
   Proposed Funding Period: June 2013- May 2016
   Total Direct Cost: $312,741.00: (Narendra Kumar: PI)

5. Intramural engineering collaborative award
   Funding Agency: Texas A&M Kingsville
   Title: Influence of Actin Dynamics on Force field and wound repair
   Proposed Funding Period: June 2012- May 2013
   Total Direct Cost: $20,741.00: (Narendra Kumar: PI)

6. Peer Reviewed CRP New Investigator Award.
   Status: Pre-selected in the initial review and invited to submit the full proposal. Full
   proposal not funded
   Funding Agency: Department of Defense
   Title: Role of Shc and IL-2 in Colorectal Cancer
   Proposed Funding Period: June 2012- May 2014
   Total Direct Cost: $275,000.00: (Narendra Kumar: PI)

7. Funding Organization: Crohn’s & Colitis Foundation of America (CCFA)
   Proposed Funding period: 01/01/10- 12/31/12
   Title: Pattern recognition receptor modulation of Intestinal P-Glycoprotein function and
   expression and its role in IBD
   Total direct cost: $ 168,750; (Narendra Kumar: Mentor)

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RESEARCH COLLABORATION:

A. INDUSTRY: 21ST CENTURY THERAPEUTIC INC. MICHIGAN
B. HOSPITAL: SCOTT & WHITE HOSPITAL, TEMPLE TX
C. HOSPITAL: CHRISTUS SPOHN HEALTH SYSTEM
D. HOSPITAL: Corpus Christi Medical Center

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BOOK CHAPTERS:

Mishra J. & Kumar N. Structure and Function of Jak3-SH2 domain. N. Kurochkina (ed.), SH
Domains, Structure, Mechanism and Applications:© Springer International Publishing

Kumar N, Roy N, Mishra J, Mukherjee L, Das D. Scanning electron microscopy of immobilized
whole cells: A case studies on the hydrogen production using immobilized Enterobacter cloacae
FORMATEX, Spain, 2002.
PATENTS AND DISCLOSURES


PUBLICATIONS *(Peer-reviewed Full Research Articles)*


25. Mishra J, Kumar N. Functional dissection of phospho tyrosine residue of Janus kinase 3 responsible for cytoskeletal remodeling. (under preparation)


**Novel Gene Cloned:**
Complete coding sequence of Fe-hydrogenase gene (444 bp) from Enterobacter cloacae IIT BT 08 *Uniqueness*: This is a novel and the smallest hydrogenase gene coding for [Fe]-hydrogenase isolated from a high rate of hydrogen producing bacteria Enterobacter cloacae IIT-BT 08 till reported today and its over expression in a non-hydrogen producing bacteria resulted increase in hydrogen production as confirmed by gas chromatography.

*Accession # AY676139 [gi: 62914769] in NCBI gene bank*

*Author*: Mishra J., Khurana,S., Kumar,N., Ghosh,A.K. and Das,D.


*Title of the Article*: Molecular cloning, characterization, and over expression of a novel [Fe]-hydrogenase isolated from a high rate of hydrogen producing Enterobacter cloacae IIT-BT 08

**Abstract/Paper published in proceedings**

1. Kumar N, Das D. Studies on molecular hydrogen production by Enterobacter cloacae IIT-BT 08. 9th European Congress on Biotechnology; July 11-15, 1999, Brussels, Belgium


14. Kumar N, Mishra J, Waters CM. Interleukin-2 regulates intestinal epithelial restitution through tyrosine phosphorylation of Jak3. Inflammatory Bowel Disease Summit; Oct. 4-7, 2006, Inter Continental Hotel & MBNA Conference Center, Cleveland, Ohio.


16. Kumar N, Mishra J, Waters CM. Interactions of non-receptor tyrosine kinase Jak3 with cytoskeletal protein Villin regulates intestinal epithelial restitution. 46$^{th}$ American Society for Cell Biology (ASCB) meeting; Dec.9-13, 2006, San Diego, CA USA.

17. Narang VS, Kumar N, Stewart CF, Waters CM. Dexamethasone increases expression and activity of Multi-drug resistance transporter at the rat blood-brain barrier. 100$^{th}$ American Association for Cancer Research (AACR) meeting; Apr.14-18, 2007, Los Angeles, CA USA.


19. Mishra J, Kumar N. Expression of Jak3 changes in differentiation in intestinal epithelial cells. Experimental Biology (EB9) meeting, New Orleans April 18$^{th}$-22$^{nd}$, 2009


25. Mishra, J., Quazi, SH, Kumar, N. Increased severity of high molecular weight DSS induced colitis in aged mice. 2011 Advances in Inflammatory Bowel Diseases Crohn's & Colitis Foundation's Clinical & Research Conference, December 1-3 2011, Hollywood FL.


31. Mishra J, Verma RK, Kumar, N. Jak3 at the juxtaposition of inflammation and health. 2013 COP-Research Colloquium June27-28, ILR College of Pharmacy, Kingsville TX.


Invited Speaker:
3. Regulation of Intestinal Restitution by IL-2 and Jak3. University of Rochester Medical Center, Rochester, April 6, 2006.
8. Inflammation and therapeutic Targets - An Epithelial, Invited to present on September 18, 2010 at the 2010 College of Pharmacy Research Colloquium, Kingsville TX.
9. Reinforcing the Border in GI tract: the chain of commands. Invited to present at Texas A&M Health Science Center Research Symposium, November 11-12, 2010, College station, Texas.

10. Increased severity of high molecular weight DSS induced colitis in aged mice. World Congress on gastroenterology and Urology. March 20-14, 2012, Omaha, Nebraska.


12. Jak3 at the juxtaposition of inflammation and health. 2013 COP-Research Colloquium June27-28, ILR College of Pharmacy, Kingsville TX.

13. Low-grade inflammation and therapeutic implication for chronic diseases. 2015 TAMUS-Immunology Consortium, June 19, College Station TX.

14. Gut feeling, what is it all about? The 2015 Joseph E & Martha E Kutscher DDRC Symposium; October 8-9, Scott & White Healthcare Temple, TX.


**TEACHING**

a. Courses taught from 2008-present (Didactic)

   **PHAR 726 sch-3, (Microbiology/Immunology); Average class size: 90; Role: Instructor:**
   **Objective:** To integrate the basic concepts of the immune functions in infectious diseases, pathogenesis, and therapeutics. **Responsibility:** Taught the entire immunology part of the course. **Techniques used:** Power point slides, recorded lecture videos, electronic instruction through Bb, interactive video animation, and internet. **Assessment:** Short term retention was fostered through continuous assessment (CA) using interactive videos and Turning PointsR questions during each lecture period. Long term retention was fostered through end point assessment (EPA) using multiple choice questions and Scantron evaluation. The average of CA and EPA were used for final grading.

   **PHAR 627 sch-3 (Biochemistry); Average class size: 130; Role: Instructor:**
   **Objective:** To offer integrated concept to cellular metabolism and provide a biochemical, genetic, and molecular basis of disease pathogenesis and drug functions. **Responsibility:** Taught one third of the course which included various topics on metabolic/hormonal regulation, lipid/amino acid/protein biosynthesis, genes and chromosomes, and DNA/RNA metabolism etc. **Techniques used:** same as in PHAR 726. **Assessment:** same as in PHAR 726.

   **PHAR 610 sch-2 (Principles of Drug actions); Average Class size: 90; Role: Instructor:**
   **Objective:** This is a two-course series offered in the P1 year that provides an introduction to the integrated concepts on the general principles of pharmacology and medicinal chemistry. **Responsibility:** Taught topics on immunopathology, inflammation, and introduction to genetic variability in drug effects. **Techniques used:** same as in PHAR 726. **Assessment:** same as in PHAR 726.
PHAR 813 sch-3 (Integrated Pharmacotherapy Oncology; IPT VIII); Class size: 90; Role: Course co-coordinator and instructor: Objective: This eighth of an eight-course sequence builds on the course description of the IPT Sequence. IPT VIII presents the pathophysiology, medicinal chemistry, pharmacotherapy, clinical trial evidence, and pharmacogenomics of different organ transplantation and cancers. Responsibility: Taught the entire pharmacogenomics portion of the course. Techniques used: same as in PHAR 726. Assessment: same as in PHAR 726.

Student Portfolio; Role: Instructor: Apart from academic progress, professional growth and physical fitness are equally important for the development of a successful professional. The aim of this course is to foster in student communication skills, professional development, and physical fitness. Each student is assigned a faculty advisor who advises the student on professional advancement, physical wellbeing, and communication competencies. Responsibility: Advised over 50 pharmacy students and assessed their progress each semester over a period of 4 years.

b. Teaching Evaluation Ratings; Narendra Kumar.
Given below are representative teaching evaluations by the students in the courses where I teach maximum lectures. Peer evaluation of teaching by the Associate Dean of Academic Affairs and the Department Chair are available upon request.

<table>
<thead>
<tr>
<th>Course (Name &amp; number)</th>
<th>Year</th>
<th>Responsibility</th>
<th>Mean Evaluation² (scale: 1-5 (n=90-120) compared with college rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>07-08</td>
<td>Instructor</td>
<td>4.6 (75th Percentile)</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>08-09</td>
<td>Instructor</td>
<td>4.5 (50th Percentile)</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>09-10</td>
<td>Instructor</td>
<td>4.3 (~50th Percentile)</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>11-12</td>
<td>Instructor</td>
<td>4.5 (50th Percentile)</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>12-13</td>
<td>Instructor</td>
<td>4.6 (75th Percentile)</td>
</tr>
<tr>
<td>PHAR 627 Biochemistry</td>
<td>14-15</td>
<td>Instructor</td>
<td>4.7 (75th Percentile)</td>
</tr>
<tr>
<td>PHAR 726 Microbiology &amp; Immunology</td>
<td>08-09</td>
<td>Instructor</td>
<td>4.7 (75th Percentile)</td>
</tr>
<tr>
<td>PHAR 726 Microbiology &amp; Immunology</td>
<td>09-10</td>
<td>Instructor</td>
<td>4.5 (~75th Percentile)</td>
</tr>
<tr>
<td>PHAR 726 Microbiology &amp; Immunology</td>
<td>10-11</td>
<td>Instructor</td>
<td>4.5 (75th Percentile)</td>
</tr>
<tr>
<td>PHAR 726 Microbiology &amp; Immunology</td>
<td>12-13</td>
<td>Instructor</td>
<td>4.4 (~50th Percentile)</td>
</tr>
<tr>
<td>PHAR 726 Microbiology &amp; Immunology</td>
<td>14-15</td>
<td>Instructor</td>
<td>4.5 (75th Percentile)</td>
</tr>
<tr>
<td>PHAR 813 Oncology, Transp. Genomics</td>
<td>13-14</td>
<td>Inst/Coord</td>
<td>4.3 (~50th Percentile)</td>
</tr>
</tbody>
</table>

²Mean: Average of the students evaluation scores for the faculty member using all (22) the questions on the Course/Instructor Evaluation Form. 75th Percentile is the highest rating available for the college.

MENTORING AND ADVISING EXPERIENCE:
1. Students Organization: Cultural Diversity Committee
Role: Faculty advisor (2012-present)

2. List of Graduate students supervised/advised:
   - Ramya Ambidi, MS, Chemistry, Department of Chemistry, Texas A&M University Kingsville, (2011)
   - Alok Tomar Ph.D. Biochemistry, Department of Physiology, University of Tennessee, (2007). Topic: Determine the role of villin phosphorylation in intestinal epithelial cell migration.
   - Leon Chattman, Doctoral student (2005), University of Tennessee, Topic: Recombinant protein production and mammalian cell culture practices
   - Si Jing, Doctoral student (2003), University of Tennessee, Topic: Cloning, sequencing and expression of Ca\(^{2+}\) binding mutants of villin

3. List of Research Assistant Professor, Research Scientist, Research Assistants, and postdocs mentored:
   - Dr. Jayshree Mishra Ph.D. (current position: Research Assistant Professor) (advising period: June 2008-Present) Texas A&M Kingsville HSC College of Pharmacy. Topic: Role of Jak3 and ShcA in intestinal development
   - Dr. Rafique Islam Ph.D. Postdoctoral Research Associate (March-April 2009) Texas A&M Kingsville HSC College of Pharmacy. Topic: Role of structural determinates of ShcA in intestinal Development
   - Dr. Sohel Hossain Quazi Ph.D. Postdoctoral Research Associate (September 2010-August 2012) Texas A&M Kingsville HSC College of Pharmacy. Topic: Role of Jak3 and ShcA in intestinal wound repair.
   - Swathi Javvaji MS. Chemistry Student (April-November 2009) Texas A&M Kingsville Topic: Role of Jak3 and ShcA in treatment of colorectal Cancer

4. List of professional Pharm D students mentored:

5. List of undergraduate and High-school students mentored:

• Alisha Hassels, Pre-doctoral student (2006), University of Tennessee University of Tennessee Topic: DNA isolation and cloning for human ShcA .
• Shemika Wilson, McNair Fellow (2006), University of Tennessee, Topic: Isolation of total RNA and amplification of Pgp cDNA from total RNA Isolated from different mouse tissue samples.
• Leon Chattman, Pre-doctoral student (2005), University of Tennessee, Topic: Recombinant protein production and mammalian cell culture practices.
• Tiffany Lovelace, McNair Fellow (2004), University of Tennessee, Topic: actin dynamics studies using recombinant villin.
• Olivia McGregory, Pre-doctoral student (2003), University of Tennessee, Topic: Generation of truncation mutant of villin through site directed mutagenesis.
• Cyril Patra, Undergrad student, Chemistry (2011-2012), University of Evansville, Topic: Structural elucidation of ShcA.
• Edward P. Saenz, Ronald E. McNair Scholar TAMUK (2012), Texas A&M University Kingsville, Topic: Role of Jak3 in mucosal barrier functions.
• Jaclyn Salinas, Ronald E. McNair Scholar TAMUK (2012), Texas A&M University Kingsville, Topic: Functional Analysis of potential Jak3 inhibitor as Target for Colon Cancer.

• Paris Garcia, Upward bound math and Science Student (UBMS) program (2012) for under-represented minority students under the US Department of Education, Texas A&M University Kingsville, Topic: Role of Jak3 in mucosal wound repair.

• Mark Daniel Galvan, Upward bound math and Science Student program (2012) for under-represented minority students under the US Department of Education, Texas A&M University Kingsville, Topic: Role of Jak3 in mucosal wound repair.

• Mark Daniel Lopez, Upward bound math and Science Student program (2012) for under-represented minority students under the US Department of Education, Texas A&M University Kingsville, Topic: Role of Jak3 in mucosal wound repair.

• Shreya Narang, Undergrad University of Texas (2013), Determination of structural functions of Jak3.

• Devina Narang, Undergrad University of Texas (2013), Determination of structural functions of p52ShcA.

*These students were awarded first place under the entire UBMS program for their project done under faculty-mentorship of Dr. Narendra Kumar

**Professional Development:**

A. Teaching-Related Development Activities:
   (few selected are listed: attended mostly every year)
   • Faculty Technology Forum
   • Teachers' Seminar: Triangulating Teaching Evaluations, offered by AACP
   • Biological Science Section: Capture the Action! A Tool to Quantify Active Learning in Your Classroom, offered by AACP
   • Joint session: Biological Sciences, Pharmaceutics, Medicinal Chemistry section: Integrating Pharmacogenomics in Pharmacy Education; offered by AACP.

B. Certificate course:
   • A Field Guide to Gene bank and NCBI Molecular Biology Resources at University Of Tennessee Health Science Center Date

C. Teaching workshop attended:
   • Faculty Technology Forum Series: Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Kingsville Texas.
   • Using the Flipped Classroom Model to Increase Student Engagement and Results organized by McGraw Hill Publication, hosted by Jason M. Seitz of Georgia Perimeter College.

D. Scientific Meetings
   • Annual Meeting of American Association for College of Pharmacy (AACP),
   • Experimental Biology. Sponsoring society: American Society for Biochemistry and Molecular Biology and American Physiological Society, (mostly every year)
   • Neuro-gastroenterology and Motility Meeting 2010, 2011.

**Leadership/Service Experience:**

Narendra Kumar Ph D
A. **Conference Symposia organized**
1. 2010 COP Research Colloquium organizing committee (Role: **Chair**): Instrumental in conceptualizing and organizing the very first research colloquium in the college. Mission: To showcase the research activities at the college of pharmacy and to foster research collaboration among researchers in south Texas area.
2. 2013 COP Research Colloquium organizing committee (Role: **Co-Chair**): Instrumental in conceptualizing and organizing the second research colloquium in the college. Mission: To showcase the research activities and to foster research collaboration among researchers in south Texas area.

B. **Administrative:**

**TEXAS A & M HSC-WIDE COMMITTEES:**
1. Texas A&M HSC Research Retreat Symposium Committee (Role: Member, 2008-2009; representing college of Pharmacy in inter component meeting on Research Retreat Symposium. Active participation in planning and execution of symposium.)
2. Texas A&M HSC Research Advisory Committee (Role: member, annual appointment for 2008-2012, representing college of Pharmacy in inter component meeting on Research and Development. Internal research pre-proposal review for CPRIT)
3. Texas A &M HSC Technology Commercialization and Advisory Committee ((Role: member, 2010-2014; representing college of Pharmacy in inter component meeting on Technology Commercialization and intellectual property rights.)

**TEXAS A & M HSC COLLEGE OF PHARMACY COMMITTEES**
1. College of Pharmacy Vivarium Committee (Member; 2008-2012: Review of vivarium facility plan, assessment of faculty needs, review 2nd assessment of the plan and recommendation for modification).
2. College of Pharmacy Research Advisory Ad Hoc Committee (**Chair**; 2008-2009, advisory to the College on all matters related to the research programs, infrastructure, and mission of the College of Pharmacy).
3. College of Pharmacy Library and Learning Resources Committee (Member; 2008-2009: making recommendations to the Dean pertaining to library use, collection, and library service, access and acquisition of learning, library, drug information resources as relates to missions of the College of Pharmacy.
4. College of Pharmacy Graduate Program Steering Committee (Member; 2008-Present: Instrumental in designing courses for MS and Ph.D. in Pharmaceutical Sciences with the specialty track on Biotechnology. Organizing, facilitating, and chairing the meetings between College of Pharmacy and College of Engineering TAM Kingsville, and office of technology transfer TAM College Station.
6. Rangel College of Pharmacy Research Advisory Committee (**Chair**; 2009-2012, advisory to the College on all matters related to the research programs, infrastructure, and mission of the College of Pharmacy)
7. Rangel College of Pharmacy Research Colloquium organizing committee (**Chair**, 2010) Conceptualizing the idea and responsible for co-coordinating the “2010 COP Research Colloquium” held on September 17-18 2010 at Texas A&M Health Science Center College of Pharmacy Kingsville TX.
8. Rangel College of Pharmacy Research Advisory Committee (member; 2013-present, advisory to the College on all matters related to the research programs, infrastructure, and mission of the College of Pharmacy)

9. Appointment, Promotion and Tenure Committee (APT), (Member; 2011-2013) Review and recommend different candidate’s application for appointment, promotion and tenure (APT) matters in the College of Pharmacy during each of the academic year.

10. Rangel College of Pharmacy Award, Honors and Scholarships Committee (member; 2011-2014, charged with establishing the criteria for the awards and honors for the faculty and students of the College. The Committee is further charged with establishing criteria for student scholarships, when necessary, and making recommendations for administering already existing scholarships in the College.

11. Rangel College of Pharmacy Curricular Affairs Committee (member; 2014-present), charged with continually monitoring, assessing, and revising the professional pharmacy curriculum. Responsibilities include review of individual course offerings on a regular basis to ensure that each course meets the goal and objectives established for the course offerings; review of proposals for new course, course deletions, and changes in sequence, and to determine the appropriate sequence and scheduling of course clerkship.

TEXAS A & M HSC DEPARTMENT OF PHARMACEUTICAL SCIENCES COMMITTEES

1. Faculty search committee for Molecular biology position (Chair; 2008-2009: review and formulating of the Advertisement posted on professional website/journals. Review of applicants and making report on each candidate.

2. Faculty search committee for Physiology position (Chair; 2008-2009: review and formulating of the advertisement posted on professional website/journals. Review of applications and finalizing potential candidate. Participated in the interview process of the final candidates.

3. Faculty search committee for Pharmacology position (Chair; 2008-2009: review and formulating of the advertisement posted on professional website/journals. Review of applications and finalizing potential candidate. Participated in the interview process of the final candidates.

4. Department of Pharmaceutical Sciences Academic Promotion and Tenure Review Committee (Member; 2011-2012, reappointed for 2012-2013), Reviewed faculty record of applicant and review and editing of the recommendation letters.

5. Department of Pharmaceutical Sciences Administrative Secretary Search Committee (member; 2009), Reviewed and assessment of applicant.

6. Instructor of Physiology search committee (Member; 2008), made report on the assessment.

7. Pharmaceutical Sciences imaging facility; (Role: Chair, 2009-present) instrumental in deciding make model and set up of confocal and other microscopes, coordinating and maintaining day to day activities of the facility, setting-up of user friendly account, responsible for coordinating maintenance and repair.

C. EDITORIAL SERVICES

Editorial board member:

   a. Journal Immunodeficiency and disorder
b. Journal of Liver: Disease and Transplant

**Book reviewed:**  
Kuby Immunology 7th Edition by Owen, Punt, and Stranford  
(a recommended text book for Undergrad, graduate, and Pharm.D. students)

**Reviewer for Journals:**  
a. Journal of Biological Sciences  
b. America Journal of Physiology; Cell Physiology  
c. Journal of Biotech Research  
d. Digestive and Liver Disease  
e. Human Immunology  
f. PLOS One

**D. COMMUNITY SERVICES**  
1. Men’s Overall 5K Runner (1st place) 2015: Santa Gertrudis ISD Family Fitness Week.  
3. Delivered special lecture on “Balancing professional and personal lives and raising kids: different cultural perspective” at the department of Human Sciences at Texas A & M University Kingsville; 2013.  
4. Regular-advisor to the Boys and Girls Club of Kingsville for career options in health sciences.  
Dai Lu, Ph.D.

Department of Pharmaceutical Sciences
Rangel College of Pharmacy, Texas A&M University
1010 West Avenue B, Kingsville, TX 78363, USA
Telephone: (361) 221-0745 Email: dlu@tamhsc.edu

EDUCATION:

Postdoc: Harvard Medical School, Boston, MA 09/2006-09/2007
National Institute of Health, Bethesda, MD 06/2005-08/2006
Ph.D. University of Connecticut, Storrs, CT 05/2005
M.S. Peking Union Medical College
Chinese Academy of Medical Sciences, Beijing, China 01/1992
B.S. NanKai University, Tianjin, China 07/1987

PROFESSIONAL EXPERIENCE

2012/01-Present Assistant Professor of Medicinal Chemistry and Pharmaceutical Sciences, Rangel College of Pharmacy, Health Science Center, Texas A&M University
2007/09-2011/11 Instructor, Department of Neurology, Harvard Medical School, Boston, MA
2007/09-2011/11 Senior Chemist, Center for Neurologic Diseases, Harvard Medical School and Brigham and Women's Hospital, Boston, MA
2006/09-2007/08 Research Fellow, Harvard Medical School, Boston, MA
2005/06-2007/08 Postdoctoral Fellow, National Institute of Health
1998/09-2005/05 Research Assistant, School of Pharmacy, University of Connecticut, Storrs, CT
1992/02-1994/07 Assistant Professor of Medicinal Chemistry, Peking Union Medical College, Chinese Academy of Medical Sciences, Beijing, China
1987/08-1988/08 Research Associate, Institute of Materia Medica, Chinese Academy of Medical Sciences, Beijing, China

OTHER PROFESSIONAL EXPEREINCES

a. Consultant

2013/05-Present Asymchem, Tianjin, China
2006/08-Present Essenix Inc, Natick, Massachusetts
2006/10-Present Center for Drug Discovery, Northeastern University, Boston, MA
2007/01-Present  MakScientific LLC, Woburn, Massachusetts
2006/06-Present  National Engineering Research Center for the Development of New Drug, Beijing, China

b. Reviewer

Peer-review Journal:  Journal of Medicinal Chemistry, Molecular Pharmacology, Natural Products Chemistry & Research, Bioorganic Medicinal Chemistry Letter, Bioorganic Medicinal Chemistry, Modern Chemistry & Applications

Grant Review:  Portuguese Foundation for Science and Technology Cancer Prevention and Research Institute of Texas (CPRIT)

c. Membership in Professional Organizations

- American Chemical Society
- International Cannabinoid Research Society
- American Association of Pharmaceutical Sciences
- American Association of Cancer Research
- Alzheimer’s Association
- Sino American Pharmaceutical Professionals Association
- Harvard NeuroDiscovery Center

HONORS & AWARDS

- Team Teaching Award, Rangel College of Pharmacy, Texas A&M University, 2015
- Team Teaching Award, Rangel College of Pharmacy, Texas A&M University, 2012
- National Research Service Award, NIH, 2005
- Richardson-Vicks/A. Francis Summa Memorial Award, 2003.
- Doctoral Dissertation Award, University of Connecticut, 2002
- Outstanding Young Research Fellow, Chinese Academy of Medicine, 1993, 1994.

Research Activities:
I obtained a Ph.D. in medicinal chemistry from the University of Connecticut in 2005. This was followed by a postdoctoral training in NIH and a second term postdoctoral training in Harvard Medical School. Since 2007, I worked as an Instructor in Harvard Medical School and senior chemist in the center for neurologic diseases of Brigham and Women’s hospital for 6 years. During my Ph.D. and first postdoctoral training in the medicinal chemistry of cannabinoids, I made several important discoveries, which include the first and the only class of intrinsically fluorescent
cannabinoid ligands (U.S. Patent: 7183313), the discovery of first class of water-soluble cannabinergic lipids (U.S. Patent: 8,202,893) and the discovery of the first class of selective agonists of cannabinoid CB2 receptors (U.S. Patent: 6,166,066). During my appointment at Harvard Medical School and Brigham and Women’s hospital, I was involved in the drug discovery for Alzheimer’s disease. I was a co-inventor for the discoveries of two novel classes of Notch-sparing γ-secretase inhibitors (U.S. patents: 61/543,287 and 61/389,537). Prior to my pursuit of Ph.D. degree in the United States, I had been an assistant professor at Peking Union Medical College and Chinese Academy of Medical Sciences where I was involved in the discovery of anxiolytic drug candidate Buagafuan, which is currently under phase II clinical trials in China (Chin. J. Med. Chem. 13, 125-30, 2003). Over the last four years I have led a group with average staff of 3 postdoctoral fellows and 3-4 graduate students to conduct research in 4 directions, which include: 1) developing novel allosteric modulators and inverse agonists of cannabinoid CB1 receptors as potential therapies for obesity and pain; 2) developing novel anticancer agents from synthetic lead compounds (pyranopyrimidionones) and natural products (paclitaxel); 3) developing multi-component nanoparticles for pancreatic cancer.

Extramural Funding Highlights:
- NIH Grant (R01 DA039942) “CB1 Allosteric Modulators: Molecular, Cellular and In Vivo Pharmacology”, Role: PI; 04/15/2016-1/31/2021.
- NIH Grant (R21 DA038804) “Novel CB1 Inverse Agonists for Investigation of Constitutive Signaling Activities”, Role: Co-PI; 07/01/2015-06/30/2017.
- Texas Clinical Science and Translational Research Institute Pilot Study Grant, “Cannabinoid CB2 Receptor Selective Agonists to Improve Prognosis of Pancreatic Cancer”, Role: PI; 01/2013-01/2014.

Teaching Activities (courses taught):
- CHEM 5412, Advanced Medicinal and Pharmaceutical Chemistry (graduate level), 2012-presnet
- PHAR 610, Principles of Drug Action I (undergraduate and professional student level), 2012-presnet
- PHAR 612, Principles of Drug Action II (undergraduate and professional student level), 2012-presnet
- PHAR 712, Endocrinology & Metabolic Diseases (undergraduate and professional student level), 2012-presnet
- PHAR 711, Cardiovascular Diseases (undergraduate and professional student level), 2012-presnet
- PHAR 813, Oncology, Transplant & Genomics (undergraduate and professional student level), 2012-presnet

Postdoctoral Fellow Supervision:
Mentored 6 postdoctoral fellows at TAMU in my laboratory including: Drs. Sandeep Sundriyl, Hamed I. Aly Ismail, Teresa Olszewaska, Xinhe Yang, Anantha Lakshmi Duddupudi, and Venkateson Perumal.

Mentored 4 postdoctoral fellows at Harvard University including: Drs. Yang Liu, Jian Chen, Ting Yang, and Pranab Maiti.
Ph.D. Supervision:

Completed: Mr. Changjiang Qiao, Ph.D. “Design and Synthesis of Photoactivatable Affinity Ligands for the allosteric sites of the Cannabinoid CB1 receptor”, May 2016.

M.S. Supervision:

Mentored 6 students who received the M.S. in medicinal chemistry including Sushma Samala, Hui Liu, Venkata Surya Aparna Damaraju, Venkata Kishore Pulipati, Mayur Chaudary, Bhandhavi Akkina.

Supervision of undergraduate students at Harvard University (2006-2011)

- Brett Michael Giblin, Department of Chemistry, Harvard College, 2010-2011
- Christopher Chung, Department of Chemistry, Emmanuel College, 2010-2011
- Andrew Zhang, Department of Chemistry, Harvard College, 2008-2009
- Conan Liang, Department of Chemistry, Harvard College, 2009
- Chris Kowk, Department of Chemistry, Harvard College, 2007-2008
- James Colombe, Department of Chemistry, Harvard College, 2007-2008
- Vivien Sun, Department of Chemistry, Harvard College, 2006-2008

Selected Invited Presentation:

5. Colloquium, Center for Drug Discovery, Northeastern University, Sept 18th, 2011, “CB2 receptor as a Novel Therapeutic Target for Alzheimer’s Disease”
9. Seminar, Center of Neurologic Diseases, Brigham and Women’s Hospital, Oct. 18, 2009, “ADME properties in CNS Drug Discovery”
10. Seminar, Novartis Institutes of Biomedical Research, Cambridge, Sept 9, 2009, “Pyridopyrimidinones as Novel Gamma-secretase Inhibitors for Alzheimer’s Disease”
12. Seminar, Center of Neurologic Diseases, Brigham and Women’s Hospital, Jan, 6, 2009, “Modern Automatic Flash Chromatography Techniques and Applications”
13. Seminar, Center For Drug Discovery, Northeastern University, June 16, 2008


National and International Conference Presentation:


5. Han-Xun Wei, Dai Lu, Vivien Sun, Jing Zhang, Yongli Gu, Pamela Osenkowski, Wenjuan Ye, Corinne E. Augelli-Szafran, “Beta-Amino alcohols as notch sparing g-secretase modulators”, 235th National Meeting of the American Chemical Society, New Orleans, LA, April, 2008.


11. Dai Lu, Huaping Hu, Zhaoxing Meng, Atmaram D. Khanolkar, Joy Erickson, Patricia H. Reggio and Alexandros Makriyannis, Adamantyl & Alkyl Substituted Adamantyl


Publication in Peer-reviewed Journals:


**Patents:**


**Book Chapter**

CONTACT INFORMATION

Work: Michael J. Miller, RPh, DrPH, FAPhA
Associate Professor
Department of Pharmaceutical Sciences
Irma Lerma Rangel College of Pharmacy
Texas A&M University
Mail Stop 1114
159 Reynolds Medical Building
College Station, Texas 77843
979-436-0294 (T)
miller@pharmacy.tamhsc.edu

Home:
8901 Sandstone Drive
College Station, TX 77845

BACKGROUND

EDUCATION

12/2004
Doctor of Public Health
Department of Behavioral and Community Health Sciences (formerly Health Services Administration), Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA 15260
Directed by: Howard B. Degenholtz, PhD

5/1995
Master of Science Degree in Pharmacy Administration
College of Pharmacy, The University of Arizona, Tucson, AZ 85721
Thesis: "A Retrospective Analysis of the Clinical and Economic Impact of a Tobacco Cessation Program for Active Duty Military Service Members"
Directed by: JoLaine R. Draugalis, Ph.D.

5/1988
Bachelor of Science Degree in Pharmacy
College of Pharmacy, University of Pittsburgh, Pittsburgh, PA 15260
Cum Laude Honors

PROFESSIONAL EXPERIENCE

Current:

1/2017
Associate Professor (Tenure on Arrival Pending), Irma Lerma Rangel College of Pharmacy, Texas A&M University, College Station, Texas 77843

Completed:

9/2015 to 1/2017
Associate Professor with Tenure, College of Medicine – Tulsa, Department of Medical Informatics, School of Community Medicine, The University of Oklahoma, Tulsa, OK 74135

7/2010 to 1/2017
Adjunct Associate Professor, College of Medicine – Tulsa, Department of Family Practice, School of Community Medicine, The University of Oklahoma, Tulsa, OK 74135
4/2009 to 9/2015 Member (Level 4), Graduate Faculty in Pharmaceutical Sciences, The University of Oklahoma Health Sciences Center, Oklahoma City, OK 73190

7/2011 to 9/2015 Associate Professor with Tenure, Department of Pharmacy, College of Pharmacy – Tulsa, The University of Oklahoma, Tulsa, OK 74135

6/2008 to 7/2011 Associate Professor, Department of Pharmacy, College of Pharmacy – Tulsa, The University of Oklahoma, Tulsa, OK 74135

8/2004 to 8/2008 Assistant Professor, Department of Pharmacy Practice, College of Pharmacy and Health Sciences, Drake University, Des Moines, IA 50311

9/2001 to 8/2004 Graduate Student Researcher, Department of Health Policy and Management, Graduate School of Public Health, University of Pittsburgh, Pittsburgh PA 15260. Principal Investigator and Research Advisor: Dr. Howard Degenholtz

10/1999 to 7/2004 Instructor, Department of Clinical, Social, and Administrative Pharmacy, Mylan School of Pharmacy, Duquesne University, Bayer Learning Center, Pittsburgh, PA 15282

1/1999 to 10/1999 Pharmacoeconomic Research Specialist, Bio Assessment Technologies (BioAsTec), 10592 Perry Highway, Suite 204, Wexford, PA 15090

3/1998 to 7/2000 Clinical Specialist, Drug Use Outcomes, Stadtlanders Managed Pharmacy Services, 600 Penn Center Blvd., Pittsburgh, PA 15235-5810

3/1998 to 6/1999 Clinical Instructor, Department of Pharmaceutical Sciences, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA 15260


9/1997 to 3/1998 Clinical Instructor, Department of Pharmacy and Therapeutics, School of Pharmacy, University of Pittsburgh, Pittsburgh, PA 15260

10/1996 to 8/1997 Senior Clinical Research Pharmacist, VA Cooperative Studies Program Clinical Research Pharmacy Coordinating Center, 2401 Centre Avenue SE, Albuquerque, NM 87106-4180

8/1996 to 8/1997 Clinical Assistant Professor, University of New Mexico, College of Pharmacy, Albuquerque, New Mexico 87131

5/1995 to 10/1996 Clinical Research Pharmacist, VA Cooperative Studies Program Clinical Research Pharmacy Coordinating Center, 2401 Centre Avenue SE, Albuquerque, NM 87106-4180

1/1993 to 4/1995 Graduate Research and Teaching Assistant, Department of Pharmacy Practice, College of Pharmacy, The University of Arizona, Tucson, AZ 85721


7/1988 to 7/1991 Officer in Charge, Inpatient Pharmacy Service, Carswell Air Force Base, Fort Worth, TX 76127

PROFESSIONAL LICENSURE

1991 New York, 040580 (RPh) (Inactive)
CONSULTING EXPERIENCE

9/2013 to 8/2018  Special Government Employee (SGE), Division of Advisory Committee and Consultant Management (DACCM). Consultant to the FDA/CDER Advisory Committee for Pharmaceutical Science and Clinical Pharmacology

3/2011 to 6/2011  Member, Faculty Advisory Panel, AHRQ Health Literacy in Pharmacy Project. Subcontractor to Abt Associates

7/2007 to 6/2008  Pharmacy Data Management Consultant to Department of Preventive and Behavioral Medicine, University of Massachusetts, Worcester. Project: Latinos en Control Study

    - Toolkit for Community Members
    - Toolkit for Those Who Live With Depression
    - A Medical Reference Chart for Primary Care Providers


PROFESSIONAL DEVELOPMENT


7/2010 to 4/2011  The University of Oklahoma College of Medicine – School of Community Medicine Faculty Academy and Summer Institute. Tulsa, OK 74135.


12/1-3/2004  Grants 101: Professional Grant Proposal Writing Workshop presented by The Grant Institute at Iowa State University (Downtown Des Moines) – Pappajohn Higher Education Center, Des Moines, IA 50309.

9/17/2004  Public Responsibility in Medicine and Research (PRIMER): PRIMER IRB 101 on the ROAD presented by Iowa State University at the West Des Moines Marriott, 1250 74th Street, West Des Moines, IA 50266


11/1998  Amgen Outcomes Institute presented by The University of South Carolina College of Pharmacy in Hilton Head Island, SC.

9/1996 to 12/1996  Project Management Certificate Program presented by the University of New Mexico Division of Continuing Education in Albuquerque, New Mexico.

6/4 to 7/2/1996  Successful Project Management presented by the University of New Mexico Division of Continuing Education in Albuquerque, New Mexico.
10/18-20/1995 Meeting Global Regulatory Requirements for Adverse Drug Reaction Reporting with Specialized ADR Data Systems presented by The Institute for International Research in Washington, DC.

6/1995 Current Good Manufacturing Practices Training Course presented by the Quality Control and Assurance Unit at VA Cooperative Studies Program Clinical Research Pharmacy Coordinating Center in Albuquerque, NM

PROFESSIONAL / ACADEMIC AWARDS

2015 Graduate, American Association of Colleges of Pharmacy Academic Research Fellows Program. Alexandria, VA 22314

2012 Fellow, American Pharmacists Association

2010 Letter of Appreciation, Department of Health and Human Services, PHS Indian Hospital, Claremore, Oklahoma


2008 Drake College of Pharmacy and Health Sciences Mentor of the Year Award

4/2005 Omicron Chapter of Delta Omega Best Dissertation of the Year in the Department of Behavioral and Community Health Sciences, Graduate School of Public Health, University of Pittsburgh

4/1997 Special Contribution Award - Workload Specification and Task Measurement Project Department of Veterans Affairs

1993/1994 Outstanding Graduate Teaching Assistant Award - College of Pharmacy University of Arizona Foundation

4/1994 Rho Chi Pharmacy Professional Honor Society - Alpha Psi Chapter

12/1992 Air Force Commendation Medal with First Oak Leaf Cluster

7/1991 Air Force Commendation Medal

MILITARY EXPERIENCE

12/1992 to 3/1995 Captain, United States Air Force (Inactive/Active Reserve)


TEACHING

UNDERGRADUATE and PROFESSIONAL DEGREE COURSES DIRECTED and TAUGHT

Current:

1/2017 to Present  Primary Course Coordinator, PHAR 872, Social and Behavioral Aspects of Patient Care, Irma Lerma Rangel College of Pharmacy, Texas A&M University (1 offering, 2 credit hours, 111 Students enrolled)

Completed:

1/2010 to 5/2014  Primary Course Coordinator, PHAR 7812, Advanced Drug Literature Evaluation, College of Pharmacy, The University of Oklahoma (5 offerings, 2 credit hours, 104 to 121 students enrolled)

10/2010 to 12/2010  Project Director, INDT 8302, Community Medicine Enrichment I, School of Community Medicine, The University of Oklahoma – Tulsa Campus.

8/2010 to 12/2012  Co-Course Coordinator, PHAR 7163, Biostatistics, College of Pharmacy, The University of Oklahoma (4 offerings, 3 credit hours, 107 to 119 students enrolled)

1/2009 to 5/2009  Co-Course Coordinator, PHAR 7812, Advanced Drug Literature Evaluation, College of Pharmacy, The University of Oklahoma (1 offering, 2 credit hours, 133 students enrolled)

1/2008 to 5/2008  Course Master, PHAR 150, Health Literacy, College of Pharmacy and Health Sciences, Drake University (1 offering, 2 credit hours, 10 students enrolled)

8/2005 to 12/2007  Course Master, PHAR 172, Literature Evaluation Methods (formerly known as Basic Quantitative Methods for Pharmaceutical Care), College of Pharmacy and Health Sciences, Drake University (3 offerings, 3 credit hours, 101 to 135 students enrolled)

1/2005 to 5/2006  Co-Instructor, PHAR 171, Social and Behavioral Aspects of Health Care (Management and Administration Section), College of Pharmacy and Health Sciences, Drake University (2 offerings, 3 credit hours, 128 to 135 students enrolled)

1/2005 to 5/2008  Course Master, PHAR 173, Applied Quantitative Methods for Pharmaceutical Care (Pharmacoeconomics), College of Pharmacy and Health Sciences, Drake University (4 offerings, 3 credit hours, 24 to 82 students enrolled)

8/2002 to 12/2003  Course Master, PHPRC 452, Drug Literature Evaluation, Mylan School of Pharmacy, Duquesne University (2 offerings, 2 credit hours, 127 to 129 students enrolled)

1/2000 to 5/2003  Co-Instructor, NTDP 475 Quality Assessment and Outcomes, Mylan School of Pharmacy, Duquesne University (4 offerings, online course, 3 credit hours, 9 to 17 students enrolled)

1/2000 to 5/2002  Course Master, GPHSC 587, Pharmacoeconomics, Mylan School of Pharmacy, Duquesne University (3 offerings; 2 credit hours, 3 to 15 students enrolled)

1/1999 to 4/1999  Course Master, PHARM 5311, Profession of Pharmacy 6 (Pharmacoeconomics and Managed Care), Department of Pharmacy and Therapeutics, College of Pharmacy, University of Pittsburgh (1 offering, 3 credit hours, 100 students enrolled)

GRADUATE COURSES DIRECTED and TAUGHT

Current:  None
Completed:

8/2014 to 12/2014 Co-Course Coordinator, PHSC 5703, Design and Methods in Health Services Research, College of Pharmacy, The University of Oklahoma (1 offering, 3 credit hours, 3 students enrolled)

1/2014 to 5/2014 Instructor, PHSC 5723 Pharmacoepidemiology/Pharmacoeconomics, College of Pharmacy, The University of Oklahoma (1 offerings, 3 credit hours, 3 students enrolled)

8/2012 to 5/2013 Primary Course Coordinator, PHSC 5031 Oral/Written Skills in the Social and Administrative Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma (2 offerings, 1 credit hour, 3 students enrolled)

8/2011 to 12/2011 Primary Course Coordinator, PHSC 5703, Pharmacy Administration Research Methods, College of Pharmacy, The University of Oklahoma (1 offering, 3 credit hours, 3 students enrolled)

1/2011 to 5/2011 Co-Course Coordinator, PHSC 6120, Survey Methods for Health Services Research, The University of Oklahoma College of Pharmacy (1 offering, 3 credit hours, 5 students enrolled)

8/2009 to 12/2009 Co-Course Coordinator, PHSC 5703, Pharmacy Administration Research Methods, College of Pharmacy, The University of Oklahoma (1 offering, 3 credit hours, 6 students enrolled)

8/2001 to 12/2003 Co-Instructor, GPHSC 589, Research Methods in Pharmacy Administration, Mylan School of Pharmacy, Duquesne University (2 offerings, 3 credits, 4 to 6 students)

GRADUATE INDEPENDENT STUDY DIRECTED and TAUGHT

6/2016 to 7/2016 Faculty Research Mentor. OU-TU School of Community Medicine Summer Internship. The University of Oklahoma. (Students: Jacob Ruzicka, Collin Troester)

6/2015 to 8/2015 Primary Course Coordinator, PHSC 5990, Special Studies in Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma (Student: Christina F. Bulkley)

8/2013 to 12/2013 Primary Course Coordinator, PHSC 5990, Special Studies in Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma (Student: Timothy T. Pham)

6/2012 to 8/2012 Primary Course Coordinator, PHSC 5990, Special Studies in Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma (Students: Craig F. Burns, Timothy T. Pham)

6/2010 to 8/2010 Primary Course Coordinator, PHSC 5990, Special Studies in Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma (Student: Craig Burns)

6/2009 to 8/2009 Primary Course Coordinator, PHSC 5990, Special Studies in Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma (Student: Michael R. Schmitt)

INVITED LECTURES

10/2015 Invited Lecturer, Health Literacy: Opportunities and Potential Solutions, PHAR 7733, Clinical Communications, College of Pharmacy, The University of Oklahoma

9/2014 Invited Lecturer, Health Literacy: Opportunities and Potential Solutions, PHAR 7733, Clinical Communications, College of Pharmacy, The University of Oklahoma
9/2013 Invited Lecturer, Health Literacy: Opportunities and Potential Solutions, PHAR 7733, Clinical Communications, College of Pharmacy, The University of Oklahoma

4/2013 Invited Discussion Leader, Health Literacy Research, PHAR 7991, Current Topics in Pharmaceutical Sciences, College of Pharmacy, The University of Oklahoma.


9/28/2011 Invited Lecturer, Health Literacy, INDT 8304, Community Medicine Enrichment II, School of Community Medicine, The University of Oklahoma Health Sciences Center.

8/31/2011 Invited Lecturer (with Stewart Brower, MLIS and Alice Kirkpatrick, PharmD, MS), Identifying User Friendly Medication Resources, OCTH 7443, Promoting Occupational Therapy for Chronic Conditions, The University of Oklahoma Health Sciences Center.


4/2000 to 4/2002 Invited Lecturer, PHBAS 410, American Health Care Systems (Pharmacoconomics Lecture Series), Mylan School of Pharmacy, Duquesne University (3 offerings)

2/13 and 18/1997 Invited Lecturer, An Introduction to Epidemiology, PHARM 311, Pharmacy Practice Management II, College of Pharmacy, University of New Mexico

10/9 and 11/1996 Invited Lecturer, An Introduction to Epidemiology, PHARM 707, Social and Epidemiological Pharmacy, College of Pharmacy, University of New Mexico

11/2/1995 Invited Lecturer, Cost Determination and Analysis, PHAR 310, Pharmacy Practice Management I, College of Pharmacy, University of New Mexico

PRECEPTING – ADVANCED PHARMACY PRACTICE EXPERIENCE

6/2013 to 7/2013 Preceptor, PHAR 7090, Research Practicum, Advanced Pharmacy Practice Experience (Student: Anh T. Quach)

9/2011 Preceptor, PHAR 7090, Research Practicum, Advanced Pharmacy Practice Experience (Student: Lih-Wern Wang)

8/2011 Preceptor, PHAR 7090, Research Practicum, Advanced Pharmacy Practice Experience (Student: Lourdes Ramos)

9/2010 Preceptor, PHAR 7090, Research Practicum, Advanced Pharmacy Practice Experience (Student: Sarah Brasor)
7/2010 to 8/2010  Preceptor, PHAR 7090, Research Practicum, Advanced Pharmacy Practice Experience
(Student: Timothy Pham)

GRADUATE STUDENT MENTORSHIP

Doctor of Philosophy, Pharmaceutical Sciences

Current:  None
Completed:

Major Advisor:

8/2010 to 5/2015  Craig F. Burns, PhD
Dissertation: A Prevalence-Based Case-Control Study of the Association Between Mental Health
and Exposure to Anti-TNFα Biologic Therapy: Evidence of a Role for Macrophage Cross-Linking
by Monoclonal Antibodies in Mental Illness

Committee Member:

8/2011 to 8/2013  Manish Mittal, PhD
Dissertation: An Evaluation of Three Statistical Estimation Procedures in the Assessment of the
Association between an FDA Suicidality Warning and Antiepileptic Drug Prescription Claims in a
State Medicaid Program

7/2011 to 8/2013  Amany Hassan, PhD
Dissertation: Treatment Resistant Depression: Identifying Predictors of Second-Line Therapy and
Comparing Healthcare Utilization and Costs

Master of Science, Pharmaceutical Sciences

Completed:

Major Advisor:

6/2008 to 12/2009  Michael R. Schmitt, PharmD
Degree: Master of Science in Pharmacy Administration, The University of Oklahoma Health
Sciences Center
Thesis: The relationships among health literacy, physician and pharmacist counseling, written
medicine information and nonsteroidal anti-inflammatory drug (NSAID) risk awareness in older
adults.*
Committee Chair: Michael J. Miller, RPh, DrPH
Committee Members: Donald L. Harrison, PhD, Kevin C. Farmer, PhD, Jeroan J. Allison, MD, MSc.
*Recipient of the 2010 University of Oklahoma Health Sciences Center Outstanding Thesis Award

PHARMACY RESIDENT MENTORSHIP (RESEARCH ADVISOR)

Current:

7/2016  Elizabeth A. Cook, PharmD
PGY2 Ambulatory Care Resident
The University of Oklahoma College of Pharmacy
Project: Clinical implications and prescriber attitudes regarding new FDA recommendations with
metformin prescribing
Completed:

7/2015 to 6/2016  Kaci Thiessen, PharmD  
PGY2 Ambulatory Care Resident  
The University of Oklahoma College of Pharmacy  
Project: Prescribing practices for community-acquired pneumonia in a large outpatient practice: identifying opportunities for antimicrobial stewardship

7/2014 to 6/2015  Crystal Tiller, PharmD  
PGY2 Ambulatory Care Resident  
The University of Oklahoma College of Pharmacy  
Project: A Literacy-Sensitive Approach to Improving Antibiotic Understanding in a Community-Based Setting

7/2014 to 6/2015  Amanda Capino, PharmD  
PGY1 Pharmacy Resident  
The University of Oklahoma College of Pharmacy  
Project: Parent and caregiver perceptions of iatrogenic drug withdrawal

7/2013 to 6/2014  Jessica M. Downes, PharmD  
PGY2 Ambulatory Care Resident  
The University of Oklahoma College of Pharmacy  
Project: Identifying opportunities to improve medication therapy management in transitions of care

9/2012 to 8/2013  Minhye Kim, PharmD  
PGY2 Ambulatory Care Resident  
The University of Oklahoma College of Pharmacy  
Project: Concordance with the IDSA Guidelines for Uncomplicated Urinary Tract Infections at an Academic Medical Clinic

7/2010 to 6/2011  Jessica L. Collum, PharmD  
PGY1 Community Pharmacy Resident  
The University of Oklahoma College of Pharmacy  
Project: Health Literacy and Patient Perceptions of Pharmacist Interventions

7/2009 to 6/2010  Katherine S. O’Neal, PharmD  
PGY2 Ambulatory Care Resident  
The University of Oklahoma College of Pharmacy  
Project: An Evaluation of Health Literacy Preparedness Within a Chain Community Pharmacy Environment

7/2009 to 6/2010  Nicholas D. Sparrow, PharmD  
PGY1 Pharmacy Practice Resident  
Claremore Indian Hospital  
Claremore, Oklahoma  
Project: Clinical Impact of the Indian Health Service Anticoagulation Training Program
RESEARCH and SCHOLARSHIP

GRANT / CONTRACT ACTIVITY (FUNDED)

Current: None

Completed:


4. Krenzelok EP, Cobaugh DJ, **Miller MJ**, Pham TT. Medications Frequently Implicated in Suicide in Older Adults: An Analysis of Poison Center Data. University of Pittsburgh School of Pharmacy. $8,000. Role: Co-Investigator. 7/2011 to 6/2012.


GRANT ACTIVITY (UNDER REVIEW)

None

GRANT ACTIVITY (SUBMITTED, BUT NOT FUNDED)


**RESEARCH IN PROGRESS**

1. **Miller MJ.** Variations in Asthma Medication Control and Associated Exacerbations in Sooner Health Access Network Patients. (Data Extraction)

2. **Miller MJ.** Appropriate Treatment for Children with Upper Respiratory Infection (URI) in Sooner Health Access Network Patients. (Data Extraction)

3. McMillan S, **Miller MJ.** Impact of Electronic Health Record Functionality on Antibiotic Prescribing and Visit Duration in Children and Adults with Upper Respiratory Infection. (Data Analysis)


7. O’Neal KS, **Miller MJ, Condren ME, Chalmers LJ, Steward ME.** The Clinical Impact of the Delay in Transition of Type 1 Diabetes Care: Pediatric to Adult. (Planning)

**PEER-REVIEWED PUBLICATIONS**


**REPLIES TO LETTERS TO THE EDITOR**


**NON-PEER-REVIEWED PUBLICATIONS**


**BOOK CHAPTERS**

EDITORIALS


PUBLIC TESTIMONY


MANUSCRIPTS UNDER REVIEW


MANUSCRIPTS IN PREPARATION


CONTRIBUTED ABSTRACTS

Podium Presentations:


Poster Presentations:


OsteoPOroSis (APROPOS) Study: A Randomized Trial within the GLOW cohort. American Society for Bone and Mineral Research (ASBMR) 2016 Annual Meeting, Atlanta, GA 9/2016


**INVITED PRESENTATIONS**


33. **Miller MJ**. Integrating Pharmacy Services with an Investigational Drug Trial: A Central Research Pharmacy Perspective. Pharmacy Department at the University of Pittsburgh Medical Center, 302 Scaife Hall, Pittsburgh, PA 15213. 7/1997.

34. **Miller MJ**. The Investigational Device Exemption (IDE), Highlights and Implications for CRAs. New Mexico Research Coordinators monthly meeting at the VA Cooperative Studies Program Clinical Research Pharmacy Coordinating Center, 2401 Centre Avenue SE, Albuquerque, NM 87106-4180. 10/1996.

35. **Miller MJ**. Incorporating Health Economic Measures into Clinical Research Trials. Clinical Trials Unit, Beth Israel Hospital, 330 Brookline Avenue, GZ-813, Boston, MA 02215. 9/1996.
UNIVERSITY, PROFESSIONAL and COMMUNITY SERVICE

UNIVERSITY SERVICE

Current:

3/2016 to Present  Member, OU Health Sciences Center Strategic Plan Subcommittee for Accelerating Translational Research

Completed:

3/2016 to 4/2016  Track Director, Abstract Reviewer, and Poster Judge, OU-Tulsa Research Forum
7/2011 to 9/2015  Member, Research Council, The University of Oklahoma Health Sciences Center
11/2011 to 9/2015  Member, Admissions Interview Panel, The University of Oklahoma College of Pharmacy
6/2011 to 9/2015  Member, Graduate Student Appeals Board, The University of Oklahoma Health Sciences Center
9/2008 to 9/2015  Member, Research Affairs Committee, The University of Oklahoma College of Pharmacy
9/2012 to 6/2014  Chair, Subcommittee to Review College Promotion and Tenure Guidelines and Processes, The University of Oklahoma College of Pharmacy
5/2010 to 6/2014  Member, Graduate Advisory Subcommittee, Social and Administrative Sciences, The University of Oklahoma College of Pharmacy
9/2010 to 8/2012  Member, Oklahoma Poison Control Center Operational Group, The University of Oklahoma College of Pharmacy
8/2010 to 8/2012  Member, P-3 Integrated Examination Committee, The University of Oklahoma College of Pharmacy
4/2010 to 8/2012  Faculty Co-Advisor, Student Chapter of the Academy of Managed Care Pharmacy, The University of Oklahoma College of Pharmacy
5/2009 to 8/2012  Member, The University of Oklahoma School of Community Medicine Research Mentoring Committee
5/2009 to 8/2012  Member, The University of Oklahoma School of Community Medicine, Department of Family Medicine Institutional Review Group
10/2008 to 6/2011  Member, Secondary Database Community of Scholarship, The University of Oklahoma College of Pharmacy, Clinical and Administrative Sciences – Tulsa
11/2010 to 5/2011  Member, Faculty Search Committee, Assistant Professor/Reference and Instructional Services Librarian, OU-Tulsa Library
10/2010  Faculty Co-Chair, Pharmacy Month Breast Cancer Awareness Event, The University of Oklahoma College of Pharmacy
10/2008 to 12/2010  Peer Observer, Faculty Peer Observation Program for Didactic Lectures, Department of Pharmacy Clinical and Administrative Sciences – Tulsa, The University of Oklahoma College of Pharmacy
10/2008 to 9/2010  Chair, Indigent Care Community of Scholarship, The University of Oklahoma College of Pharmacy, Clinical and Administrative Sciences – Tulsa

10/2009  Faculty Co-Chair, Pharmacy Month Breast Cancer Awareness Event, The University of Oklahoma College of Pharmacy

10/2008  Faculty Co-Chair, Pharmacy Month Breast Cancer Awareness Event, The University of Oklahoma College of Pharmacy

9/2007 to 5/2008  Chair, Faculty Search Committee (Geriatrics / Well-Elderly), Department of Pharmacy Practice, College of Pharmacy and Health Sciences, Drake University

8/2007 to 5/2008  Member and Alternate Chair, Institutional Review Board (IRB), Drake University

3/2007 to 5/2008  Faculty Advisor, Lambda Kappa Sigma International Pharmacy Fraternity, Drake Chapter

8/2004 to 5/2008  Member, Pharmacy Admission Committee, College of Pharmacy and Health Sciences, Drake University

9/2006 to 8/2007  Delegate (Drake University) to the American Association of Colleges of Pharmacy

1/2007 to 5/2007  Member, Pharmacy Practice Department Chair Search Committee, College of Pharmacy and Health Sciences, Drake University

8/2005 to 5/2007  Faculty Advisor, National Community Pharmacists Association (NCPA) Student Chapter, College of Pharmacy and Health Sciences, Drake University

2/21/2007  Speaker, Pharmacy Day 2007, Drake University College of Pharmacy and Health Sciences

1/2006 to 5/2006  Member, Contagious Diseases Contingency Task Force, Drake University

2/7/2006  Speaker, Pharmacy Day 2006, Drake University College of Pharmacy and Health Sciences

12/2005 to 8/2006  Alternate Delegate (Drake University) to the American Association of Colleges of Pharmacy

5/2004 to 8/2006  Member, Biomedical Sciences Program Task Force, College of Pharmacy and Health Sciences, Drake University

12/2005 to 5/2006  Member and Subcommittee Chair, Faculty Search Committee (Early Experiential, Well Elderly Community Practice, La Clinica), College of Pharmacy and Health Sciences, Drake University

8/2005 to 5/2006  Member, Curricular Cases Task Force, College of Pharmacy and Health Sciences, Drake University

12/2004 to 4/2005  Member, Faculty Search Committee (Iowa Methodist, Iowa Lutheran, La Clinica), College of Pharmacy and Health Sciences, Drake University

7/2000 to 6/2001  Member, Mission, Planning and Assessment / Organization and Administration Subcommittees, Accreditation Self-Study, Mylan School of Pharmacy, Duquesne University

PROFESSIONAL SERVICE

Current:

Grant Review Panels
8/2016 to Present Invited Reviewer, 2016 ASHP Foundation Pharmacy Resident Practice-Based Research Grant Program

11/2014 to Present Invited Reviewer, 2015 ASHP Foundation Pharmacy Practice Model Initiative (PPMI) Demonstration Grant Program

12/2013 to Present Invited Reviewer, 2013-2014 ASHP Foundation Federal Services Junior Investigator Grant Program

Advisory Panels

3/2016 to Present Member, Editorial Advisory Board, Research in Social and Administrative Pharmacy

10/2010 to Present Chair, ASHP Research and Education Foundation Research Advisory Panel

2007 to Present Member, ASHP Research and Education Foundation Research Advisory Panel

Editorial Advisory Boards


3/2012 to 9/2013 Guest Editor, Research in Social and Administrative Pharmacy, Special Themed Issue – Health Literacy

3/2006 to 11/2014 Member, Editorial Advisory Board, Research in Social and Administrative Pharmacy

Manuscript Reviewer

7/2012 to Present International Journal of Pharmacy Practice
3/2012 to Present Pharmacy Practice
11/2011 to Present Medical Care
12/2010 to Present Journal of Patient Safety
10/2008 to Present Patient Education and Counseling
10/2006 to Present Journal of the American Pharmacists Association
12/2005 to Present American Journal of Health System Pharmacy
9/2004 to Present Research in Social and Administrative Pharmacy
5/1997 to Present The Annals of Pharmacotherapy
1/2015 to Present Currents in Pharmacy Teaching and Learning
4/2015 to Present Journal of Health Communication

Completed:

Grant Review Panels

5/2015 Invited Reviewer, 2015 Oklahoma Shared Clinical and Translational Resources Pilot Grants Program

4/2015 Invited Reviewer, 2015 Lipscomb University College of Pharmacy Faculty Development Research Series

1/2014 to 4/2015 Invited Reviewer, 2014 ASHP Foundation Pharmacy Practice Model Initiative (PPMI) Demonstration Grant Program

11/2012 to 5/2013 Invited Reviewer and Review Panel Chair, 2012 ASHP Foundation Drug Therapy Management Complexity Score Contract
1/2012 to 4/2012  Invited Reviewer, 2012 ASHP Foundation Pharmacy Practice Model Initiative (PPMI) Demonstration Grant Program

2/2011 to 4/2011  Invited Reviewer, 2011 ASHP Foundation Junior Investigator Research Grant Program (annual cycle)

1/2007 to 12/2007  Invited Reviewer, Wellmark Foundation Community Responsive Grant Program (2 cycles)

7/2006 to 8/2010  Invited Reviewer, ASHP Foundation Federal Services Junior Investigator Grant Program (annual cycle)

Advisory Panels

2/2011 to 9/2011  Member, AHRQ Faculty Advisory Panel (FAP) for Promote Health Literacy-Focused Quality Improvement (QI) in Pharmacy

7/2006 to 8/2007  Member, Steering Committee, Barn Raising VI: The Governor’s Conference on Public Health (Iowa)

8/2005 to 5/2008  Member, Well Elderly Advisory Committee, Polk County Senior Services, Polk County, IA

7/1996 to 6/1998  Advisory Board Member, Pharmacy Council on Tobacco Dependence 200 Gate Five Road, P.O. Box 1336, Sausalito, CA 94966

Abstract Reviewer


3/2010  Abstract Reviewer, OU-Tulsa Research Day


Awards Committees

4/2010  Poster Judge, OU-Tulsa Research Day

3/2008  Poster Judge, 2008 American Pharmacists Association Annual Meeting and Exposition (ESAS Section)

3/2007  Poster Judge, 2007 American Pharmacists Association Annual Meeting and Exposition (ESAS Section)

6/2006 to 6/2009  Invited Panelist, ASHP Foundation Literature Awards, Student Research Award Category (annual cycle)

Meeting Facilitator

12/2007  Meeting Program Associate for the 2007 American Society of Health-System Pharmacists Midyear Clinical Meeting in Las Vegas, NV

8/2007  Host and Session Facilitator, Barn Raising VI: The Governor’s Conference on Public Health (Iowa)

COMMUNITY SERVICE

10/2004 to 1/2007  Literacy Tutor, Drake Adult Literacy Center, School of Education, Drake University
Jayshree Mishra, PhD
Research Assistant Professor

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Kingsville, TX-78363
Telephone: 361-516-0544(cell)
Email: mishra@pharmacy.tamhsc.edu
United States Citizen

OFFICIAL ADDRESS
Department of Pharmaceutical Sciences
Irma Lerma Rangel College of Pharmacy
1010 West Avenue B, MSC 131
Texas A&M HSC University System, Kingsville TX, 78363
Phone: (Office); 361-221-0963 (Lab); 361-221-0744 (Fax): 361-221-0793

EDUCATION

PhD; Microbial Molecular Biology  Indian Institute of Technology, Kharagpur  2000-2005
MS; Life Sciences  Sambalpur University  1995-1997

POST DOCTORAL EDUCATION AND TRAINING

Post-Doctoral Trainee
University Of Tennessee, College Of Medicine, Memphis, TN  Oct 2004- Nov 2005

Post-Doctoral Research Associate
University Of Tennessee, College Of Pharmacy, Memphis, TN  Dec 2005-Feb 2008

Associate Research Scientist
(Texas A&M Health Science Center Kingsville, TX)  June 2008-Jan 2010
Research Scientist
(Texas A&M Health Science Center Kingsville, TX)  Jan 2010-July 2014

ACADEMIC APPOINTMENT

Research Assistant Professor
(Texas A&M Health Science Center Kingsville, TX)  July 2014-Present

HONORS

Cytoskeleton Inc.Award  2015
Honorarium from Science Advisory Board  2015
Santacruz Investigator Award  2013, 2014
Travel Award; Gordon Research Conference  June, 2013
Second Best Poster Presenter award 1st Annual Research Colloquium-2010  Sept, 2010
Travel Award; Academic Skill Workshop; AGA Institute and AASLD Institute  Mar, 2009
DAAD Fellowship; Government of Federal Republic of Germany  2003- 2004
Jawaharlal Nehru Memorial Fund Award; India, Delhi  2001-2002
ACCP-TAP Pharmaceuticals GI Investigator Development  2006
Research Award from ACCP Research Institute

**COMPLETED OR PENDING FUNDING**

**Funded**

Organizations:
- National Institute of Health-SBIR (GM109528)

Total direct cost: **$653,000.00**
(Proposed duration of support): 06/1/2014- 06/1/2016
Title: Development of a Novel ELISA Kit for Screening Potential JAK3 Inhibitors
Role: Co-PI (University Subcontract)

**Research Support during Post-Doctoral Studies**

**Funding agency**: Texas A&M University, Kingsville, TX
Type: TAMUK UP-Bound Science and Math Program
Period of support: 1st June, 2012- 30th June, 2012
Role: PI

**Research Support during Graduate (PhD) studies**

1. **Funding agency**: Jawaharlal Nehru Memorial Fund, India
Type: PhD scholarship
Title: Isolation and Molecular Characterization of hydA gene from Enterobacter cloacae IIT BT 08
Period of support: 12/01-12/02
Total direct cost: Rs 82,000.00
Role: PI (100%)

2. **Funding agency**: DAAD, Govt. of Federal Republic of Germany
Type: PhD scholarship to do advance research on Hydrogen Biotechnology
Title: Advance studies on molecular biology aspect of molecular hydrogen production
Period of support: 12/03-04/04
Total direct cost: Euro 4,000.00
Role: PI (100%)

**Pending (Approved but not funded)**

1. Organization: Crohn’s & Colitis Foundation of America (CCFA)
Total direct cost: **$225,500.00**
(Proposed duration of support): For 3 years
Title: Role of drug transporter protein in colonic mucosal innate immunity
Role: PI (Scored but not funded)

2. Organization: Crohn’s & Colitis Foundation of America (CCFA)
Total direct cost: **$168,750.00**
Proposed duration of support: For 3 years
Title: Pattern recognition receptor modulation of Intestinal P-Glycoprotein function and expression and its
role in IBD
Role: PI (Scored but not funded)
Score: percentile 2.Re Submitted on 07/01/09 Score: percentile 2.5

3. Organization: National Institute of Health (RO3)
Total direct cost: $100,000.00
(Proposed duration of support): For 3 years
Title: Role of IL2 signaling in colonic differentiation
Role: Co-PI (Scored but not funded)

4. Organization: National Institute Of Health KO1
Total direct cost: $485,500.00
(Proposed duration of support): For 5 years
Title: Role of drug transporter protein in colonic mucosal innate immunity
Role: PI (Scored but not funded)

5. Organization: National Institute of Health RO1
Total direct cost: $1000,000.00
(Proposed duration of support): For 5 years
Title: Collaborative and Tailored Interventions to Promote the Research Careers of Underrepresented
Role: Co-PI

6. Organization: National Institute of Health RO1
Total direct cost: $1000,000 Submitted on 10/20/2012
Proposed duration of support): For 5 years
Title: Gut, Low Grade Inflammation and Obesity
Role: Co-PI (Scored but not funded) Will be submitted on July, 2015

7. Organization: Bil and Melinda Gates Foundation
Total direct cost: $100,000 Submitted on 11/13/2014
Proposed duration of support: For 2 years
Title: Development of a biomarker to determine the accurate gestational age
Role: PI

8. Organization: NIH (R15) will be submitted on Oct, 2015
Total direct cost: $300,000.00 Will be submitted on 10/05/2014
Proposed duration of support: For 2 years
Title: Role of Transporter proteins in colonic mucosal immunity
Role: PI

PUBLICATIONS

Peer-reviewed Full Research Articles


Jayshree Mishra, Zhang Q and Neudeck B. Activation of TLR-4 receptor increases cell surface P-glycoprotein expression with decreased activity; *Drug Metabolism and Disposition* Oct;36(10):2145-9, 2008


Pending publications:


Jayshree Mishra and Narendra Kumar “Regulation of intestinal cell function through the interaction of β-catenin and Jak3” *J Biol Chem* (Accelerated publication) (Manuscript under preparation; 2015)

Jayshree Mishra and Narendra Kumar “Drug induced Liver Injury and IL-2 therapy” *Critical Reviews on Oncology and Hematology; Invited Review article under review; 2015*. 

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Jayshree Mishra  

Page 4
Invited Review articles:


Product review on Mouse tail PCR kit (Biocompare).

Media release:
https://news.tamhsc.edu/?post=texas-am-pharmacy-researchers-developing-tool-to-test-effectiveness-of-drugs

Abstract (Peer Reviewed)

1. Kumar N, Mishra J and Quazi SH. Jak3 expression regulates colonic hypoxia mediated severity of DSS induced Colitis. (Gastroenterology 2011:tu1898)
3. Kumar N, Mishra J. Karanki S. N terminal phosphorylation of Jak3-villin interaction (Inflammatory Bowel Diseases) volume 17, Number 1, January 2011

Book Chapters


US PATENT

Link: [http://otc.tamu.edu/technologies.jsp?casecode=3196HSC10](http://otc.tamu.edu/technologies.jsp?casecode=3196HSC10)

NOVEL GENE CLONED

Gene name: Complete coding sequence of Fe-hydrogenase gene (444 bp) from Enterobacter cloacae IIT BT 08

Uniqueness: This is a novel and the smallest and hydrogenates gene coding for [Fe]-hydrogenase isolated from a high rate of hydrogen producing bacteria Enterobacter cloacae IIT-BT 08 till reported today and its over expression in a non-hydrogen producing bacteria resulted increase in hydrogen production as confirmed by gas chromatography.

Accession #:AY676139 [gi: 62914769] in NCBI Gene Bank
Author: Mishra J., Khurana,S., Kumar,N., Ghosh,A.K. and Das,D.

**Title of the Article:** Molecular cloning, characterization, and over expression of a novel [Fe]-hydrogenase isolated from a high rate of hydrogen producing *Enterobacter cloacae* IIT-BT 08

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**PRESENTATION**

**Poster**

Mishra, J., and Narendra Kumar Novel role of Breast Cancer resistant protein in mucosal homeostasis 2013 Experimental Biology Meeting. **April 19th-23rd** 2013, Boston MA


Mishra, J., Quazi, SH, Kumar, N. Increased severity of high molecular weight DSS induced colitis in aged mice. 2011 Advances in Inflammatory Bowel Diseases Crohn's & Colitis Foundation's Clinical & Research Conference, March14-15 2012, Omaha NB.

Mishra, J., Quazi, SH, Kumar, N. Jake regulates colonic hypoxia Digestive Diseases week Washington DC May 19<sup>th</sup>-23<sup>rd</sup>, 2012

Mishra, J., Quazi, SH, Kumar, N. Increased severity of high molecular weight DSS induced colitis in aged mice. 2011 Advances in Inflammatory Bowel Diseases Crohn's & Colitis Foundation's Clinical & Research Conference, December 1-3 2011, Hollywood FL.

Narendra Kumar, **Jayshree Mishra** and Staya Sridhar Karanki N- terminal phosphorylation of Jak3 regulates Jak3-villin interaction. 2010 Advances in Inflammatory Bowel Diseases; Crohn’s and Colitis Research Foundation’s Clinical and Research Conference Hollywood, FL, December 1<sup>st</sup> -4<sup>th</sup>, 2010 in Hollywood, Florida

**Jayshree Mishra** and Narendra Kumar Targeting colorectal cancer through gene delivery; Texas A&M Health Science Center Research Symposium College Station 11<sup>th</sup>-12<sup>th</sup> November, 2010.

**Jayshree Mishra**, Satya Sridhar Karanki* and Narendra Kumar Inter-domain interaction of  Jak3 regulates villin interaction with Jak3”Gastro intestinal response to Injury from Scotts dale AZ Sept 28th-Oct 1st 2010

**Jayshree Mishra** and Narendra Kumar. Jak3 interaction with β-catenin regulates the intestinal barrier function Ist Annual Research Colloquium Kingsville TX September 18<sup>th</sup>n -19th, 2010

**Jayshree Mishra**, Satya Sridhar Karanki* and Narendra Kumar; N- Terminus of Jak3 interacts with cytoskeletal protein Ist Annual Research Colloquium Kingsville TX September 18<sup>th</sup> -19th, 2010

**Jayshree Mishra** and Narendra Kumar. Expression of Jak3 changes in differentiation in intestinal epithelial cells American Society for Biochemistry and Molecular Biology, New Orleans April 18<sup>th</sup> -22<sup>nd</sup>, 2009

Narendra Kumar, **Jayshree Mishra** and Christopher Water. Jak3 regulates IL-2 induced mucosal homeostasis through regulation of Shc A expression. Sixth Annual Inflammatory bowel Diseases Aventura Florida Dec 6<sup>th</sup> -9<sup>th</sup>, 2007.

Jayshree Mishra


Brien L. Neudeck, Qiuye Zhang and **Jayshree Mishra** Activation of Toll like receptor–4 alters intestinal P-glycoprotein function, American Society for Microbiology San Antonio, TX, October 2006

Jessica L Rosson, Qiuye Zhang, **Jayshree Mishra** and Brien L. Neudeck Intracellular bacteria Activates intestinal P-glycoprotein American College of Clinical Pharmacy, Louisiana October 2006,

Kumar N, **Mishra J**, Waters CM Jak3 regulates IL-2 induced mucosal homeostasis through regulation of ShcA expression national Research and Clinical Conference 6th Annual Advances in the inflammatory Bowel Diseases December 6-9, 2007, Florida

Kumar N, **Mishra J**, Waters CM. Non- receptor tyrosine kinase Jak3 regulates interleukin-2 induced intestinal epithelial restitution. Stem Cells in Gastrointestinal Development, Regeneration and Neoplasia Symposium held on Sept. 8th-9th 2006 at Tyson Corner VA

Kumar N, **Mishra J**, Waters CM. Interleukin-2 regulates intestinal epithelial restitution through tyrosine phosphorylation of Jak3. Inflammatory Bowel Disease Summit held on Oct. 4-6, 2006 at the Inter-Continental Hotel & MBNA Conference Center in Cleveland, Ohio.

Kumar N, **Mishra J**, Waters CM. Non-receptor tyrosine kinase jak3 regulates mucosal restitution. Fifth Annual Advances in the Inflammatory Bowel Diseases; December 1-3, 2006, Miami, Florida, United States,

Kumar N, **Mishra J**, Waters CM. Interactions of non-receptor tyrosine kinase Jak3 with cytoskeletal protein villin regulates intestinal epithelial restitution. Presented at 46th American Society for Cell Biology (ASCB) meeting; Dec.9-13, 2006, San Diego, CA USA.


Wang Y., **Mishra J** and Khurana S., Villin is an epithelial cell specific anti apoptotic protein. Digestive Diseases Week May 18, 2005 Chicago IL.


**Mishra J**, Kumar N and Das D Isolation and Designing of degenerate primer for the isolation of Hyd A gene from *Enterobacter cloacae* IIT-BT 08. Workshop on Biophysics and Bioinformatics Indian institute of Chemical Biology, Calcutta, March, 2001
Oral

Mishra J, Pattern recognition receptor modulation of Intestinal P-glycoprotein and its role in IBD. Academic Skill workshop, 2009 Phoenix, AZ.

Mishra J and D. Das Isolation and partial purification of hydrogenase from the intact cells of IIT-BT 08. Paper presented in National Seminar and Workshop on Advanced Separations Process, Department of Chemical Engineering, IIT Kharagpur, 2002

Invited

Topic: Pattern Recognition Receptor Modulation of Intestinal P-glycoprotein and its role in Inflammatory Bowel Diseases. Sponsored by Alumni Association of Department Of Life Sciences, Sambalpur University, India on 14th December, 2008 at Sambalpur University, Orissa, India

Topic: Pattern Recognition Receptor Modulation of Intestinal P-glycoprotein and its role in Inflammatory Bowel Diseases. Texas A&M Health Science Center, Department of Pharmaceutical Sciences, monthly research seminar on December 17, 2009 at TAMHSC Rangel College of Pharmacy, Kingsville TX.

Topic: Molecular mechanism of interleukin-2-induced mucosal homeostasis. The Department of Pharmaceutical Sciences, monthly research seminar on December 14, 2011 at Rangel College of Pharmacy, Kingsville TX

Topic: Towards understanding the sub-molecular aspects of epithelial-immunocytic crosstalk Institute of Biosciences and Technology; Texas A&M Health Science Center on 25th October, 2012

Topic: Identification of molecular switch regulating interactions of Janus kinase 3 with cytoskeletal proteins. The Department of Pharmaceutical Sciences, 2nd Annual Research Colloquium June 27th-28th, 2013 at TAMHSC Rangel College of Pharmacy, Kingsville TX

Topic: Improving the bioavailability of the drugs in GI tract by modulating the epithelial targets. Pharmacovigilance-2013, 2nd International Conference and Exhibition on Pharmacovigilance & Clinical Trials November 18th-19th, 2013 San Antonio, USA


Topic: "In quest of a Novel Epithelial Specific Target; COP Journal and Data Club: Fall 2015, Department Of Pharmaceutical Sciences, College of Pharmacy, 01/17/14

Topic: "Role of Janus kinase 3 in mucosal differentiation and predisposition to colitis; RCOP Journal and Data Club: Spring 2015, Department Of Pharmaceutical Sciences, College of Pharmacy, 04/15/15

RESEARCH COLLABERATION

Dr. J.J. Shaw: 21st century therapeutics and Incs; Michigan USA.
Topic: Development of therapeutic drugs for treating colorectal cancer
Dr. Rodriguez, Gastroenterologist, Christos Sphon, Corpus Christi Collaborator in our pending NIH RO1 grant (Colonic biopsy sample collection from IBD patients.)

MENTORING AND ADVISING EXPERIENCES

I have mentored more than 10 Undergraduates, MS, Pre-meds, Post-doctoral trainee in the laboratory.

TEACHING EXPERIENCES

PROFESSIONAL COURSES (Pharm.D program)

Irma Lerma Rangel College Of Pharmacy/ Accredited by AACP, Texas A&M University, USA

SPRING 2015
Course No PHAR 813( ONCOLOGY, TRANSPLANT and GENOMICS)
Lecture hr 50 minutes each (3SCH)
Topic: Targeted Therapies

FALL 2014
Course No PHAR 627( BIOCHEMISTRY) 21SCH
Lecture hr 50 minutes each: Total 21 hr

Topics:
Foundation of BioChemistry, Amino acids, peptides and proteins, Protein structure, Protein functions: Binding, Protein functions: Binding/Catalysis, Protein functions: Catalysis, Carbohydrates and glycobiology(I), Carbohydrates and glycobiology (II), Nucleotides and nucleic acids (I), Nucleotides and nucleic acids , DNA-based information technologies, Lipids(I), Lipids (II), Biological membranes and transport(I), Biological membranes and transport (II), Biosignaling(I), Biosignaling(II), Fatty acid metabolism, Amino acid oxidation and production of urea, Oxidative phosphorylation(I), Oxidative phosphorylation(II)

FALL 2013
Course No. PHAR 627( BIOCHEMISTRY) 1SCH
Lecture hr 50 minutes Topic: (1) Regulation of gene expression in Eukaryotes

FALL 2010
Course No. PHAR 627( BIOCHEMISTRY) 2SCH
Lecture hr 50 minutes each
Topic: (1) Principles of gene regulation
(2) Regulation of gene expression in Eukaryotes
Contact hour: 8SCH (Pre- Exam , Post exam review, proctoring, recitation)

College Of Pharmacy, University of Tennessee Health Science Center USA

2006-2008
**Laboratory Instructor**: Molecular Biology and Cell Biology

**GRADUATE/UNDERGRADUATE STUDENTS**

**Indian Institute Of Technology, Kharagpur**

Recombinant DNA technology Laboratory. 02/02/2001-05/02/2001.
Lecture HR: 4 hours /week to the
Topic: Methodology for different molecular biology technique
Students: B.Tech and M.Tech

Fermentation technology Laboratory 02/014/2002-05/02/2002
Lecture HR 10 hours /week
Topic: Introductory lecture on batch and continuous bioprocess
Principle and components of large-scale fermentation
Principle and components of large-scale fermentation.
Development and optimization of different parameters for both batch as well as continuous
Bioprocess.
Students: B. Tech as well as M. Tech

**PROFESSIONAL DEVELOPMENT ACTIVITIES (RESEARCH AND TEACHING)**

**Certificate course** (31st July 2007)

- A Field Guide to Gene bank and NCBI Molecular Biology Resources at University Of Tennessee Health Science Center
- “WRITE WINNING NIH GRANT PROPOSALS” organized by Research Development Services Division of Research Texas A&M University Tuesday, February 25, 2014
- “WRITE WINNING NIH GRANT PROPOSALS” organized by Research Development Services Division of Research Texas A&M University Tuesday, February 25, 2015

- Teaching work shop attended on 06/24/08
  * Faculty Technology Forum Series: Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Kingsville, Texas

- Teaching work shop attended 06/213/09
  * Faculty Technology Forum Series: Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Kingsville Texas

- Teaching work shop attended 06/12/10
  * Faculty Technology Forum Series: Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Kingsville Texas

- Teaching Seminar series attended. *Teaching At Its Best* from 09/09/08 to 11/24/08
  This is an Interactive, Weekly seminar series organized by faculty members from different Department of TAMUK at Student Union Building, Texas A&M University, Kingsville Texas

- Attended Education Grand Rounds, “Active Learning Strategies” on April 9, 2014, organized by Texas A&M University
• Texas A&M Irma Lerma Rangel College of Pharmacy (COP) Office of Academic Affair’s Distance Education Peer Mentorship Program (participated as a mentee)

• “WRITE WINNING NIH GRANT PROPOSALS” organized by Research Development Services Division of Research Texas A&M University Wednesday February 25, 2015

• Served as a panelist in the Panel discussion on “Distance Teaching Faculty Forum” organized by the Office of Academic Affairs and the Faculty Development Committee

• New Faculty Orientation to Rangel COP Instructional Technology and Getting Started with Blackboard

• Creating and Administering Exams with the New Exam Soft User Interface

• Faculty Technology Forum Series: Faculty Experience of Administering Ex Establishing Best Practices

• Engaging Students in a Videoconference Environment Co-delivered with former TLRC Director, Kelleen tine-Cheyne, PhD, and sponsored by COP Faculty Development Committee

• Developing Competence and Confidence in ExamSoft: Longitudinal One-on-One Faculty Training

• Faculty Development Seminar with Dr. Popovich

• Evolution and Revolution in Pharmacy Education Presented by: Russell B. Melchert, PhD

• Distance Education Peer Mentorship Program: Mentee; Dr.Jayshree Mishra Mentor; Dr.Victoria Pho

• Faculty Forum on Teaching in a Dual-Campus Environment

• Education Scholar, self-paced online faculty development available at http://educationscholar.org

• Informal Peer Review of Teaching (IPRT) Program: Reviewed by Dr.Andrea Luce.

• Inaugural COP Interdisciplinary Seminar: MRSA Research with Central and South Texas Partner Presented by: Dr. Christopher Fre

• Participated in breakout group assignments for the Self-study retreat on April 10, 2015 at Irma Lerma Rangel College of Pharmacy.

PROFESSIONAL MEMBERSHIP

2006-present: American Gastroenterology Association (AGA)

PROFESSIONAL COMMITTEE

Faculty Forum for ExamSoft and Distance Learning – Panelist
Journal and Data Club – Presenter
Curricula committee Bio-Pharmaceutical Sciences-Member
Self-Study Facility and Administration break out group – Member
2016 Awards , Honors and Scholarship committee -Member
Organizing committee member in an International conference (Nutraceuticals-2015)
Organizing committee member in an International conference (Pharmacovigilance-2014)
Organizing committee member in an International conference (Pharmacovigilance-2013)
College scholarship committee 2013 (Reviewed all the application)
College scholarship committee 2012 (Reviewed all the application)

NATIONAL SERVICE AND RECOGNITION:
Editorial Board member: MOJ IMMUNOLOGY (2015)
Lead Guest Editor (Science publishing group); 2015: To lead the publication of a special issue of Cancer Research Journal (Scheduled to be published on 31st March, 2016)
Editor: Global Journal of Infectious Diseases and Clinical Research (2015)

ORGANIZING COMMITTEE MEMBER OF INTERNATIONAL CONFERENCE
Nutraceuticals-2015
World Nutraceutical Conference and Expo-2015
Dates: July 13-15, 2015
Venue: Philadelphia, USA

ORGANIZING COMMITTEE MEMBER INTERNATIONAL CONFERENCE
Pharmacovigilance-2014
3rd International Conference and Exhibition on Pharmacovigilance & Clinical Trials
Dates: October 28th-29th, 2014
Venue: Hyderabad, India

ORGANIZING COMMITTEE MEMBER INTERNATIONAL CONFERENCE
Pharmacovigilance-2013
2nd International Conference and Exhibition on Pharmacovigilance & Clinical Trials
Dates: November 18-19, 2013
Venue: San Antonio, USA

SESSION CHAIR IN INTERNATIONAL CONFERENCE
Pharmacokinetics and Pharmacodynamics
Pharmacy Practices and its Challenges; Case Report in Clinical Trials
Pharmacovigilance-2013
2nd International Conference and Exhibition on Pharmacovigilance & Clinical Trials

JUDGE FOR STUDENT POSTER SESSION INTERNATIONAL CONFERENCE
Pharmacovigilance-2013
2nd International Conference and Exhibition on Pharmacovigilance & Clinical Trials
Dates: November 18th-19th, 2013
Venue: San Antonio, USA

COMMUNITY SERVICE
1. Served as a “Judge” in the Shelby county Science Fair 2004
2. “Sponsor” in Boys and Girls Club of America at Kingsville TX
3. Participated in Fajita Fund raiser event at CCYC in 2009-2012
4. Participated in several fund raising events at Ricardo Elementary School and Santagatrudis Elementary School
Mohammad T.H. Nutan, Ph.D.

Irma Lerma Rangel College of Pharmacy       Phone:  361-221-0746
Texas A&M University HSC                      Fax:    361-221-0793
1010 West Avenue B, MSC 131                  E-mail: mnutan@pharmacy.tamhsc.edu
Kingsville, TX 78363

❖ EDUCATION

2000-2004  Doctor of Philosophy
          Major: Pharmaceutical Sciences
          Department of Pharmaceutical Sciences
          Texas Tech University Health Sciences Center, Amarillo, TX

1994-1997  Master of Pharmacy
          Department of Pharmacy
          University of Dhaka, Bangladesh

1989-1994  Bachelor of Pharmacy (Honors)
          Department of Pharmacy
          University of Dhaka, Bangladesh

❖ WORK EXPERIENCE

September 2012 - Present
Associate Professor
Department of Pharmaceutical Sciences
Irma Lerma Rangel College of Pharmacy
Texas A&M University Health Science Center
Kingsville, TX

June 2006 - August 2012
Assistant Professor
Department of Pharmaceutical Sciences
Irma Lerma Rangel College of Pharmacy
Texas A&M University Health Science Center
Kingsville, TX

September 2004 - May 2006
Graduate Pharmacy Intern
Walgreen Co.
Miami, FL

August 2000 - August 2004
Teaching/Research Assistant (Part-time)
School of Pharmacy
Texas Tech University Health Sciences Center
Amarillo, TX
October 1997 - August 2000
Faculty Member
Pharmacy Discipline
Khulna University
Khulna, Bangladesh

April 1997 - October 1997
Faculty Member
Department of Pharmacy
University of Asia Pacific
Dhaka, Bangladesh

❖ TEACHING SUMMARY

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Courses coordinated:
Pharmaceutical Calculations
Pharmaceutics I
Pharmaceutics II
Basic Pharmacokinetics

Other courses taught:
Principles of Drug Action I
Electives including Drugs in Practice I and Independent Study

❖ TEACHING RELATED PRESENTATIONS AND DEVELOPMENTS

- Item Writer. FPGEE/PCOA Item Development Workshop, NABP, Mouth Prospect, IL, Apr 3-4, 2014.
- Item Writer. FPGEE/PCOA Item Writing Workshop, NABP, Mouth Prospect, IL, Oct 12-13, 2012.
- Objectives of Teaching & Learning (From the Teaching Professor Conference). Faculty Teaching Forum, TAMHSC College of Pharmacy, March 17, 2009.
- Structuring Lecture (From the Teaching Professor Conference). Faculty Teaching Forum, TAMHSC College of Pharmacy, March 17, 2009.
• Using On-line Quizzes to Improve Student Learning. Facilitating Significant Learning: Teaching with Technology, Texas A&M University, Kingsville, TX, February 14, 2009.
• WebCT Gradebook. Faculty Teaching Forum Series: The Road We Have Travelled, Irma Lerma Rangel College of Pharmacy, Texas A&M University Health Science Center, Kingsville, TX, June 19, 2008.

❖ TEACHING AWARDS

• 2013-2014: AACP Teacher of the Year, Irma Lerma Rangel College of Pharmacy, Texas A&M University HSC
• 2012-2013: AACP Teacher of the Year, Irma Lerma Rangel College of Pharmacy, Texas A&M University HSC
• 2011-2012: Teacher of the Year, Irma Lerma Rangel College of Pharmacy, Texas A&M University HSC
• 2010-2011: Teacher of the Year, Irma Lerma Rangel College of Pharmacy, Texas A&M University HSC
• 2009-2010: AACP Teacher of the Year, Irma Lerma Rangel College of Pharmacy, Texas A&M University HSC
• 2007-2008: Teacher of the Year, Irma Lerma Rangel College of Pharmacy, Texas A&M University HSC

❖ RESEARCH EXPERTISE

• Developing formulations including solid-lipid nanoparticles and self-nanoemulsifying drug delivery systems for improving bioavailability of drugs
• Quantitative analyses of drug and impurities in sildenafil tablets obtained from various online sources
• Development of in situ injectable implant and microparticle formulations containing biocompatible polymers and study of the effect of formulation and process variables on release of drug and stability of the products
• Development of mucoadhesive controlled release microcapsules of indomethacin
• Development of mefenamic acid topical preparations with improved bioavailability
• Development of controlled drug delivery systems including multi-particulate and osmotic systems
• Physical characterization of polymers
• Preparation and characterization of polymeric dispersions for coating
• Preformulation and stability study
• Developing formulations for oral delivery of protein and peptide drugs
GRADUATE STUDENT SUPERVISION

I served as the Primary Research Supervisor and Member of Graduate Committees of the following Ph.D. students from the Department of Pharmaceutics and Industrial Pharmacy of Al-Azhar University, Cairo, Egypt. They worked full-time as Visiting Scholars in my laboratory to perform the research portion of their Ph.D. curriculum.

- Hamdy Mahmoud Dawaba
  Dissertation title: Design and evaluation of pharmaceutical controlled release dosage forms
  Project completed: March 2014
  Graduated: May 10, 2015

- Tarek El-Napy Ahmed
  Dissertation title: Pharmaceutical studies on the release and bioavailability of drugs from biocompatible parenteral formulations
  Project completed: November 2009
  Graduated: March 8, 2010

- Hany Mahmoud Ibrahim
  Dissertation title: Effect of formulation parameters on the release of drug from injectable biocompatible polymers
  Project completed: July 2009
  Graduated: October 22, 2009

GRANTS/FUNDING

- Total amount: $15,000
  Funding agency: Research Development grant, Research Development and Enhancement Awards Program, Texas A&M University HSC
  Title: Development of an extended release implant for alcohol and opioid abuse treatment
  Date: Sept 2008-Aug 2010
  Role on grant: Principal investigator

- Total amount: $26,000 (used for chemicals and supplies)
  Funding agency: Government of Egypt
  Title: Scholarships for Ph.D. students to perform various projects in formulation development
  Date: 2008-2014
  Role on grant: Major Research Supervisor of the students

REVIEWING EXPERIENCE

- Journal of Microencapsulation
- Novel Oral Delivery
- Pharma Scientist
- International Journal of Nanomedicine
- Journal of Nanomaterials
- Colloids and Surfaces A: Physicochemical and Engineering Aspects
Pharmaceutical Development and Technology
Jones and Bartlett Publishers
AAPS Annual Meeting abstracts
AAPS National Biotechnology Conference abstracts
Drug Development and Industrial Pharmacy
Acta Biomaterialia
Molecular Pharmaceutics
European Journal of Lipid Science and Technology
Thesis reviewer- Design and statistical optimization of gastric floating matrix tablets of famotidine using polyethylene oxide and glyceryl behenate: Shailaja Pashikanti for Ph.D.

❖ INSTITUTIONAL SERVICE

TAMU System

• Workplace Climate and Diversity Committee: Member since Oct 2013
• TAMU Faculty Senate: Member since Oct 2013
• Election Committee, Faculty Senate: Member since May 2013
• Applied Mathematics, Mathematics Education and Statistics Faculty Search Committee in Department of Mathematics, Texas A&M University, Kingsville: Member, Oct 2008-May 2009

TAMHSC
• Committee for Texas A&M HSC and Texas A&M University Realignment: Member, Jun 2012-Jul 2012
• TAMHSC Faculty Senate: Member, Jan 2012-Sep 2013
• International Education Scholarship Committee: Member since Sep 2011

RCOP
• Pharmaceutics Faculty Search Committee: Chair, Jan 2014-May 2014
• Awards, Honors, and Scholarships Committee: Chair, Sep 2013-Aug 2014
• Advisory Benchmark I Subcommittee: Member, Jun 2013-May 2014
• American Pharmacists Association-Academy of Student Pharmacists (APhA-ASP)- Chapter Co-Advisor, Feb 2013-Apr 2014
• Pharmaceutics Faculty Search Committee: Chair, Jan 2013-May 2013
• Pharmaceutical Sciences Department Chair Search Committee: Member, Sep 2012-Apr 2013
• College Strategic Expansion Task Force: Member since Jul 2012
• College Staff of the Year Award: Facilitator since Feb 2012
• Curricular Affairs Committee: Member, Sep 2011-Aug 2013
• The Rho Chi Society (Gamma Omega Chapter): Faculty Advisor since 2011
• Physiology Faculty Search Committee: Member, Oct 2009-Jul 2010
• Enterprise Risk and Opportunity Management Committee: Member, Sep 2009-Aug 2014
• Faculty Development Committee: Chair, Aug 2009-Aug 2011
- AACP Faculty Delegate Alternate: 2009
- Outcomes Assessment Committee: Member, Sep 2008-Aug 2009
- Support Services Committee: Member, Sep 2008-Aug 2009
- OSCE: Evaluator since 2008
- Pharmaceutics and Medicinal Chemistry Faculty Search Committee: Member, Jul 2007-Aug 2008
- Clinical Focus Group: Member, Jul 2007-Aug 2008
- COP Student Admission Interviewer: Since Feb 2007
- Academic Credentialing Committee: Member, Dec 2006-Jun 2007
- Self-Study Curriculum Committee for Accreditation: Member, Aug 2006-Aug 2008
- Curricular Affairs Committee: Member, Aug 2006-Aug 2008
- Pharmaceutics/Pharmacokinetics Faculty Search Committee: Chair, Aug 2006-Mar 2007
- Student Advisor: Advisor of thirty seven Pharm.D. students since Aug 2006

Department
- Departmental APT Review Committee: Member since Sep 2013-Aug 2014
- Lab Manager Search Committee: Chair, Jun 2012-Aug 2012
- College Graduate Program Committee: Member since May 2012-Jun 2012
- Departmental APT Review Committee: Member, Sep 2012-Aug 2013
- Departmental APT Review Committee: Member, Jan 2010-Aug 2010

PROGRAMS AND SYMPOSIUMS ORGANIZED
- Active Learning Workshop by Drs. Mike Horseman, Mark Bremick, Kris Virga, Srikanth Kolluru, and Elaine Demps (Faculty Development Workshops)
  December 14, 2010 and January 6, 2011
  TAMHSC COP, Kingsville
  Organized through the College Faculty Development Committee
- Perspectives on Scholarship, Authorship, and Publishing by Dr. Milap Nahata (Faculty Development Seminar)
  April 22, 2010
  TAMHSC COP, Kingsville
  Organized through the College Faculty Development Committee
- Peer Teaching Evaluation: APT Process and the Role of Teaching Evaluations in Assessing Proficiency by Dr. Charles Berry (Faculty Development Seminar)
  February 11, 2010
  TAMHSC COP, Kingsville
  Organized through the College Faculty Development Committee
- Writing Better Exam Questions by Dr. Barry Bleidt and Dr. Jacqueline Thomas (Faculty Development Session)
  November 17, 2009.
  TAMHSC COP, Kingsville
  Organized through the College Faculty Development Committee
PROFESSIONAL AND SCHOLARLY AFFILIATIONS AND ACTIVITIES

- American Pharmacists Association (APhA)- Member, Apr 2013-Apr 2014
- “It’s Your Life”, SSHP Smoking Cessation Service Learning- Preceptor, April 20, Heritage Park, Corpus Christi, TX
- The Rho Chi Society (Gamma Omega Chapter)- Member since 2009
- American Association of Pharmaceutical Scientists (AAPS): Member since 2001
- American Association of Colleges of Pharmacy (AACP): Member since 2006
- Sigma-Xi The scientific Research Society: Member, 2007-2013
- Bangladesh Pharmaceutical Society (BPS): Member, 1995-2000
- Pharmacy Graduates Association (PGA) of Bangladesh: Member, 1994-2000

PUBLICATIONS


**POSTER PRESENTATIONS**

- Dawaba HM, Abd-Allah FI, **Nutan MTH**. Enhancing the stability profile and the anti-tumor activity of curcumin through solid lipid nanoparticles. *AAPS Annual
Meeting Poster Presentation, San Diego, California, November 4, 2014. (Poster # T3135)


- Dawaba HM, Abd-Allah FI, Samy AM, Fetouh MI, Nutan MTH. Development of curcumin solid lipid nanoparticles (CSLNS) using $2^3$ full factorial design. Graduate Student Organization (GSO) Symposium, Bryan, TX, April 26, 2013.


- Ahmed TA, Ibrahim HM, Khalifa S, Samy AM, Kaseem AA, Nutan MTH, Hussain MD. Controlled release of haloperidol from biodegradable injectable in situ implant and microparticle formulations. AAPS Annual Meeting Poster Presentation, New Orleans, Louisiana, November 18, 2010

- Nutan MTH, Hussain MD, Virga K, Sethi R. Pharmaceutical compounding laboratory course, paving the way to careers in compounding pharmacy. AACP Annual Meeting Poster Presentation, Seattle, WA, July 10-14, 2010

- Hussain MD, Nutan MTH, Sethi R, Demps E. Active learning and engagement of students in large classes with student response technology. AACP Annual Meeting Poster Presentation, Seattle, WA, July 10-14, 2010


*Updated: Jun 2015*
CURRICULUM VITAE

SRINATH PALAKURTHI, Ph.D.
Associate Professor of Pharmaceutical Sciences
Director of Graduate Studies
Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
Kingsville, TX 78363
Ph: 361-221-0748
Fax: 361-221-0793
Email: palakurthi@pharmacy.tamhsc.edu

PROFESSIONAL EXPERIENCE

02/2014 – Present  Tenured Associate Professor, Irma Lerma Rangel College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

11/2010 – Present  Director of Graduate Studies, Irma Lerma Rangel College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

05/2008 – Present  Associate Professor of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

03/2007 – 04/2008  Associate Professor of Pharmaceutical Sciences, College of Pharmacy, South Dakota State University, Brookings, SD.

03/2003 – 03/2007  Assistant Professor of Pharmaceutical Sciences, College of Pharmacy, South Dakota State University, Brookings, SD.

04/2001 – 03/2003  Postdoctoral Fellow, Faculty of Pharmaceutical Sciences, University of Alberta, Edmonton, Canada.

04/2000 – 03/2001  Research Associate, Immunopharmacology Division, National Institute of Immunology, New Delhi, India.

08/1999 – 03/2000  Research Associate, Pharmacology Division, Indian Institute of Chemical Technology, Hyderabad, A.P., India.

EDUCATION

08/1995 – 08/2000  Ph.D. (Pharmaceutics), Pharmacology Division, Indian Institute of Chemical Technology, Hyderabad, A.P., India. (Thesis submitted to Dr. H. S. Gour University, Sagar, India in 08/1999)

10/1991 – 07/1993  M. Pharm (Pharmaceutics), First Division, Dr. H.S. Gour University, Sagar, India.

10/1986 – 03/1991  B. Pharmacy (First Division), Kakatiya University, Warangal, A.P., India.

HONORS AND AWARDS

2011  Organizing Committee Member and Chair of Nanotech for Drug Delivery session, 2nd World Congress on Pharmaceutics & Novel Drug Delivery Systems, 20-22 February, 2012, San Francisco Airport Marriott, USA
2010 Served as a grant reviewer for Special Emphasis panel/Scientific Review group 2011/01 ZRG1 IMST-D(13) B- Small business: Biomaterials, Delivery systems, and Nanotechnology.

2010 Invited as a speaker at the Second World Congress on Cancer, WCC-2010, September 3-5, Kottayam, Kerala, India

2009 Served as a grant reviewer for the DOD Breast Cancer Research: Radiation Oncology Concept Panel.

2008 Invited as a speaker at the Ehrlich II-2nd World Conference on Magic Bullets, October 3-5, 2008, Nurnberg, Germany.

2008 Invited as a speaker at the Eighth International Conference of Anticancer Research, October 17-22, 2008, Kos, Greece.

2008 Served as a grant reviewer for the DOD-Prostate Cancer Research Program (DOD-PCRP FY08).

2008 Served as a grant reviewer for the DOD-Peer Reviewed Medical research Program (DOD-PRMRP FY08).

2008 Invited member of External Consulting and Advisory Team (ECAT) in the Global Health Sector of SRA International.

2002 AHFMR Travel grant (Canada) for attending National Biotechnology Conference held in San Diego, CA in June 2002

2000 Research Associate (RA) award by Council of Scientific and Industrial Research (CSIR), New Delhi, India.

1999 An independent project entitled ‘Brain targeting of drugs-novel approaches’ was awarded by IICT under ‘Prolog to discovery program’ of CSIR, New Delhi, India.

1995 Senior Research Fellowship (SRF) by Council of Scientific and Industrial Research (CSIR), New Delhi, India.

1991 Graduate Aptitude Test in Engineering (GATE) fellowship by University Grants Commission (UGC), New Delhi.

EXPERIENCE

TEACHING

2008-Present Pharmaceutics-II (PHAR 741, 3 Cr): Texas A&M Health Science Center College of Pharmacy, Kingsville, TX

2013 Pharmaceutics-I (PHAR 645, 3 Cr): Texas A&M health Science Center College of Pharmacy, Kingsville, TX.

2010 Directed Study (PHAR 685, 4 Cr): Texas A&M Health Science Center College of Pharmacy, Kingsville, TX.

2008-Present Basic Pharmacokinetics (PHAR 742, 3 Cr): Texas A&M Health Science Center College of Pharmacy, Kingsville, TX.

2003-2008 Pharmaceutics-I (PHA 331, 3 Cr): College of Pharmacy, South Dakota State University, Brookings, SD.

2003-2008 Pharmaceutics-II (PHA 332, 4 Cr): College of Pharmacy, South Dakota State University, Brookings, SD.

2003-2005 Pharmaceutical Calculations (PHA 131, 2 Cr): College of Pharmacy, South Dakota State University, Brookings, SD.
2005-2008 Advanced Pharmaceutics (PHA 759, 3 Cr): College of Pharmacy, South Dakota State University, Brookings, SD.
2005-2008 Biopharmaceutics & Pharmacokinetics (PHA 415, 5 Cr): College of Pharmacy, South Dakota State University, Brookings, SD.
2003-2005 On-line (WebCT) Pharmaceutical Calculations (PHA 331, 2 Cr): College of Pharmacy, South Dakota State University, Brookings, SD.
1993 Physical Pharmacy at the Department of Pharmaceutical Sciences, Dr. H. S. Gour University, Sagar, India.

OTHER TEACHING ACTIVITIES

2011 Lectured (4 hrs) the Chinese Delegation to School of Rural Public Health (SRPH), Texas A&M Health Science Center, on Drug delivery systems on June 13, 2011
2011 Lectured (4 hrs) the Chinese Delegation to School of Rural Public Health (SRPH), Texas A&M Health Science Center, on Nanotechnology on June 14, 2011

RESEARCH

Nanomedicine: Design and development of nanoparticle-based drug/gene and vaccine delivery systems including dendrimers, PLGA nanoparticles, liposomes, nanoemulsions.

Product Development: Preformulation, formulation and preclinical evaluation of solid and liquid oral dosage forms, transdermal delivery systems.

Pharmacokinetics: Design of pharmacokinetic studies, PK/PD analysis using HPLC and spectroscopic techniques, pharmacokinetic modeling.


Cell culture: Maintenance of various cancer cell lines, Screening of cytotoxic agents by cell proliferation assays using MTT, apoptosis and gene expression studies using SDS-PAGE and Western Blot.

Pharmacology: Established various animal models. Copenhagen rats as a prostate tumor model, arthritis and diabetes, studies, guinea pigs for asthma and rabbits for toxicological studies.

Cancer models: Development of subcutaneous and metastatic human cancer xenograft models (ovarian, breast and prostate) in Balb/c nude mice; Biodistribution and tumor survival studies (Kaplan-meir analysis).
CURRENT AREAS OF RESEARCH FOCUS:

My research is focused on design of novel polymers for gene therapy, polymer-based nanoparticles for targeted delivery of chemotherapeutics for the treatment of cancer, mucosal vaccine delivery of chemotherapeutics and antigens and cellular trafficking of nanoconstructs.

EXPERTISE IN SOFTWARE PROGRAMS IN PHARMACOKINETICS

a) Win Nonlin  b) PK Analyst  c) NCOMP  d) Ramkin

RESEARCH SUPPORT

CURRENT

Palakurthi (PI)  04/02/2014 – 06/30/2016  1.2 cal. months
Dissolution method for Topical Ocular Emulsions
Food and Drug Administration (FDA)  $250,000

460821  Palakurthi (PI)  04/02/2012 – 10/30/2015  0.6 cal. months.
National Corn Growers Association (NCGA)  $152,099
Title of the project: Development of Zein (corn protein) nanoparticles for nasal delivery of vaccines
Project goal: The primary goal of the project is to develop mucoadhesive nanoparticles using the corn protein, Zein, for nasal delivery of tetanus as a model vaccine.

PENDING

1. Title of the project: Physiologically based Pharmacokinetic model of long acting injectable microspheres of risperidone
   Principal Investigators: Palakurthi, Srinath, Simona Hodis
   Amount: $600,000
   Funding agency: Food and Drug Administration (FDA)

RESEARCH PROJECTS COMPLETED (Federal & Intramural grants: Total funding: $1, 276,806)

1. Title of the project: Sigma receptor ligands for target specific gene therapy of prostate cancer
   Principal Investigator: Palakurthi, Srinath, Ph.D.
   Amount: $20,000
   Agency: Texas A&M HSC Research Enhancement Award
   Period: 09/2011-08/2012

2. Title of the project: A multistep approach for the targeted chemotherapy of ovarian cancer using novel polyamine conjugated dendrimers as drug carriers
   Principal Investigator: Palakurthi, Srinath, Ph.D.
   Co-investigator: Guan, Xiangming, Ph.D., Dwivedi, Chandradhar, Ph.D.
   Amount: $213,000
   Agency: NIH
3. Title of the project: Novel targeting approach for breast cancer gene therapy
   Principal investigator: Srinath Palakurthi
   Co-investigators: Xiangming Guan, Ph.D., Gareth e. Davies, Ph.D.
   Amount: $108,375
   Funding agency: DOD-BCRP (BC075798)
   Period: 09/2008-08/2009

4. Title of the project: Inhibition of glutathione reductase and ovarian cancer drug resistance reversal
   Principal Investigator: Xiangming Guan, Ph.D.
   Co-investigators: Srinath Palakurthi, Ph.D., Chandradhar Dwivedi, Ph.D., Xiuling Wang, Ph.D., Cuirong Ren, Ph.D.
   Amount: $213,083.00
   Award period: May 1, 2006-April 30, 2009
   Funding Agency: NIH

5. Title of the project: Development of supramolecular bio vectors as antigen delivery systems
   Principle investigator: Srinath Palakurthi, Ph.D.
   Co-investigators: Xiangming Guan, Ph.D.
   Amount: $10,000
   Funding agency: NSF/EPSCoR, SD
   Award period: 2003-2004

6. Title of the project: Preparation and characterization of supramolecular biovectors (SMBV)
   Principle investigator: Srinath Palakurthi, Ph.D.
   Co-investigators: Xiangming Guan, Ph.D.
   Amount: $3,000
   Funding agency: Research Support Fund, Graduate School, SDSU
   Award period: 2003-2004

7. Title of the project: Development and characterization of the new natural polyamine dendrimers for biological applications
   Principle investigator: Srinath Palakurthi, Ph.D.
   Co-investigators: Xiangming Guan, Ph.D.
   Amount: $16,500
   Funding agency: NSF/EPSCoR, SD
   Award period: 2004-2005

8. Title of the project: Synthesis and characterization of novel PAMAM dendrimers as carriers for the early diagnosis of prostate cancer
   Principle investigator: Srinath Palakurthi, Ph.D.
   Co-investigators: Xiangming Guan, Ph.D.
9. Title of the project: Development and characterization of polyamine-conjugated dendrimers as drug carriers for targeted chemotherapy of ovarian cancer.
   Principle investigator: Srinath Palakurthi, Ph.D.
   Co-investigators: Xiangming Guan, Ph.D.
   Amount: $44,198
   Funding agency: Governor’s 2010 individual research seed grant, SD
   Award period: 2005-2006

10. Title of the project: Inhibition of glutathione reductase as novel approach to reverse ovarian cancer resistance to chemotherapy.
    Principle investigator: Xiangming Guan, Ph.D.
    Co-investigators: Srinath Palakurthi, Ph.D.
    Amount: $58,000
    Funding agency: Governor’s 2010 individual research seed grant, SD
    Award period: 2005-2006

11. Title of the project: Center for Accelerated Applications at the Nanoscale (CAAN) (An inter-institutional multi investigator project aimed at establishing two sub centers with focus on nanotechnology).
    Specific Project: Dendrimer nanostructures as Biosensors
    Principal Investigator: Decker, Shawn, Ph.D.
    Co-Principal investigator: Palakurthi, Srinath, Ph.D.
    Co-investigators: Guan, Xiangming, Ph.D., Galipeau, David, Ph.D.
    Agency: Governor’s 2010 Initiative, Research Centers Program, South Dakota
    Amount: $585,000 was funded to the center for the first year
    Period: 2005-2010

12. Received the ‘F.O. Butler Foundation Classroom Enrichment Award’ from the F.O. Butler Foundation, South Dakota state University, Brookings, SD.

MEMBER OF RESEARCH GRANT REVIEW STUDY SECTIONS

2015 Serving as a reviewer for 2015 Lung Cancer Research Program (LCRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP). Concept Award, online Nanotechnology (CON-NT) peer review panel.

2015 Served as a grant reviewer for National Science Center, Poland, OPUS research grant Proposals, Panel Panel NZ7, March 31.

2015 Served as a grant reviewer for National Priority Research Program (NPRP), Qatar National Research Fund (QNRF), February 28.


2014 Served as a grant reviewer for Peer reviewed medical Research Program (PRMRP) FY14 Discovery-Chronic Migraine and Posttraumatic Headache (DIS-CMPTH) panel, September 14.

2014 Served as a grant reviewer for Peer reviewed medical Research Program (PRMRP) FY14 Discovery-Inflammatory Bowel Disease (DIS-IBD) panel, September 15-18.

2012 Served as a grant reviewer for the DOD-Prostate Cancer Research Program (DOD-PCRP) FY12 Clinical and Experimental Therapeutics (CET 2) study panel (October 17-19).

2011 Served as a grant reviewer for the DOD-Prostate Cancer Research Program (DOD-PCRP) FY11 Clinical and Experimental Therapeutics (CET 2) study panel (October 12-14).

2010 Served as a grant reviewer for the online PRE-Clinical & Experimental Therapeutic 4 (PRE-CET4) Peer review panel of the 2011 Prostate cancer research program of DOD (July 5-10).

2010 Served as a grant reviewer on NIH Special emphasis panel/scientific Review group 2011/01 ZRG1 IMST-D(13) B-Small Business: Biomaterials, Delivery systems, and Nanotechnology (March 15-16).

2010 Served as a grant reviewer for the Clinical and Experimental Therapeutics #4 (CET #4) peer review panel of the 2010 Breast Cancer Research for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP) (June 20-22).

2009 Served as a grant reviewer for the PRE-Clinical and Experimental Therapeutics D (PRE-CET-D) online panel 2009 Department of Defense (DOD) Prostate Cancer Research Program (PCRP), Congressionally Directed Medical Research Programs (CDMRP) (March 20).

2009 Served as a grant reviewer for the radiation oncology in-line Concept panel, Department of Defense (DOD) Breast Cancer Research Program, Congressionally Directed Medical Research Program (CDMRP) (January14).

2008 Served as a grant reviewer for the Radiation Oncology Concept panel 2008 Department of Defense (DOD) Breast Cancer Research Program (BCRP), Congressionally Directed Medical Research Programs (CDMRP).

2008 Served as a grant reviewer for the Peer reviewed medical Research Program (PRMRP) panel, Department of Defense (DOD) Congressionally Directed Medical Research Programs (CDMRP).

2008 Served as a reviewer for Research and Development Proposals for the FY 2008-2009 Board of Regents Support Fund, Louisiana.
RESEARCH PAPERS:


**INVITED PRESENTATIONS**


4. Venkata K Yellepeddi, Ajay Kumar, **Srinath Palakurthi**, Cytotoxicity of Cisplatin Loaded Biotinylated PAMAM Dendrimers in Ovarian Cancer cells, Cancer workshop#2, 06-25-08, School of Medicine, College Station, TX.

**POSTERS AND ORAL PRESENTATIOS:**

1. Vangara KK, **Palakurthi S.** CD44 receptor targeting with Hyaluronic acid-conjugated PLGA nanoparticles loaded with SN 38. Abstract accepted for presentation at the 40th Annual Meeting & Exposition of the Controlled Release Society (CRS), July 21 – 24, 2013, at the Hawaii Convention Center, Honolulu, Hawaii, USA.


18. Venkata K Yellepeddi, Ajay Kumar, Srinath Palakurthi. Cytotoxicity of Cisplatin Loaded Biotinylated PAMAM Dendrimers in Ovarian Cancer cells, Cancer workshop#2, 06-25-08, School of Medicine, College Station, TX.


33. P. Srinath, McQuarrrie and Suresh M.R. Comparative study of uptake polyamines by Prostate and Non-prostate cancer cell lines. Annual ACB (Alberta Cancer Board) meeting held from November 11-12, 2001at Banff center, Alberta, Canada.


**INDUSTRIAL PROJECTS COMPLETED**


**RESEARCH MENTORING**

**Post-Doctoral Fellows**

1. Rishi Paliwal (2013-present), Post-doctoral fellow, Texas A&M Health Science Center College of Pharmacy, Kingsville, TX.

2. Mukti N. Mishra (2012-2013), Post-doctoral fellow, Texas A&M Health Science Center College of Pharmacy, Kingsville, TX.

3. Venkateswara Rao Bommisetti (2005-2007), Research Assistant Professor, Center for Accelerated Applications at the Nanoscale (CAAN) at the South Dakota State University, Brookings, SD

**Graduate Students**

1. Ajay Kumar, Graduate Research Assistant at the Texas A&M HSC College of Pharmacy, Kingsville. Serving as the Chair Person of Graduate advisory Committee Since 2006.

2. Venkata K. Yellepeddi, Graduate Research Assistant at the Texas A&M HSC College of Pharmacy, Kingsville. Serving as the Chair Person of Graduate advisory Committee Since 2006.

3. Kiran K. Vangara, Graduate Research Assistant at the Texas A&M HSC College of Pharmacy, Kingsville. Serving as the Chair Person of Graduate advisory Committee Since 2008.

4. Josua Haslum, Graduate Research Assistant at the Department of Life Sciences Texas A&M Corpus Christi, Corpus Christi. Serving as the Co-Chair of the Graduate Advisory Committee (Chair: Dr. Kevin Strychar) since 2009.
5. Prashanthi Avadhanula, Served as the Chair Person of Graduate advisory Committee from 2009-2010.

6. Yong Zhao, Graduated in 2008. Currently working as a PostDoc at University of Michigan. Served as a Graduate Advisory committee at the College of Pharmacy South Dakota State University, Brookings, SD.

7. Dipak S. Pisal, Graduated with M.S. degree in 2006. Served as the Major Advisor at the College of Pharmacy South Dakota State University, Brookings, SD.

8. Aparna Gavande, Graduated with M.S. degree in 2006. Served as Major Advisor at the College of Pharmacy South Dakota State University, Brookings, SD.

9. Prakash Manikwar. Graduated with M.S. degree in 2006. Served as a member of the Graduate Advisory committee at the College of Pharmacy South Dakota State University, Brookings, SD.

10. Served as Graduate School representative for the two Graduate Advisory Committees (2006, 2007) at the South Dakota State University, Brookings, SD.

**Professional Students**

1. Mr. Rama Surya Prakash Perepu (M.S. Biology, Texas A&M Kingsville), Research strategy and Molecular biology techniques, Oct 2009 - May 2010, Texas A&M Health Science Center College of Pharmacy, Kingsville, TX.

2. Mr. Krunal Choksi (B.S. Pharmacy), Research volunteer, Summer 2008, Texas A&M Health Science Center College of Pharmacy, Kingsville, TX.

3. Mr. Zhao Yong (PhD Pharmacy), Research guidance and tissue culture techniques, 2006, South Dakota State University, Brookings, SD-57007.

4. Ms. Teresa Seefeldt (PhD Pharmacy), Research guidance and tissue culture techniques, 2005, South Dakota State University, Brookings, SD-57007.

5. Ms. Dana Klapprodt (Pharm.D student) Jospeh Nelson Summer Undergraduate Fellowship, South Dakota State University, Brookings, SD-2007

6. Ms. Bethany Weinmeister (Prepharmacy student) Jospeh Nelson Summer Undergraduate Fellowship, South Dakota State University, Brookings, SD-57007

7. Christopher Stampe, Summer Undergraduate Fellowship, South Dakota State University, Brookings, SD-2007

8. Mr. Kurt Green on liposome preparation and antibody purification during the Summer 2001 at Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, Canada.

**Undergraduate Students**

1. Trained Mr. John Wilson on liposome preparation and antibody purification during the Summer 2001 at Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, Canada.

2. Trained Ms. Hannah Bartham, an undergraduate student on ‘Design of nanoparticle for drug targeting’ during the summer, 2009. Ms. Hannah Bartham received May-mester fellowship to undertake the training in my laboratory at the ILR College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

3. Trained Ms. Meghan Beltran, an undergraduate student on ‘Design of nanoparticle for drug targeting’ during the summer, 2009. Ms. Meghan Beltran received May-mester fellowship to undertake the training in my laboratory at the ILR College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.
4. Trained Ms. Roxann Campos, a high school student on ‘Transfection of GFP (Green Fluorescent Protein) into CHO cells using PAMAM dendrimers’ during the summer, 2011 (6 – 30 June). Ms. Roxann Campos received fellowship (Upper Bound Math and Science, Texas A&M University at Kingsville) to undertake the training in my laboratory at the ILR College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

5. Trained Mr. Juan D. Salazar, a high school student on ‘Transfection of GFP (Green Fluorescent Protein) into CHO cells using PAMAM dendrimers’ during the summer, 2011 (6 – 30 June). Mr. Juan D. Salazar received fellowship (Upper Bound Math and Science, Texas A&M University at Kingsville) to undertake the training in my laboratory at the ILR College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

6. Trained Mr. Salvador Garcia, a high school student on ‘Transfection of GFP (Green Fluorescent Protein) into CHO cells using PAMAM dendrimers’ during the summer, 2011 (6 – 30 June). Mr. Salvador Garcia received fellowship (Upper Bound Math and Science, Texas A&M University at Kingsville) to undertake the training in my laboratory at the ILR College of Pharmacy, Texas A&M Health Science Center, Kingsville, TX.

7. Trained Mr. Justin Walker, B.S (Chemistry & Biology) from TAMUK under Ronald E. McNair Scholar Program, June 13, 2011 to July 29, 2011.

PROFESSIONAL MEMBERSHIP

* Controlled Release society
* American Association of Pharmaceutical Scientists
* American Association of Colleges of Pharmacy
* Canadian Society of Pharmaceutical Sciences
* Sigma Xi, Scientific Research Society, SDSU Chapter, Brookings, SD
* Rho Chi, Pharmacy Honor Society, College of Pharmacy, SDSU, Brookings, SD

MEMBER OF EDITORIAL BOARD

1. Journal of Biotechnology & Biomaterials: 2009-Present
5. International Journal Medical Biotechnology & Genetics: 2013-present

JOURNAL REVIEWER

2013 Langmuir
2013 International Journal of Molecular Sciences
2013 Journal of Colloid and Interface Science
2013 Journal of Ocular Pharmacology and Therapeutics
2012-present International Journal of Nanomedicine
2011- Present Journal of Drug Targeting
2011-Present Journal of Nanobiosciences
2011- Present Journal of Biological Macromolecules
2009 - Present Journal of Controlled Release
2010 - Present Biomaterials
2009 - Present  Nanomedicine
2007 - Present  Journal of Pharmaceutical Sciences
2007 - Present  Pharmaceutical Research
2003 - Present  International Journal of Pharmaceutics
2006 - Present  Journal of Microencapsulation
2010 - Present  European Journal of Medicinal Chemistry
2009 - Present  Journal of Biotech Research

PROFESSIONAL SERVICE

1. Member of Special Interest Group (SIG) on Graduate Education, American Association of Colleges of Pharmacy (AACP).
2. Member of Special Interest Group (SIG) on Pharmaceutics, American Association of Colleges of Pharmacy (AACP).
3. Sub-Chair, Formulation and Drug Delivery Section, Abstract Screening Committee, American Association of Pharmaceutical Scientists (AAPS) Annual meeting & Exposition.
5. Member of Sigma Xi Scientific Society.

ADMINISTRATIVE EXPERIENCE

2010-Present: Director of Graduate Studies, Texas A&M HSC College of Pharmacy
2012-2013: Member, University Research Council (URC), Texas A&M University
2011-2013: Member, Graduate Program Council (GPC), Texas A&M University

Activities/Accomplishments:

Graduate Program (M.S. and Ph. D) in Pharmaceutical Sciences: Currently serving as the COP representative in Graduate Program Council (GPC) of the TAMHSC. Recently a preliminary short proposal on the Graduate Program in Pharmaceutical Sciences (GPPS) was prepared and submitted to Office of Vice President of Research for further consideration.

ACPE’s Site-Team Evaluator Training Session: Completed the training in October, 2011.

Research Advisory Council (RAC): Serving as the COP representative on the Research Advisory Council of the TAMHSC since 2008.

Research Colloquium: Served as the Chair for Research Colloquium organized on June 27-28, 2013 at the College of Pharmacy, Texas A&M Health Science Center.

Credentialing Committee: Serving as the Chair, Credentialing Committee of COP since 2011

Strategic Planning Task Force: Served as a member of the Strategic Planning task Force to develop Strategic Planning document, 2011 & 2013.

Pharm.D/MBA Dual Degree Program: Served as a member of the Pharm.D/MBA dual degree program task force and was instrumental in developing and implementing the program. The program
started in the fall 2012. Pharm.D students after their P1 year are eligible to apply to this program with an approval from the Dean, COP.

**Cooperative Graduate Degree Program between Texas A&M Health Science Center (TAMHSC) and Texas A&M University Kingsville (TAMUK):** A Graduate Program Committee was made including the faculty members from the both participating institutions, Graduate Curriculum and curriculum map was prepared. A draft of the proposal was prepared for submission to the Office of Vice President of Research, TAMHSC. The proposal was put on hold, pending Southern Association of Colleges and Schools (SACS) accreditation visit in 2012.

**Bachelor of Science in Pharmaceutical Sciences (BSPS) program:** Chaired the inter-institutional Task Force between TAMUK and TAMHSC to prepare a feasibility report on developing BSPS program. A detailed feasibility report was submitted and the proposal is under review.

**Service activities at Texas A&M HSC College of Pharmacy**

**University:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
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<tbody>
<tr>
<td>2008-Present</td>
<td>Member, Research Advisory Council (RAC)</td>
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<tr>
<td>2012-2013</td>
<td>Member, Graduate Program Council (GPC)</td>
</tr>
<tr>
<td>2013</td>
<td>Member, Biomedical Training Program Working Group, School of Graduate Studies.</td>
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<tr>
<td>2008-2012</td>
<td>Member, Faculty senate</td>
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**College:**

<table>
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<tr>
<th>Year</th>
<th>Activity</th>
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<tbody>
<tr>
<td>2010-Present</td>
<td>Director of Graduate Studies</td>
</tr>
<tr>
<td>2012-Present</td>
<td>Member, Academic Leadership Team (ALT)</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Chair, Credentialing Committee</td>
</tr>
<tr>
<td>2008-Present</td>
<td>Member, Research Advisory committee</td>
</tr>
<tr>
<td>2011</td>
<td>Chair of the Ad-hoc Committee, Feasibility Study on Bachelor of Science in Pharmaceutical Sciences Program</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Member, Credentialing Committee</td>
</tr>
<tr>
<td>2008 and 2010</td>
<td>Student Admissions Interview Committee</td>
</tr>
<tr>
<td>2010</td>
<td>Served as a College Appointment, Promotion and Tenure (APT) Review committee for Mid-Term Reviews</td>
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</tbody>
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**Department**

<table>
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<tr>
<th>Year</th>
<th>Activity</th>
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<tbody>
<tr>
<td>2012-2013</td>
<td>Member, Faculty Search Committee</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Chair, Department Chair Search Committee</td>
</tr>
<tr>
<td>2010-Present</td>
<td>Completed the NSF-NIH initiated Survey of Graduate Students and Postdoctoral fellows in Science and Engineering (GSS)</td>
</tr>
</tbody>
</table>
Service activities at South Dakota State University

**Department:**

- 2003-2005: Member of the Graduate Education and Research Committee
- 2003-2006: Member of the Physical Facilities Committee
- 2005-2008: Member of the Curricular Affairs committee
- 2004-2006: Member of the Pharmaceutical Sciences Faculty Search Committee
- 2006-2008: Member of the Missions and Goals Committee
- 2007-2008: Department Advisory Committee

**College:**

- 2005-2008: College of Pharmacy Curriculum Committee
- 2004-2008: College of Pharmacy Commencement and Planning Committee
- 2004-2008: College of Pharmacy Commencement and Planning Committee
- 2005-2008: Involved in annual fund-raising activities of the College
- 2007: Self-study for Accreditation (member)

**University:**

- 2003-2008: Served as Graduate School representative (3 students)
- 2003-2006: Served as a Faculty advisor for Indian Students’ Association
Contact Information

Work address 310 Reynolds Medical Building
Texas A&M Health Science Center
Station 77843-1114
E-mail: mnvrkumar@tamhsc.edu
Phone: +1-979-436-0721 (Office)

Home address 2610 Cartington Court, College Station, TX 77845, USA

Education

2000 PhD-Indian Institute of Technology, Roorkee (Drug Delivery)
1996 MSc-Devi Ahilya Viswha Vidyalaya, India (Applied Chemistry)
1992 BSc-Nagarjuna University, India (Physical Sciences)

Employment History

Nov 4, 2013-till date Professor, Department of Pharmaceutical Sciences, Texas A&M University, College Station, USA
Jan 10 2008-Oct 31, 2013 Professor of Drug Delivery, University of Strathclyde, Glasgow, UK
Sept 22, 2003-Dec 22, 2007 Assistant Professor, Department of Pharmaceutics, National Institute of Pharmaceutical Education & Research, India.
2002-2003 Alexander von Humboldt Research Fellow, Department of Biopharmaceutics and Pharmaceutical Technology, Saarland University, Germany. (Host: Prof. Dr. C.-M. Lehr)
2000-2002 Postdoctoral Scholar, Department of Preventive Medicine and Environmental Health, University of Kentucky Medical Center, Lexington, USA. (Host: Prof. Dr. R. C. Gupta)

Grant Support (~$4 M)

The goal is to develop an orally bioavailable form of the company’s peptide.

M1401162 (PI: M. N. V. Ravi Kumar) April 2014-Sept 2015 The Cunningham Trust, UK Understanding biodegradable nanoparticle toxicity: Tracking drug containing nanoparticles and factors that influence their distribution in vivo
The goal is to develop AFM methodology for particle tracking and toxicity profiling.
Greek Ministry of Research and Development
Investigation of new therapeutics for diabetic retinopathy: Neurosteroidal microneurotrophins. The goal is to develop nanoparticle encapsulated neurosteroidal analogs for enhanced bioavailability. Role: Collaborator

School of Pharmacy/TAMHSC
Lab setup
The goal is to develop sustainable drug delivery research program.

Completed (16 Grants)

Patents


Awards and honors

2012 Guest Professor, University of Torino, Italy (Host Dr. Loredana Serpe, MD, PhD)
2011 Guest Professor, University of Padua, Italy (Host Prof. P. Caliceti, PhD)
2011 Foreign Distinguished Professor, University of Shandong, China. (Host Prof. N. Zhang, PhD)
2011 Chairman, World Drug Delivery and Formulation (Organised by World Trade Group).
2010 Foreign Distinguished Professor, Seoul National University, Korea. (Host. Prof. C. S. Cho)
2009 British Pharmaceutical Conference Science Medal. UK
2008 Visiting Professor, University of Navarra, Spain. (Host Dr. Maria Blanco-Prieto)
2008 Tom Gibson Memorial Award, British Society of Plastic Surgeons & the Royal College of Physicians and Surgeons, UK
2008 Fellow of Royal Society of Chemistry (FRSC), London.
2007 Indian National Science Academy (INSA) Medal for Young Scientist. India
2002 Alexander von Humboldt Research Fellowship, Germany.
1999 Senior Research Fellowship, CSIR, Government of India.

Memberships in societies

- American Chemical Society (ACS), USA
- Materials Research Society (MRS), USA
- American Association for the advancement of Science (AAAS), USA
- American Society for Pharmacology and Experimental Therapeutics (ASPET)
- American Association for Pharmaceutical Scientists (AAPS), USA.
- Royal Society of Chemistry (RSC)-Fellow, UK.
- Life Member, Society of Biomaterials and Artificial Organs, India.
- Life Member, Indian Chemical Society, India.
- Life Member, Indian Science Congress Association, India.
- Life Member, Materials Research Society of India, India.
Past memberships
- Controlled Release Society (CRS).
- European Society for Biomaterials (ESB).
- Academy of Pharmaceutical Sciences Great Britain, UK
- Honorary Membership, German Chemical Society, GDCh.

Service to societies
- Young Scientist Member (2002) Education Committee, Controlled Release Society, USA
- Abstract Reviewer for CRS.
- Member of selection committee-CRS Jorge Heller Journal of Controlled Release Best Paper Award.
- CRS Mentorship Program.

Editorial Appointments
- Member, Editorial board, Therapeutic Delivery (2010-)
- Member, Editorial board, Pharmaceutical Nanotechnology (2013-)
- Member, Editorial board, Cancer Nanotechnology (2013-)
- Member, Editorial board, Journal of Drug Delivery Science and Technology (2011-)
- Member, Editorial board, Journal of Medical and Biological Engineering (2011)
- Member, Editorial board, Journal of Bioengineering & Biomedical science. (July 2013).
- Member, Editorial board, Journal of Nanoscience and Nanotechnology (2008-2013)

Journal Reviewer (~60)
AAPS PharmSciTech; J. Applied Polymer Science; Accounts for Chemical Research; J. Biomaterials Applications; Biomacromolecules; J. Biomaterials Science: Polymer Edition; Biomaterials; J. Biomedical Materials Research: Part A; Biotechniques; J. Biomedical Nanotechnology; Biotechnology and Bioengineering; J. Controlled Release; Biotechnology Progress; J. Drug Targeting; Carbohydrate Polymers; J. Materials Chemistry; Chemical Communications; J. Nanomedicine; Chemical Society Reviews; J. Nanoscience and Nanotechnology; Chemical Reviews (ACS); J. Pharmaceutical Research; Colloids & Surfaces A: Physicochem. Eng Aspects; J. Pharmaceutical Science; Drug Development & Industrial Pharmacy; Marine Biotechnology; E-Polymers; Nanomedicine; European J Pharmaceuticals & Biopharm.; Organic and Biomolecular Chemistry; European Polymer Journal; Pharmaceutical Research; Expert Opinion on Drug Delivery; Physical Chem. Chem. Physics; Gene Therapy; Reactive and Functional Polymers; Green Chemistry; Recent Patents on Drug Delivery & Formulation; Indian J Pharmacology; Therapy; International Journal of Pharmaceutics; The Open drug delivery Journal; Israel J Chemistry; Therapeutic Drug Delivery; JMS-Pure and Applied Chemistry; Drug Delivery and Translational Research; Molecular Pharmaceutics. **Reviewer for book proposals, John Wiley, Biohealthcare Publishing.**

Advisory role/committee memberships/session chairs/scientific meetings organised/grant reviewer/thesis examiner/Public engagement
- Reviewer, Proposal to setup Centre of excellence in intelligent oral drug delivery, Danish National Research Foundation, 2014.
- Principal Committee member of the evaluation committee (Pharmaceuticals and cosmetics) Ministry of Education, Lifelong Learning & Religious Affairs Special Agency for the
Management & Implementation of Research, Technological Development & Innovation Actions, Greece 2012.

- Board of Examiner (External), Pharmaceutics, University of Wolverhampton, 2012-2013.
- Reviewer, Annual Review of teaching fellows (Pharmacy Practice Lecturers), 2012.
- Member, Medical Devices Doctoral Training Centre funded by EPSRC. The DTC is founded upon collaboration between the Faculties of Science and Engineering, led by Bioengineering and SIPBS, and funded by the EPSRC Life Sciences Interface Programme.
- University of Strathclyde coordinator for GALENOS network for advanced drug delivery.
- International Advisory Board, 24th European Conference on Biomaterials European Society for Biomaterials (ESB) Dublin 2011.
- Advisor, Z-cube, a start-up drug delivery company, Italy (2009).
- Organizing Committee Member, Nanotechnology 2006, Jointly Organized by Rensselaer Nanotechnology Center, Office of Alumni Relations & Bawa Biotechnology Consulting, September 25-26, 2006, NY, USA.
- Member, Program Advisory Committee, International Conference and Exhibition on Nanotechnology, Federation of Indian Chambers and Industry, January 17-19, 2007, New Delhi, India.
- Organizing Committee Member, 2nd Annual Nanomedicine: Commercializing Drug Delivery, Diagnostics and Medical Devices, Organized by Strategic Research Institute (www.srinstitute.com/nano) March 26-27, 2007, Washington DC, USA.
- Our research in nanomedicines has been cited by the President of India (APJ Abdul Kalam) in his Inaugural Speech at the Global Nanoscience Initiatives on March 16 2006 in New Delhi, India.
- Member, Advisory Board, Indo-Italian Workshop on chemistry and biology of antioxidants, 8-9 January’ 2006, Department of Chemistry, University of Delhi and Embassy of Italy, New Delhi.
- Chaired a session at Indo-Italian Workshop on chemistry and biology of antioxidants, 8-9 January’ 2006, Department of Chemistry, University of Delhi and Embassy of Italy, New Delhi.
- Chaired a Session at Second International Workshop on Nanotechnology & Health Care, May 23-24, 2005, SASTRA Deemed University, Thanjavur, Tamilnadu, India.
- American Association of Government College of Pharmacy (Bangalore) Alumni, New York. (awards partial cost for Master’s research project by a student enrolled at the Government College of Pharmacy, Bangalore).
- Member, Task Force-11th Five Year Plan (2007-2012) for Nanobiotechnology, Department of Biotechnology, Government of India.
- Member, Board of Studies in Nanoscience and Nanotechnology (01. 04.2007-31.03.2009), Panjab University, Chandigarh.
- Member, Facility Management Committee, Sophisticated Analytical Instrument Facility, Central Drug Research Institute, Lucknow.
- **Ad hoc Reviewer for the following funding agencies:** Engineering & Physical Sciences Research Council (EPSRC), UK; Medical Research Council (MRC), UK; Ohio Cancer Research Associates, USA; Kentucky Science and Engineering Foundation R&D Excellence Awards, USA; Alberta Crop Industry Development Fund Ltd., Canada; Canada Foundation


Promotion and appointments review: Reviewer, Senior Professorial appointments, University of North Carolina, USA. Reviewer, McKnight Land Grant Professorship, University of Minnesota, USA. Tenure and Promotion Reviewer, Missouri State University, USA. Tenure and Promotion Reviewer, Aston University, UK. Promotion Reviewer, Kwame Nkrumah University of Sci & Tech, Kumsai, Ghana.

Career events: Lecture (March 1, 2012) on career opportunities in research at St Nianian’s high school for outgoing students, Glasgow.

**Peer reviewed publications**


**Web of Science citation report (August 12, 2015) Author=Kumar MNVR**

<table>
<thead>
<tr>
<th>Results found</th>
<th>78</th>
<th>Average citations per item</th>
<th>72.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of the times cited (without self-citations)</td>
<td>5450</td>
<td>h-index</td>
<td>34</td>
</tr>
</tbody>
</table>

**Abstracts/Conference Presentations**


10. V. Bhardwaj, D. Ankola, and M. N. V. Ravi Kumar, PLGA nanoparticles of Paclitaxel (Taxol) for the treatment of solid tumors. 35th Controlled Release Society Annual meeting, USA July 12-16, 2008. *(V. Bhardwaj Received Travel award)*


26 G. Mittal and M. N. V. Ravi Kumar, Estradiol loaded PLGA nanoparticles for oral administration: Effect of polymer nature and organic solvents on release behavior in vitro and in vivo, Indian Chemists Convention, December 23-27, 2006, Aurangabad, India (Abstract Selected for Young Scientist Award)


37 G. Sharma, V. Bhardwaj, D. Sahana and M.N.V Ravi Kumar, Enhancing delivery prospects of antioxidant ellagic acid by an in situ gelling system, Indo-Italian Workshop on chemistry and biology of antioxidants, Department of Chemistry University of Delhi and Embassy of Italy, 8-9 January’ 2006, New Delhi.

38 K. Sonaje, V. Bhardwaj, G. Mittal and M.N.V. Ravi Kumar, Biodegradable polymeric nanoparticles for oral delivery of a polyphenolic antioxidant Ellagic acid, Indo-Italian Workshop on chemistry and biology of antioxidants, Department of Chemistry University of Delhi and Embassy of Italy, 8-9 January’ 2006, New Delhi.

39 D. Venkat Ratnam, V. Agrawal, J. Italia, V. Bhardwaj, N. Roy and M.N.V. Ravi Kumar, Determination of IC50 value of poorly water soluble polyphenolic compound ellagic acid in yeast cells, Indo-Italian Workshop on chemistry and biology of antioxidants, Department of Chemistry University of Delhi and Embassy of Italy, 8-9 January’ 2006, New Delhi.


Invited Talks/Guest Lectures

1. International Seminar on Advances in Polymer Technology, January 16-17, 2004, CUSAT, Kochi, India.


3. Consultation for road map on Nanobiotechnology and its implications in medicine and diagnostics, Department of Biotechnology, New Delhi & Semiconductor complex limited (SCL), Mohali, August 16-17, 2004, New Delhi, India.


5. Department of Chemistry, University of Delhi, Sept 02’ 2005.


<table>
<thead>
<tr>
<th>No.</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>8</td>
<td>Indo-Italian Workshop on chemistry and biology of antioxidants, Department of Chemistry University of Delhi and Embassy of Italy, New Delhi, 8-9 January’ 2006.</td>
</tr>
<tr>
<td>11</td>
<td>6th International Conference and Workshop on Cell Culture and in-vitro Models for Drug Absorption and Delivery, Saarland University, Saarbruecken, Germany, 1-10 March, 2006.</td>
</tr>
<tr>
<td>13</td>
<td>Humboldt Kolleg (Sponsored by Alexander Von Humboldt Foundation, Germany), Palampur March 24-26, 2006.</td>
</tr>
<tr>
<td>14</td>
<td>University Institute of Technology, Panjab University, Chandigarh, 17, April 2006.</td>
</tr>
<tr>
<td>17</td>
<td>Seoul National University (Host Prof. Chong-Su Cho), April 27 2006.</td>
</tr>
<tr>
<td>18</td>
<td>Symposium on Nanomedicine and Tissue Engineering in memory of Dr. C.J. Lee organized by Biomedical Engineering Society of Taiwan, Tsing Hua University, Taiwan, June 23-24, 2006.</td>
</tr>
<tr>
<td>19</td>
<td>Center for Nanoscience and Nanotechnology, Mahidol University, Bangkok, Thailand (Host: Prof. Teerakiat Kerdcharoen) June 26-28, 2006.</td>
</tr>
<tr>
<td>20</td>
<td>Conference on Polymers: Advanced Technologies &amp; Applications, Confederation of Indian Industry (CII) and Indian Plastics Institute, July 13-14, 2006.</td>
</tr>
<tr>
<td>21</td>
<td>Indian Institute of Technology Delhi (Host: Dr. Aditya Mittal), Department of Biochemical Engineering and Biotechnology, July 18, 2006.</td>
</tr>
<tr>
<td>22</td>
<td>University of Pisa, Italy (Host: Professor Roberto Solaro), Department of Chemistry and Industrial Chemistry. July 25-28, 2006.</td>
</tr>
<tr>
<td>23</td>
<td>International Conference on NanoBioscience, Agharkar Research Institute, Pune, August 6-8, 2006.</td>
</tr>
<tr>
<td>24</td>
<td>National University of Singapore (Host: Prof. S. S. Feng &amp; B. V. R. Chowdary), October 24-29, 2006.</td>
</tr>
<tr>
<td>26</td>
<td>Symposium on Recent Developments on Nanodrug Delivery System, XXXIX Annual Conference of Indian Pharmacological Society, Jaipur, December 21-23, 2006.</td>
</tr>
<tr>
<td>27</td>
<td>Multifunctional nanomaterials, nanostructures and applications” (MNNA 2006) University of Delhi, December 22-23, 2006.</td>
</tr>
</tbody>
</table>
29 Public Lecture, Chandigarh Science Congress, Department of Physics, Panjab University, Chandigarh, India March 10, 2007.
30 Short Term Course on Nanoscience and Nanotechnology, National Institute of Technical Teachers Training & Research, April 16-20, 2007.
31 Institute of Microbial Technology (IMTECH), Chandigarh, June 8, 2007.
33 Brown Cancer Center, University of Louisville (Host: Prof. R. C. Gupta), Louisville, USA July 12, 2007.
34 IGERT Nanomedicine Science and Technology Distinguished Lecture, IGERT Nanomedicine, Northeastern University (Host: Prof. S. Sridhar), Boston, USA, July 17, 2007 (http://www.igert.neu.edu/newsrelease.php?id=11).
35 Strathclyde Institute of Pharmaceutical and Biomedical Sciences, University of Strathclyde (Host Prof. H. Stevens), Glasgow, UK September 6, 2007.
36 36th InterPharm Research Conference, Crabwall Manor Hotel, Chester, UK, May 14-16, 2008.
37 42nd Academie des Alpilles, St Remy de Provence (Gattefosse), France, June 26-29, 2008.
38 University of Navarra, Pamplona, Spain (Host: Maria Blanco Prieto) September 10-14, 2008.
40 One-Day Symposium: Encapsulation for Drug Delivery & Microbubbling, University College London, November 14, 2008.
42 60th Indian Pharmaceutical Congress, New Delhi, India December 12-14, 2008.
45 DIMET Course on “Nanoparticles in Medicine”, University of Milan, Italy, March 11-13, 2009.
46 Pearls of Wisdom debate, Controlled Release Society Annual meeting, Copenhagen July 18-122, 2009.
48 Special Symposium on Contemporary research in polymer science, Technion University, Haifa Israel, October 15, 2009.
49 Guest Lecture, Division of clinical neuroscience, Glasgow University, January 28, 2010.
50 Presentation to Scientific Advisory board of Organisation for the Prohibition of Chemical Weapons, April, 12, 2010.
52 XX PAN American Pharmacy, Brazil May 27, 2010.
53 Seoul National University (Host: Chong-Su Cho), June 10, 2010.

Korean Institute of Science and Technology (KIST) (Host: Ick Chan Kwon), June 11, 2010.

School of Life Sciences, University of Hyderabad, India (Host Anand Kumar) July 26, 2010.

School of Biological Sciences, Indian Institute of Technology, Delhi (Host Jayaram/Aditya Mittal), August 2, 2010.

Department of Metallurgy, Indian Institute of Technology, Madras (Host Sampath Kumar) August 11, 2010.

RPSGB Science Medal Lecture, UK Pharm Sci, Nottingham, September 1, 2010.

An International Training Course in Pharmaceutical Medicine, Diploma in Pharmaceutical Medicine, Swindon (Host: Prof Sam Salek) November 24, 2010.


'Nanomedicine: what is it and how can it help the patient?' Organised by Institute of Nanotechnology, Glasgow, March 22, 2011.

Guest Lecture, Glasgow Caledonian University, March 23, 2011.


Advanced Drug Delivery Lecture series 1-20, Shandong University, Jinan, China (Foreign Distinguished Professor) June 22-30, 2011. (1 hour Lectures 20).

International Showcase event at NDDS India 2011, Holiday Inn Mumbai International Airport, Organised by UBM India Pvt Ltd. August 10-12, 2011.

NDDS India 2011, Holiday Inn Mumbai International Airport, Organised by UBM India Pvt Ltd. August 10-12, 2011.

College of Medical, Veterinary and Life Sciences, University of Glasgow (Host Dr. Stuart Cobb), Sept 2, 2011.

Sullivan University, Louisville, USA Sept 13, 2011

Brown Cancer Centre, University of Louisville (Hosts Prof. R C Gupta & Dr. Sucheta Telang), Sept 14, 2011


Indian Institute of Technology, Hyderabad (Host Dr. Saptarshi Majumdar), Nov 16, 2011.

Department of Chemical and Process Engineering, University of Strathclyde (Host Dr. Jan Sefcik) Dec 7, 2011

University of Padua, Italy (Host Prof. Paolo Caliceti) Dec 12-15, 2011. (1 hour lectures 5)

Discovery Chemistry (Select Biosciences conference), Munich, Germany, March13-14, 2012

University of Torino, Italy (Host Dr. Loredana Serpe, MD, PhD) March 25-28, 2012.

Cranfield University, UK (Host Prof. Sergey A. Piletsky), October 24, 2012.

University of Warwick, UK (Host Prof. Rachel K. O'Reilly), November 28, 2012.

University of Padua, Italy (Host Prof. Paolo Caliceti) Jan 15-19, 2013. (1 hour lectures 2)

University of Ferrara, Italy (Host Dr. Elisabetta Esposito & Prof. Rita Cortesi) Jan 18, 2013

MedImmune, Cambridge, UK (Host Dr. Chris Walle) Feb 4, 2013

Texas A&M, Kingsville, Texas, USA (Host Prof. I. K. Reddy), April 12, 2013

University of Santiago de Compostela, Spain (Host Prof. M. J. Alonso) April 16, 2013

University of Navarra, Pamplona, Spain (Host Dr. Maria Blanco-Prieto), April 22, 2013

Clinica Universidad de Navarra, Pamplona, Spain (Host Prof Felipe Prósper Cardoso, MD), April 2013

University of South Florida, Tampa, USA (Host Dr Shyam Mohapatra-nano Bio Cell group), May 28, 2013

University of Delhi, New Delhi, India (Host Dr. Vibha Tandon), October 26, 2013

Shri G S Institute of Technology and Science, Indore, India (Host J. Thomas Andrews), Dec 9, 2013


Toxicology Seminar Series (Host Beiyan Zhou), Texas A&M University, October 13, 2014

Guest Lecture (Department of Pharmaceutical Sciences-Seminar Series), Auburn University (Host D. Muralikrishna), October 21, 2014.

Guest lecture, (Host Vince Rotello), University of Massachusetts, Amherst, November 20, 2014.

Plenary talk, Innovation in pharmaceutical research: Development of incrementally modified drugs shooting for unmet clinical needs, Seoul, South Korea, June 12, 2015

Journal Special Issues


Books


Non-refereed publications: 15

Students supervised

PhDs: 7
Postdoctoral/Scientists: 10
MS Pharm/MRes: 21
Visitors: 3
Summer students: 2

Media

• Our article Lamprou et al., PLoS One. 8 (2013) e64490 received wide coverage by following:
  ScienceDaily; ScienceNews; Phys.org; Physics News; Bio-Medicine; Nanowerk; HealthCanal; Nanotechnology Now: EurekAlert!; May 29, 2013; Pharma; India Education Diary; Today Topics; Laboratory Equipment; Azonano; Eyeforpharma; GlasgowCityofScience; May 30, 2013; Medical News Today; News-Medical.net; PharmaBiz; Pakedu.net ; May 31, 2013; domain-B, June 3, 2013.
• Interviewed by Neil Canavan of Pharmaceutical Formulation and Quality (PFQ) Magazine (Issue Date: April/May 2012) on Delivery-Nanoparticles "Creating nanostructures for oral drug delivery" and my statement "Platforms prove elusive, but research persists" was highlighted.
• The Northeastern Voice, August 21, 2007, Hope for the future of nanomedical work.
Ziyaur Rahman, Ph.D.
Associate Professor
310 Reynolds Medical Science Building
Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
College Station, TX 77843
Personal: rahman.ziyaur@gmail.com
Phone: 240-460-5419

EDUCATION

- Ph.D. (Pharmaceutics), Hamdard University, New Delhi, India, 2005
- M.S. in Pharmaceutics - 2002
- B.S. in Pharmacy - 2000

EMPLOYMENT

- Nov 2012- Sept 2016 Associate Professor
  Texas A&M Health Science Center, College Station, Texas, USA
- Nov 2012- Sept 2016 Scientist and CMC Reviewer (Staff fellow)
  U.S. Food and Drug Administration/CDER/OPQ/DPQR, Staff Fellow
- Sept 2011-Nov 2012 Instructor
  Texas A&M Health Science Center, Kingsville, Texas, USA
- Sept 2008-2011 Orise Fellow
  Division of Product Quality and Research, OTR/OPS/CDER
- July 2007-Sept 2008 Research Associate
  University of Mississippi, USA
- Feb 2006-June 2007 Research Scientist
  Dabur Pharma, India
- May 2005-Feb 2006 Research Associate
  Torrent Pharmaceuticals, India

RESEARCH AREA OF INTEREST
Over 14 years of research experience in the general areas of pharmaceutical sciences and over 12 years of experience in the area of drug delivery systems, with special expertise in the area of formulation design and process development. Research areas are: 1) formulation and process design of complex drug delivery systems (such as liposomes, nano-suspension, emulsions, microspheres, pediatric etc.); 2) improving drug product quality as well as process understanding through Quality by Design (QbD) approach and Process Analytical Technologies (PAT); 3) development of in vitro release performance tests for traditional (tablets, capsules, gels, emulsions) as well as complex drug delivery systems (microspheres, liposomes, nano-suspensions, emulsions, ointments, creams, etc.); 4) evaluation of bio-equivalence of complex drug dosage forms; 5) design and evaluation of abuse deterrent formulations (ADF) for opioid analgesics, 6) 3-dimensional printing of various dosage forms for pharmaceutical application, 7) continuous manufacturing of pharmaceutical dosage forms and 8) univariate and multivariate models (chemometrics, mega-data analysis) development for various phases (polymorphs, amorphous, solvates, salt or base) quantification in the drug products. Other area of
intense research interest includes: protein and peptide delivery using polymeric materials in formulation design and risk analysis.

COURSES TAUGHT
- Principle of Drug action (PHAR 610)
- IPT I: Electrolytes, Acid-Base and Kidney diseases (PHAR 710)
- IPT II: Cardiovascular diseases (PHAR 711)
- IPT VI: Critical care, GI, Pulmonary, Rheumatic, Ophthalmology and Dermatology
- IPT VII: Infectious Disease (PHAR 812)
- IPT VIII: Oncology, Transplant and Genomics (PHAR 813)
- Sterile Products/IV Admixtures (PHAR 777)
- Pharmaceutics I (PHAR 642) compounding laboratory

RESEARCH GRANT
- PI- Understanding critical quality attributes of modified release formulation manufactured by three dimensional printers, US Food and Drug Administration, Direct costs, $ 158,000, 2016-2017.
- Co-PI- Disproportionation of Prasugrel Hydrochloride in the presence of excipients: analytical method development and validation for measurement of salt and free base in generic products, US Food and Drug Administration, Direct costs, $ 165,000, 2014-2016.

FDA SPECIAL ASSIGNMENTS AND ADVISORY ACTIVITIES
- CDER, Member, CDER Science Day, 2016.
- FDA Grant reviewer, 2014-2016.
- OPQ, Immediate Release/Modified Release Work Group, 2015

HONORS AND AWARDS
1. ‘Special Recognition’ award for ‘Outstanding research effort on Abuse Deterrent Formulations and for the first review of generic ADF through a pilot Review-Research team approach’ by CDER, Food and Drug Administration, FDA, MD, USA, 2016.
2. ‘Team Excellence’ award for ‘Development of in-vitro quality metrics of acyclovir ointment and cream for the review of NDA # 20408 and Zovirax ANDAs’ by CDER, Food and Drug Administration, FDA, MD, USA, 2016.
3. ‘FDA group recognition’ award for ‘Crystalline quantification in new tacrolimus extended release product for regulatory action’ by CDER, Food and Drug Administration, FDA, MD, USA, 2016.
4. ‘Regulatory Science Excellence’ award for ‘Quantification of crystalline fraction of warfarin sodium in the drug products and in-use stability of commercial products’ by CDER, Food and Drug Administration, FDA, MD, USA, 2016.
5. ‘Regulatory Science Excellence’ award for ‘Developing a performance matrix for equivalence evaluation of cyclosporine ophthalmic emulsions, paving the pathway for generic approval and provided scientific support to address
sponsor’s CP request’ by CDER, Food and Drug Administration, FDA, MD, USA, 2015.


7. ‘Special Recognition’ award for ‘The outstanding first review of generic abuse-deterrent formulations through a pilot review-research team approach’ by Food and Drug Administration, MD, USA, 2015.


9. ‘Team Excellence’ award for ‘The extraordinary contributions to the review and management of post approval changes to ANDAs’ by Food and Drug Administration, MD, USA, 2014.

10. ‘Regulatory Science Excellence’ award for ‘Chemometric Methods for Tacrolimus Crystallinity Team’ for the quantification of crystallinity and discriminatory dissolution methods development for the tacrolimus products’ by CDER, Food and Drug Administration, MD, USA, 2014.

11. ‘Team Excellence’ award for ‘Cyclosporine Ophthalmic Research’ by CDER, Food and Drug Administration, MD, USA, 2014.


13. ‘Team Excellence’ award to for ‘The development of a new in-vitro dissolution method to demonstrate bioequivalence of vancomycin hydrochloride to allow submission to ANDAs’ by CDER, Food and Drug Administration, MD, USA, 2010.

14. ORISE fellowship by Food and Drug Administration, MD, USA for three year, 2008-2011

15. Post-Doctoral fellowship by University of Mississippi, MS, USA for one year, 2007-2008.


17. Junior Research fellowship for pursuing M.S. (Pharmaceutics) by University Grants Commission, New Delhi, India for two year, 2000-2002

18. Score 97.89 percentile and 75th national ranking in Graduate Aptitude Test Exam, UGC, New Delhi, India, 2000.

LIST OF PUBLICATIONS


MANUSCRIPT UNDER REVIEW

- Headspace-gas chromatography method validation for isopropanol determination in warfarin sodium products as an indirect measure of the drug crystallinity submitted to Acta Pharmaceutica.
- Nanotechnology based drug products: science and regulatory considerations, Pharmaceutical Nanotechnology Volume XVII: Regulatory aspects and policies related to development, evaluation and control of nanopharmaceuticals, Elsevier, Editor Alex Grumezescu
- Nanoparticles for improvement in oral bioavailability, Pharmaceutical Nanotechnology Volume XVII Volume XIV: Biopharmaceutics and pharmacokinetics of nanomaterials, Elsevier, Editor Alex Grumezescu.
**BOOK CHAPTERS**


**CONFERENCE OR SOCIETY PROCEEDINGS**


**POSTER PRESENTATION**


2nd Biennial National IDEa Symposium of Biomedical Research Excellence (NISBRE), Washington DC, USA, Aug 2008.


EDITORIAL ADVISORY BOARD
- American Journal of Analytical chemistry
- Current Nanoscience
- Scientia Pharmaceutica
- Journal of Pharmaceutical Investigation
- The Pharma Research
- International Journal of Pharma Informa
- Journal of Pharmaceutical Sciences & Allied Research
- International Journal of Pharmacy and Technology
- International Journal of Applied Chemical Sciences Research
  Development in analytical Chemistry

MANUSCRIPT REVIEWER
- AAPS PharmSciTech
- Abstract reviewer for AAPS Annual Meeting 2009-2012
- Abstract reviewer for AAPS National Biotechnology Conference 2011
- American Journal of Analytical Chemistry
- Asian Journal of Pharmaceutics
- Current Drug Delivery
- Current Nanoscience
- Drug Development and Industrial Pharmacy
- Expert Opinion on Drug Delivery
- International Journal of Pharmaceutics
- Journal of Drug Targeting
- Journal of Liposome Research
- Journal of Pharmacy and Pharmacology
- Journal of Pharmaceutical Sciences
- Journal of Thermal Analysis and Calorimetry
- Pharmaceutical Development and Technology
- Pharmaceutical Technology
- Scientific Research and Essays
- Toxicology Mechanism and Methods
LIXIAN ZHONG

Phone: 979-436-0193  Email: zhong@pharmay.tamhsc.edu
Reynolds Medical Building, Suite 304A, College Station, Texas 77843

EXPERIENCE

- **University of Texas A&M University**
  - *Assistant Professor / Rangel College of Pharmacy* 2015- present
    Research interests: pharmacoeconomics, outcomes research, decision analysis, health technology assessment, pharmaceutical pricing & reimbursement.

- **University of California, San Francisco (UCSF)**
  - *Assistant Clinical Professor / School of Pharmacy* 2014 - present

- **Biogen**
  - *Senior Analyst / Corporate Strategy Department* 2014 - 2015
    Conduct analytics to support strategic business planning for a core therapeutic area. Perform pricing and reimbursement trend assessment. Conduct strategic and operational planning for corporate organizational integration.
  - *Senior Analyst / Global Market Access Department* 2013 - 2014
    Conducted health economics and outcomes (HEOR) research to implement global market access strategy for launching a blockbuster product in multiple sclerosis. Engaged in activities including cost-effectiveness analysis, budget impact modeling and global value dossier development.
  - *Research Fellow / Global Market Access* 2012 - 2013
    Conducted research to support value proposition for early phase pipeline products using real world evidence and cost-effectiveness models.

- **University of California, San Francisco (UCSF)**
  - *Postdoctoral Fellow / School of Pharmacy* 2011 - 2012
    Conducted various pharmaceutical economics and policy studies including cost-effective analysis in new prostate cancer drugs, patient preference studies in multiple sclerosis, and resource utilization analysis in ALS patients.

- **World Health Organization (WHO), Headquarters**
  - *Intern / International Clinical Trial Registration Platform (ICTRP)* 2010
    Conducted policy research on the regulation of clinical trial registration in WHO member countries.

- **Duke University**
  - *Postdoctoral Fellow / Duke University Medical Center* 2011
  - *Research Assistant / Duke University Medical Center* 2005 - 2011
    Studied the signaling pathway of pain sensation using *Drosophila melanogaster* as a model system. Published scientific manuscripts in high-impact research journals.
EDUCATION

- Duke University  Ph.D. in Pharmacology  2004 - 2011
- Duke University  M.A. in Economics  2008 - 2010
- Peking University  B.S. in Biological Sciences  1999 - 2003

HONORS AND AWARDS

- UCSF Best Population Science/Outcome Research Award  2012
- Duke University Global Health Fellowship  2010
- Duke Neurobiology Best Student Talk Award  2009
- Peking University Sumitomo Corporation Scholarship  2003
- Peking University Academic Excellence Award  2002, 2003

TEACHING

School of Pharmacy, UCSF

- Decision Analysis (Guest Instructor, student rating 4.50 out of 5)  2011
- Decision Analysis (Guest Instructor, student rating 4.75 out of 5)  2013
  (Decision Analysis is an elective course offered to 4th year Pharm.D. students)

PROFESSIONAL ACTIVITIES

Membership in Professional Organizations

- International Society of Pharmacoeconomics and Outcomes Research (ISPOR)
- Genetic Society of America (GSA)
- Society for Neuroscience (SfN)

Referee/Reviewer

- Journal of Neuroscience
- Pain
- PLoS ONE
- Journal of National Cancer Institute
- Journal of Molecular Neuroscience
- Insect Biochemistry and Molecular Biology

PUBLICATIONS

Peer Reviewed Articles


- **Zhong L***, Hwang RY*, Tracey WD. Pickpocket is a DEG/ENaC protein required for mechanical nociception in *Drosophila* larvae. *Current Biology.* 2010; (20), 429–434 (*authors contributed equally)


**Selected Abstracts and Talks**


- **Zhong L**, Niu X, Sarda S Health-Related Quality of Life Instruments Used in Multiple Sclerosis Clinical Trials: A Systematic Review. 2014 Annual Meeting – the Consortium of Multiple Sclerosis Centers, Dallas


- Kappos L, Fox RJ, Gold R, Kita M, Phillips JT, Sarda SP, **Zhong L**, Niecko T, Kurukulasuriya NC, Giovannoni G, Delayed-release dimethyl fumarate and health-related quality of life (HRQoL) in relapsing-remitting multiple sclerosis (RRMS) patients according to prior therapy: integrated analysis of DEFINE and CONFIRM, the 2014 Joint Congress of European Neurology, Istanbul, Turkey


EDUCATION

- **Ph.D.** in Pharmaceutics, University of Tennessee Health Science Center, 08/2005-08/2010
- **M.S.** in Pharmaceutics, China Pharmaceutical University, 09/2000-06/2003
- **B.E.** in Pharmaceutics, China Pharmaceutical University, 09/1993-07/1997

PROFESSIONAL EXPERIENCES

- **Assistant Professor**, Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M University Health Science Center, 10/2013-present
- **American Cancer Society Postdoctoral Fellow**, Center for Pharmaceutical Biotechnology and Nanomedicine, Northeastern University, 07/2013-09/2013
- **Postdoctoral Research Associate**, Center for Pharmaceutical Biotechnology and Nanomedicine, Northeastern University, 08/2010-06/2013
- **Senior Lecturer and Principal Investigator**, China Pharmaceutical University, 09/2003-08/2005
- **Lecturer**, School of Pharmacy, Henan University, China, 09/1997-09/2000

HONORS AND AWARDS

- **CRS T. Nagai Postdoctoral Research Achievement Award**, Controlled Release Society, 2014
- **American Cancer Society-Ellison Foundation Postdoctoral Fellowship**, 2013
- **AAPS Graduate Student Symposium Award** in Biotechnology, 2009
- **AAPS Travel Awards** in Biotechnology, 2009
- **University of Tennessee Student Travel Award**, 2009
- **AAPS Travel Awards** in Biotechnology, 2008
- **Outstanding Student Award**, China Pharmaceutical University, 1993-1995

PATENTS

- **Zhu L.**, Tu Y “Polymers for the delivery of drugs and nanoparticles into cells” March 23, 2015 (*Application No.: 62/136,952*), (*Licensed to BioTechnique LLC, Madison, WI, for commercial development in May 2015*).

PUBLICATIONS (* Corresponding author*)

1
Research Articles


**Review Articles**


**Book Chapters**


**Book**

Zhu L (Editor) “Stimuli-Responsive Nanomedicine” *Pan Stanford Publishing*, 2017

**PRESENTATIONS**

Podium presentations (* Speaker):  


4. Zhu L*, Taigind A, Torchilin VP, Tumor Cell-Specific Delivery of Paclitaxel Using a Self-assembled
Matrix Metalloprotease 2-sensitive Nanocarrier, **CRS Annual**, Québec City, Canada, July 15-18, 2012.


**Poster presentations:**


**EDITORIAL BOARDS**

OpenNano: Cutting Edge Research in Nanopharmaceutics and Nanopharmacology (Elsevier)
Journal of Drug Research and Development (Sci Forschen)

**SCIENTIFIC REVIEWER**


**PROFESSIONAL AFFILIATIONS**

Controlled Release Society (CRS), American Association of Pharmaceutical Scientists (AAPS), American Association for Cancer Research (AACR), American Association of Colleges of Pharmacy (AACP)
CURRICULUM VITAE

Robert W. Hutchison Jr., Pharm.D, BCACP

Contact Information
Texas A&M University College of Pharmacy
SPH Administration Building, Office 319
1266 TAMU
College Station, Texas 77843-1266
979-845-4664
hutchison@tamhsc.edu

Licensure: Texas State Board of Pharmacy – 29391
Board Certification: Ambulatory Care Clinical Pharmacy Practice

Teaching Recognition 2014
1) Advanced Pain Management & Palliative Care Course – Teaching Evaluation scores are above the 75th percentile
2) Five out five score from all students in Preceptor Professionalism & overall evaluation
3) 89% of Dr. Hutchison’s Advanced Practice students nominated him for Mentor of the Year

Academic Appointments

Associate Professor
Texas A&M University College of Pharmacy, College Station, Texas
April 2008 to present

Regional Advance Practice Coordinator
Bryan/College Station
Texas A&M Health Science Center College of Pharmacy
April 2008 to 2010

Institutional Review Board Member
Human Subject Research Compliance
Texas A&M University - College Station, Texas
2009-present

Preceptor, Advance Practice Rotations
Bryan/College Station
Texas A&M Health Science Center College of Pharmacy
April 2008 to 2010

Assistant Professor
Tech Texas University Health Science Center College of Pharmacy, Dallas, Texas
Adjunct Faculty  
2002-2008  

Preceptor, Advance Practice Rotations and Pain Management Residency Rotations  
Tech Texas University Health Science Center College of Pharmacy, Dallas, Texas  
2000-2008  

Clinical Pharmacist Specialist in Pain Management  
Texas Health Presbyterian Hospital Dallas  
2000-2008  

Institutional Review Board  
Human Subject Research Compliance  
Texas Health Resources 14 Hospital Network - Dallas/ Ft. Worth, Texas  
2007-2008  

**Professional Activity and Public Service**  

Director of Pharmacy Health for All Community Clinic  

Faculty, Texas A&M Family Medicine Residency  

Editorial Board of the Journal of Research in Interprofessional Practice and Education  

Editorial Board Journal of Opioid Management  

Member, PRIM&R Public Responsibility in Medicine & Research  

Member, American College of Clinical Pharmacy  

Member, Texas Pharmacy Association  

Member, Brazos Valley Pharmaceutical Association  

Member, Texas Society of Healthsystem Pharmacists  

Member, Task Force for Development of Clinical Guidelines – American Pain Society  

**Presentations & Teaching Experience**  

**2015**  

Neurology and Pain Management Course Lecturer College of Pharmacy

Ambulatory Care Clinical Practice, Health for All Clinic

Toxicology – Course Co-coordinator & Lecturer Opioids, Cannabinoids, Hallucinogens, & NSAIDs College of Pharmacy

2014


Advance Pain Management Elective - Course Coordinator & Lecturer College of Pharmacy 30 class contact hours.

Toxicology – Opioids, Cannabinoids, Hallucinogens, & NSAIDs College of Pharmacy


Neurology and Pain Management Course Lecturer College of Pharmacy

2013


Research Presentation “Multidisciplinary Team of a Physician and Clinical Pharmacists Managing Hypertension’ - Health for All Ambulatory Care Clinic

Toxicology – Course Co-coordinator & Lecturer Opioids, Cannabinoids, Hallucinogens, & NSAIDs College of Pharmacy


Hutchison, R. (2013, Oct. 1). Diabetes Education class- Nutrition and Meal Planning, Health for All Clinic, Bryan, Texas. Texas A&M School of Medicine Residency Didactic Program – Lecturer

Pain management case studies – Colloquia 2013 College of Pharmacy

Neurology and Pain Management Course Lecturer College of Pharmacy


2012

Toxicology – Lecturer College of Pharmacy

Texas A&M School of Medicine Residency Didactic Program – Lecturer

Pain management case studies – Colloquia 2012 College of Pharmacy

Neurology and Pain Management Course Lecturer College of Pharmacy

Ambulatory Care Clinical Practice

2011

Pain management case studies – Colloquia 2011 College of Pharmacy

Toxicology – Course Coordinator and Lecturer College of Pharmacy

Diabetes Guidelines – School of Nursing

Self Care – Treatment of Insect Bites & Stings College of Pharmacy
Pain Management Safety – Texas A&M Health Science Center College of Medicine 4th year students

2010

Medication Safety in Ambulatory Care Clinics – College of Medicine

Toxicology – Lecturer College of Pharmacy

Opioid Case Studies – Colloquia College of Pharmacy

NSAIDs Case Studies – Colloquia College of Pharmacy

Pain Management Safety – Texas A&M Health Science Center College of Medicine 4th year students

Self Care – Treatment of Insect Bites & Stings College of Pharmacy

Introduction to Patient Care - NSAIDs College of Pharmacy

2009

College of Pharmacy Toxicology Course – Opioids & Acetaminophen

College of Pharmacy Toxicology Course – NSAID & Salicylates

Texas A&M School of Medicine Residency Program “Opioid Use and Variability in Response”

2008

Nursing Staff – College Station Medical Center “Analgesics Use in the Hospital Setting”

National Speaker at American Society of Peri-Anesthesia Nurses Convention “Opioid Inter-patient Variability”

2007

Podium Speaker at Texas/Oklahoma Annual Pharmaceutical Convention- “Opioid related Medication Errors”; Grapevine Texas.

Regional Speaker for Nephrology Workshop “Analgesic Options in the Renal Compromised Patient” Cook Children’s Hospital, Dallas/ Fort Worth, Texas. November 2007.

Texas Health Resources Quality Fair Speaker 14 hospital network “Capnography monitoring”.

Austin Area Society of Health System Pharmacist – “Opioid Use in Acute Pain Management”.

2006

Podium Speaker - Research Symposium Presbyterian Hospital of Dallas – PAINAD Assessment Tool

National Speaker American Society of Health System Pharmacist Mid Year Convention – Acute Postoperative Pain Management - California

2005

Medical Residents & Medical Staff - Research Symposium Presbyterian Hospital of Dallas

Pain Management in Palliative Medicine- Texas Tech College of Pharmacy

Acute Sickle Cell Pain Episode- Texas Tech College of Pharmacy

Pharmacotherapy in Acute Pain in the Hospital Setting

Pain Management in the Intensive Care Unit- Texas Tech College of Pharmacy

Sustained Release Opioids- Texas Tech College of Pharmacy

2004

Identifiers for the Undiagnosed Sleep Apnea Patient

New Opioid Therapy- Texas Tech College of Pharmacy

Pain Management in Palliative Medicine

Physicians and Physician Assistants Continuing Education Transdermal and other Sustained Release Opioid Pharmacotherapy

Pharmacotherapy in Migraine Headache Continuing Education

Intensive Care Pain Management- Nursing Intern program

2003

State-wide Speaker Palliative Care Medication in Intensive Care Units for American Association of Critical-Care Nurses -Dallas
State-wide Speaker at Pediatric Pain Management Texas Association of Perianesthesia Nurses

Pharmacology of Triptans – Medical Training

Continuing Education for Physicians, Nurses, and Pharmacists - Documentation of Pain Management

Use of NSAIDS in Post Operative Day Surgery- Texas Tech College of Pharmacy

State-wide Speaker Pediatric Pain Management Nurses

2002

Opioid Use in the Acute Care Setting- Texas Tech College of Pharmacy

Chronic Pain Management- Texas Tech College of Pharmacy

Principles of Pain Management- Texas Tech College of Pharmacy

Documentation, Monitoring, & Assessment of Pain- Texas Tech College of Pharmacy

2001

Sickle Cell Acute Pain Episodes- Texas Tech College of Pharmacy

Infusion Control Devices- Texas Tech College of Pharmacy

Neuropathy and Neuromodulators- Texas Tech College of Pharmacy

Acute Pain Management in the Pediatric Patient - Texas Tech College of Pharmacy

Peer Reviewed Publications


Thompson, T; Hutchison, R; Pain Management in Pancreatic Surgery: Is Combining PCA Therapy and a Continuous Local Infusion of 0.5% Ropivacaine Beneficial? Texas Society of Hospital Pharmacists Conference, April 1, 2006.

Wade, R; Hutchison, R; Cziraky, M; The complex logistics and potential errors in the daily use of intravenous patient-controlled analgesia (IV PCA)." Spring Practice and Research Forum of the American College of Clinical Pharmacy, April 2006.

Hutchison, R; Mordin, M; Albright, B; Hospital Logistics Associated With Intravenous Patient-Controlled Analgesia in the Management of Acute Pain Following Orthopedic or Gynecologic Surgery, poster presentation at the Mid-year Clinical Meeting in Las Vegas, NV, December 4-8, 2005; Am J Health-Syst Pharm, 2005;62:2172.


Hutchison, R., Decreasing the Cost & Time to Pain Relief Sickle Cell Acute" 2000-2004. Published in Emergency Medicine 30(5), October 2004


Hutchison, R., Palliative Care: A compassionate and cost-effective approach; PHD Nurse, 5(10), 2004.


Hutchison, Rob W., Update on COX-2 Inhibitors: A Review Amer J Nurs March 2004. PMID:15108571

**Research Grants & Awards**

2013 ASHP Foundation Pain Management and Palliative Care Traineeship

2009-2012 Research Grant in Diabetes Education & Health Professional Cultural Competency

2007 1st Place President’s Research Award Texas Health Resources Quality Fair Capnography Monitoring


Primary Investigator “Analysis of Two Local Anesthetic Continuous Infusion Therapies in Total Knee Repair”, 2005-2006.

2005 Texas Health Resources Mosaic Award for Recognition of Cultural Diversity in work & personal life


Primary Principle Investigator “An observational multi-center prospective study of the costs of intravenous patient controlled analgesia with a sub-study of pump acquisitions, inventory, and logistics” – 2004-2005. Poster presentation at the Mid-year Clinical 2005 1st Place President’s Research Award “Improving the Pain & Suffering in the Non-communicative Patient – A New Assessment Tool” Texas Health Resources Quality Fair

2005 Awarded ACCP Pain Management Sabbatical – Texas A&M University Psychology Department

2004 1st Place President’s Research Award “Decreasing the Cost & Time to Pain Relief Sickle Cell Disease” Texas Health Resources Quality Fair

2002 1st place President’s Award “Meperidine Use in the Hospital” Texas Health Resources System

1998 Class Act Award Employee of the Year - Baylor Hospital

1994 Positive Reflector of the Year - Baylor Healthcare System

1994 Pharmacy Department Leader in Quality Healthcare - Baylor Hospital

1992 Pharmacist Educator of the year - Baylor Hospital
CURRICULUM VITAE

Dr. E. Paul Holder
KHS, R.Ph., M.Sc., Pharm.D., FTSHP

PERSONAL INFORMATION:

Home Address: 2105 Olympic Cove
Work Address: Round Rock, Texas USA 78664

Marital Status: Married to Cheryl D. Holder, M.A., J.D.

E-Mail: holder@pharmacy.tamhsc.edu
        epaulholder@gmail.com

EDUCATION:

Post-Doctoral Training -- Specialty Residency, Drug Information Practice
Texas A&M University Health Science Center, Scott & White Memorial Hospital, Temple, Texas and
The University of Texas at Austin/The University of Texas Health Science Center at San Antonio.

Doctor of Pharmacy
The University of Texas at Austin/The University of Texas Health Science Center at San Antonio
Austin/San Antonio, Texas (1994)

Bachelor of Science in Pharmacy
The University of Texas at Austin
Austin, Texas (1991)

Master of Science in Chemistry
(Physical Chemistry/Electrochemical Kinetics)
(Summa Cum Laude)
Sam Houston State University
Huntsville, Texas (1981)

Bachelor of Science in Chemistry/Mathematics
(Magna Cum Laude)
ACS Certified Professional Chemist
Sam Houston State University
Huntsville, Texas (1979)

Honorary Alumnus
Baylor University
Waco, Texas (1992)
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PHARMACY PRACTICE EXPERIENCE

Texas A&M Health Science Center, Irma Lerma Rangel College of Pharmacy, College Station, Texas

**Assistant Professor of Pharmacy Practice.** Primary responsibilities include education of students enrolled in the Doctor of Pharmacy program, specifically, teaching proper aseptic technique and sterile compounding to second year (P2) students, Pharmacy Law to first year (P1) students, pharmaceutical calculations, and co-instructing in the non-sterile pharmacy compounding laboratory. Due to my experience with the Texas State Board of Pharmacy (see below), I also provide pharmacy law reviews to P2 before they begin IPPE rotations and to P4 students to help prepare them to take the MPJE licensing examination.

- Selected as Item Writer for NAPLEX and PARE Exams, National Association of Boards of Pharmacy (2015 – present)

Texas State Board of Pharmacy, Austin, Texas

**Assistant Director of Enforcement.** Assist Division Director in directing, evaluating, and accomplishing activities relating to Division goals and objectives. Supervise operation of Division in absence of Division Director. Perform advanced management activities relating to agency’s complaint process. Perform advanced oversight activities relating to provision of enforcement information, including interpretations and explanations of pharmacy laws and rules. Responsibilities include, but are not limited to:

- timely resolution of complaints and for certain in-house investigations;
- monitoring licensees’ compliance with public Agreed Board Orders;
- providing technical and clinical assistance/advice regarding the laws and rules governing the practice of pharmacy in Texas;
- supervising the statewide compliance program;
- coordinating the compounded preparation sample testing program recently instituted by TSBP;
- serving as the Agency specialist on USP 797 and TSBP Rule 291.133 sterile compounding rules; and
- serving as preceptor for pharmacy students completing final-year elective rotations with the agency. (August 2006-January 2015)

**Compliance Officer.** Inspected pharmacies to ensure compliance with laws and rules governing the practice of pharmacy, using independent judgment as to the degree of noncompliance; advised pharmacists and others of causes of noncompliance and method of correction; issued written warning notices for noncompliance based upon established procedures; planned weekly inspection itinerary based on established priorities; drove or flew to inspection locations; managed time and travel to maximize efficiency. (January 2005 to July 2006)

Additional Credentials

- Completion of Advanced Internet Search for Investigators course presented by David Vine Associates, LLC
- Completion of Internet for Investigators course presented by David Vine Associates, LLC
- Completion of NCIC/TCIC Policy and Procedure Training for Criminal Justice Practitioners
- CLEAR Certified Investigator/Inspector
- Commissioned Officer – United States Department of Health and Human Services – Food and Drug Administration
- Commissioned Officer – United States Consumer Product Safety Commission
Texas State Board of Pharmacy Advisory Activities

- Participant MPJE Item Writing Workshop, Chicago, Il (March 2014)
- Participant NABP Compliance Officer/Legal Counsel Seminar, Chicago, Il (December 2013)
- Advisor to TSBP-Appointed Compounding Task Force, Austin, TX (November 2005)

Professional Development

- Completion of 2007 Government Law and Liability Conference presented by The Office of the Attorney General of Texas, Austin, TX (October 2007)
- Completions of Telicon 2007 Texas Legislative Seminar, Austin, TX
- Working Together Effectively, presented by the Governor’s Center for Management Development, LBJ School of Public Affairs, The University of Texas at Austin, Austin, TX (August 2006)
- 24th Annual University of Texas Preceptor Orientation and Training Conference, Salado, TX (August 2006)
- Completion of Texas Open Meetings Act training course, Austin, TX (August 2006)
- Completion of Texas Public Information Act training course, Austin, TX (August 2006)
- Council on Licensure, Enforcement and Regulation (CLEAR) Basic Investigator/Inspector Certification, Austin, TX (July 2006)
- The Essential Guide to Employment Law course, Austin, TX (June 2006)
- Texas Society of Health-System Pharmacists 58th Annual Seminar, Galveston, TX (March/April 2006)
- Aseptic Training Course, presented by Professional Compounding Centers of America (PCCA), Houston, TX (March 2006)
- USP Chapter 〈797〉 Training program, presented by Pharmacy Systems, Inc, Austin, TX (February 2006)
- Practical Applications of General Chapter 〈797〉 by USP, U.S. Pharmacopoeia Pharmacy Workshop, San Francisco, CA (August 2005)
- Texas Society of Health-System Pharmacists 57th Annual Seminar, Austin, TX (April 2005)
- Stress Management Personal and Professional Resilience, Austin, TX (February 2005)
- Coastal Bend Pharmacy Association, Corpus Christi, TX (January 2005)

Harris Methodist HEB Hospital, Bedford, Texas

Clinical Pharmacist. Responsibilities included consulting with the adult medicine physicians, conducting daily medication reviews, conducting weekly patient reviews and pharmacokinetic consults, review medication orders for accuracy, completeness, therapeutic and pharmacologic accuracy. Supervise preparation of chemotherapeutic agents for the oncology unit. Supervise and conduct final checks of daily activities of certified pharmacy technicians. Conduct quarterly lecture series to cardiac rehabilitation patients and other lectures and presentations as requested. Named Employee of the Quarter, 3rd quarter 2004. (March 2002 to December 2004)

Providence Hospital, Waco, Texas

Clinical Coordinator. Develop and conduct clinical pharmacy educational activities for pharmacists, nurses and other healthcare disciplines within the hospital. Write, edit and produce drug information newsletter. Evaluate all drugs requested for formulary inclusion and prepare in-house monographs for presentation at Pharmacy and Therapeutics (P&T) Committee. Serve as member of the P&T Committee. Work with Director of Pharmacy on new and existing drug contract issues to insure optimum balance between patient care and compliance with GPO contracts. (October 2000 to February 2002)

Clinical Pharmacist. Review medication orders for accuracy, completeness, therapeutic and pharmacologic accuracy. Prepare Total Parenteral Nutrition (TPN) and Enteral Nutrition admixtures. Prepare chemotherapeutic agents for the oncology ward. Supervise and conduct final checks of admixtures and unit-dose carts prepared by technicians. Have begun development and implementation
of clinical pharmacy activities, including patient medication history reviews, clinical pharmacokinetics program and antibiotic streamlining program. (September 1999 to October 2000)

**Scott & White Memorial Hospital, Temple, Texas**

**Clinical Specialist, Adult Medicine/Infectious Diseases.** Responsibilities included rounding and consulting with the infectious disease team, conducting daily medication reviews with Patient Care Pharmacist assigned to cardiac patient care units, participation in Antibiotic Streamlining Team weekly administrative meetings, participation in Antibiotic Streamlining Team daily patient rounds, conducting weekly patient reviews and pharmacokinetic consults with Home Care pharmacy team, assisting with implementation and updating of pharmacy computer system, coordinating development of Anticoagulation Clinic computer database system, assisting with planning and coordination of hospital and HMO drug use evaluation (DUE) projects, participation in Drug Therapy Task Force activities, participation in Pre-Senior Staff meetings, participation in and assisting with coordination of Patient Care Pharmacists education and staff development. (July 1995 to July 1998)

**Committee, Clinical Pharmacy and Academic Activities**

**Committee Activities**

- Medical Education Subcommittee of the Texas Committee for Judicious Antibiotic Use, Texas Medical Association (1998 to 2000)
- Team Leader, Adult Medicine clinical pharmacy services (1995 to 1998)
- Co-Director, Antibiotic Streamlining Team (1995 to 1998)
- Co-Director, LevelHeads Clinical Pharmacokinetics Program; Pharmacokinetics Lecturer (1995 to 1998)
- Member, Pharmacy Computer System Implementation Team (1995 to 1998)
- Post-Doctoral Residency Program, Assistant Director (1996 to 1998)

**Clinical Pharmacy Activities**

- Preceptor, Pharmacy Practice Residency program (1995 to 1998)
- Preceptor, Pharm.D. and baccalaureate pharmacy students (1995 to 1998)
- Pharmacy Reengineering Committee (1995 to 1998)
- Computer software manager for Anticoagulation Clinic, Lipid Clinic, Antibiotic Streamlining Program (software developer), clinical documentation activities (1995 to 1998)
- Participant, The 4th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Vienna, Austria, September 1995.

**Academic Activities**

- **Clinical Assistant Professor of Pharmacy**
  Division of Pharmacy Practice & Administration, College of Pharmacy, The University of Texas at Austin, Austin, Texas (1995-1998, 2007 to present).

- **Assistant Professor of Medicine**
  Department of Internal Medicine, College of Medicine, Texas A&M University Health Science Center, Temple, Texas (1995-1998).
Scott & White Memorial Hospital, Temple, Texas

**Specialty Practice Resident, Drug Information.** Responsibilities included writing and editing the Pharmacy and Therapeutics Newsletter and the nursing newsletter, participation in the hospital ADR monitoring program and prospective drug use evaluations (DUEs), involvement in the Pharmacy and Therapeutics Committee activities, participation in the Scott & White Drug Therapy Task Force. Attended morning report and round with the Family Practice group and provided drug information to medical residents, senior staff physicians, other health care providers and the lay public. Precepted and evaluated baccalaureate pharmacy students and assisted with precepting Doctor of Pharmacy students. Participated in pharmacy staff development by conducting formal lectures during weekly Pharmacy Rounds conferences. Monitored anticoagulation status and adjusted warfarin dosing in patients enrolled in ambulatory anticoagulation clinic. Development of protocol for outcomes measurement of aminoglycoside-vancomycin pharmacokinetics monitoring project; developed kinetics monitoring program and presented results of this work at international meeting in Vienna, Austria. (July 1994-June 1995)

Medical Center Hospital, San Antonio, Texas

**Clinical Pharmacist.** Interpreted and evaluated prescription and medication orders as to completeness, accuracy and appropriateness. Assisted in the selection of drugs and reviewed drug utilization patterns. Participated in Cardiac Arrest Team. Counseled outpatients and dismissal patients on proper use of drugs, dosages, regimens, side effects, precautions, etc. Assisted in drug use evaluations. Monitored drug therapy, making recommendations for changes based on desired patient outcomes. Provided drug information to health-care professionals as well as the public. Participated in inservice program for pharmacy, nursing and medical staffs. (July 1992-June 1993)

Baptist Medical Center, San Antonio, Texas

**Staff Pharmacist.** Reviewed medication orders for accuracy, completeness, therapeutic and pharmacologic accuracy. Prepared Total Parenteral Nutrition (TPN) and Enteral Nutrition admixtures. Prepared chemotherapeutic agents for the oncology ward. Supervised and conducted final checks of admixtures and unit-dose carts prepared by technicians. Served as preceptor to pharmacist-interns and pharmacy students. Served as trainer for pharmacists and technicians. Co-wrote and co-edited a pharmacy technician training manual. (July 1991-June 1992)

Walgreen Company, Dallas East District, Waco, Texas

**Pharmacy Manager.** Served as pharmacist-in-charge and manager of operations of a retail pharmacy. Supervised two registered pharmacists and a three-technician support staff. Maintained records of controlled substances dispensed and completed all monthly managerial reports. (August 1998-September 1999)

**ADDITIONAL PHARMACY ACADEMIC EXPERIENCE**

The University of Texas at Austin, Austin, Texas

**Clinical Assistant Professor.** Precepted post-doctoral Pharmacy Practice Residents in conjunction with the Department of Pharmacy, Scott & White Memorial Hospital. Supervised and precepted baccalaureate and Pharm.D. students during clinical rotations in Acute Care Medicine (Adult Medicine and Infectious Diseases). Conducted lectures, conferences, journal clubs as needed to help develop clinical competence in these students. Conducted discussions in PHR 394R, Drug Literature Evaluation and Biostatistics and PHR 185S, Acute Myocardial Infarction. (1995 to 1998)

Division of Pharmacy Practice & Administration, College of Pharmacy, The University of Texas at Austin, Austin, Texas (1995 to 1998, 2007 to present)
• Preceptor, Post-doctoral Pharmacy Practice Residency program in conjunction with the Department of Pharmacy, Scott & White Memorial Hospital, Temple, Texas (1996 to 1998)
  • Post-doctoral Resident (Faculty Supervisor)
    Michelle Polansky, Pharm.D. (1998, Current Position: Clinical Specialist, Scott & White Memorial Hospital, Temple, Texas)
    Cybil Avants, Pharm.D. (1998, Current Position: Clinical Pharmacist, Parkland Hospital, Dallas, Texas)
  • Post-doctoral Resident (Rotation Supervisor)
    Bryan Poon, Pharm.D. (Infectious Diseases, 1997)
    Kim Moore, Pharm.D. (Infectious Diseases, 1996)
    Charlene Church, Pharm.D. (Infectious Diseases, 1996)
    Mary Nguyen, Pharm.D. (Adult Internal Medicine, 1996)
• Preceptor, Doctor of Pharmacy curriculum (Adult Medicine, Infectious Diseases, Pharmacokinetics, and Legal and Administrative rotations) in conjunction with Graduate School of Biomedical Sciences, The University of Texas Health Science Center. (1995 to present)
• Students Precepted
  Zachary Korstian (Legal and Administrative, 2014)
  Damian Chavarria (Legal and Administrative, 2014)
  David Oliver King (Legal and Administrative, 2013)
  Jacqueline Waters (Legal and Administrative, 2013)
  Kathryn Nagyvary (Legal and Administrative, 2012)
  Brandon Arthur Lerma (Legal and Administrative, 2012)
  Dora Ruth Guajardo (Legal and Administrative, 2011)
  Ryan Martin (Legal and Administrative, 2011)
  Jenna Miller (Legal and Administrative, 2011)
  Robert Matt Vitek (Legal and Administrative, 2011)
  Laura Lynn Schneider (Legal and Administrative, 2011)
  Julie Ann Kerslake (Legal and Administrative, 2011)
  Lori Jobe (Legal and Administrative, 2010)
  Tammy Lee (Legal and Administrative, 2010)
  Delaney Ruth Ivy (Legal and Administrative, 2009)
  Michael Don Hearn (Legal and Administrative, 2009)
  Shauna Rutherford (Legal and Administrative, 2009)
  Veronica SueLi Tovar (Legal and Administrative, 2009)
  Sarah Leung (Legal and Administrative, 2009)
  Laura Hejl (Legal and Administrative, 2008)
  Bianca Cruz (Legal and Administrative, 2008)
  Sang Luong (Legal and Administrative, 2008)
  Monica Dunnam (Clinical Pharmacokinetics, 1998)
  Leah Shevchek (Adult Medicine, 1998)
  Thomas Isbon (Adult Medicine, 1998)
  James Angello (Clinical Pharmacokinetics, 1998)
  Stephanie Barnes (Clinical Pharmacokinetics, 1998)
  Esther Castellanos (Clinical Pharmacokinetics, 1997)
  Teresa Zipkes (Adult Medicine, 1997)
  Cybil Avants (Adult Medicine, 1997)
  Maria Llana (Adult Medicine, 1996)
GiGi Nguyen (Adult Medicine, 1996; Clinical Pharmacokinetics, 1997)
Jolanda Fleitman (Adult Medicine, 1995)

- Preceptor, Bachelor of Science curriculum, College of Pharmacy, The University of Texas at Austin. (1995 to 1998)

- Member, Doctoral Supervisory Committee
  - Margaret Asquith (Pharm.D. 1998)
  - Stephanie Barnes (Pharm.D. 1998)
  - Eric Alvear, RPh (Pharm.D. 1998)
  - Suzanne Duett (Pharm.D. 1997)
  - Julie Honey (Pharm.D. 1997)
  - Maria Llana (Pharm.D. 1997)

- Member, Committee on Graduate Studies/Joint Pharm.D. Committee (1995 to 1998)
  - Discussion Leader, PHR 394R--Drug Literature and Biostatistics (1996 to 1998)
  - Discussion Leader, PHR 185S--Acute Myocardial Infarction (1996); Antibiotic Resistance (1997)

\section*{Texas Southern University, Houston, Texas}
College of Pharmacy, \textbf{Texas Southern University}, Houston, Texas (2007 to present)

- Preceptor, Doctor of Pharmacy curriculum (Pharmacy Law and Regulations)
- \textit{Students Precepted}
  - Manpreet Dahlival (Legal and Administrative, 2014)
  - Melvin Roberts (Legal and Administrative, 2013)
  - Tuyen Pham (Legal and Administrative, 2010)
  - Linda Ho (Legal and Administrative, 2009)
  - Veronica Gonzales (Legal and Administrative, 2007)

\section*{University of Houston, Houston, Texas}
College of Pharmacy, \textbf{University of Houston}, Houston, Texas (2007 to present)

- Preceptor, Doctor of Pharmacy curriculum (Pharmacy Law and Regulations)
- \textit{Students Precepted}
  - Rachel Harvey (Legal and Administrative, 2014)
  - Jana Downing (Legal and Administrative, 2012)
  - Dana Smith (Legal and Administrative, 2011)
  - David Trindle (Legal and Administrative, 2010)
  - Lesley Kan (Legal and Administrative, 2009)
  - Ngan Vo (Legal and Administrative, 2009)
  - Neha Shah (Legal and Administrative, 2008)
  - Lacey Mullins (Legal and Administrative, 2008)

\section*{Texas Tech University, Lubbock, Texas}
Clinical Assistant Professor of Pharmacy Practice, School of Pharmacy, Texas Tech University, Lubbock, Texas (2007 to present)

- Doctor of Pharmacy curriculum (Pharmacy Law and Regulations)
- \textit{Students Precepted}
  - Natalie Luu (Legal and Administrative, 2013)
  - Sean Pazoki (Legal and Administrative, 2012)
  - Nori Fujinami-Dinh (Legal and Administrative, 2011)
Jill I. Gray (Legal and Administrative, 2011)
Rachel Harris (Legal and Administrative, 2011)
Jacob Daggett (Legal and Administrative, 2010)
John Carpio (Legal and Administrative, 2009)
Lisa Garza (Legal and Administrative, 2008)

University of the Incarnate Word, San Antonio, Texas
Clinical Adjunct Professor of Pharmacy Practice Feik School of Pharmacy, University of the Incarnate Word, San Antonio, Texas (2010 to present)
- Doctor of Pharmacy curriculum (Pharmacy Law and Regulations)
- Students Precepted
  Thuy Bui (Legal and Administrative, 2014)
  Audrey Valencia (Legal and Administrative, 2011)
  Synthia Hill (Legal and Administrative, 2011)
  Amy Morton (Legal and Administrative, 2010)
  Payal Patwa (Legal and Administrative, 2010)

Texas A&M Health Science Center, Kingsville, Texas
Adjunct Assistant Professor (Department of Pharmacy Practice) Irma Rangel College of Pharmacy, Texas A&M University Health Science Center, Kingsville, Texas 2009 to present
- Doctor of Pharmacy curriculum (Pharmacy Law and Regulations)
- Students Precepted
  Hoang Ho (Legal and Administrative, 2014)
  Garrett Goode (Legal and Administrative, 2013)
  Phan-An “Andy” Tong (Legal and Administrative, 2011)
  Eleuterio (Lou) Garza (Legal and Administrative, 2010)
  Chad Gibson (Legal and Administrative, 2010)
  Jacob Williamson (Legal and Administrative, 2010)

Texas A&M University Health Science Center, Temple, Texas
Assistant Professor of Medicine (Department of Internal Medicine). Conducted lectures and Grand Round presentations for medical students and Resident Physicians as requested. Supervised medical students on pharmacology clinical electives rotations, advised residents/students on drug-related research projects, especially projects involving antibiotics and infectious diseases. (1995 to 1998)
- Research Project supervisor for Chief Internal Medicine Resident
- Cost-Effectiveness Analysis of Nursing Home-Acquired Pneumonia Requiring Hospitalization (Advisor to Donney Kastner, M.D., 1997)
- Students Precepted
- Claire Coco, MS-4 (Infectious Diseases, 1998)
- Cynthia Monroe, MS-4 (Clinical Pharmacokinetics Rotation, 1997)

The University of Texas at Austin, Austin, Texas
Clinical Instructor of Pharmacy. Supervised and precepted baccalaureate students during clinical rotations. Conducted lectures, conferences, and journal clubs with these students as needed to help develop competence in clinical pharmacy. (July 1994 to August 1995)

Baptist Medical Center Hospital, San Antonio, Texas
Texas State Board of Pharmacy certified pharmacist preceptor. Precepted and trained pharmacist-interns and helped these new pharmacist-interns develop competence in all aspects of hospital pharmacy practice. (July 1991 to June 1992)
• Preceptor, baccalaureate pharmacy students and pharmacist interns, in conjunction with the College of Pharmacy, The University of Texas at Austin and the Texas State Board of Pharmacy (July 1991 to June 1992)

• Students/Interns precepted
  • Marla Krueger Bermea, R.Ph.
  • Cecilio Rodriguez, R.Ph.
  • Chi Pham, R.Ph.

PHARMACY RESEARCH EXPERIENCE

Scott & White Memorial Hospital, Temple, Texas

• Cost-Effectiveness Analysis of Nursing Home-Acquired Pneumonia Requiring Hospitalization. Advisor to Donney Kastner, M.D.

• A Randomized, Open-Label Study to Assess the Health-Related Cost Effectiveness of Pulmicort® (budesonide) Turbuhaler Compared to Azmacort® (triamcinolone acetonide) in Patients With Asthma. Co-investigator with John Dvorak, M.D., and Barry Browne, Pharm.D.


• Antibiotic Streamlining Outcomes Study. Developed database to track outcomes of an antibiotic streamlining team (AST) consisting of an Infectious Disease physician, three Doctors of Pharmacy, and five Patient Care Pharmacists. The database will be capable of evaluating physician acceptance rates of recommendations, days of therapy, cost savings, etc. resulting from the efforts of the AST. Co-investigator with Paul Godley, Pharm.D, FASHP, Gary Holmes, M.D., Jon Herrington, Pharm.D. (September 1995-1998)

• Anticoagulation Outcomes Research. Assisted in development of computer database to track outcomes of a pharmacist-directed anticoagulation clinic. The database will be capable of evaluating patient compliance rates, adverse events, and cost savings resulting from the efforts of the anticoagulation clinic. Co-investigator with Paul Godley, Pharm.D., FASHP and Dannielle O’Donnell, Pharm.D. (September 1995-1998)


Healthquest Research, Inc., Austin, Texas

Completed Doctor of Pharmacy elective rotation in Clinical Research. Assisted in coordinating two Phase-I research projects. Interviewed and screened potential patients for eligibility, conducted pulmonary function tests and coordinated physician examinations and follow-up visits for study patients. Performed other duties of a clinical coordinator under direction of preceptor. (February-March 1994)

College of Pharmacy, The University of Texas at Austin, Austin, Tx.


PHARMACY-RELATED GOVERNMENTAL AND NATIONAL ASSOCIATION EXPERIENCE

- **Member, Pharmacy Technician Certification Board (PTCB) Sterile Compounding Advanced Certification Task Force, Alexandria, Virginia.**  
  Serving as an invited expert on USP Chapter <797> and Sterile Compounding.

- **Representative, Food and Drug Administration 50-State Intergovernmental Meeting on Pharmacy Compounding, Silver Spring, MD.** Represented Texas State Board of Pharmacy in the Southwest Regional Discussion Group concerning FDA rules on pharmacy compounding and manufacturing. (December 19, 2012)

- **Representative, National Association of Boards of Pharmacy Interactive Compliance Officer Forum, Chicago, IL.** Served as member of expert panel on sterile compounding rules and compliance with USP Chapter <797>. (December 1-2, 2011)

- **Member of HHSC Telemedicine and Telehealth Advisory Committee Texas Health and Human Services Commission, Austin, TX.** Serve with members from the Department of State Health Services, the Texas Department of Rural Affairs, Texas Department of Insurance, Texas Medical Board, Texas Board of Nursing, and representatives of health sciences centers to conduct periodic reviews regarding reimbursement under the Medicaid program for telemedicine to identify variations between permissible reimbursement under that program and reimbursement available to providers under the Medicare program. (2011 to 2012)

- **Chairman of Pharmacy Technology Program Academic Advisory Committee, Texas State Technical College, Waco, TX.** Served with other educational and industrial representatives to insure that training needs are properly identified and that training is updated in conjunction with changing developments, knowledge and skills required for students to become Certified Pharmacy Technicians. (Current term: 2000 to 2002)

- **Member of Chemical Technology Program Academic Advisory Committee, Texas State Technical College, Waco, TX.** Served with other educational and industrial representatives to insure that training needs are properly identified and that training is updated in conjunction with changing developments, knowledge and skills required for entry-level technical personnel in the chemical industry. (Current term: 1999-2002)

- **Member of Medical Education Subcommittee of the Texas Committee for Judicious Antibiotic Use, Texas Medical Association.** Served with other members of the healthcare industry to establish means of educating medical students and residents on the proper use of antibiotic with the goals of reducing inappropriate prescribing of these medications and limiting development of bacterial resistance due to excess exposure to broad-spectrum antibiotics. (1998 to 1999)

PHARMACY PRACTICE AND ADMINISTRATIVE EXPERIENCE

*Texas State Board of Pharmacy, Austin, Texas*

See page 4.
Scott & White Memorial Hospital, Temple, Texas
Conducted daily medication reviews with Patient Care Pharmacist assigned to cardiac and general internal medicine patient care units, participated in Antibiotic Streamlining Team daily administrative meetings, assisted with implementation and updating of pharmacy computer system, coordinated development of Anticoagulation Clinic computer database system, assisted with planning and coordination of hospital and HMO medication use evaluation (MUE) projects, participated in Drug Therapy Task Force activities, participated in Pre-Senior Staff meetings, participated in and assist with coordination of Patient Care Pharmacists education and staff development. Prepared monthly schedule for all hospital staff pharmacists. (1995 to 1998)

Seton Medical Center, Austin, Texas
Completed Pharm.D. elective rotation in Clinical Education and Administration. Responsibilities included preparation of agenda and information packet for Pharmacy and Therapeutics Committee meeting and presentation of sections of the agenda; development policy for proper administration of IM ketorolac in hospitalized patients; prepared new antibiogram for the hospital; monitored and reported adverse drug reactions; provided drug information and dosing consults as requested by medical staff; provided in-services for pharmacy and nursing staff; coordinated and assisted with baccalaureate pharmacy student rotations. (July-August 1993, January-February 1994)

The University of Texas at Austin, The University of Texas Health Science Center at San Antonio, Austin/San Antonio, Texas
Served as Class Coordinator for the First-Year Pharm.D. class. Responsibilities included serving as class liaison with members of the Clinical Pharmacy faculty. Met with faculty members and coordinators from second- and third-year classes to schedule events calendar. Worked with class and faculty members to resolve scheduling conflicts. (July-October 1992)

Baptist Medical Center, San Antonio, Texas
Supervised work of technician staff and served as preceptor to pharmacy students and pharmacist-interns. Conducted performance appraisals of technicians. Conducted in-service classes for new interns and those who were preparing for the technician certification examinations. (July 1992 to May 1993)

College of Pharmacy, The University of Texas at Austin, Austin, Texas
Served as Research Coordinator in two Phase III clinical trials of cefpodoxime proxetil in the management of complicated and uncomplicated urinary tract infections. Duties included enrolling patients in the trials, scheduling and conducting follow-up visits with the patients to monitor clinical and biological efficacy of the antibiotic and completed reports and evaluations of the outcomes. Responsibilities also included scheduling physician follow-up visits with the patients and additional laboratory studies as required if the patients were not cured. Consulted with representative from study coordinating firm at various intervals throughout the studies. Prepared poster presentation of the study and presented this at the ASHP Mid-Year Clinical Meeting in Las Vegas, Nevada. (June 1989 to May 1991)

CHEMISTRY-RELATED ACADEMIC EXPERIENCE

McLennan Community College, Waco, Texas
Instructor, Department of Chemistry (Part Time). Conducted lecture and laboratory courses for freshman chemistry classes for science and non-science major classes. (June 1981 to August 1982; January 1995 to 2002)
North Harris County College, Houston, Texas
Instructor, Department of Chemistry (Part Time). Conducted lecture and laboratory courses for freshman chemistry classes for science and non-science major classes. (September 1986 to August 1988)

Baylor University, Waco, Texas
Graduate Teaching Assistant, Department of Chemistry. Developed and taught physical chemistry laboratory course for senior chemistry majors. (June 1981 to August 1982)

Texas A&M University, College Station, Texas
Graduate Teaching Assistant, Department of Chemistry. Taught freshman chemistry laboratory courses for both chemistry and non-science majors. (September 1982 to May 1983)

Sam Houston State University, Huntsville, Texas
Assistant Instructor, Department of Chemistry. Taught freshman chemistry lecture and laboratory courses as well as senior physical chemistry, analytical chemistry and instrumental analysis laboratory courses. Assisted in compilation of laboratory textbook used in the physical chemistry laboratory course. Developed computer program to simulate the infrared spectra of diatomic gases. (January 1980 to May 1981)

CHEMISTRY WORK EXPERIENCE

Betz Laboratories, Inc. The Woodlands, Texas
Research Scientist. Directed the research of 3 degreed and 3 non-degreed chemists involved in research and development of products and programs designed to mitigate deposition of inorganic salt and silt deposits in industrial cooling water. Additional research and development was directed at prevention and amelioration of corrosion damage in steel, stainless steel, and alloy-based heat exchangers. (June 1983 to August 1988)

Jaggers and Associates, Inc. Rison, Arkansas
Consultant Chemist. Served as consultant to environmental waste and water treatment consulting company. Consulted on treatments used in bacterial wastewater treatment ponds, silt clarifiers that use cationic polymers for agglomeration and precipitation media, cooling water treatment programs. (1988 to 2002)

CHEMISTRY RESEARCH EXPERIENCE

Betz Laboratories, The Woodlands, Texas
Studied mechanisms of inorganic salt deposition in industrial cooling systems as well as the antagonistic effects of various organic and inorganic molecules on these mechanisms. Developed products and treatment programs designed to mitigate the deposition of inorganic salts and silt in these systems. Developed and patented a treatment program for the removal of corrosion products from mild steel heat exchangers while the cooling system remained on-line. Developed and patented (in conjunction with other research scientists) additional programs to mitigate deposit formations on down-hole drilling equipment and in open, recirculating industrial water systems. (June 1983 to August 1988)
Texas A&M University, College Station, Texas

Studied and measured changes in glass transition temperatures of epoxy resins composed of bisphenolacetone derivatives. Worked with Dutch Prof. Dr. C.A.J. Hoeve (June 1982 to May 1983)

Baylor University, Waco, Texas

Studied the effects of high pressures on the rheological and viscoelastic properties of kaolin and montmorillonite clay suspensions in various aliphatic and aromatic solvent systems. Worked with Swedish Prof. Dr. Stig Claesson, Chair of Nobel Selection Committee for Chemistry and Physics and Prof. Dr. James McAtee (June 1981 to May 1982)

Sam Houston State University, Huntsville, Texas

Discovered that the evolution of hydrogen from the surface of rhodium electrodes did not follow classical electrode kinetics mechanisms. Developed and proposed a mathematical model that fit the experimental kinetics data. Master of Science thesis. (January 1980 to May 1981)

PUBLICATIONS

Book Chapter


Book Review


Journal Review Activities


Journal Articles and Newsletters

Holder EP. 291.133 New Sterile Compounding Rules. Texas State Board of Pharmacy Newsletter (Fall 2007).


**Abstracts**


**Master’s Thesis**

United States Patents

ONE OR MORE OF THE FOLLOWING UNITED STATES PATENTS OR PATENTS PENDING APPEARS AS CITATIONS IN MORE THAN 130 ADDITIONAL UNITED STATES PATENTS BY VARIOUS AUTHORS.


United States Patents Applications Submitted

Peerce-Landers PJ and Holder EP. Additives to Prevent Soluble Zinc Losses in High pH, High Silica Waters (Pat. Pend.)

Peerce-Landers PJ and Holder EP. The Use of Surfactants to Minimize Reductant Losses Caused by Reaction with Oxygen in Open Cooling Systems (Pat. Pend.)

Peerce-Landers PJ and Holder EP. On-Line Cleaning Procedures for Equipment Constructed from Iron-Based Alloys (Pat. Pend.)

Holder EP and Zapata M. Synergism Between Inhibitors and Antioxidants for Maintaining Calcium Phosphate Soluble in Open Cooling Systems (Pat. Pend.)

Holder EP. Synergism Between Dispersants and Copolymers Containing Chelant Functionalities for Maintaining Iron Soluble in Open Cooling Systems (Pat. Pend.)


Brown JM and Holder EP. Polymer/Phosphonate Blends for Prevention of Manganese Deposition in Open Recirculating Cooling Systems (Pat. Pend.)

Carlisle AB and Holder EP. The Use of Lignin-Based Materials to Minimize the Interferences of Cationic Polymers on Stabilized Phosphate Inhibitor Programs (Pat. Pend.)

Holder EP. Dynamic Laboratory Test Methods for Screening Silica and Magnesium Silicate Scale Inhibitors in Open Cooling Systems (Pat. Pend.)

PHARMACY RELATED PRESENTATIONS

Public Service Television/Radio


Drugs and Driving. Public Service Television Interview with Christina Wofford. KCEN-TV, Waco-Temple-Killeen, Texas. November 1994.


Poster Presentations


Platform Presentations

International

Education and Training of Clinical Pharmacists in the United States. Presented to the Department of Pharmacy, National University of Singapore, Singapore (May 1998)

Klinische Pharmazie in den Vereinigten Staaten (Clinical Pharmacy in the United States). Presented to the Wiener Krankenanstaltenverbund at Allgemeines Krankenhaus, Vienna, Austria (July 1997)

Klinische Apotheke Belehrung in den Vereinigten Staaten (Clinical Pharmacy Education in the United States). Presented to the Department of Pharmacology, Universität Wien (The University of Vienna), Vienna, Austria. (July 1997)

Apoteken Praktizieren in den Vereinigten Staaten--Damals und Heute (Pharmacy Practice in the United States--Then and Now). Presented to the Institute of Pharmaceutical Chemistry, Universität Wien (The University of Vienna), Vienna, Austria. (July 1997)

Re-engineering the Therapeutic Drug Monitoring Program. Presented with Paul Godley, Pharm.D., FASHP at the Fourth International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Vienna, Austria. (September 1995)

National, State, Local

USP <797> vs. TSBP 291.133 – What’s this mean to me?, presented at the Texas Society of Health-System Pharmacists Annual Seminar, San Antonio, Texas April 25, 2015
The Texas State Board of Pharmacy, What it is, Who it is, and What it does, presented to the Pharmacy Technician class, Virginia College, Austin, Texas, November 13, 2014

Update on Sterile Compounding Rules, presented to the IV Admixture Class, College of Pharmacy, The University of Texas at Austin, Austin, Texas, November 11, 2014

Strategies for Minimizing Prescribing Misadventures, presented at the KSTARS Pharmacology and Prescribing Course at Texas A&M University Health Science Center, College Station, Texas, November 6, 2014

Texas State Board of Pharmacy Updates and Changes, presented at the Fall 2014 Pharmacy Technician Summit sponsored by Texas A&M Health Science Center and the Coastal Bend Health Education Center, September 20, 2014

Application Process & Maintenance of Licenses for Pharmacy Technicians, presented at the Fall 2014 Pharmacy Technician Summit sponsored by Texas A&M Health Science Center and the Coastal Bend Health Education Center, September 20, 2014

TSBP Update on Sterile Compounding Rules, presented to The University of Texas Pharmacy Practice Seminar, Austin, Texas, September 12, 2014

TSBP rules vs USP <797> - Regulatory Issues to Consider, presented to Controlled Environment Testing Association (CETA) Annual Meeting, Austin, Texas, April 15, 2014

Compounding Sterile Preparations – Are we ready for the changes?, presented at Texas Society of Health-System Pharmacists Annual Seminar, Houston, Texas April 11 - 12, 2014

New Federal and State Sterile Compounding Rules, presented to Texas Tech University Second Year Pharmacy Class, Abilene, Texas, March 10, 2014


New Sterile Compounding Rules, presented at Texas A&M University, Kingsville, Texas, February 21, 2014

Compounding Sterile Preparations – Are we ready for the changes?, presented to Dallas-Fort Worth Hospital Pharmacy Directors, Parkland Hospital, Dallas, Texas, (January 24, 2014)

TSBP, Drugs, and You, presented to the University of Houston Student PRN Alcohol, Drugs, and You Seminar, Houston, TX (January 17, 2014)

TSBP – Inspecting Compounding Pharmacies, presented to 2013 NABP Interactive Compliance Officer and General Council Forum, Chicago, Illinois, (December 4, 2013)

Patient Safety and TSBP, presented to Patient Safety Class, College of Pharmacy, The University of Texas at Austin, (November 18, 2013)

Update on TSBP Sterile Compounding Rules, presented to IV Admixture Class, College of Pharmacy, The University of Texas at Austin, (November 12, 2013)

Texas Pharmacy Law Review for Pharmacy Technicians, presented at Fall Pharmacy Technician Summit, Corpus Christi, Texas, (September 21, 2013)

Texas State Board of Pharmacy Law Update, presented to Austin Community College Pharmacy Technician Program, Austin Community College Eastview Campus, Austin, Texas (April 15, 2013)

TSBP Compliance, Investigations, and Compounding, presented to P2 Pharmacy students at Texas A&M Health Science Center, Kingsville, Texas (February 22, 2013)

Sterile Compounding Failures and Catastrophes, presented to IV Admixture Class, College of Pharmacy, The University of Texas at Austin, Austin, Texas (November 13, 2012)

Update on TSBP’s Compounded Preparation Sampling & Testing Program, presented at Academy of Compounding Pharmacists Meeting at the Texas Pharmacy Association Conference, The Woodlands, Texas (July 28, 2012)

Licensing, Compliance, and Investigations, presented to P2 students at Texas A&M Health Science Center, Kingsville, Texas (May 4, 2012)

TSBP and PRN, presented to the University of Houston Student PRN Alcohol, Drugs, and You Seminar, Houston, TX (January 20, 2012)

Challenges Encountered by TSBP when Implementing USP 797, presented at the 2011 NABP Interactive Compliance Officer Forum and Surveyor Training Program, Chicago, Illinois, (December 1-2, 2011)

Update on Laws and Rules, presented to the Austin Area of Health-System Pharmacists, Austin, Texas (October 1, 2011)

Update on Laws and Rules, presented to the West Texas Pharmacy Association, Lubbock, TX (September 10, 2011)

TSBP and Patient Safety Failures, presented to Texas A&M University-Kingsville College of Pharmacy, Kingsville, TX (April 29, 2011)

TSBP: Public Safety, Patient Safety, and Mandatory Counseling: an Overview, presented to Texas A&M University-Kingsville College of Pharmacy, Kingsville, TX (April 29, 2011)

TSBP Review for Technicians, presented at the Texas Society of Health-System Pharmacists, Annual Seminar, San Antonio, TX (April 16, 2011)

Law and Rules Update, presented to Texas A&M University-Kingsville College of Pharmacy, Kingsville, TX (April 7, 2011)

Participant, PTCB 2011 C.R.E.S.T. Summit Conference, The Colony Hotel, Palm Beach, FL (February 17-18, 2011)

TSBP and CSPs, presented to The University of Texas at Austin IV Admixtures Class, Austin, TX (November 29, 2010)

The Role of the Texas State Board of Pharmacy in the Professional Recovery Network, presented to University of Houston Student PRN Alcohol, Drugs and You Seminar, Houston, TX (March 27, 2009)

Technician Town-Hall Meeting, presented to the Gulf Coast Society of Health-System Pharmacists, Annual Seminar, Galveston, TX (February 7, 2009)

Sterile Compounding Update, presented to the Gulf Coast Society of Health-System Pharmacists Annual Seminar, Galveston, TX (February 7, 2009)

Recent Changes in Pharmacy Laws and Rules, presented to the staff of John Peter Smith Hospital, Fort Worth, TX (February 3, 2009)

The Texas State Board of Pharmacy, presented to the Pharmacy Jurisprudence Class, The University of Texas at Austin, Austin, TX (October 6, 2008)

Recent Changes in Pharmacy Laws and Rules, presented to the Central Texas Society of Health-System Pharmacists, San Antonio, TX (October 4, 2008)

Sterile Compounding Update, presented to the Central Texas Society of Health-System Pharmacists, San Antonio, TX (October 4, 2008)

TSBP 291.133: A summary of the New Sterile Compounding Rules, presented at the Texas Society of Health-System Pharmacists 60th Annual Seminar, Dallas, TX (April 6, 2008)

An Overview of the New Sterile Compounding Rules, presented to the Austin Area Society of Health-System Pharmacists, Austin, TX (March 11, 2008)

Texas Pharmacy Law Update, presented to the El Paso Society of Health-System Pharmacists, El Paso, TX, (March 8, 2008)

TSBP and the Professional Recovery Network (PRN), presented to University of Houston Student PRN Alcohol, Drugs and You Seminar, Houston, TX (January 18, 2008)

Texas State Board of Pharmacy and You, presented to future pharmacist interns at The University of Texas at Austin, Austin, TX (November 14, 2007)

An Overview of the New Sterile Compounding Rules, Webinar presentation to members of the Texas Society of Health-System Pharmacists, Austin, TX and statewide (October 24, 2007)

Texas Pharmacy Laws Update, presented to VHA Pharmacy Council, Tomball, TX (October 18, 2007)

Update on Texas Pharmacy Act and Rule Changes, presented to John Peter Smith Hospital System, Fort Worth, TX (February 2006)

Update on Pharmacy-related Actions by 79th Texas Legislative Session and Rule Changes, presented to VHA Southwest Pharmacy Council, Plano, TX (February 2006)

Texas State Board of Pharmacy Update, presented to Denton County Pharmacy Association, Lewisville, TX (September 2005)

Review and Summary of Practical Application of General Chapter <797> by USP, presented to TSBP staff, Austin, TX (September 2005)

Practical Applications of USP Chapter 797 – A review. Presented to staff members of Texas State Board of Pharmacy, Austin, TX (August 23, 2005)


Fluoroquinolones: The Next Generation? Pharmacy Rounds presentation to Department of Pharmacy, Scott & White Memorial Hospital. (June 4, 1997)


Antimicrobial Drug Resistance. Advanced Nurse Practice Symposium. Department of Nursing Services, Scott & White Memorial Hospital. (February 29, 1996)

Vancomycin-Resistant Enterococcus. Department of Medicine Residency Noon Conference. Scott & White Memorial Hospital and Texas A&M Health Science Center, Temple, Texas. (November 30, 1995)

Aminoglycosides and Vancomycin: Pharmacokinetics and Dosing. Pediatric Core Curriculum, Scott & White Memorial Hospital and Texas A&M Health Science Center, Temple, Texas. (April 20, 1995)

Clinical Pharmacokinetics. Pediatrics Core Curriculum, Scott & White Memorial Hospital and Texas A&M Health Science Center, Temple, Texas. (April 13, 1995)

Fluticasone: A New Inhaled Corticosteroid. Resident Rounds Teleconference Presentation. The University of Texas at Austin and The University of Texas Health Science Center at San Antonio. Austin and San Antonio, Texas. (January 27, 1995)

The Role of the Clinical Pharmacist in Today’s Managed Healthcare Environment. Invited Speaker, Longhorn Pre-Pharmacy Association, College of Pharmacy, The University of Texas at Austin. (November 1994)

The Role of Sumatriptan in Acute Migraine Management. Pharmacy Case Conference, Olin E. Teague Veteran’s Administration Hospital, Austin Satellite Outpatient Clinic. Austin, Texas. (June 1994)
Stereokinetics. Resident Rounds Teleconference Presentation. The University of Texas at Austin and The University of Texas Health Science Center at San Antonio. Austin and San Antonio, Texas. (March 1994)


Enalapril-Induced Agranulocytosis Pharmacy Case Conference, Scott & White Hospital, Texas A&M University Health Science Center. Temple, Texas. (October 1993)

Mercaptopurine in Crohn’s Disease. Family Practice Group, Scott & White Hospital, Texas A&M University Health Science Center. Temple, Texas. (October 1993)

Propofol: Its Role in ICU Sedation. Mini-Resident Round Teleconference Presentation. The University of Texas at Austin and The University of Texas Health Science Center at San Antonio. Austin and San Antonio, Texas. (August 1993)

Procardia 10mg SL prn SBP > 160: Bite and Swallow vs. SL dosing of Nifedipine. Pharmacy in-service to the emergency room, cardiology and critical care nursing staff, Seton Medical Center. Austin, Texas. (July 1993)

Pamidronate: A New Bisphosphonate for the Treatment of Hypercalcemia of Malignancy. The University of Texas Health Science Center at San Antonio. San Antonio, Texas. (January 1993)

Heart Medications: What you should know and ask. Cardiovascular Support Group at Baptist Medical Center Hospital. San Antonio, Texas. (May 1992)


Cardiovascular Pharmacology: A Patient Perspective. Cardiovascular Support Group at Baptist Medical Center Hospital. San Antonio, Texas. (May 1992)

Pre-Hospital Thrombolytic Therapy — Pros and Cons. Honors Therapeutics Class, The University of Texas at Austin. (November 1990)


Research in Retrospect. Pharmacy 131L class, The University of Texas at Austin. (November 1989)

Cefpodoxime Proxetil, An Orally Effective Third Generation Cephalosporin. Pharmacy 173L class, The University of Texas at Austin. (October 1989)

**COMMUNITY ACTIVITIES**

**Equestrian Order of the Holy Sepulcher of Jerusalem**

Investiture and conferring of Knighthood (Sir Paul Holder, KHS), October 23, 2011

Membership approved by Latin Patriarch of Jerusalem H.B. Fouad Twal and Pope Benedict XVI, 2011

Membership approved by His Eminence John Cardinal Foley, Grand Master, 2011

Membership approved by His Eminence Daniel Cardinal DiNardo, 2011

Recommended for membership by Most. Rev. Joe Vasquez, 2011

Nominated for Knighthood, 2009

**Knights of Columbus, Assembly 2245 and Council 9368, Round Rock, Texas**

Elected Faithful Navigator for Assembly #2245, 2013-2014

Elected Faithful Captain for Assembly #2245, 2011-2013

Elected Faithful Pilot for Assembly #2245, 2010-2011
Elected Faithful Comptroller for Assembly #2245, 2009-2010
Named Delegate to 2009 State Convention
Completed Fourth Degree Exemplification, October 5, 2008
Completed Second and Third Degree Exemplifications, August 2007
Completed First Degree Exemplification, July 22, 2007

**Troy Independent School District, Troy, Texas**

**Central Texas Science and Engineering Fair, Waco, Texas**
Head Judge/Finalist Judge, Chemistry/Biochemistry-Senior Division (1995-2002)

**Cypress Creek Emergency Medical Services, Houston, Texas**
Volunteered as Emergency Medical Technician (EMT) on weekends. (1986-1988)

**American Red Cross, Houston/Conroe, Texas**
Served as volunteer Cardiopulmonary Resuscitation (CPR), Basic and Advanced First Aid Instructor for Red Cross Chapters in both Houston and Conroe, Texas. (1986-1988)

**PROFESSIONAL ORGANIZATIONS**

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**Pharmacy Related**
- Controlled Environmental Testing Association (CETA)
- International Association of Therapeutic Drug Monitoring and Clinical Toxicology
- European Society of Clinical Pharmacy
- American Society of Health-System Pharmacists
- Texas Society of Health-System Pharmacists
- Austin Area Society of Health-System Pharmacists
- American College of Clinical Pharmacy

**Chemistry and Academic Related**
- American Chemical Society
- New York Academy of Science
- Texas Academy of Science
- Alumni Association of The University of Texas at Austin
- Alumni Association Baylor University (Honorary)

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**ACADEMIC HONORS**

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**Pharmacy Related**
- Multi-State Jurisprudence Exam (MPJE) Item Writer (2005 to 2014)
- National Association of Boards of Pharmacy Licensing Exam (NABPLEX) Item Writer (1997)
- Doctor of Pharmacy Scholarship, The University of Texas at Austin/The University of Texas Health Science Center at San Antonio (1993 and 1994)
- Graduated with High Honors from Bachelor of Science in Pharmacy degree program, The University of Texas at Austin (1991)
- Dean’s List (all semesters), The University of Texas at Austin (1988-1991)
Chemistry Related

American Chemical Society Undergraduate Analytical Chemistry Award (Sam Houston State University)
Graduated Magna Cum Laude from Sam Houston State University (B.Sc. Chm./Mathematics)
Graduated Summa Cum Laude from Sam Houston State University (M.Sc. Chm.)
Dean’s List (all semesters), Sam Houston State University
Robert A. Welch Research Associate (Sam Houston State University)
Robert A. Welch Research Associate (Baylor University)
NSF Research Associate (Sam Houston State University)
Outstanding Graduate Teaching Assistant (Baylor University)

General Academic Honors

Men of Achievement (1996)
Who’s Who Among Students in American Universities and Colleges (1979)
International Youth in Achievement
Community Leaders of America - Young Community Leadership Award
Alpha Chi, Phi Theta Kappa
Golden Key National Honor Society

ACADEMIC APPOINTMENTS

Pharmacy/Medicine Related

Assistant Professor
Department of Pharmacy Practice – Texas A&M Irma Lerma Rangel College of Pharmacy, College Station, TX 2015 –

Clinical Adjunct Professor
Department of Pharmacy Practice – University of the Incarnate Word, San Antonio, TX 2010 – 2015

Adjunct Assistant Professor
Department of Pharmacy Practice – Texas A&M Health Science Center, Kingsville, TX 2009 – 2015

Adjunct Assistant Professor
Department of Pharmacy Practice – College of Pharmacy, The University of Texas at Austin, Austin, TX 2010 - 2015

Clinical Assistant Professor of Pharmacy Practice
School of Pharmacy – Texas Tech University Health Science Center, Amarillo, TX 2010 - 2015

Clinical Assistant Professor
Department of Pharmacy Practice – The University of Texas at Austin, Austin, TX 1995 – 1998

Assistant Professor of Medicine
Department of Internal Medicine – College of Medicine, Texas A&M University, College Station, TX 1995-1998

Chemistry Related

Instructor of Chemistry

Instructor of Chemistry
Department of Chemistry, North Harris County Community College, Houston, TX – 1986 - 1988

Assistant Instructor of Chemistry
Department of Chemistry, Sam Houston State University, Huntsville, TX 1980 – 1981
APPENDIX I

EDUCATION (Detailed):

Specialty Residency in Drug Information

Completed a comprehensive post-doctoral residency in a clinically oriented Drug Information Center, designed to provide both verbal and written drug information to staff and resident physicians, pharmacists, nurses and other allied healthcare professionals in a 507-bed teaching institution affiliated with Texas A&M University Health Science Center. Residency functions included writing/editing responsibilities for the Pharmacy and Therapeutics Newsletter and the Scott & White Pharmacy nurses newsletter, participation in hospital adverse drug reaction monitoring, and involvement in the Pharmacy and Therapeutics Committees for the for both the hospital and the Scott & White Health Plan, a private managed-care organization serving more than 130,000 members. Additional residency functions included monitoring drug therapy for Pediatric and Family Medicine patients, attending Family Medicine morning report, providing staffing for the Ambulatory Anticoagulation Clinic, delivering lectures to pharmacy students, medical students and resident physicians, conducting outcomes-based research for the hospital pharmacokinetics monitoring service, precepting B.S. and Pharm.D. pharmacy students.

Doctor of Pharmacy:

First-year course work included over 300 hours in advanced pathophysiology courses taken at the School of Medicine, The University of Texas Health Sciences Center, San Antonio (UTHSCSA) with second-year UTHSCSA medical students and taught by the medical faculty in the various subspecialties. Advanced pharmacy course work designed to complement medical school classes and to prepare the first-year students for clinical rotations were taught by the clinical pharmacy faculty in Austin and San Antonio, Texas. In addition to advanced pharmacotherapeutic modules, course work was completed in clinical pharmacokinetics (3 courses), drug literature evaluation and biostatistics (2 courses), clinical toxicology, physical diagnosis and patient assessment. A variety of short courses in computer literacy and applications were also conducted. Supervised teaching, required of all doctoral students during either the first or second year, consisted of lecture preparation including audio-visual materials and handouts. In-service presentations to medical, nursing, and pharmacy staffs at the teaching hospitals were also required. Teaching also included assisting in the pharmacy practice labs and helping in precepting undergraduate pharmacy students during their clinical and hospital rotations. (Complete curriculum outlined in Appendix II)

Second-year clinical rotations were completed in pharmacokinetics, psychiatry, drug information, adult internal medicine, ambulatory care, and pediatrics. Two additional elective rotations were completed in clinical education and administration and in clinical research.

Bachelor of Science in Pharmacy:

Degree program included required course work in Pharmaceutics, Pharmacology, Medicinal Chemistry, Pharmacy Administration and Pharmacy Practice laboratories. Additional coursework was completed in Human Physiology, Biochemistry, Toxicology and Drug Interactions. Undergraduate research in clinical pharmacy was conducted under the direction of Paul J. Godley, Pharm.D. Duties in the research work included enrolling patients in two Phase III double-blind, placebo controlled trials of cefpodoxime proxetil in complicated and uncomplicated urinary tract infections, conducting follow-up visits with these patients to assess clinical and biological efficacy of the antibiotic, monitoring patient compliance with the treatment regimens and completing necessary reports and paperwork on each patient as he/she progressed through the trial period.

Master of Science in Chemistry:

Degree program included course work in Kinetics (major focus), Thermodynamics, Advanced Instrumental Analysis, Advanced Inorganic Chemistry, Polymer Chemistry and Kinetics, Advanced Organic Mechanisms of Reactions, X-Ray Crystallography and Statistical Mechanics of Polymer
Reactions. Research involved studying electrode kinetics of reactions involving the generation of hydrogen gas from the surface of gold-plated Rhodium electrodes in a liquid ammonia-ammonium nitrate system. Reactions were carried out at -50°C and potentiometric measurements were conducted to elucidate the reaction mechanism. Results of the research demonstrated that the reaction did not follow either of two classic electrode-kinetic mechanisms and a new mechanism was proposed and proved mathematically. Additional research work was conducted in computer-based learning. Developed computer program to simulate infrared spectra of common diatomic gases which was later used in the physical chemistry laboratory course at SHSU. Taught undergraduate laboratory courses in general, physical, analytical and organic chemistry. Became the first Master’s degree student to conduct lecture courses in general chemistry at Sam Houston State University.

Doctor of Philosophy Research:
Conducted research into high-pressure polymer physical chemistry under the direction of University of Uppsala Professor Dr. Stig Claesson, former Chairman of the Nobel Prize Selection Committee for Chemistry and Physics and Utrecht University Professor Dr. C.A.J. Hoeve. Professor Hoeve was also a member of the Chemistry Department at TAMU My research involved two projects: (1) the study of polymer solutions at pressures approaching 20,000 atmospheres, and (2) changes in glass-transition temperatures of epoxy resins composed of bisphenolacetone derivatives. After two and a half years of research and coursework, my mother died and my father was institutionalized for the remainder of his life. As a result, I had to leave school and was unable to complete my dissertation and examinations; therefore, I was unable to complete the Ph.D. degree.

Bachelor of Science in Chemistry/Mathematics:
Degree program consisted of course work in general, organic, analytical, inorganic and biochemistry. Additional course work was completed in psychology, advanced calculus, linear algebra, statistics, English, history, government and anthropology. During senior year began research in electrode kinetics and was awarded the Undergraduate Analytical Chemistry Award by the American Chemical Society. Was appointed a Robert A. Welch Foundation Research Associate and a National Science Foundation Research Associate.
APPENDIX II

**Doctor of Pharmacy (Post-baccalaureate) Curriculum**

Completed at The University of Texas at Austin/The University of Texas Health Science Center at San Antonio, Austin/San Antonio, Texas

**First-Year Didactic Coursework**

<table>
<thead>
<tr>
<th>MEDICAL SCHOOL</th>
<th>ADVANCED PHARMACOTHERAPEUTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Clinical Medicine I</td>
<td>Drug Literature Evaluation</td>
</tr>
<tr>
<td>Endocrine Pathophysiology</td>
<td>Pharmacotherapeutics of Endocrine Disorders</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>Pharmacotherapeutics of Infectious Diseases</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>Pharmacotherapeutics of Musculoskeletal Disorders</td>
</tr>
<tr>
<td>Oncology</td>
<td>Pharmacotherapeutics of Hematology/Oncology</td>
</tr>
<tr>
<td>Introduction to Clinical Medicine II</td>
<td>Pharmacotherapeutics of Reproductive Disorders</td>
</tr>
<tr>
<td>Cardiology</td>
<td>Pharmacotherapeutics of Cardiovascular Disorders</td>
</tr>
<tr>
<td>Pulmonology</td>
<td>Pharmacotherapeutics of Pulmonary Disorders</td>
</tr>
<tr>
<td>Renal Pathophysiology</td>
<td>Pharmacotherapeutics of Renal Disorders</td>
</tr>
<tr>
<td>Introduction to Dermatology</td>
<td>Pharmacotherapeutics of Psychiatric Disorders</td>
</tr>
<tr>
<td>Introduction to Clinical Medicine III</td>
<td>Clinical Toxicology</td>
</tr>
<tr>
<td>Hematology</td>
<td>Pharmacokinetics I, II, III</td>
</tr>
<tr>
<td>Neurology</td>
<td>Pharmacotherapeutics of Neurological Disorders</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>Pharmacotherapeutics of Gastrointestinal Disorders</td>
</tr>
<tr>
<td>Introduction to Nutrition</td>
<td>Fluid, Electrolytes, and Parenteral Nutrition</td>
</tr>
<tr>
<td>Immunology</td>
<td>Clinical Skills Laboratory - included physical diagnosis</td>
</tr>
<tr>
<td>Introduction to Surgery I</td>
<td>and patient assessment</td>
</tr>
<tr>
<td>General Surgical Considerations</td>
<td>Supervised Teaching</td>
</tr>
<tr>
<td>Anesthesiology &amp; Coagulation</td>
<td></td>
</tr>
<tr>
<td>Gastrointestinal Surgery</td>
<td></td>
</tr>
<tr>
<td>Breast Surgery</td>
<td></td>
</tr>
<tr>
<td>Introduction to Surgery II</td>
<td></td>
</tr>
<tr>
<td>Urology</td>
<td></td>
</tr>
<tr>
<td>Pediatric Surgical Considerations</td>
<td></td>
</tr>
<tr>
<td>Cardiothoracic Surgery</td>
<td></td>
</tr>
<tr>
<td>Endocrine &amp; Thyroid Surgery</td>
<td></td>
</tr>
<tr>
<td>Introduction to Pediatrics</td>
<td></td>
</tr>
</tbody>
</table>

**Second-Year Clinical Clerkships**

<table>
<thead>
<tr>
<th>ROTATION</th>
<th>INCLUSIVE DATES</th>
<th>PRECEPTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacokinetics</td>
<td>June 21 - July 30, 1993</td>
<td>Emory Martin, Pharm.D.</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>Aug. 2 - Sept. 10, 1993</td>
<td>Peter G. Dorson, Pharm.D.</td>
</tr>
<tr>
<td>Adult Internal Medicine</td>
<td>Oct. 25 - Dec. 3, 1993</td>
<td>James Karboski, Pharm.D.</td>
</tr>
<tr>
<td>Clinical Education/Administration</td>
<td>Jan 3 - Feb. 11, 1994</td>
<td>Emory Martin, Pharm.D.</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>Mar. 28 - May 6, 1994</td>
<td>Christopher Paap, Pharm.D.</td>
</tr>
<tr>
<td>Ambulatory Care</td>
<td>May 9 - June 17, 1994</td>
<td>Betsy Carlisle, Pharm.D.</td>
</tr>
</tbody>
</table>
Mary Lynn Chavez, Pharm.D, FAACP

(361) 221-0700 (office)
(623) 703-1733 (cell)

Rank: Interim Vice Dean and Professor and Chair of Pharmacy Practice

Education: University of Texas at Edinburg, Texas
(Pre-Pharmacy), 1968 – 1970

B.S. (Pharmacy) University of Texas,
Austin, Texas, 1973

Pharm. D. (Pharmacy) Purdue University,
West Lafayette, Indiana in 1985

Professional Appointments:

Texas A&M HSC Rangel College of Pharmacy
1010 W. Ave B, MSC 131
Kingsville, Texas

1/2014 – present Interim Vice Dean
2/2012 – present Acting Associate Dean of Clinical Programs
6/2006 – present Professor and Chair Pharmacy Practice

9/2006 – present HEB Pharmacy Kingsville, Texas
Part-time relief pharmacist

Midwestern University

College of Pharmacy – College of Pharmacy-Glendale and Chicago College of Pharmacy
Glendale, AZ and Downers Grove, IL

7/2001 – 6/2006 Professor of Pharmacy Practice (Tenured)
College of Pharmacy Glendale (2000 – 2006)

7/1996 – 6/2003- Director of Complementary Therapies Education and Research
The Center for the Advancement of Pharmacy Practice
College of Pharmacy Glendale

1998 – 2003 Director of Didactic Education
College of Pharmacy-Glendale (1998 - 2000)
1993 – 1999  Associate Professor of Pharmacy Practice and Acting Assistant Chair for Clinical Education (Tenured) College of Pharmacy Glendale/Chicago College of Pharmacy


School of Pharmacy, Department of Pharmacy Practice San Juan, Puerto Rico

Associate Professor of Pharmacy Practice School of Pharmacy (1986 - 1992) (Tenured)

Clinical Pharmacy Specialist Pediatric Oncology Program University of Puerto Rico School of Medicine, with the Pediatric Oncology Group (POG) (1984 – 1993)

Instructor of Pharmacy Practice School of Pharmacy (1983 – 1985)

Clinical Pharmacy Specialist Veterans Administration Hospital (1983 – 1987)

3/1982 - 12/1982  Seton Medical Center
Austin, Texas Staff Pharmacist

Tucson, Arizona Poison Control and Drug Information Specialist Arizona Poison Control and Drug Information Center

5/1973 - 12/1979  Holy Cross Hospital
Austin, Texas Staff Pharmacist and Assistant to Chief Pharmacist

Teaching at Texas A&M

<table>
<thead>
<tr>
<th>Course</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 841 Clinical Toxicology and Poison Management (3 credits)</td>
<td>2008-2014</td>
</tr>
<tr>
<td>74 students</td>
<td></td>
</tr>
<tr>
<td>Course Title</td>
<td>Credit hours</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>PHAR 705/706 Introductory Pharmacy Practice Experience III and IV</td>
<td>2</td>
</tr>
<tr>
<td>PHAR 711 IPT II: Cardiovascular Diseases (Course Coordinator)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Course Coordination**

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credit hours</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 705/706 Introductory Pharmacy Practice Experience III and IV</td>
<td>2</td>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>PHAR 711 IPT II: Cardiovascular Diseases (Course Coordinator)</td>
<td>3</td>
<td>2008</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Years</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>PHAR 714</td>
<td>IPT Recitation/Rounds I</td>
<td>1</td>
<td>2007</td>
</tr>
<tr>
<td>PHAR 673</td>
<td>Self-Care and Complementary Medicine (Course Coordinator)</td>
<td>3</td>
<td>2006, 2007, 2008</td>
</tr>
<tr>
<td>PHAR 678</td>
<td>Drug Literature Evaluation and Patient Education</td>
<td>3</td>
<td>2007</td>
</tr>
<tr>
<td>PHAR 875</td>
<td>Clinical Pharmacokinetics</td>
<td>3</td>
<td>2008</td>
</tr>
<tr>
<td>PHAR 714</td>
<td>Integrated Pharmacotherapy VIII – Oncology, Transplant and Genomics</td>
<td>3</td>
<td>2008-2014</td>
</tr>
<tr>
<td>PHAR 841</td>
<td>Clinical Toxicology and Poison Management</td>
<td>3</td>
<td>2008, 2009-2014</td>
</tr>
</tbody>
</table>

**Curriculum and/or Course Development**

1. Instrumental in the developing the Doctor of Pharmacy curriculum at Texas A&M HSC Irma Lerma Rangel College of Pharmacy

**Teaching Materials Developed at Other Universities/Colleges**

Clinical Pharmacotherapy I, II and III (Course coordinator and lecturer) in the areas of:

- Anemias
- Anxiety disorders
- Bone infections
- Cancer chemotherapeutic agents
- Endocarditis
- Fluids and electrolytes
- Gastrointestinal infections
- Geriatric
- Pharmacokinetics
- Headache
- Hyperlipidemia
- Hypertension
- Ischemic heart disease
- Liver disease
- Lower respiratory infections
- Meningitis
- Myocardial infarction
- Ophthalmic infections
- Pain management
- Pancreatic disease
- Parkinson's disease
- Pediatric pharmacokinetics
- Renal diseases
- Skin and soft tissue infections
- Sleep disorders
- Surgical prophylaxis
- Thrombolytics
- Toxicity of cancer chemotherapeutic agents
- Tuberculosis
- Upper respiratory infections
- Urinary tract infections

**Complementary Medicines**

Evidence based evaluation of common complementary therapies with a focus on common diseases
Advanced Pharmacotherapy (Lecturer and course coordinator), in the areas of:
Bone Marrow Transplantation
Breast Cancer
Colorectal Cancer
Leukemia/Lymphoma
Lung cancer
Prostate Cancer
Skin Cancer
Renal disease
Migraine headache
Liver disease

Non-Traditional Pharm.D. Program (Chicago College of Pharmacy) Courses:
Drug Literature Evaluation/Laboratory Assessment

Pathophysiology:
Acid-base Disorders
Cardiovascular Diseases
Hepatic Disease
Pancreatic Disease
Infectious Disease
Renal Disease

Intravenous Admixture Laboratory

Elective courses in:
Alternative Therapies
Infectious Disease
Oncology
Pediatrics
Clinical Toxicology

Research/Special Topics Courses:
(Pharm. 4283) Patient medication education in ambulatory/cardiac clinics (3 credit hours)
(Pharm. 4287) Library research and drug evaluation (3 credit hours)
(Pharm. 499) Research in pharmacy. A survey of alternative cancer medication in an outpatient oncology clinic (3 credit hours)
(Pharm. 499) Research in pharmacy. A survey of alternative medication in inpatient cancer patients. (3 credit hours)
(Pharm. 489) Topics in pharmacy. Spanish for the pharmacist. (1 credit hour)
(Pharm. 499) Research in pharmacy. A survey of alternative therapy for masking of drug screening (3 credit hours)
(Pharm. 499) Research in pharmacy. A survey of alternative therapy for AIDS (3 credit hours).
(Pharm. 499) Research in pharmacy. A survey of alternative therapy for arthritis (3 credit hours).
(Pharm. 499) Research in pharmacy. A survey of alternative therapy for asthma (3 credit hours).

**Continuing Education Lectures Delivered**

"Diagnosis and Pharmacological Treatment of Anxiety" sponsored by the Department of Mental Health and Bristol-Myers of Puerto Rico, Condado Beach Hotel, San Juan, Puerto Rico, August 21, 1987. Presenter, 1 hour

"Pharmacology of Antianxiety Drugs Used in Dental Practice." Department of Dentistry, Veterans Administration Hospital, San Juan, Puerto Rico, February 27, 1989. Presenter, 1 hour

"Pharmacotherapy of Anxiety," Department of Dentistry, Veterans Administration Hospital, San Juan, Puerto Rico, February 23, 1990. Presenter, 1 hour

"Interpretation of Clinical Laboratory Tests," Pharmacy-in-Service Training, Veterans Administration Hospital, San Juan, Puerto Rico, July 11 and 13, 1990. Presenter, 1 hour

"Effect of Cancer Chemotherapeutic Drugs on Cellular Structure and Function" as part of the conference on the Care of Children and Adolescents with Neoplastic Diseases, Programa de Desarrollo de Personal, Departamento de Enfermeria, Hospital Pediatrico Universitario, Oct. 5, 1990. Presenter, 1 hour

"A Model for Teaching, Research and Service in Clinical Pharmacy," The Division of Clinical and Administrative Sciences, Xavier University, New Orleans, Louisiana, April 13, 1992. Presenter, 1 hour

"Update on Tuberculosis", Illinois Council of Hospital Pharmacy, Oakbrook, Illinois, April 16, 1994. Presenter, 1 hour


"Antioxidants, Vitamins and Homeopathy," Hinsdale Hospital, Continuing Medical Education. Hinsdale, Illinois, Jan 30, 1997. Presenter, 1 hour


“Homeopathy.” Ohio Society of Health-System Pharmacists. Columbus, Ohio, May 21, 1998. Presenter, 1 hour


“Herbal Medicine.” Midwestern University, Health Sciences Career Fair, Glendale, Arizona. March 10, 1999. Presenter, 1 hour


“Herbals: Drug Interactions” AZCOM Consortium. Mesa General Hospital, Mesa, Arizona, January 21, 2000. Presenter, 1 hour


“Workshop: How to be an Effective Preceptor”. Texas A&M HSC College of Pharmacy, Kingsville, TX, March 3, 2007 and McAllen, TX March 10, 2007. Presenter, 1 hour


Pharmacology of Diabetes. 4th Annual Coastal Bend Health Education Center Diabetes Conference. August 9, 2008. Corpus Christi, Texas.

Dietary Supplements for Treatment of Diabetes. 6th Annual Coast Bend Health Education Center Diabetes Conference, July 31, 2010. Corpus Christi, Texas


Published Continuing Education Lectures


Student/Trainee Supervision

a. Thesis/Dissertation Committees

1) Member

Midwestern University Thesis Advisory Committee member for Anya Dehr-Turrell. The Use of Cytisine from *Sophora secundiflora* and the affinity for binding to nicotinic acetylcholine receptors, 2009-present


Midwestern Thesis Advisory Committee member for Karla Lodge, Master’s of Science in Physicians Assistant Program, 1999-2000.

University of Puerto Rico Thesis Advisory Committee member for Erin L. Piper, Master’s of Science in Physicians Assistant Program, Inhibition of ETEC, EHEC and Pathogenic *E. coli* by Various Lactobacillus Species, 2001-2002
Teaching Awards

American Association of College of Pharmacy Outstanding Teaching Award 2009
P3 Teaching Award, Texas A&M HSC Irma Lerma College of Pharmacy, 2008-2009
Outstanding Teaching Award, University of Puerto Rico, School of Pharmacy, 1990-91
Outstanding Teaching Award, University of Puerto Rico, School of Pharmacy, 1989-90
Outstanding Teaching Award, University of Puerto Rico, School of Pharmacy, 1988-89

Academic Counseling

2013-2014 P3 Faculty Mentor, Texas A&M HSC Irma Lerma Rangel College of Pharmacy
2011-2012 P2 Faculty Mentor, Texas A&M HSC Irma Lerma Rangel College of Pharmacy
2010-2011 P1 Faculty Mentor, Texas A&M HSC Irma Lerma Rangel College of Pharmacy
2008-2009 P3 Faculty Mentor, Texas A&M HSC Irma Lerma Rangel College of Pharmacy
2007-2008 P2 Faculty Mentor, Texas A&M HSC Irma Lerma Rangel College of Pharmacy
2006-2007 P1 Faculty Mentor, Texas A&M HSC Irma Lerma Rangel College of Pharmacy

Consulting

External review for promotion (assistant to associate professor) Dr. Pamella Ochoa, Texas Tech University, 2015
External reviewer for promotion (associate professor to professor) Dr. Sayer I. Al-Azzam Jordan University of Science and Technology 2014
External review for promotion (associate to full professor) Dr. Laura Fox, Presbyterian College, Clinton, South Carolina, 2013.
Reviewer for promotion for Eric J. MacLaughlin, Pharm.D., FCCP, BCPS, Texas Tech University Health Science Center, 2010
Reviewer for promotion for Sayer Al-Azzam, Pharm.D., Jordan University of Science and Technology 2010
Reviewer for promotion for Angela Treadway, Pharm.D., BCPS Texas Tech University Health Science Center, 2009
Reviewer for promotion for Laura M. Fox, Ph.D., University of South Carolina, 2008
Reviewer for promotion for Melanie A. Jordan, Ph.D. Midwestern University, 2008.
Reviewer for promotion for Kenneth Lee McCall, III, Pharm.D., BCPS, CACP, Texas Tech University Health Science Center, 2007

Reviewer for promotion for Samuel Mahrous, Ph.D., Midwestern University, 2006

Reviewer for Amie D. McCord, Pharm.D., BCPS, CDE, Midwestern University, 2006

Reviewer for promotion for Edward A. Bell, Pharm.D., Drake University, 2005

12. Other Indices of Teaching

Who’s Who in North American Education 2010-2011


The Worldwide Honours List. International Biographical Centre of Cambridge England

Living Legends 2004, International Biographical Centre of Cambridge England

Da Vinci Award, International Biographical Centre of Cambridge England


2000 Outstanding Intellectuals of the 21st Century, International Biographical Centre of Cambridge England
21st Century Award for Achievement, International Biographical Centre of Cambridge England

One Thousand Great Americans, International Biographical Centre of Cambridge England.


IBC Lifetime Achievement Award, International Biographic Centre of Cambridge England

International Health Professional of the Year for 2003, International Biographic Centre of Cambridge England


One Thousand Great Scientist. International Biographic Centre of Cambridge England


One Thousand Great Scientists of the 21st Century, International Biographic Centre of Cambridge England
F. Research and Scholarly Activities

Area of Interest
Involves evidence based evaluation of complementary and alternative medicine with emphasis on dietary supplements. As a result of I am a member of the United States Pharmacopeia Expert Committee of Dietary Supplements
Published Interviews

Growth of alternative medicine poses challenges, dilemmas for health-system pharmacists.  
*ASHP Specialists’ Spectrum* 3(3):1,3,9, 1997  
Alternative pharmacy: natural therapies gaining acceptance. *Drug Topics*  
July 7; 61-62, 1997  

Abstract Presentations


Chavez, M.L., Moro, V., Chavez, P.I., "Use of Psychoactive Drugs by Pharmacy Students in Puerto Rico," Tenth Annual Research Forum, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico, December 5, 1988.


Chavez, M.L., Chavez, P.I., "Drug Use in First and Second Year Medical Students at UPR and Comparison to Pharmacy Students," Twelfth Annual Research Forum, University of Puerto Rico, Medical Sciences Campus, December 6, 1990.


Research Forum, University of Puerto Rico, Medical Sciences Campus, December 6, 1990.


Bleidt B; Robertson J, Chavez M; A. Ratka A, Sethi R; Reddy I. Using Student Portfolios to Assess Self Learning and Independent Learning Ability, American Association of Colleges of Pharmacy, Orlando, Florida, 2006


Talks without published abstracts.

“Benzodiazepine Overdose and Withdrawal" presented to the Arizona Poison Control and Drug Information Center Staff, August, 7, 1981.

"Castor Bean Poisoning" presented to the Arizona Poison Control and Drug Information Center Staff, October 19, 1981.

"Handling of Cancer Chemotherapeutic Admixtures" presented to the Nursing Staff at the University Pediatrics Hospital, San Juan, Puerto Rico, August 15, 1983.

"Childhood acute lymphocytic leukemia" presented to Purdue University Clinical Faculty and Pharm.D. Students, Indiana Medical Center, Indianapolis, Indiana, May 22, 1985.

"Wilm's Tumor" presented to Purdue University Clinical Faculty and Pharm.D. Students, Indiana Medical Center, Indianapolis, Indiana, June 11, 1985.

"The Controversial Use of Hemoperfusion" presented to Purdue University Clinical Faculty and Pharm.D. Students, Indiana Medical Center, Indianapolis, Indiana, August 15, 1985.

"Iron Overdose" presented to Butler University Clinical Faculty and St. Vincent Hospital Pharmacy Staff, St. Vincent Hospital, Indianapolis, Indiana, October 24, 1985.

"New Drugs in 1985" presented to Indiana University Hospital Pharmacy Department Staff, Indiana University Hospitals, Indianapolis, Indiana, December 12, 1985.

"Integrated approach to natural products research in Puerto Rico" presented to the Department of Pharmaceutical Sciences round table presentation series, School of Pharmacy, University of Puerto Rico, Feb. 9, 1990.

"Modelo de Servicios Farmaceuticos Clinicos y de Investigacion en Oncologia Pediatrica," presented to faculty and students at the University of Puerto Rico, San Juan, Puerto Rico, May 2, 1991.

"An Interdisciplinary Education Model in Pediatric Oncology," presented at the Octavo Foro de Educacion Superior en Las Ciencias de la Salud, University of Puerto Rico, Medical Sciences Campus, April 10, 1992.

"Ischemic heart disease," presented as a mini-course for continuing education for pharmacist, UPR, School of Pharmacy, March 9, 10, 1993.

"Pediatric Oncology" presented to the department of pharmacy, Hinsdale Hospital, Aug. 21, 1995 (videotaped for CE).

"Overview of Chemotherapy" presented to the department of nursing, Hinsdale Hospital, Sept. 15, and Oct. 4, 1995 (videotaped for CE).


“Herbals and Other Dietary Supplements” presented to members of the Rotary Club of Glendale, Glendale, AZ. June, 2000.

“Herbals and Other Dietary Supplements” presented to members of the Glendale Kachina Rotary Club, Phoenix, AZ. September, 2000.


“Treatment of Prostate Cancer” presented to the Us Too Group (patients with prostate cancer and their family members). Sun City West, AZ, September 26, 2002.


Chavez, M and Chavez, P. Cultural Diversity and Expectations of the Health Professionals. Invited presentation to the Spanish Club, Midwestern University, Glendale, Arizona, April 28, 2015

**Grants**

a. Funded


“Clinical Specialist for the Puerto Rican Pediatric Oncology Program.” 1990-1993. CCOP/POG and the Pediatric Oncology Program, University of Puerto Rico,
funded by the Department of Health, Commonwealth of Puerto Rico). (Funded for $113,600)


“An open label trial of PEG-asparaginase in the treatment of patients in relapse with malignant hematological disorders.” 1991 (Co-investigator) (Enzon, Inc., Funded for $5000)


Collaborative Partnership Between the Doctor’s Hospital at Renaissance and the Texas A&M Rangel College of Pharmacy. (Funded for $750,000)


Kleberg County Health Fair, April 2014. Kleberg County. $4000.

Not Funded


“Hospice and Palliative Care Education Programs: RFA: CA-94-12 (Co-investigator), National Cancer Institute, 1994 (Not Funded).

“Human Diversity in the Practice of Pharmacy. (Principal-investigator). AACP-GAPS grant, 1995 (Not Funded).

“Student Generated Case Studies in Medicinal Chemistry” Innovation in Teaching Competition. (Co-investigator) American Association of Colleges of Pharmacy, 1995

“Student-Centered Research and Critical Thinking in an Elective Course on Alternative Therapies, (Principal-investigator) American Association of Colleges of Pharmacy, 1996

“Cultural Competency, Texas A&M HSC, 2007

“Evidence Based Drug Information Center.” Federal Initiative 2009 ($100,000)

Addressing Health Care Needs in South Texas: College of Pharmacy Health Care Intervention and Evaluation Project, 2012 Fed Initiative, ($350,000)

Wardle, E, Chavez M. 2013, Drug and Alcohol Abuse, Collaborative Research Award (CRA) Grant, $15,000 (not funded),

O’Neal C., Chavez M, et al (Co-PI). 2013, Nurse Education, Practice, Quality and Retention, HRSA $1,071,736 (not funded)
Natural Product Discovery and Development Program, 2013. Submitted to TAMU (not funded).
Wardle, E, Chavez M. Drug and Alcohol Abuse, Collaborative Research Award (CRA) Grant, 2013 $15,000 (not funded).
Chavez ML, Reddy IK, Benfield R. Collaborative Partnership between the Doctor’s Hospital at Renaissance and the Texas A&M Rangel College of Pharmacy. $700,800/5 years. 2014. Edinburg, Texas.

Manuscript Review

Journals Refereed; Book/Chapter Review


2013 Reviewer for Handbook of Nonprescription Drugs, 18th Edition: An Interaction Approach to Self-Care. APhA: Jefferson City, TN

2013 Reviewer for The Clinical Practice of Drug Information. Jones & Bartlett Learning: Burlington,

2004 - present Reviewer for Pharmacist Letter

2003 – present Reviewer for Indian Health Service Provider

2003 – present Reviewer for Expert Opinion on Pharmacotherapy


2000 Expert Reviewer for Pharmacists Letter, Monographs on Herbal Therapies

2000 Reviewer of poster/podium presentations for Annual Meeting of American Society of Health-Systems Pharmacists

1999 Reviewer of poster/podium presentations for Midyear Clinical Meeting of American Society of Health-Systems Pharmacists

1999 Reviewer of poster/podium presentations for Annual Meeting of American Society of Health-Systems Pharmacists
<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>1998 – present</td>
<td>Reviewer for the <em>American Journal of Pharmaceutical Education</em></td>
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<td>1998 – present</td>
<td>Reviewer for the <em>Journal of Pharmacy Technology</em></td>
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<td>1998</td>
<td>Reviewer of poster/podium presentations for Midyear Clinical Meeting</td>
<td>Reviewer of poster/podium presentations for Midyear Clinical Meeting of</td>
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<td>of American Society of Health-Systems Pharmacists</td>
<td>American Society of Health-Systems Pharmacists</td>
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<td>1998</td>
<td>Reviewer of poster/podium presentations for Annual Clinical Meeting</td>
<td>Reviewer of poster/podium presentations for Annual Meeting of American</td>
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<td>of American Society of Health-Systems Pharmacists</td>
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<td>1997 – present</td>
<td>Reviewer for <em>Clinical Therapeutics: The International Journal of Drug Therapy</em></td>
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<td>1997</td>
<td>Reviewer of poster/podium presentations for Midyear Clinical Meeting</td>
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<td>of American Society of Health-Systems Pharmacists</td>
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<td>1997</td>
<td>Reviewer of poster/podium presentations for Annual Clinical Meeting</td>
<td>Reviewer of poster/podium presentations for Annual Meeting of American</td>
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<td></td>
<td>of American Society of Health-Systems Pharmacists</td>
<td>Society of Health-Systems Pharmacists</td>
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<tr>
<td>1997 – present</td>
<td>Reviewer for the <em>Journal of the American Pharmacy Association</em></td>
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<tr>
<td>1996</td>
<td>Reviewer for poster/podium submissions for the Annual Clinical Meeting</td>
<td>Reviewer for poster/podium submissions for the Annual Clinical Meeting</td>
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<td></td>
<td>of American Society of Health-Systems Pharmacists</td>
<td>of American Society of Health-Systems Pharmacists</td>
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<td>1995 – present</td>
<td>Reviewer for the <em>Annals of Pharmacotherapy</em></td>
<td></td>
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<tr>
<td>1994 – present</td>
<td>Reviewer for the <em>American Journal of Health-Systems Pharmacy</em></td>
<td></td>
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<tr>
<td>1991 – 1993</td>
<td>Reviewer of grant proposals, Committee on the Integration of Scientific</td>
<td>Reviewer of grant proposals, Committee on the Integration of Scientific</td>
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<td></td>
<td>Affairs, Academic Affairs, University of Puerto Rico</td>
<td>Affairs, Academic Affairs, University of Puerto Rico</td>
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**Editorial Boards**

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<tr>
<td>2005 – 2010</td>
<td>Member of United States Pharmacopeia Expert Committee on Dietary</td>
<td>Member of United States Pharmacopeia Expert Committee on Dietary</td>
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<td></td>
<td>Supplement Information</td>
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<tr>
<td>2009 – present</td>
<td>Member of the Association of American Medical Colleges Task Force on</td>
<td>Member of the Association of American Medical Colleges Task Force on</td>
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<tr>
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<td>Conflicts of Interest in Clinical Care</td>
<td>Conflicts of Interest in Clinical Care</td>
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<tr>
<td>2003 – 2007</td>
<td>Co-Chair of the ACCP Public and Professional Affairs Committee of the</td>
<td>Co-Chair of the ACCP Public and Professional Affairs Committee of the</td>
</tr>
<tr>
<td></td>
<td>and Industry: Guidelines for Ethical Interactions</td>
<td>and Industry: Guidelines for Ethical Interactions</td>
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</tbody>
</table>
2002 Consultant to Arizona Osteopathic Association on Initiative of Natural Substance Definition to be submitted to the Arizona State Congress. 2002


2000 - present Editorial Advisory Board, *Integrative Medicine Communications*, Newton, MA.


1997 - present Editorial Board, *Journal of the American Pharmacy Association*

1997 - 2001 Contributing Editor, *Hospital Pharmacy*

**Participation on National or Regional Board Examination, Certification, or Accreditation Committees**


2009-2010 American College of Clinical Pharmacy Membership Committee (chairman)

**Programs and Symposiums Organized**


**Component Committees**

Awards, Honors, and Scholarship Committee, 2006, 2007
Preceptor Advisory, 2008,
APPE Review Committee, 2008
APT Committee, 2008, 2009
CBHEC Pharmacist CE 2012-present

HSC Committees

Cash Committee, 2007

Other HSC Service

Interdisciplinary Research Project, 2009

I. Publications

JOURNALS


Chavez ML. Omega-3s and depression in heart disease patients. Rx News Connection, December 2009.

PUBLISHED MONOGRAPHS

BOOKS AUTHORED
Contributor to "Medicinal Chemistry Study Workbook," Williams and Wilkins, York, PA, 1996.


BOOK REVIEWS


Andrea M. Luce, PharmD
luce@pharmacy.tamhsc.edu

Assistant Professor
Department of Pharmacy Practice
Texas A&M Health Science Center
Rangel College of Pharmacy
Office: 713-566-5246

Infectious Diseases Clinical Pharmacist
Lyndon B. Johnson General Hospital
Harris Health System
5656 Kelley Street, Houston, TX 77026
Pager: 281-952-0009

EDUCATION AND POSTGRADUATE TRAINING

South Texas Veterans Health Care System
PGY2 Infectious Diseases Pharmacy Residency
San Antonio, Texas
Jul 2008 - Jul 2009

St. Luke’s Episcopal Hospital
PGY1 Pharmacy Practice Residency
Houston, Texas
Jul 2007 - Jun 2008

University of Houston College of Pharmacy
Doctor of Pharmacy, Cum Laude
Houston, Texas

University of Texas Pan American
Prerequisite Coursework
Edinburg, Texas
Aug 2000 - Jul 2003

TEACHING EXPERIENCE

Assistant Professor of Pharmacy Practice
Texas A&M Health Science Center Rangel College of Pharmacy
PHAR 812- IPT VII: Infectious Diseases Course Coordinator
Jan 2013 - Present
PHAR 815- Rounds and Recitations Course Co-Coordinator
Jan 2011 - Present
Aug 2009 - Present

Adjunct Clinical Instructor
The University of Texas at Austin College of Pharmacy
San Antonio, Texas
Jul 2008 - Jul 2009

Adjunct Clinical Instructor
The University of Incarnate Word Feik School of Pharmacy
San Antonio, Texas
Jul 2008 - Jul 2009

Clinical Laboratory Instructor
University of Houston College of Pharmacy
Houston, Texas
Jul 2007 - Dec 2007

PROFESSIONAL EXPERIENCE

Infectious Diseases Clinical Pharmacy Specialist
Harris Health System – Lyndon B. Johnson General Hospital
Houston, Texas
Aug 2009 - Present

Staff Clinical Pharmacist
St. Luke’s Episcopal Hospital
Houston, Texas

Pharmacist Intern
HEB Pharmacy
McAllen, Texas
Jun - Aug 2004
### LICENSURE AND CERTIFICATIONS

- Pharmacist Preceptor Certification
- Texas State Board of Pharmacy, Licensed Pharmacist #45177
- Immunization Administration Trainer
- The American Heart Association Basic Life Support
- Immunization Administration
- Sterile Products Preparations
- Bloodborne Pathogens Training
- PCCA Compounding Techniques

### PROFESSIONAL AFFILIATIONS

<table>
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<tr>
<th>Affiliation</th>
<th>Date Range</th>
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<tbody>
<tr>
<td>American Society for Microbiology</td>
<td>Sep 2010 - Present</td>
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<tr>
<td>Gulf Coast Society of Health-System Pharmacists</td>
<td>Jul 2009 - Present</td>
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<tr>
<td>Society of Infectious Diseases Pharmacists</td>
<td>Oct 2008 - Present</td>
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<td>American Society of Health-System Pharmacists</td>
<td>Sep 2006 - Present</td>
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<tr>
<td>Texas Society of Health-System Pharmacists</td>
<td>Aug 2007 - Present</td>
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### COMMITTEES AND SERVICE

<table>
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<tr>
<th>Committee</th>
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<tbody>
<tr>
<td>Health and Wellness Committee</td>
<td>Jun 2014 - Present</td>
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<tr>
<td>Student Advisor</td>
<td>Aug 2013 - Present</td>
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<td>Awards, Honors, and Scholarship Committee - Chair</td>
<td>Aug 2013 - Present</td>
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<td>Outcomes Assessment Committee</td>
<td>Aug 2011 - Present</td>
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<td>Student Society of Health System Pharmacists Faculty Advisor</td>
<td>Aug 2010 - Present</td>
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<tr>
<td>Pharmacy Candidate Interview Panel</td>
<td>Feb 2010 - Present</td>
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<tr>
<td>Member, Internet Committee</td>
<td>Sep 2010 - Aug 2012</td>
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<tr>
<td>Infection Control Subcommittee</td>
<td>Jan 2010 - Present</td>
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<tr>
<td>Department of Pharmacy Infection Control Liaison</td>
<td>Jan 2010 - Present</td>
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<td>P&amp;G Residency Interview Panel</td>
<td>Dec 2009 - Present</td>
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<td>P&amp;T Antimicrobial Subcommittee</td>
<td>Oct 2009 - Present</td>
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<tr>
<td>Preceptor Committee</td>
<td>Aug 2009 - Jul 2011</td>
</tr>
<tr>
<td>Medical Mission Pharmacy Team</td>
<td>Sep 2006</td>
</tr>
</tbody>
</table>
PUBLICATIONS (peer-reviewed)


Nesher L, Hadi CM, Wootton SH, Garey KW, Luce AM, Hasbun R. Epidemiology of meningitis with a negative CSF Gram-stain: underutilization of available diagnostic tests. Epidemiol Infect. 2015; [epub ahead of print]


Winans SA, Luce AM. Dificid. TSHP Journal. Fall 2012;13(3):7-10


ABSTRACTS


Pham VP, Luce A, Garey KW. Assessing age-related treatment response rates in hospitalized patients with Clostridium difficile infection. American Society of Health-System Pharmacists Midyear Clinical Meeting, Orlando, FL, December 2013. (Poster presentation)


INVITED PROFESSIONAL PRESENTATIONS

Antibiotic Stewardship. Texas Society of Health-System Pharmacists Annual Meeting, Houston, TX, April 2015.

Antibiotic Stewardship Panel Presentation. Texas Society of Health-System Pharmacists Annual Meeting, Houston, TX, April 2014.

Antibiotics in the Hospital Setting. University of Texas Health Science Center at Houston, Houston, TX, November 2013.

Antibiotics I and II. University of Texas Health Science Center at Houston, Houston, TX, August 2010 - 2014.

Empiric Use of Antibiotics in the Acute Care Setting. University of Texas Health Science Center at San Antonio, San Antonio, TX, May 2009.

HONORS AND AWARDS

<table>
<thead>
<tr>
<th>Award</th>
<th>Institution</th>
<th>Date</th>
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<tbody>
<tr>
<td>Preceptor of the Year</td>
<td>Harris Health System Department of Pharmacy</td>
<td>Jun 2014</td>
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<tr>
<td>Teacher of the Year</td>
<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy</td>
<td>AY 2013 - 2014</td>
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<tr>
<td>Teaching Team of the Year – IPT VII: Infectious Diseases</td>
<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy</td>
<td>AY 2013 - 2014</td>
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<tr>
<td>Induction into Phi Lambda Sigma Pharmacy Leadership Society</td>
<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy</td>
<td>Apr 2014</td>
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<tr>
<td>Induction into Rho Chi Society</td>
<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy</td>
<td>Apr 2014</td>
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<tr>
<td>Dedication to Teaching Award</td>
<td>University of Texas Health Science Center at Houston</td>
<td>Jun 2013</td>
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<tr>
<td>Teacher of the Year</td>
<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy</td>
<td>AY 2012 - 2013</td>
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<td>Texas A&amp;M Health Science Center Rangel College of Pharmacy</td>
<td>AY 2010 - 2011</td>
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</tbody>
</table>
CURRICULUM VITAE
Jaye Scott Weston MS, RPh

Home Address: 17539 Seneca Springs
College Station, TX 77845

Business Address: SRPH Administration Building
University Drive & Adriance Lab Road
MS 1266, Office 320
College Station, TX 77843

EDUCATION

1980 - 1983 College of Pharmacy, University of Houston
Houston, Texas
M.S. - Hospital Pharmacy

1977 - 1980 College of Pharmacy, University of Houston
Houston, Texas
B.S. - Pharmacy

1974 - 1976 Stephen F. Austin State University
Nacogdoches, Texas

1972 - 1974 Henderson County Junior College
Athens, Texas

PROFESSIONAL EXPERIENCE

2014-Present Assistant Professor of Pharmacy Practice
Irma Lerma Rangel College of Pharmacy
Texas A&M Health Science Center
College Station, TX

2013-2014 Clinical Pharmacy Applications Analyst
Department of Health Informatics
Baptist Health System
San Antonio, TX

2010-2013 Regional Infectious Diseases
Clinical Coordinator and Critical Care Coordinator
Department of Pharmacotherapy and Pharmacy Services
Baptist Health System
San Antonio, TX
2006-2010  Clinical Coordinator
Infectious Diseases
St Luke’s Episcopal Hospital
Houston, TX

1998-2006  Clinical Pharmacy Manager
East Texas Medical Center
Tyler, Texas

1996-1998  Clinical Coordinator
Memorial Medical Center of East Texas
Lufkin, Texas

1995-1996  Drug Information Specialist
Memorial Nacogdoches Hospital
Nacogdoches, Texas

1992 - 1995  Drug Information Specialist
Infectious Disease Pharmacist
Monitor for Infectious Disease Investigational Drug Protocols
St. Luke’s Episcopal Hospital
Houston, Texas

1988 - 1992  Sr. Staff Pharmacist Cardiovascular Surgery/Recovery Room
St. Luke’s Episcopal Hospital
Houston, Texas

1986 - 1988  Pharmacy Satellite ICU Supervisor/Clinical Coordinator
St. Luke's Episcopal Hospital
Houston, Texas

1982 - 1986  Assistant Professor of Clinical Pharmacy
Texas Southern University
Houston, Texas

1980 - 1982  Pharmacy Resident, The University of Texas
M.D. Anderson Hospital & Tumor Institute
Houston, Texas

1979 - 1980  Pharmacy Intern, Medicine Man Pharmacy
Houston, Texas
LICENSURE

Texas (by examination)

PROFESSIONAL AFFILIATIONS

American College of Clinical Pharmacy
Brazos Valley Pharmacist Association
American Society for Microbiology
American Association of Colleges of Pharmacy

AWARDS

Recipient of ASHP Best Practices Award 2010:

Center for Antimicrobial Stewardship and Epidemiology (CASE): Improving Patient Care Through Clinical Service, Teaching, and Research

COMMITTEE APPOINTMENTS

Infection Control Committee

PUBLICATIONS

Weston C, Weston J. Applying the Beers and STOPP criteria to care of the critically ill older adult. Crit. Care Nursing. 2015;38(3):231-236


**PRESENTATIONS**

"Emerging Resistance” Weston JS One Health Spring Conference, College Station, TX February 2015

"High Dose Daptomycin (≥8mg/kg) for Treatment of Non-Urinary Vancomycin-Resistant Enterococcal Infections” Poster presentation with Tran TT, Palmer HR, Weston JS, Hirsch EB, Shah DN, Cottreau JM, Tam VH, Garey KW. 51st ICAAC meeting Chicago, IL, September 2011.


"Emerging Bacterial Resistance-The Challenges Ahead” Tarrent County Society of Hospital Pharmacists, Fort Worth, TX, April, 2004.


“Man vs Microbes, the Next Step” NTI Meeting Orlando, Florida, May 2000.


“Infectious Diseases” Round Table Discussion Presenter and Moderator. 50th Annual Texas Society of Health-System Pharmacists Seminar, Houston, Texas, April 1998.

“Management of Community Acquired Pneumonia in a Rural Hospital.” Poster presentation with Weston, J.S., Griffin, K.E., Williams, C. In association with the 32nd Annual ASHP Midyear Clinical Meeting, Atlanta, Georgia, December 1997.

“Development of Clinical Pharmacy Services in a Rural Area.” Poster presentation with Weston, J.S., Griffin, K.E. 32nd Annual ASHP Midyear Clinical Meeting, Atlanta, Georgia, December 1997.


"Overview of Antimicrobial Therapy" Deep East Texas Chapter of Texas Pharmacy Association, Nacogdoches, Texas, April 1996.


"Mechanisms of Antibiotic Resistance” Infectious Disease Service, St Luke's
Episcopal Hospital, Houston, Texas, May 1995.


"Recent Advances in Cardiovascular Drugs," American Association of Critical Care Nurses Regional Symposium, Houston, Texas, March 1993.

"Drug Interactions," Houston Infectious Disease Group, Houston, Texas, Presented Monthly to Infectious Disease Staff, Medical Residents and Interns.

"Basic Clinical Pharmacokinetics," Houston Infectious Disease Group, Houston, Texas, Presented Monthly to Infectious Disease Staff, Medical Residents and Interns.

"Antimicrobial Update," Houston Infectious Disease Group, Houston, Texas, Presented Monthly to Infectious Disease Staff, Medical Residents and Interns.


"Advances in Cardiovascular Drugs", American Association of Critical Care Nurses Regional Symposium, Houston, Texas, October 1990.


"Total Parenteral Nutrition Therapy," Medicine Staff, Sam Houston Memorial Hospital, Houston, Texas, February 1985.


"Intraventricular Morphine via an Ommaya Reservoir," Texas Society of Hospital Pharmacists Annual Meeting, Dallas, Texas, April 1982.


Mark C. Granberry  
Curriculum Vitae

Office Address  
1010 West Avenue B, MSC 131  
Kingsville, Texas 78363  
Telephone: 361-221-0708  
e-mail: granberry@pharmacy.tamhsc.edu

Home Address  
5017 Lethaby Cr.  
Corpus Christi, Texas 78413  
210-255-0870

EDUCATION

Clinical Residency in Cardiovascular Pharmacotherapy  
University of Arkansas College of Pharmacy  
Little Rock, Arkansas  
July 1994 - June 1995

Pharmacy Practice Residency  
University Hospital of Arkansas  
Little Rock, Arkansas  
July 1993 - June 1994

Doctor of Pharmacy  
University of Arkansas College of Pharmacy  
Little Rock, Arkansas  
August 1994

Bachelor of Science in Pharmacy  
University of Arkansas College of Pharmacy  
Little Rock, Arkansas  
June 1978

LICENSURE

Arkansas, State Board of Pharmacy # 6457  
Texas, State Board of Pharmacy # 41497

PROFESSIONAL EXPERIENCE

Professor and Vice Chair of Pharmacy Practice  
Irma Lerma Rangel College of Pharmacy  
Texas A&M Health Science Center  
1010 West Avenue B, MSC 131  
Kingsville, Texas 78363  
May 2011 to present

Professor with Tenure  
Feik School of Pharmacy  
The University of the Incarnate Word  
4301 Broadway, CPO 99  
San Antonio, Texas 78209  
January 2009 to December 2010

Associate Professor, Tenure awarded 2007  
Assistant Dean and Chair, Pharmacy Practice  
Feik School of Pharmacy  
The University of the Incarnate Word
4301 Broadway, CPO 99
San Antonio, Texas 78209
February 2005 to December 2008

Associate Professor with Tenure September 2004 to December 2004
Cooperative Pharmacy Program
The University of Texas – Pan American
1201 West University Drive, HSW 1.130
Edinburg, Texas 78541
Assistant Professor October 2002 to August 2004

Assistant Professor with Tenure, Department of Pharmacy Practice
College of Pharmacy – July 2001 to September 2002
University of Arkansas for Medical Sciences
4301 West Markham St., Slot 522
Little Rock, Arkansas 72205
July 2001 to September 30, 2002
Assistant Professor - July 1995 to June 2001

Responsibilities include instruction of the Cardiology module of the Therapeutics course, coordinator of Pharmacy Practice - Advanced Cardiovascular Therapeutics, coordinator of ambulatory care Lipid Clinic, as well as selected lectures in other courses, precepting students, patient care rounds with the Cardiology teams, conducting clinical research and service through committee work.

Staff Pharmacist
Baptist Memorial Medical Center
One Pershing Circle
North Little Rock, Arkansas  72114
July 1978 to June 1993

Responsibilities included IV admixture, chemotherapy, TPN, computerized unit dose, pharmacokinetics consults, drug utilization evaluation (DUE), "Code Blue" team member, inservice to pharmacy and nursing staff, preceptor for University of Arkansas College of Pharmacy, member of the advisory committee for the Recuperative Care Unit.

Westside Free Medical Clinic
2415 North Tyler Street
Little Rock, Arkansas  72207
December 1989 - 2000

Review charts and fill prescriptions in a clinic setting, provide information to patients and professional staff.

Osco Drug, Inc.
3929 McCain Boulevard
North Little Rock, Arkansas  72116
September 1977 - June 1978

Responsibilities included patient counseling, filling prescriptions, maintaining patient profiles, drug procurement.

PROFESSIONAL MEMBERSHIPS

American Association of Colleges of Pharmacy
CERTIFICATION

Advanced Cardiac Life Support (ACLS)
April 1995 - Present

Basic Life Support (BLS)
July 1993 – Present

INSTRUCTION

Lecturer and Co-Course Coordinator, PHAR 778, Drug Literature Evaluation and Patient Education. A required course for Pharm.D. candidates in their second professional year. Texas A&M Health Science Center Rangel College of Pharmacy, 2013 to 2014

Faculty Advisor, Independent Study, PHAR 785. An elective course advising students on an independent study project. Texas A&M Health Science Center Rangel College of Pharmacy
Purvi Patel Fall 2012
Kristen Gililland Spring 2013

Preceptor, Advanced Pharmacy Practice Experience, a cardiology elective clerkship for Pharm.D. candidates in their fourth professional year. Texas A&M Health Science Center Rangel College of Pharmacy, 2012 to present

Lecturer and Co-Course Coordinator, Integrated Pharmacotherapeutics II: Cardiovascular (PHAR 711). A required course for Pharm.D. candidates in their second professional year. Texas A&M Health Science Center Rangel College of Pharmacy, 2011 to present

Lecturer and Course Coordinator, Landmark Studies. An elective course for Pharm.D. candidates in their third professional year. Texas A&M Health Science Center Rangel College of Pharmacy, 2011 to present

Lecturer and Course Coordinator, Pharmacotherapeutics IX: Musculoskeletal Diseases. (PHAR 52463) a required course for Pharm.D. candidates in their third professional year. University of the Incarnate Word School of Pharmacy, 2008

Lecturer and Course Coordinator, Landmark Studies (PHAR5276) an elective course for Pharm.D. candidates in their third professional year. University of the Incarnate Word School of Pharmacy, 2008 - 2010

Lecturer and Course Coordinator, Pharmacotherapeutics V: Cardiovascular Diseases. (PHAR 4543) a required course for Pharm.D. candidates in their second professional year. University of the Incarnate Word School of Pharmacy, 2008 - 2010

Lecturer and Course Coordinator, Drug Information. (PHAR3157) a required course for Pharm.D. candidates in their first professional year. University of the Incarnate Word School of Pharmacy, 2007 - 2008

Lecturer and Course Coordinator, Pharmacotherapeutics for Clinical Nurse Specialists, 2006 - 2010

Lecturer and Course Coordinator, Professional (Applied) Development Skills. (PHAR 1105), a required course for pre-pharmacy candidates in their second year, University of the Incarnate Word School of Pharmacy, 2005 – 2008

Lecturer, Applied Pharmacy Care III (PHAR4230) a required course for Pharm.D. candidates in their second professional year. University of the Incarnate Word School of Pharmacy, 2007 – 2008

Lecturer, Ethics and Life Issues (PHAR3150) a required course for Pharm.D. candidates in their first professional year. University of the Incarnate Word School of Pharmacy, 2006 - 2010

Lecturer and Course Coordinator, Landmark Studies in Cardiovascular Pharmacotherapy. (Phr277k), an elective course of Pharm.D. candidates in their third professional year, University of Texas at Austin College of Pharmacy, 2004

Preceptor, Adult Medicine Clerkship, a cardiology elective clerkship for Pharm.D. candidates in their fourth professional year. Cooperative Pharmacy Program, University of Texas – Pan American and University of Texas at Austin College of Pharmacy, 2003 - 2005

Lecturer and Course Coordinator, Medical Terminology, (HRP2303), College of Health Sciences and Human Services, University of Texas – Pan American, 2003 - 2005

Lecturer and Course Coordinator, Human Physiology, (OTTC3301), Occupational Therapy Program, University of Texas – Pan American, 2003

Preceptor, Academic Clerkship, an elective clerkship for Pharm.D. candidates in their fourth professional year. Cooperative Pharmacy Program, University of Texas – Pan American and University of Texas at Austin College of Pharmacy, 2003 - 2005

Lecturer, Pharmacology I and Pharmacology II, (PHAS3228 and PHAS3329) Physician Assistant Studies Program, University of Texas – Pan American 2002 to 2005

Lecturer and Course Coordinator, Advanced Cardiovascular Pharmacotherapy: Case-Based Studies (PhPr5632), an elective course of Pharm.D. candidates in their third professional year, University of Arkansas College of Pharmacy 2001 - 2002.

Lecturer, Introduction to Patient Monitoring. (PhPr4224), a required course for Pharm.D. candidates in their second professional year, University of Arkansas College of Pharmacy 2000 – 2002.

Lecturer, Contemporary Issues in Pharmacy Practice. (PhPr5692), an elective for Pharm.D. candidates in their second professional year, University of Arkansas College of Pharmacy 1999-2000.

Lecturer, Landmark Studies and Consensus Statements. (PhPr5892), an elective for Pharm.D. candidates in their third professional year, University of Arkansas College of Pharmacy 1998 – 2002.
Lecturer and Laboratory Instructor, Physical Assessment. (PhPr5634), a required course for Pharm.D. candidates in their third professional year, University of Arkansas College of Pharmacy 1996 - 2000

Lecturer, Clinical Therapeutics in Advanced Nursing Practice (NUSC5213), Cardiology Section. University of Arkansas College of Nursing 1996 - 2002

Lecturer and Course Coordinator, Advanced Cardiac Life Support (PhPr5882), an elective for Pharm.D. candidates in their third professional year, University of Arkansas College of Pharmacy 1996 - 1997

Instructor, Advanced Cardiac Life Support, University Hospital of Arkansas 1995 - 2002

Preceptor, Pharmacy Practice Residency Program, John L. McClellan VA Medical Center, a one month experience in Cardiovascular Therapeutics, 1995 - 2002

Preceptor, Pharmacy Practice Residency Program, University Hospital of Arkansas, a one month experience in Cardiovascular Therapeutics, 1995 - 2002

Instructor, Therapeutics Recitation I and II, case based instruction for Pharm.D. candidates in their third professional year, University of Arkansas College of Pharmacy 1995 - 1996

Preceptor, Adult Internal Medicine and Cardiology Clerkship for Pharm.D. candidates in their fourth professional year, University of Arkansas College of Pharmacy 1994 - 2002

Lecturer, Therapeutics I (Pharmacy Practice 5645), Cardiology Section, University of Arkansas College of Pharmacy 1994 - 2002

Lecturer, Clinical Pharmacology in Advanced Nursing Practice (NUSC 5213), Cardiology Section. University of Arkansas College of Nursing 1994-2002

Preceptor, Hospital Pharmacy Experiential Rotation for Pharm.D. candidates in their fourth professional year, Baptist Memorial Medical Center, North Little Rock Arkansas 1988 - 1993

PUBLICATIONS


Gardner SF, Schneider EF, Granberry MC, Carter IR. Combination therapy with low-dose lovastatin and niacin is as effective as higher-dose lovastatin. *Pharmacotherapy* 1996;16(3):419-423.

Granberry MC, Gardner SF. In the absence of terfenadine, can erythromycin cause QT prolongation that may result in torsade de pointes? *Ann Pharmacother* 1996;30:77-78.


### PEER REVIEWED ABSTRACTS


Granberry MC, Maize DF and Coleman C. Knowledge and Perceptions of Accreditation from Applicants to a New School of Pharmacy. [abstract]. *Am J Pharm Educ* 2006;70(3) Article 65

Granberry MC, Canales PL, Jennifer Myhra. Analysis of Clinical Competency Test Performance by Faculty Status and by Geographic Region. [abstract]. *Am J Pharm Educ* 2005; 69(3) Article 60


Franks AM, **Granberry MC**, Glover F, Hawkins JB, Smith ES. Non-steroidal anti-inflammatory drugs do not increase major events in heart failure patients. [Abstract] Published in Meeting Abstracts: Asia Pacific Scientific Forum: The 43nd Annual Conference on Cardiovascular Disease and Epidemiology; April 2002, Honolulu, HI.


Johnson JT, **Granberry MC**. Reimbursement of pharmacist’s cognitive services for anticoagulation and hyperlipidemia management. [abstract]. *Pharmacotherapy*. 1996;16(3):517

Schneider EF, Gardner SF, Granberry MC, Carter IR. Is it safer and more effective to add low-dose niacin to low-dose HMG-CoA reductase inhibitor than to increase the dose of the HMG-CoA reductase inhibitor in patients failing to respond to initial therapy? [abstract]. Pharmacotherapy 1995;15:403


RESEARCH/CONTRACTS

The Thiazolidinediones and Brain Natriuretic Peptide (Principal Investigator) Funded by Office of Biomedical Research Resources, The University of Texas – Pan American $6,430.00 (2003)

Documentation and Analysis of Potential Grade Inflation at a College of Pharmacy Over 20 Years (Principal Investigator) Unfunded (2002)

Evaluation of Clinician’s Knowledge of Statistical Methods and Clinical Significance. (Principal Investigator) Unfunded (2001)

Retrospective Evaluation of the Medical Management of Patients with Left Ventricular Systolic Dysfunction. (Principal Investigator) Funded by Smith-Kline Beecham $3000.00

Forearm Endothelial Response in Users of Smokeless Tobacco as Compared to Cigarette Smokers: A Pilot Study. (Principal Investigator) Unfunded (1999)

HMG-CoA Reductase Inhibition and Repression of Cardiac Hypertrophy. Funded by Parke-Davis, and Co. (Co-Investigator) $25,625.00 (1999)

A Multicenter, Six Week, Randomized, Open-Label, Parallel Arm Study Comparing the Efficacy of Once Daily Atorvastatin to Simvastatin in Hypercholesterolemic Patients, Contract with Parke-Davis, Medical Research, (Co-Investigator) $69,000.00 (1998)

Forearm Endothelial Response to Atorvastatin and Troglitazone in Non-insulin Dependent Diabetic Patients (Principal Investigator) Funded by a grant from Parke-Davis and Co. $73,500.00 (1997)

Can Pharmacist Intervention and Education Prevent Hospital Re-Admission for Congestive Heart Failure? (Co-Investigator) Funded by National Association for Retail Druggists $10,000.00 (1996)

A Comparison of the Fibrinogen, Homocysteine, and Plasma Lipid Modification by Metformin and Pravastatin When Used Separately or in Combination in Non-insulin Dependent Diabetic Patients. (Principal Investigator) Funded by Bristol-Myers Squibb $9,600.00 (1996)

Case-Based Lecture Versus Standard Lecture. (Co-Investigator) 1996

Low-dose lovastatin plus niacin versus higher dose lovastatin. (Co-Investigator) Funded by Bristol-Myers Squibb Family Medicine Research Award, ACCP Research Institute. $10,000.00 (1994)
Once daily Procardia XL versus once daily Adalat CC for twenty-four blood pressure control. (Principal Investigator) (1994)

Effect of niacin on lipids and glucose control when added to pravastatin in diabetic patients. (Co-Investigator) Funded by R. Clifton Brooks Medical Research Fellowship Program of the Sons of the Confederate Veterans. (1994)

**RESEARCH GRANTS UNFUNDED**

The Effect of Exercise on Inflammatory Markers in Obese Children (Principal Investigator of subgrant) RIMI $231,087.00 (2004)

Comparison of Health Interventions Between Hispanic and Non-Hispanic Diabetics. Submitted to the Centers for Medicare and Medicaid Services. (Co-Investigator) $223,523.00 (2003)

HMG-CoA Reductase Inhibitors and Cardiac Hypertrophy. Submitted to Atorvastatin Research Awards Program. (Co-Investigator) $49,814.00 (1999)

Effect of Atorvastatin on Cyclosporine Pharmacokinetics in Heart Transplant Patients. Submitted to Parke-Davis, and Co. (Co-Investigator) $35,000.00 (1999)

Differential Effects of Lipophilic and Hydrophilic HMG-CoA Reductase Inhibitors on Cardiac Myocytes: An Advantage for Hydrophilic Agents? (Co-Principal Investigator) Grant proposal submitted to Bristol-Myers Squibb, Inc. $10,000.00 (1998)

HMG-CoA Reductase Inhibitors and Cardiac Hypertrophy. (Co-Investigator) Submitted to the Pharmaceutical Research and Manufacturers of American Foundation. $25,000.00 (1998)

Lipid Lowering Therapy for Secondary Prevention after Acute Myocardial Infarction: Prescribed Use and Outcomes. (Principal Investigator) $2,500.00 (1997)

Forearm Endothelial Response to Sildenafil in Non-insulin Dependent Diabetic Patients. (Principal Investigator) Grant proposal submitted to Pfizer Inc. $16,762.50 (1998)

The Effect of Cerivastatin on Hemostatic Risk Factors Associated with Cardiovascular Disease. (Principal Investigator) Grant proposal submitted to SmithKline Beecham. $20,862.50 (1998)

**POSTER PRESENTATIONS**


DeLeon MA, Farrell NC, Coleman CA, Granberry MC. Preadmission Writing Samples as a Predictor of Academic Success of First-year Pharmacy Students. Am J Pharm Edu; 2011; 75(5) Article 105
Granberry MC, Witte AP, Barnes JN. Author’s Contribution to Posters Presented at a National Pharmacy Meeting Did Not Consistently Adhere to the International Committee of Medical Journal Editors (IMJE) Guidelines. Poster presentation at the ASHP Midyear Meeting, December 2007

Granberry MC, Maize DF and Coleman C. Knowledge and Perceptions of Accreditation from Applicants to a New School of Pharmacy. Poster presentation at American Association of Colleges of Pharmacy Annual Meeting, San Diego, CA, July 9, 2006

Bellanger RA, Granberry MC, Mathes A. Continuing Professional Development (CPD) Survey – Responses from Texas Pharmacists. Poster presentation at the American Pharmacists Association annual meeting in San Francisco, March 2006

Granberry MC, Canales PL, Myhra J. Analysis of Clinical Competency Test Performance by Faculty Status and By Geographic Region. Poster presentation at American Association of Colleges of Pharmacy Annual Meeting, Cincinnati OH, July 10, 2005

Granberry MC, Evans ME, Tijerina S. B-type natriuretic peptide levels not increased in heart failure patients receiving thiazolidinediones. Poster presentation at the American College of Clinical Pharmacy Spring Practice and Research Forum, Myrtle Beach, SC April 11, 2005

Granberry MC, Garza R, McIntyre WJ. Assessment of student professionalism during acute care clerkships at colleges of pharmacy. Poster presentation at the American Association of Colleges of Pharmacy Annual Meeting, Minneapolis MN, July 22, 2003

Granberry MC, Stiegler KA. Documentation and analysis of increased grade point averages at a college of pharmacy over 20 years. Poster presentation at the American Association of Colleges of Pharmacy Annual Meeting, Minneapolis MN, July 22, 2003


Granberry MC, Troillet R, Eidt J, Smith ES. Forearm endothelial response in users of smokeless tobacco as compared to cigarette smokers and non-tobacco users. Poster presentation at the American College of Clinical Pharmacy Spring Practice and Research Forum, Savannah, GA, April 9, 2002


INVITED LECTURES AND PRESENTATIONS


“Lipid-Therapy for Special Populations”. Texas Society of Health-System Pharmacists Annual Meeting, Houston, TX April 12, 2014


“Use of Aldosterone Antagonists and Ivabradine in Treating Heart Failure”. Clinical Pharmacy Week. Vienna, Austria September 10, 2012


“Setting Up A Rotation”. Preceptor training for the Rangel College of Pharmacy, Corpus Christi, Texas June 2012.

“Evidence-Based Drug Therapy”. Continuing education presentation for the Central Texas Society of Health-System Pharmacists. San Antonio, Texas, September 8, 2008

"Gambling on Drug Therapy: How to Improve Your Odds When Interpreting the Medical Literature" Continuing education presentation at the UIW School of Pharmacy Preceptor Conference, San Antonio TX, October 26-27, 2007

“The Use of Insulin Sensitizers in Patients with Heart Failure: The Risks Outweigh the Benefit” Platform presentation at the 40th Annual Midyear Clinical Meeting of the
American Society of Health-System Pharmacists. Las Vegas, Nevada, December 7, 2005

"Gambling on Drug Therapy: How to Improve Your Odds When Interpreting the Medical Literature" Platform Presentation at the Fall UT-Austin College of Pharmacy CE Seminar, Edinburg TX, October 19, 2003

"Frequently Asked Questions About Anti-platelet Therapy" UAMS College of Medicine Continuing Medical Education Program. Hot Springs, Arkansas March 23, 2002

"Forearm Endothelial Response in Users of Smokeless Tobacco as Compared to Cigarette Smokers and Non-Tobacco Users" UAMS College of Pharmacy Pharmaceutical Sciences Seminar. Little Rock, Arkansas October 5, 2001

"New Developments in Lipid Management" Presentation at the Fall Symposium of the Mid-South College of Clinical Pharmacy. Memphis, Tennessee September 9, 2000


"Reimbursement of pharmacist’s cognitive services for anticoagulation and hyperlipidemia management" Johnson JT and Granberry MC. Poster presentation at the American College of Clinical Pharmacy Annual Meeting, Nashville, TN. August 6, 1996.


PROFESSIONAL APPOINTMENTS AND SERVICE

Clinical Specialist, Cardiovascular Intensive Care Unit, Heart Hospital of Corpus Christi, Corpus Christi, TX, 2014 to present

Member, Search Committee, Assistant/Associate Dean for Experiential Education, Texas A&M Health Science Center Rangel College of Pharmacy, 2014-2015

Member, Outcomes Assessment Committee. Texas A&M Health Science Center Rangel College of Pharmacy, 2014-2015

Member, Accreditation Council for Pharmacy Education (ACPE) Self-Study Committee, Texas A&M Health Science Center Rangel College of Pharmacy, 2014-2015

Member, Strategic Plan Task Force: Education Sub-Committee, Texas A&M Health Science Center Rangel College of Pharmacy, 2013

Chair, Search Committee: Program Manager Experiential Education, Texas A&M Health Science Center Rangel College of Pharmacy, 2013

Chair, Search Committee: Pharmacy Practice Faculty Search, Texas A&M Health Science Center Rangel College of Pharmacy, 2012 to present

Clinical Specialist, Cardiovascular Intensive Care Unit, CHRISTUS Spohn Memorial Hospital, Corpus Christi, TX, 2012 to 2014
Co-Chair, Search Committee: Director of Introductory Practice Experiences, Texas A&M Health Science Center Rangel College of Pharmacy, 2011 to 2012

Member, QEP Committee. Texas A&M Health Science Center Rangel College of Pharmacy, 2011 to present

Chair, Departmental Appointment, Promotion and Tenure Committee. Texas A&M Health Science Center Rangel College of Pharmacy, 2011 - 2013

Chair, Curricular Affairs Committee. Texas A&M Health Science Center Rangel College of Pharmacy, 2011 to present

Clinical Specialist, Cardiovascular Intensive Care Unit, University Hospital, San Antonio, Texas 2009 to 2010

Member, University of the Incarnate Word, Rank and Tenure Committee, 2009 - 2010

Chair, Accreditation Council for Pharmacy Education Writing Committee, School of Pharmacy, University of the Incarnate Word, 2008 – 2010

Clinical Pharmacy Specialist, South Texas Veterans Affairs Medical Center, San Antonio, Texas 2006 – 2008

Member, Public and Professional Affairs Committee, American College of Clinical Pharmacy, 2007-2008

Member, Editorial Board, Texas Society of Health System Pharmacists, 2006 to 2010

Member, Faculty Affairs Committee, University of the Incarnate Word, San Antonio, Texas 2006 - 2008

Member, Publications Committee, American College of Clinical Pharmacy, 2005-2006

Chair, Institutional Review Board, University of the Incarnate Word, 2005 – 2007

Member, Admission and Academic Standards Committee, University of the Incarnate Word School of Pharmacy, 2005 – 2009

Member, Curriculum Committee, University of the Incarnate Word School of Pharmacy, 2005 – 2008

Member, Core Curriculum Review Committee, University of Texas – Pan American, 2004

Member, Strategic Planning Committee, College of Health Sciences and Human Services, The University of Texas – Pan American, 2003-2004

Member, Research Committee, College of Health Sciences and Human Services, The University of Texas – Pan American, 2003-2004

Chair, Assistant Dean Search Committee, University of Texas – Pan American, 2003-2004

Chair, Institutional Review Board, University of Texas – Pan American, 2003-2004
Member, Faculty Search Committee, Cooperative Pharmacy Program, The University of Texas – Pan American 2003–2004

Member, Pharmacy Scholars Program Admissions Committee, The University of Texas – Pan American 2002–2004

Member, Faculty Search Committee, Physician Assistant Studies Program, University of Texas – Pan American 2002–2004

Member, American Council of Pharmaceutical Education Accreditation Committee, College of Pharmacy, University of Arkansas for Medical Sciences, 2001

Member, Promotion and Tenure Committee, College of Pharmacy, University of Arkansas for Medical Sciences, 2001-2002

Member, Scholastic Standing Committee, College of Pharmacy, University of Arkansas for Medical Sciences, 2001-2002

Member, Curriculum Committee, College of Pharmacy, University of Arkansas for Medical Sciences, 2000-2002

Member, Editorial Advisory Board, Journal of the American Pharmaceutical Association, Special Issue Series: Avandia, 1999

Member, Editorial Advisory Board, Journal of the American Pharmaceutical Association, Special Issue Series: Insulin Resistance, 1999

Member, Disease State Management Examination Review Committee, National Association of Boards of Pharmacy. 1999-present

Member, Cardiology Item Writing Panel, BPS Specialty Council on Pharmacotherapy. 1998 - present

Member and Lipid Section Coordinator, Disease State Management Committee, College of Pharmacy, University of Arkansas for Medical Sciences, 1998-2002

Member, Item Writing Committee for Disease State Management, National Association of Boards of Pharmacy, 1998

Member, Undergraduate Admissions Committee, College of Pharmacy, University of Arkansas for Medical Sciences, 1997 - 1999

Consultant, Angioplasty Clinical Pathway Development Committee, University Hospital of Arkansas, University of Arkansas for Medical Sciences, Little Rock Arkansas, 1996

Consultant, Pharmaceutical Care Committee, University Hospital, University of Arkansas for Medical Sciences, Little Rock Arkansas, 1996

Coordinator and Member, Lipid Management Clinic, University Hospital, University of Arkansas for Medical Sciences, Little Rock, Arkansas, 1995-2002

Member, Anticoagulation Clinic, University Hospital, University of Arkansas for Medical Sciences, Little Rock, Arkansas, 1995-2002
Member, Drug Utilization Review (DUE) Subcommittee, University Hospital, University of Arkansas for Medical Sciences, Little Rock, Arkansas, 1995-2002

Consultant, Patient Focused Care Committee, Baptist Medical System, Little Rock, Arkansas, 1995

Member, Clinical Pharmacokinetic Monitoring Service, University Hospital, University of Arkansas for Medical Sciences, Little Rock, Arkansas, 1994-1999

CURRICULUM VITAE

PETERSON, STEVEN LLOYD

Birthdate: January 6, 1953
Birthplace: Broken Bow, Nebraska
Citizenship: United States of America
Marital Status: Married; three children

Education
B.S. University of California at Davis, December 1975 (Animal Science)
Ph.D. University of California at Davis, June 1980 (Pharmacology and Toxicology)

Major Research Interest
Integrative neuropharmacological studies of drug action in the central nervous system.

Research and Professional Experience
1. Doctoral Candidate, Department of Pharmacology, University of California, Davis, School of Medicine, 1976-1980.
2. Pharmaceutical Manufacturers Association Foundation Predoctoral Research Fellow, Department of Pharmacology, University of California, Davis, 1979-1980.
3. Tarbox Postdoctoral Fellow, Department of Pharmacology and Therapeutics, Texas Tech University, 1980-1982.
4. Assistant Professor, Department of Medical Pharmacology and Toxicology, College of Medicine, Texas A&M University, 1982-1988.
5. Associate Professor, Department of Medical Pharmacology and Toxicology, College of Medicine, Texas A&M University, 1988-1996. (Promoted to Professor in 1996).
6. Associate Professor, College of Pharmacy, University of New Mexico, 1996-2002.
7. Professor, College of Pharmacy, University of New Mexico, 2002-2010.
8. Assistant Dean for Professional Curriculum, College of Pharmacy, University of New Mexico, 2007-2010.
9. Professor, Texas A&M Health Science Center Rangle College of Pharmacy, 2010.
10. Associate Dean for Academic Affairs, Texas A&M Health Science Center Rangle College of Pharmacy, 2010.

Honors and Awards
5. 1995-1996 Texas A&M University Center for Teaching Excellence Scholar for the College of Medicine. (Included $5000 grant to facilitate teaching excellence)
8. Teaching Team of the Year for Psychiatry and Addiction course. Presented by Rangel College of Pharmacy, 2012.

**Academic Committees**
1. Texas A&M University, Medical Student Admissions Committee, 1988-1996. Served as Co-Chair 1993-1996
2. University of New Mexico, College of Pharmacy, Student Services Committee, 1996-1998.
3. University of New Mexico, College of Pharmacy, Tenure and Promotion Committee, 1996-2010.
7. University of New Mexico, College of Pharmacy, Admissions Committee, 2002-present, served as Chair 2002-2009.
9. University of New Mexico, College of Pharmacy, PharmD Curriculum Committee, 2007-2010, served as Chair 2007-2010.
10. University of New Mexico, College of Pharmacy, Dean’s Executive Leadership Committee, 2007-2010.
11. University of New Mexico, College of Pharmacy, Organizational Planning & Evaluation Committee (OPEC), 2009-2010.
13. Texas A&M Health Science Center, Rangel College of Pharmacy, Executive Committee, 2010-present.
14. Texas A&M Health Science Center, Rangel College of Pharmacy, Curricular Affairs Committee, (ex officio), 2010-present.
15. Texas A&M Health Science Center, Rangel College of Pharmacy, Appointment, Promotion and Tenure Committee, (ex officio), 2010-present.
16. Texas A&M Health Science Center, Rangel College of Pharmacy, Research Advisory Committee, serving as Chair, 2011-2014.
17. Texas A&M Health Science Center, Rangel College of Pharmacy, Self-Study Committee, serving as Chair, 2010-present.
18. Texas A&M Health Science Center, Academic Affairs Advisory Council, 2010-present.
19. Texas A&M Health Science Center, Institutional Effectiveness Council, 2010-present.
20. Texas A&M Health Science Center, Instructional Technology Advisory Committee, 2010-present.
21. Texas A&M Health Science Center, Quality Enhancement Plan Committee, 2010-2014.

**Assistant Dean for Professional Curriculum-University of New Mexico**
Responsible for implementation of a new PharmD curriculum in a school of 340 students. Duties as Assistant Dean and Chair of the Curriculum Committee include development of an annual program.
teaching peer review and course evaluation process that includes faculty, community partners and PharmD students. Coordinated development of new College of Pharmacy competencies based on American Association of Colleges of Pharmacy (AACP) standards. Served as Director of the Curriculum Office and student learning portfolio (E*Value). Leadership style is consensus oriented support of faculty yet focused on optimizing student education and developing innovative leaders in pharmaceutical care and research. All teaching reviews, course reviews and mentoring activities are constructive in nature and intended to foster faculty, student and institutional success.

**Associate Dean for Academic Affairs-Texas A&M Health Science Center Rangel College of Pharmacy.**

Responsible for professional curriculum and faculty development in a school of 350 students. Duties include scheduling of courses and curriculum compliance with AACP standards, faculty credentialing and promotion & tenure activities. Coordinated development of professional competencies, mapping of curriculum to Appendix B, established a course review process and established an electronic student learning portfolio. The additional challenges of a relatively junior faculty and nearly 40% of the faculty being located at a distance have necessitate enhanced communication efforts, faculty orientation process and faculty development activities.

**Elected Offices**
3. College of Pharmacy representative to UNM Faculty Senate 2006-2008.

**Professional Societies**
5. American Association of Colleges of Pharmacy (AACP) 2010-present
6. Phi Lambda Sigma Pharmacy Leadership Society 2010-present

**Review Activities**
1. Experimental Neurology
2. Journal of Pharmacology and Experimental Therapeutics
3. Neuropharmacology
4. Life Sciences
5. Behavioral Brain Research
6. Physiology and Behavior
7. The American Journal of Physiology
8. Epilepsy Research
9. Toxicology and Applied Pharmacology

**Federal Government Public Advisory Committee Service**

Fogarty International Research Collaboration Award (FIRCA) Study Section, February, 2000, Ad Hoc Reviewer.
Research Support

1. University of California at Davis, Graduate Research Award. $500 direct costs, 7-1-78 to 6-31-79.


3. Tarbox Parkinson's Disease Institute Postdoctoral Fellowship, Texas Tech University Health Science Center. $50,000 direct costs, 9-1-80 to 8-31-82.

4. Biomedical Research Support Grant sponsored by the College of Medicine, Texas A&M University. "Electrophysiological Characterization of Cortical Pyramidal Cells". $4,500 direct costs, 6-1-82 to 3-31-83.


6. The American Parkinson Disease Association. "Electroconvulsive Shock and Anti-Parkinson Drug Therapy in Models of Parkinson's Disease". $20,000 direct costs, 7-12-83 to 12-31-84.

7. Biomedical Research Support Grant sponsored by the College of Medicine, Texas A&M University. "Evaluation of Chronic Antidepressant Treatment in Three Models of Epilepsy". $4,500 direct costs, 5-1-83 to 3-31-84.

8. National Institute of Neurological and Communicative Disorders and Stroke. Grant number: R29 NS24566. "Glycine Potentiation of Anticonvulsant Drugs". $349,049 direct costs, 4-1-87 to 3-31-92, S. Peterson, Principal Investigator


10. Epilepsy Foundation of America, "Metabolic Changes in Neurons and Glia During Epileptogenesis: An Immunocytochemical Comparison Between Juvenile and Adult Rats". $30,000 direct costs, 7-1-92 to 6-30-93, Jane Clements, Principal Investigator; S. Peterson, Collaborating Investigator.

11. Scott & White Institutional Research Fund, "Serotonergic Challenges as Predictors of Antidepressant Response". $62,500 direct costs, 11-1-94 to 10-31-95, Paul B. Hicks, Principal Investigator, S. Peterson, Collaborating Investigator.


$9952, 7-1-97 to 2-31-99. S. Peterson and Craig Marcus, Principal Investigators.


15. Component “Tissue Oxygenation Status and Neuroprotection in Reversible Focal Ischemia” $945,483. J. Liu Principal Investigator, S. Peterson Collaborating Investigator, 10% effort. Component “Characterization of Interictal and Ictal Generators of Human Frontal Lobe Epilepsy” $1,252,180. J. Shih Principal Investigator, S. Peterson, Mentor, 10% effort.


17. National Institute of Health Center of Biomedical Research Excellence (COBRE), Grant number: P20 RR 15636. “Integrative Program in CNS Pathophysiology Research” $10,968,000 direct costs. 2/01/06-1/31/11. Yoshio Okada, Principal Investigator.


**Teaching Activities**

1. Medical Pharmacology 924, 925 (For Texas A&M University medical students and graduate students.) Presented lecture series on neuropharmacology. Served as course coordinator from 1987-1990.

2. Neuropsychopharmacology 603 (Graduate course based in the Texas A&M University College of Medicine.) Presented lectures on the pharmacology of central monoamine systems, drug discrimination drug self-administration, and the neuropharmacology of antiepileptic drugs.

3. Neurobiology 640 (Graduate course based in the Texas A&M University College of Veterinary Medicine.) Presented lectures on monoamines, epilepsy, Parkinson’s Disease and Alzheimer's Disease.


5. Incentive Grant, Center for Teaching Excellence, Texas A&M University, "Laboratory for the Pharmacological Treatment of Epilepsy". $1,000, 6-1-94 to 5-31-95.

6. Pharmacy 473 (For UNM pharmacy students and graduate students). Presented lecture series on the pharmacology of the autonomic nervous system.
7. **Pharmacy 475** (For UNM pharmacy BS students and graduate students). Presented lecture series on neuropharmacology.

8. **Pharmacy 710** (For UNM PharmD. students). Present lecture series on the pharmacology of the autonomic nervous system. Served as instructor of record 2006-2010.

9. **Pharmacy 731** (For UNM PharmD. students). Presented lecture series on neuropharmacology.

10. **Pharmacy 732** (For UNM PharmD. students). Presented lectures series on neuropharmacology drugs in the Top 200.

11. **Pharmacy 576** (For UNM Graduate students). Presented in graduate level neuropharmacology.

12. **Pharmacy 798-Drug Abuse** (Elective for UNM PharmD students). Presented lecture series on basic mechanisms of drug abuse.

13. **Pharmacy 741** (For UNM PharmD. students). Problem-Based-Learning course on neuropharmacology.


15. **Pharmacy 611** (For TAMHSC PharmD. Students). Present lecture series on the pharmacology of the autonomic nervous system. Serving as Course Coordinator, 2012-present.

16. **Pharmacy 810** (For TAMHSC PharmD. Students). Present lecture series on neuropharmacology of drugs relevant to psychiatry and addiction.

**Graduate Students Supervised**


**Thesis Committee Membership**


Books

List of Publications


28. Peterson, S.L. and Frye, G.D., Glycine Potentiates Diazepam Activity in Electroshock Seizures of


41. Peterson, S.L. and Schwade, N.D., The Anticonvulsant Activity of D-Cycloserine is Specific for


List of Abstracts

2. Peterson, S.L., Albertson, T.E. and Stark, L.G., Evaluation of Intertrial Interval on Developing and


31. Bragin, D., Sanderson, J.L., Peterson, S., Connor, J.A. and Muller, W.S. Progressive Changes in


CURRICULUM VITAE

Gregory W. Sawyer, Ph.D.
Associate Professor and Assistant Dean for Student Affairs
Texas A&M Health Science Center Irma Lerma Rangel College of Pharmacy
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Kingsville, Texas 78363
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e-mail: gsaw36@gmail.com

PROFESSIONAL APPOINTMENTS

2013-Present
Associate Professor of Pharmaceutical Sciences and Assistant Dean for Student Affairs, Department of Pharmaceutical Sciences, Texas A&M Health Science Center Rangel College of Pharmacy, Kingsville, OK.

2007-2013
Associate Professor of Biochemistry, Department of Biochemistry and Microbiology, OSU-CHS, Tulsa, OK.

2011-2013
Director, Biomedical Sciences Graduate Program, Oklahoma State University-Center for Health Sciences (OSU-CHS), Tulsa, OK.

2004-2007
Assistant Professor of Biochemistry, Department of Biochemistry and Microbiology, OSU-CHS, Tulsa, OK.

2001-2004
Assistant Professor of Pharmacology, Dept. of Pharmacology and Physiology, OSU-CHS, Tulsa, OK.

EDUCATION AND TRAINING

1999-2001
Postdoctoral Research, Department of Molecular and Medical Pharmacology, School of Medicine, University of California, Los Angeles, CA. Supervisor: Dr. Richard Olsen.

1995-1999
Ph.D. in Pharmacology, Department of Pharmacology and Toxicology, College of Medicine, University of California, Irvine, CA. Supervisor: Dr. Fredrick Ehlert.

1994-1995
Laboratory Technician, Department of Virology, California Veterinary Diagnostic Laboratory System, Fresno, CA.

1993-1995
Molecular Biology, Department of Biological Sciences, California State University at Fresno, Fresno CA.

1993-1995
Teaching Assistant, Department of Biology, California State University at Fresno, Fresno, CA.

1991-1993
Laboratory Technician, Krazan and Associates, Geotechnical Division, Fresno, CA.

1987-1991
B.S. in Biological Sciences (with a minor in Marine Biology), Florida Institute of Technology, Melbourne, FL.

RESEARCH FUNDING

2008-2011
“Effects of a Small Muscarinic M1 Receptor Domain on Internalization”, NIH NINDS AREA Grant, 1R15NS057742-01, G. W. Sawyer (PI), $150,000 (direct costs) (no-cost extension for 2013, ends 6/30/2013).

2010-2011
“Making a M1 Receptor Knock-in Mouse”, OSU-Center for Health Sciences, Intramural Research Grant, G. W. Sawyer (PI), $12,000 (direct costs).

2008-2009
“Dimerization of Muscarinic M1 Receptors”, OSU-Center for Health Sciences, Intramural Research Grant, G. W. Sawyer (PI), $12,000 (direct costs).

2007-2008
“Internalization of Muscarinic M1 Receptors”, OSU-Center for Health Sciences, Intramural Research Grant, G. W. Sawyer (PI), $12,000 (direct costs).

2003-2006
“Trafficking and Signaling of Muscarinic Receptors”, Oklahoma Center for the Advancement of Science and Technology (OCAST), HR03-107S, G. W. Sawyer, (PI), $135,000 (direct costs).
1999-2001  "Labeling the Neuroactive Steroid Site of GABA<sub>4</sub> Receptors" NRSA postdoctoral fellowship, 1F32NS11015-01, Dr. Richard Olsen (sponsor).
1998-1999  Regent's Dissertation Fellowship

HONORS AND AWARDS

2010  Regent’s Distinguished Teaching Award, OSU-Center for Health Sciences.
2010  Regent’s Distinguished Research Award, OSU-Center for Health Sciences.
2009  3<sup>rd</sup> Annual Julius Axelrod Early Career Poster Session Travel, ASPET Annual Meeting.
2007  INRC Young Investigator Travel Award, INRC Annual Meeting.
1999  Henry Wood Elliot Award, University of California, Irvine.

TEACHING EXPERIENCE

2014-Present  Instructor, Biochemistry, Dept. of Pharmaceutical Sciences, Texas A&M Health Science Center Rangel College of Pharmacy. Team-taught pharmacy course (4 lectures annually).
2013-Present  Instructor, Principles of Drug Action I, Dept. of Pharmaceutical Sciences, Texas A&M Health Science Center Rangel College of Pharmacy. Team-taught pharmacy course (2 lectures annually).
2013  Course Director, Molecular Biology, Genetics, and Developmental Anatomy, OSU-CHS (developed the course prior to accepting my position at Texas A&M Health Science Center).
2007-2013  Instructor, Receptors I, Dept. of Biochemistry and Microbiology, OSU-CHS. Graduate course (3 credit hour course, alternate years).
2006-2011  Instructor, Molecular and Cellular Biology. Dept. of Biochemistry and Microbiology, OSU-CHS, Team-taught graduate course (3-6 lectures annually).
2006  Instructor, G Protein-Coupled Receptor Trafficking. Dept. of Biochemistry and Microbiology, OSU-CHS. Special topics graduate course.
2004-2013  Lecturer, Medical Biochemistry, Dept. of Biochemistry and Microbiology, OSU-CHS. Team-taught medical school course (16 lectures annually).
2004-2013  Instructor, Techniques in Molecular Biology, Dept. of Biochemistry and Microbiology, OSU-CHS. Team-taught graduate course (2 lectures and 2 laboratories).
2002-2009  Facilitator, Medical Information Systems Course. OSU-CHS.
2002-2004  Instructor, Principles of Drug Action, Dept. of Pharmacology and Physiology, OSU-CHS. Graduate course (3 credit hour course, alternate years).
2001-2004  Lecturer, Medical Pharmacology, Dept. of Pharmacology and Physiology, OSU-CHS. Team-taught medical school course (13-16 lectures annually).
1998-1999  Lecturer, Toxicology, Dept. of Pharmacology and Toxicology, University of California, Irvine, CA. Team-taught graduate course (3 lectures).
1998-1999  Tutor, Dept. of Pharmacology and Toxicology, University of California, Irvine, CA. Tutored a medical student in Medical Pharmacology.
1993-1995  Teaching Assistant, General Biology I and II, Dept. of Biology, California State University, Fresno. Taught two to three laboratory sections.

ACADEMIC COMMITTEES

2015-Present  Chair, Pre-Pharmacy Coordinator Search Committee.
2014-Present  Ex officio, Awards, Honors and Scholarships Committee.
2014-Present  Chair, Student Rules and Policies Committee.
2014-Present  Member, University Grievance Committee.
2013-Present  Ex officio, Credentialing Committee.
2013-Present  Member, Executive Committee.
2013-Present  Member, Administrative Leadership Team.
2013 Chair, Academic Standards Committee.
2012-2013 Member, Thesis Embargo Committee.
2012-2013 Member, Marketing and Enrollment Strategic Planning Implementation Committee.
2012-present Member, Research Strategic Planning Implementation Committee.
2011 Member, Honorary Degree Selection Committee.
2010 Member, Subcommittee of Phase 2 Curriculum Revision Committee to evaluate the impact of a systems-based curriculum on the graduate program.
2010-2012 Chair, Group VI Graduate Council.
2010 Member, Phase 2 Curriculum Revision Committee.
2009 Member, Phase 1 Curriculum Revision Committee.
2008-2011 Member, Promotion and Tenure Committee.
2008-2011 Member, Faculty Affairs Committee.
2008-2009 Vice Chair, Group VI Graduate Council.
2008 Member, New Building Space Committee.
2008 Member, Post-tenure Review Committee, Department of Biochemistry and Microbiology.
2008 Member, AOA Accreditation Committee.
2005 Member, Biochemistry Faculty Search Committee.
2005 Member, Director of the Office of Educational Development Search Committee.
2005 Member, Research Committee.
2005-2006 Member, Biomedical Sciences Graduate Committee, Chair (2006-2007).
2003-2009 Member, Medical Student Selection Committee.
2003 Member, OB/Gyn Faculty Search Committee.
2003 Member, OB/Gyn Chair Search Committee.
2002-2010 Member, Academic Standards Committee, Chair (2008-2010).
2001-2010 Chair, Subcommittee to reevaluate a non-cognitive grading policy (2007).

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society for Pharmacology and Experimental Therapeutics (ASPET).
Society for Neuroscience (SFN).
American Association of Colleges of Pharmacy (AACP).

GRADUATE TRAINING ACTIVITIES

2013-2014 Matt Weiher, D.O./M.S. dual degree program, Biomedical Sciences (Committee member).
2013 Allie McDonald, Ph.D. degree program, Biomedical Sciences (Committee member).
2013 Simone Bigelow, D.O./M.S. dual degree program, Biomedical Sciences (Committee member).
2013-2014 Greg Cook, Ph.D. degree program, Biomedical Sciences (Committee member).
2012-2014 Rebecca Gupton, D.O./M.S. dual degree program, Biomedical Sciences (Committee member).
2012-2014 Constance Rogers, D.O./M.S. dual degree program, Biomedical Sciences (Committee member).
2012-2014 Kate Weinbrecht, Ph.D. degree program, Biomedical Sciences (Committee member).
2011-2013 Larry Johnston, M.S. degree program, Biomedical Sciences (Committee member, graduated spring 2013).
2011-2013 Steven Hulford, M.S. degree program, Biomedical Sciences (Major advisor, graduated spring 2013).
2009-2011 Genevieve Eskridge, M.S., Biomedical Sciences (Committee member, graduated spring 2011).
2010-2012 Summer Dodson, Ph.D. degree program, Biomedical Sciences (Committee member).
2009-2011 Tim Bushyhead, M.S., Biomedical Sciences (Committee member, graduated spring 2011).
2007-2011 Susan Neubauer, Ph.D., Biomedical Sciences (Committee member, graduated fall 2011).
2006-2012 Arun Thangaraju, Ph.D. degree program, Biomedical Sciences (Major advisor, graduated summer 2012).
2006-2009 Jason Macias, Ph.D. degree program, Biomedical Sciences (Committee member, dropped out of
program fall 2009).

2006-2007 James Redfearn, Ph.D. degree program, Biomedical Sciences (Committee member, dropped out of program spring 2007).

2005-2009 Yana Levchenko, Ph.D., Biomedical Sciences (Committee member, graduated summer 2009).

2005-2007 Crystal Shults, M.S., Biomedical Sciences (Major advisor, graduated spring 2007).

2005-2007 Gifty Benson, M.S., Forensic Sciences (Committee member, graduated spring 2007).

2005-2007 Kristin Martin, M.S., Biomedical Sciences (Committee member, graduated spring 2007).

2004-2008 Anuradha Nallapaneni, Ph.D., Veterinary Biomedical Sciences (Committee member, graduated spring 2008).

2003-2006 Jon Hart, M.S., Biomedical Sciences (Major advisor, graduated summer 2006).

GRANT STUDY SECTIONS

Grant reviewer for the United State Civilian Research and Development Foundation (2006).

PARTICIPATION IN THE COMMUNITY

Participated in “Mysteries of Science” high school summer experience (2013)

Judge for the ASPET Neuropharmacology Pre-Doctoral Student poster competition, Experimental Biology (ASPET) Meeting, San Diego, CA, USA. April 20-24, 2013

Science Fair Judge at Eugene Fields Elementary School, March 7, 2013.

Participated in “Mysteries of Medicine” high school summer experience (2012).


Organized and ran a laboratory experience entitled “Purification of DNA” for Boy Scouts Troop (2011).

Science Fair Judge and speaker at Eugene Fields Elementary School (2012).

Organized and ran a laboratory experience entitled “Purification of DNA from plants” for OSU Summer Science Academy (2011).


VISITING SCIENTIST

2009 Dept. of Pharmacology, University of California, Irvine, May 7-21.

2007 Dept. of Pharmacology, University of California, Irvine, April 8-15.

2006 Dept. of Pharmacology, University of California, Irvine, November 12-20.

INVITED TALKS/SEMINARS

2014 “Muscarinic acetylcholine receptor trafficking” Texas A&M Health Science Center Irma Lerma Rangel College of Pharmacy, Kingsville, TX.

2012 “Use of pharmacological chaperones to rescue the plasma membrane expression of mutant M1 receptors” OSU, Center for Veterinary Health Sciences, Stillwater, OK.

2012 “Use of pharmacological chaperones to rescue the plasma membrane expression of mutant M1 receptors” The University of Tulsa, Dept. of Biology, Tulsa, OK.

2011 “Muscarinic receptor trafficking”, The University of Mississippi, School of Pharmacy, Dept. of Medicinal Chemistry, Oxford, MS.

2009 “Muscarinic acetylcholine receptor trafficking”, The University of Tulsa, Dept. of Biology, Tulsa, OK.

2008 “Muscarinic M1 receptor trafficking”, OSU-Dept. of Biochemistry, Stillwater, OK.

2007 “Muscarinic M1-M5 receptor trafficking”, OSU-CHS Seminar Series, Tulsa, OK.
PEER-REVIEWED PRIMARY PUBLICATIONS

**BOOK CHAPTERS & CONFERENCE PROCEEDINGS**

**BOOK CHAPTERS**


**CONFERENCE ABSTRACTS**


17. **Sawyer, G.W.** A small domain in the C-terminal tail of muscarinic M₁ and M₄ receptors is necessary for expression on the plasma membrane. Annual Society for Neuroscience Meeting, 2007.


19. **Sawyer, G.W.** Cysteine Residues in the Third Intracellular Loop of Muscarinic M₁ Receptors Play a Role in Internalization. Recent Advances in Muscarinic Receptor Pharmacology & Therapeutics, San Diego, CA, USA. April 4-5, 2008.


23. **Sawyer, G.W.** Use of a regulated secretion/aggregation system to determine the rate of muscarinic M₁ and M₂ receptor plasma membrane insertion. 3rd Annual Julius Axelrod Poster Session, Annual Society for Neuroscience Meeting, Chicago, IL, USA. October 18, 2009.

24. **Sawyer, G.W.** and Shults, C.A., Mutation of amino acid residues in the C-terminal tail and near the base of transmembrane spanning domain 1 affect M₁ receptor plasma membrane expression. Annual Society for Neuroscience Meeting, Chicago, IL, USA. October 17-21, 2009.


UNIVERSITY RULE

12.03.99.M1 Faculty Teaching Workload Reporting
Approved October, 2015
Revised June 9, 2016
Next scheduled review: June 9, 2021

Reason for the Rule

Faculty workload reporting is required for any individual assigned to teach a course for resident credit, or any individual whose salary is paid in full or part from Faculty Salaries.

Definitions

Faculty Salaries - are defined as salaries or wages of those engaged in the teaching function. Those paid from faculty salaries include heads of teaching departments and faculty.

Workload Definition - individuals paid from faculty salaries receive faculty workload credit from two areas: Classroom Teaching Credit and Equivalent Teaching Credits.

Classroom Teaching Credit: Classroom Teaching Credits are generally assigned to resident-credit courses. To ensure accuracy in workload reporting, each course should be assigned to the person primarily responsible for course instruction. For team taught courses, the teaching credit may be proportioned to the faculty members teaching the course.

Equivalent Teaching Credits: Certain non-classroom academic duties performed by faculty that enhance the teaching/learning process may be funded from Faculty Salaries. Equivalent teaching credits may be assigned for these duties. Once the faculty member is in compliance, no further assignment or equivalent credits is required. The listing of allowable equivalent teaching credits for direct instructional or administrative activities is included in the “Faculty Workload Policy Statement – Texas A&M University” which is available at: http://dars.tamu.edu/dars/files/4f/4ff73c0b-45b7-4b7f-9e1a-235fbb5c4be1.pdf.
Official Rule/ Responsibilities/ Process

1. MINIMUM WORKLOAD REQUIREMENT

1.1 The minimum workload requirement for faculty members paid 100% from Faculty Salaries is nine (9) teaching credits, counting classroom and equivalent teaching credits.

1.2 For Graduate Assistant appointments that are reported in the faculty workload report the minimum workload standard is set by the academic unit reporting the workload.

1.3 For faculty members with less than full-time appointments, the minimum workload standard is proportionately less.

2. REPORTING

Every semester each academic department must prepare a Faculty Workload Compliance Report. The report must include each individual who:

2.1 is primarily responsible for course instruction for resident credit; or

2.2 is paid any part of his or her salary from FACULTY SALARIES (see definition above).

3. SPECIAL CONDITIONS REGARDING COMPLIANCE

3.1 Payment of FACULTY SALARIES to exhaust accumulated leave time: Faculty members fall into this category if they terminate employment, become ill, or die during any part of the year and the payment of salary to exhaust accumulated leave carries them into a fall or spring semester. These faculty members cannot be assigned teaching responsibilities and therefore cannot be in compliance with the minimum workload requirement. The department head must provide a written explanation to the dean of the college for each faculty member not in compliance.

3.2 Faculty who are unable to complete teaching assignment during a long semester: Faculty members fall into this category if they terminate employment, become ill, or die during a long semester and their courses are reassigned to other faculty members in the department. The compliance status of the faculty member will be the same as their compliance status before the disabling condition or termination took place.
3.3 **Other reason for non-compliance:** Occasionally faculty members may be non-compliant for reasons not covered in 3.1 or 3.2 above. For example, a faculty member may have been placed on administrative leave or there may have been another circumstance that prevents a faculty member from teaching courses in a given semester.

3.4 **Faculty members not in compliance:** The reason for any faculty member not being in compliance with the minimum teaching requirement must be explained. For regular faculty (those not covered by 3.1 or 3.2 above) who are not in compliance, the department head must initiate an appropriate Employee Payroll Action Form to adjust the individual's teaching salary percentage.

4. **RESPONSIBILITY FOR MONITORING WORKLOAD**

4.1 **Department Head**

4.1.1 Assigns and monitors the workloads of individuals within his or her department to ensure compliance with the workload requirement.

4.1.2 Approves equivalent teaching credits based on direct instruction or administrative activities as listed in the “Faculty Workload Policy Statement – Texas A&M University” ([http://dars.tamu.edu/dars/files/4f/4ff73c0b-45b7-4b7f-9e1a-235fbb5c4be1.pdf](http://dars.tamu.edu/dars/files/4f/4ff73c0b-45b7-4b7f-9e1a-235fbb5c4be1.pdf)).

4.1.3 Ensures that other academic duties are assigned equitably within the department.

4.1.4 Provides notice to the college dean of all faculty members not in compliance.

4.2 **College Dean**

The college dean is responsible for monitoring the workload of individual faculty in his or her college as reported by the department head.

4.3 **University Administration**

Data and Research Services (DARS) will consolidate the reports from the colleges to generate the final Faculty Workload Compliance Report and shall prepare a list of faculty not in compliance with the minimum workload requirement. This report shall be sent to the Provost and Executive Vice President for review and approval prior to submission to the President.
The President is responsible for verifying institutional compliance with the minimum workload requirement and for reporting this information through the Chancellor, to the Board of Regents.

5. **INSTRUCTIONS FOR COMPLETING FACULTY WORKLOAD COMPLIANCE REPORT**

Each department head and dean will be notified by the DARS when the Faculty Workload Report has been placed on the web for updating and correcting.

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**Related Statutes, Policies, or Requirements**

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**Supplements** *System Policy 12.03*

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**Contact Office**

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*Office of the Dean of Faculties*
# Certification Form for New Bachelor’s and Master’s Programs

**Texas Higher Education Coordinating Board**

**Directions:** An institution shall use this form to request a new bachelor’s or master’s degree program that meets all criteria for approval in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.44:

(a) The program has institutional and governing board approval; (b) the program complies with the Standards for Bachelor’s and Master’s Programs; (c) adequate funds are available to cover the costs of the new program; (d) new costs during the first five years of the program will not exceed $2 million; (e) the program is a non-engineering program (i.e., not classified under CIP code 14); and (f) the program will be offered by a university or health-related institution.

If a new bachelor’s or master’s program does not meet the criteria above, an institution must submit a request using the **Form for Requesting a New Bachelor’s and Master’s Degree Program**.

**Information:** Contact the Division of Academic Quality and Workforce at 512/427-6200 for more information.

## Administrative Information

1. **Institution:** Texas A&M University
2. **Program Name:** Master of Science (M.S.) in Pharmaceutical Sciences
3. **Proposed CIP Code:** 51.2010.00
4. **Number of Required Semester Credit Hours (SCHs)**: 32 SCH
5. **Administrative Unit:** Irma Lerma Rangel College of Pharmacy

   **NOTE:** The proposed program will be reflected on the Program Inventories of both Texas A&M University and the Texas A&M University Health Science Center.

6. **Delivery Mode:** On campus face-to-face at both the College Station and Kingsville locations of the Irma Lerma Rangel College of Pharmacy
7. **Implementation Date:** Fall 2018
8. **Contact Person:**
   - **Name:** Mansoor A. Khan, R.Ph., Ph.D.
   - **Title:** Professor and Vice Dean
   - **E-mail:** mkhan@pharmacy.tamhsc.edu
   - **Phone:** 979-436-0562

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1 Bachelor’s degrees should not exceed 120 SCH per Board rule 5.44 (a) (3). Those that exceed 120 SCH must provide detailed documentation describing the compelling academic reason for the number of required hours, such as programmatic accreditation requirements, statutory requirements, or licensure/certification requirements that cannot be met without exceeding the 120-hour limit.
Signature Page

I hereby certify that all of the following criteria have been met in accordance with the procedures outlined in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.44:

(a) The program has institutional and governing board approval.

(b) The program complies with the Standard’s for New Bachelor’s and Master’s Programs.

(c) Adequate funds are available to cover the costs of the new program.

(d) New costs during the first five years of the program will not exceed $2 million.

(e) The program is a non-engineering program (i.e., not classified under CIP code 14).

(f) The program will be offered by a university or health-related institution.

I hereby certify that my institution has notified all public institutions within 50 miles of the teaching site of our intention to offer the program at least 30 days prior to submitting this request. I also certify that if any objections were received, those objections were resolved prior to the submission of this request.

__________________________________________
Chief Executive Officer                          Date

I hereby certify that the Board of Regents has approved this program.

Date of Board of Regents approval:________________________

__________________________________________
Board of Regents (or Designee)                     Date
Proposal for a New Doctoral Program

Directions: Texas public universities and health-related institutions complete this form to propose a new doctoral degree program. This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) the Chief Executive Officer, acknowledging agreement to reimburse expert external reviewers’ costs; (3) the Chief Financial Officer, certifying the accuracy of funding estimates for the new program; (4) a member of the Board of Regents (or designee), certifying Board of Regents approval for Coordinating Board consideration; or, if applicable, (5) a member of the Board of Regents (or designee), certifying that criteria have been met for Commissioner consideration. Institution officials should also refer to Texas Administrative Code (TAC), Title 19, Chapter 5, Subchapter C, Section 5.46, Criteria for New Doctoral Programs.

Note: An institution must submit Planning Notification prior to submitting a proposal for a new doctoral program. An institution is considered by the Board to be planning for a new doctoral program if it takes any action that leads to the preparation of a proposal for a new program. This includes hiring personnel, including consultants and planning deans, leasing and/or purchasing real estate, building facilities, and/or developing curriculum. Planning Notification must be submitted at least one year prior to submission of a proposal to offer the degree, if the proposed program leads to the award of a professional degree, as defined by Texas Education Code 61.306. Institutions submit Planning Notification through the online submission portal, as a letter to the Assistant Commissioner of the Academic Division of Academic Quality and Workforce.

Contact: Division of Academic Quality and Workforce, 512-427-6200.

Administrative Information

1. Institution Name and Coordinating Board Accountability Group:

Texas A&M University 003632

NOTE: The proposed program will be reflected on the Program Inventories of both Texas A&M University and the Texas A&M University Health Science Center.

2. Proposed Program:

Show how the proposed program would appear on the institution’s Program Inventory (e.g., Doctor of Philosophy in Electrical Engineering).

Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences

3. Proposed CIP Code:

List of CIP Codes may be accessed online at www.txhighereddata.org/Interactive/CIP/. Include justification if the proposed program name is not included in the Texas Classification of Instructional Programs.

51.2010.00
4. Location and Delivery of the Proposed Program:

*Provide the location of instruction and how the proposed program will be delivered to students (e.g., Instructed on the main campus in Lubbock, face-to-face).*

Instruction will be face to face at the location of the Irma Rangel College of Pharmacy in Kingsville, Texas and on the main campus of Texas A&M University in College Station, Texas. Some courses will be taught through electronic to group instruction, with the faculty member at either the Kingsville location or at College Station, with students attending from both locations. However, this will be less than 50% of the total SCH for the degree program.

5. Administrative Unit:

*Identify where the proposed program would fit within the organizational structure of the institution (e.g., Department of Electrical Engineering within the College of Engineering).*

Irma Lerma Rangel College of Pharmacy

NOTE: The proposed program will be reflected on the Program Inventories of both Texas A&M University and the Texas A&M University Health Science Center.

6. Program Description:

*Describe the proposed program.*

The mission of the Ph.D. program in Pharmaceutical Sciences (PHSC) is to provide a comprehensive knowledge base that leads to drug discovery, design, and development of pharmaceutical dosage forms through basic and applied research in pharmaceutical sciences. This comprehensive knowledge will afford graduates the ability to detect and correct product manufacturing issues of post-marketing adverse drug events and to perform translational research leading to the discovery and development of pharmaceutical dosage forms.

Consistent with the Food and Drug Administration’s (FDA) message of pharmaceutical current good manufacturing practices (cGMP) of the 21st century, Process Analytical Technologies (PAT), Quality by Design (QbD), and the Critical Path Initiative, the PHSC aims to provide strong foundational, educational, and research training in drug discovery and pharmaceutical product development; delivery of drugs to their sites of action; modernization of pharmaceutical manufacturing; regulatory affairs; and to support the existing preclinical and translational research programs within Texas A&M to obtain practical dosage forms that benefit patients and the citizens of Texas.

The PHSC program will prepare students for executive positions in academia, research, education, government, industry, and related fields. These new leaders will identify, research, and problem-solve issues related to pharmaceutical sciences. The proposed Ph.D. program will provide education and research training for a comprehensive knowledge base required for translational research from bench to bedside, and to identify product quality issues that cause post-marketing adverse drug events and recalls that lead to dose and medication changes by physicians. It will prepare the students to fill the voids of pharmaceutical scientists and executives in academia, research, education, government, industry, and related fields. The M.S. program (submitted concurrently with this Ph.D. proposal) will serve primarily those students who do not complete the Ph.D. degree.

Primary objectives of the PHSC program are:
• To provide a meaningful and important course of study that is currently unavailable in Texas A&M.
• To ensure Ph.D. seats exist within the program to train as many Texas students as is practical.
• To train and create pharma and biotech entrepreneurs who will know how to leverage the vast knowledge and infrastructure of Texas A&M programs in engineering, veterinary medicine, Agri-Life, medicine, dentistry, biomedical sciences, physical and life sciences, business, and how to advance drug and medication policies through the Bush School of Government.
• To advance the sciences of Pharmacy and Pharmaceutical Sciences on the international stage.
• To foster knowledge of, and help direct, current trends and issues in pharmaceutical sciences, biopharmaceutical products development, and compounding of medications.
• To provide students with specific experiences in conceptual and technical research areas in the pharmaceutical sciences, e.g., pharmaceutics, medicinal chemistry, pharmacology, pharmacy administration, and basic sciences.
• To promote research and scholarly activities that will enable students to learn and develop a solid foundation to successfully pursue a career in the pharmaceutical sciences and related industries.
• To offer new career training options to undergraduate and pharmacy graduates of The Texas A&M University System programs and others in the State of Texas.
• To develop methods and/or innovations in analytical processes and technologies relevant to pharmaceutical and biotech products.
• To provide opportunities for residents of College Station, South Texas, and other broader areas of Texas where such a program doesn’t exist.
• To provide pharma development, pharma industrial, critical path, and precision medicine for dose tailoring and FDA/NIH training opportunities for interested students.

The degree program will be offered at both the College Station and Kingsville locations of the Irma Lerma Rangel College of Pharmacy.

7. **Proposed Implementation Date:**
   Provide the date that students would enter the proposed program (MM/DD/YYYY).

   Fall 2019

8. **Institutional and Department Contacts:**
   Provide contact information for the person(s) responsible for addressing any questions related to the proposal.

   1. Name: Mansoor A. Khan, R.Ph., Ph.D.
      Title: Professor and Vice Dean, College Station, TX
      E-mail: mkhan@tamhsc.edu
      Phone: 979-436-0562
Proposed Doctoral Program Information

I. Need

Graduate programs in Pharmaceutical Sciences (PHSC) across the nation, and particularly in the state of Texas, are mostly traditional Ph.D. programs with little or no emphasis on process or product development for innovations with emerging technologies, post-marketing corrections, and cost reduction of medications. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path initiative and the National Institute for Pharmaceutical Technology and Education’s (NIPTE) recommendations of modernization of pharmaceutical with process analytical technologies (PAT) and Quality by Design (QBD). All students in the program will have awareness of in PAT and QBD where pharmaceutical products are linked with performance.

Texas A&M’s strength in basic sciences, medical sciences, and engineering research programs has recently made significant advances in creating infrastructure to support product development and drug delivery. Developing a Ph.D. program in PHSC will be a timely endeavor, which will allow bridging the gap between the basic sciences and product development and advancing the institution’s research mission. The Rangel College of Pharmacy (RCOP) is unique in terms of its two teaching locations – one on the main campus in College Station and another location in Kingsville. This distribution provides the RCOP a unique opportunity to develop a highly qualified workforce through its presence in College Station and through its south Texas presence in Kingsville with an opportunity to serve and develop much needed representation of the Hispanic and minority workforces. It will also strengthen other Texas A&M programs with more opportunities for collaboration and drug development, particularly on the main campus. By providing collaborations among students and faculty from all of the disciplines that are encompassed by the pharmaceutical sciences, the proposed Ph.D. program will offer an interdisciplinary, team-approach philosophy to problem solving needed by professionals today. Such diversity in student interactions can create a dynamic, intellectual environment and improve the quality of research, research ideas, and information generated from such a program.

Since the introduction of the FDA’s position paper on cGMPs of the 21st century in 2005, research strategies have changed dramatically and continually in the pharmaceutical industry. Drug discovery and drug development are more intertwined as the identification of optimal pharmaceutical properties of the biologically active molecules becomes more important, necessitating the integration of drug development (pharmaceutics) into drug discovery process. One of the greatest challenges of today’s pharmaceutical industry is rapid, seamless translation of biomedical discoveries into drug products. To accommodate such a dramatic shift in the research enterprise, development of new drug discovery and delivery technologies, methodologies for modernization of manufacturing processes with process analytical technologies, Quality by Design (QbD), and emerging technologies, in vitro/in vivo simulation models, and understanding regulatory issues with sustained supply of qualified interdisciplinary scientists are critically needed. However, according to the ‘Path Forward’ report of the Educational Testing Service and Council of Graduate Schools, the percent of graduate students with US pharmacy degrees has declined sharply in the past decade which is leading to a scarcity of appropriately trained investigators.

A significant need for the continued success of the mission of RCOP and the profession of pharmacy is the availability of well-qualified professors in the pharmaceutical sciences who will continue to educate and provide the new generation of pharmacy professors and researchers who will follow them.
Academically sound schools and colleges of pharmacy provide suitable courses at the professional and doctoral levels to establish a pipeline of basic, applied, and clinical faculty who are well qualified to meet demand and make advances in a broad range of settings, including academic pharmacy, industry, regulatory, clinical, community, compounding, marketing, and consulting.

Despite the enormous strength of existing programs at Texas A&M, the pharmaceutical product development pipeline needs improvement. This improvement will come with an understanding of conversion of discoveries to tangible pharmaceutical dosage forms. It requires an integration of chemistry, engineering, life sciences, and clinical sciences for small and biotech molecules for human, veterinary, and AgriLife products. Too many valuable Texas A&M discoveries have been hindered from practical development by a lack of a substantial bridge between fundamental bench research, clinical drug development, and medical practice. The Ph.D. program in PHSC is about filling the gaps and joining the parts. Patients do not take discovered drugs as chemicals; rather, they take dosage forms such as tablets, injections, transdermal patches, and many other forms. At the present time, Texas A&M has no provision for formulations development teaching and research to promote scientists of the 21st century who understand the successful development of our chemical discoveries.

To develop the most updated Ph.D. program with respect to national and regional needs, the RCOP has hired a former FDA executive who has a proven experience of integrating the pharmacy and engineering programs in the nation. This former FDA executive started a Ph.D./M.S. program in pharmaceutical sciences at Texas Tech University as the founding director of graduate programs while he was a professor before joining the FDA. The program at Texas Tech has done well with approximately 40 students enrolled each year in the Ph.D. program in pharmaceutical sciences. It accepts about 25% of the qualified applicants that apply (correspondence with Dr. Thomas Abbruscato, associate dean). In addition, the RCOP has knowledgeable faculty and staff to comprehensively understand and link the essential components of all dosage forms and delivery systems from various colleges across Texas A&M.

Amongst many initiatives on development and modernization of pharmaceutical products, the FDA launched a “Critical Path” initiative in 2004 to invigorate pharmaceutical research to suit the emerging medical needs of the 21st century. The ultimate goal of this initiative is to modernize and facilitate the development process in order to bring drugs, biological products, and medical devices from discovery to commercialization. The initiative has identified six important areas for improving medical product development, including high quality product manufacturing. It is clear that in addition to modernizing the ‘Critical Path Sciences’ with bench to bedside discoveries, developing quality academic programs in product development, manufacturing sciences, quality assurance and control, and regulatory affairs is needed to meet these goals. Developing a graduate program in pharmaceutical sciences provides opportunities for researchers who want to work in a multidisciplinary environment in the future and generates a strong human resource pool in the field of drug discovery, development and translational research.

Product development from drug discovery through dosage-form manufacturing has recently become a highly visible enterprise in the pharmaceutical sector. Expenditures on pharmaceuticals have grown faster than other major components of the health care system since the late 1990s. This has shifted the emphasis of drug development towards optimization of the synthetic manufacturing process via Process R&D, resulting in active pharmaceutical ingredient (API) production with greater efficiency and lower cost. New strategies, such as combinatorial chemistry, are speeding up the discovery portion of the new-drug time line and pumping more candidates in the developmental pipeline, resulting in a
significant decrease in the Post-IND drug development times and rapid drug approval. According to a recent testimony of FDA officials in the US Congress, about 80% of drugs and 45% of finished dosage forms, originate overseas. We need to educate our students for US self-reliance for the development of drug and dosage forms of this 1.06 trillion-dollar worldwide industry of which US revenues are 44.5% (Reference Statistica portal; Feb 2016). Support letters obtained from Mylan and other pharma industry leaders in Texas indicate a shortage of Ph.D. graduates with a background and expertise in pharmaceutical sciences. These letters are shown in Appendix I.

A. Job Market Need

Demonstrating the need for additional graduates in the field is vital. Provide short- and long-term evidence of the need for graduates in the Texas and U.S. job markets. Cite the Bureau of Labor Statistics, Texas Workforce Commission, professional association data, and other documented data sources to create a supply/demand analysis. Institutions should be able to show how the number of new graduates produced both in Texas and nationally compares to the number of job openings that require a doctoral degree in the discipline now and in the future on both the state and national levels. The use of predictive modeling is encouraged. If the program is designed to address particular regional or state needs in addition to workforce demands, provide a detailed description.

A national study was conducted by the Bureau of Labor Statistics in 2014 to determine the estimated supply and demand trends and resultant gap of biomedical occupations (based on standard occupational classification (SOC) codes) in 10 metropolitan statistical areas (MSAs), at all degree levels. The results were determined by comparing annual job postings and the supply of graduates in the MSAs. The study establishes that there is an undersupply of medical scientists with graduate degrees in the delineated MSAs (see Table 1). According to the SOC codes, medical scientists are individuals trained to conduct research dealing with the understanding of human diseases and the improvement of human health, engage in clinical translational investigation, research and development, or other related activities. This definition would include individuals with a Ph.D. in PHSC as trained in the proposed RCOP program.

Labor gap for all-degree holders and graduate-level degree holders in the 10 MSA regions*

<table>
<thead>
<tr>
<th>Occupation</th>
<th>All degrees</th>
<th></th>
<th></th>
<th>Graduate-level degrees</th>
<th></th>
<th></th>
</tr>
</thead>
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<td></td>
<td>Demand</td>
<td>Supply</td>
<td>Gap</td>
<td>Demand</td>
<td>Supply</td>
<td>Gap</td>
</tr>
<tr>
<td>Biochemists and biophysicists</td>
<td>1002</td>
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<td>Biomedical engineers</td>
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</tr>
<tr>
<td>Medical scientists</td>
<td>27,549</td>
<td>12,191</td>
<td>15,358</td>
<td>12,816</td>
<td>6246</td>
<td>6570</td>
</tr>
<tr>
<td>Microbiologists</td>
<td>1103</td>
<td>576</td>
<td>527</td>
<td>330</td>
<td>331</td>
<td>-1</td>
</tr>
<tr>
<td>Natural sciences managers</td>
<td>5107</td>
<td>26,513</td>
<td>-21,406</td>
<td>1540</td>
<td>2266</td>
<td>-726</td>
</tr>
<tr>
<td>Statisticians</td>
<td>6239</td>
<td>5923</td>
<td>316</td>
<td>2885</td>
<td>2419</td>
<td>466</td>
</tr>
<tr>
<td>Total</td>
<td>43,658</td>
<td>62,838</td>
<td>-19,180</td>
<td>19,657</td>
<td>15,382</td>
<td>4075</td>
</tr>
</tbody>
</table>
salary of $80,400. Of these, 10,688 are reportedly pharmaceutical and medicine manufacturing jobs with a median salary of $90,688. Between 2009 and 2014, venture capitalists invested over $1.4 billion. This investment can dramatically increase with help from Texas A&M. Texas has a dynamic biotechnology marketplace with an estimated economic impact of $75 billion. Based on these statistics, it is evident there will be a persistent demand for an adequately trained workforce in the pharmaceutical and biotech industries in the areas of manufacturing, R&D, quality control and regulatory affairs. Because of the rapidly rising cost and speed of drug development, the demand for quality pharmaceutical scientists is higher than ever. In recent years, however, there has been a significant decline in the number of people who are entering science programs at the undergraduate/graduate levels in the state of Texas (www.txhigherereddata.org). New opportunities with state of the art laboratories of Texas A&M would help reverse that trend.

Recent data from 2015 graduates in pharmaceutical sciences was obtained from Texas institutions of higher education with correspondences with Deans or their representatives. In 2015, UT Austin has graduated 13 Ph.D.s, University of Houston has graduated 11 Ph.D.s, Texas Tech has graduated 10 Ph.D.s, and Texas Southern has graduated 2 Ph.D.s. All these graduates are placed in academia as assistant professors, pharma industry as scientists, FDA as reviewers and scientists, or as post-doctoral fellows. It provides a clear evidence that these are highly sought-after scientists with a very bright future. The graduation and employment data for the past five years from UT Austin and Texas Tech University’s pharmaceutical sciences programs, and University of Houston’s pharmaceutics, pharmacology, and outcomes research programs indicate that almost 100% of the graduates readily found jobs in the industry, academia, or US government. Therefore, there is evidence that the Ph.D. in PHSC represents an unmet need where the students are readily employable after earning their degrees. Pharmaceutical science is not listed in the THECB low producing Ph.D. programs.

B. Existing Programs

The information provided indicates knowledge of existing programs in Texas and of high-ranking programs nationally. This section provides an understanding of program duplication, capacity, and quality. Identify all existing degree programs in the state, include those specific to the region and major programs at peer institutions across the nation. Peer institutions have similar missions, doctoral-research/scholarship programs, and research expenditures. Peer institutions include, but are not limited to, out-of-state peer groups identified in the Coordinating Board’s Accountability System.

Identify the existing programs and their locations in Texas. Provide enrollments and graduates of these programs for the last five years, and explain how the proposed program would not unnecessarily duplicate existing or similar programs in Texas. Provide evidence that existing Texas programs are at or near capacity and describe how the existing programs are not meeting current workforce needs. Provide the job placement of existing Texas programs.

Include an assessment of capacity to accept additional students in existing Texas programs. One indicator of capacity is the faculty-to-student ratio in existing programs in the discipline. Another indicator is the number of students admitted to a program in comparison to the number of qualified applicants.

Pharmaceutical science is an interdisciplinary field of applied sciences pertaining to the design
action, delivery, manufacturing, disposition and evaluation of drugs. In pharmacy schools, this
discipline encompasses pharmaceutics and pharmacology alongside other disciplines. Public
institutions in the state of Texas offering a Ph.D. in Pharmaceutical Sciences (CIP 51.2010.00)
are the following: University of Texas at Austin, Texas Tech University Health Science Center,
and Texas Southern University. The University of Houston offers Ph.D. degrees in the key
elements of pharmaceutical science including pharmaceutics (51.2003.00), pharmacology
(51.2004.00), and outcomes research (51.2007.00). Because the number of graduates in
Outcomes Research is not available on the THECB website, this degree program is not included
in the data presented below. Data of Ph.D. enrollment and graduates in Ph.D. programs in
pharmaceutical sciences in Texas universities are provided in tables at the end of this section.

Graduate programs in Pharmaceutical Sciences across the nation, and particularly in the state of
Texas, are mostly traditional Ph.D. programs with little or no emphasis on process or product
development of pharmaceutical products. The proposed Ph.D. program will be the first of its
kind offering graduate training and education based on the FDA’s critical path initiative and the
National Institute for Pharmaceutical Technology and Education’s (NIPTE) recommendations.
NIPTE’s consortium of 16 schools of pharmacy and engineering is trying to address the FDA’s
call for enhancing national capabilities in pharmaceutical manufacturing sciences. A complete
list of the available data on enrollment and graduation for five years is provided in the tabular
forms below. The paper from Mason et. al, 2016 (Mason JL, Johnston E., Berndt S., Segal K, Lei
M, Wiest JS. Labor and skills gap analysis of the biomedical research workforce. FASEB J
30;2016; 2016 Apr 13. pii: fj.201500067R. [Epub ahead of print]) indicates the need for 12,816
medical scientists with advanced degrees with the supply of 6,246 graduates in 10 metropolis
areas. This specialty includes pharmaceutical scientists, and leaves open a gap of 6,570
graduates per year. The combined annual graduation numbers for Ph.D.s from all Texas
universities is about 36. Moreover, the quality of training for modernization of pharmaceutical
development is essential for global competitiveness.

The presence and strong support of engineering, veterinary, and Agri-Life programs at Texas
A&M is likely to prepare outstanding Ph.D.s with entrepreneurial skills in pharmaceutical product
development. Therefore, this program in pharmaceutical science is not unnecessarily duplicating
any existing Ph.D. program in the state. Further, with the annual graduation of 36 students in
pharmaceutical sciences (collected from the combined 2015 numbers from UT Austin, Texas
Tech, University of Houston and Texas Southern pharmaceutical science programs), it is readily
apparent that the graduate degrees’ level gap of 6,570 in the medical scientist category in the
table above on page 5 cannot be met by the existing programs in Texas universities. This may
be contributing to the statements from local pharm industry, e.g. Mylan in San Antonio, that
there is frequently a shortage of finding suitable pharmaceutical scientists.

Further, the support letters obtained from executives in Texas Pharma industry indicate the
shortage of pharmaceutical scientists and the opportunities of employment. These letters are
consistent with the employment data obtained from Texas Tech University School of Pharmacy
and the University of Houston, College of Pharmacy with regards to their Ph.D. graduates’
employment. Most of their graduates obtained employment after their degrees, a vast majority
without even any post-doctoral training.
### Five Year Ph.D. Pharmaceutical Sciences Enrollment in National and Texas Universities

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nation (colleges of pharmacy), data from aacp.org</td>
<td>3294</td>
<td>3086</td>
<td>3094</td>
<td>3266</td>
<td>3109</td>
</tr>
<tr>
<td>UT Austin College of Pharmacy, data from THECB</td>
<td>66</td>
<td>66</td>
<td>67</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td>U of Houston College of Pharmacy (combination of pharmaceutics and pharmacology Ph.D. degrees within pharmaceutical sciences), data from THECB</td>
<td>33</td>
<td>33</td>
<td>24</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Texas Tech University HSC College of Pharmacy, data from THECB</td>
<td>45</td>
<td>38</td>
<td>38</td>
<td>37</td>
<td>38</td>
</tr>
<tr>
<td>Texas Southern University College of Pharmacy, data from THECB</td>
<td>11</td>
<td>11</td>
<td>14</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

### Five Year Ph.D. Pharmaceutical Sciences Graduates in National and Texas Universities

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nation (colleges of pharmacy), data from aacp.org</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UT Austin College of Pharmacy, data from THECB</td>
<td>13</td>
<td>18</td>
<td>12</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>U of Houston College of Pharmacy (combination of pharmaceutics and pharmacology Ph.D. degrees within pharmaceutical sciences), data from THECB</td>
<td>11</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Texas Tech University HSC College of Pharmacy, data from THECB</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Texas Southern University College of Pharmacy, data from THECB</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

### Colleges in the Nation (www.aacp.org) and Ph.D. Enrollment in Pharmacy Schools in the year 2015

<table>
<thead>
<tr>
<th>Colleges in the Nation (<a href="http://www.aacp.org">www.aacp.org</a>)</th>
<th>Ph.D. Enrollment in Pharmacy Schools in the year 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auburn</td>
<td>41</td>
</tr>
<tr>
<td>Arizona</td>
<td>59</td>
</tr>
<tr>
<td>Arkansas</td>
<td>12</td>
</tr>
<tr>
<td>California-San Francisco</td>
<td>261</td>
</tr>
<tr>
<td>Pacific-California</td>
<td>41</td>
</tr>
<tr>
<td>Southern California</td>
<td>69</td>
</tr>
<tr>
<td>Colorado</td>
<td>43</td>
</tr>
<tr>
<td>Connecticut</td>
<td>49</td>
</tr>
<tr>
<td>Colleges in the Nation (<a href="http://www.aacp.org">www.aacp.org</a>)</td>
<td>Ph.D. Enrollment in Pharmacy Schools in the year 2015</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Howard</td>
<td>15</td>
</tr>
<tr>
<td>Florida A&amp;M</td>
<td>41</td>
</tr>
<tr>
<td>Nova Southeastern</td>
<td>39</td>
</tr>
<tr>
<td>Florida</td>
<td>97</td>
</tr>
<tr>
<td>Mercer</td>
<td>44</td>
</tr>
<tr>
<td>Georgia</td>
<td>56</td>
</tr>
<tr>
<td>Hawaii-Hilo</td>
<td>11</td>
</tr>
<tr>
<td>Idaho State</td>
<td>6</td>
</tr>
<tr>
<td>Illinois at Chicago</td>
<td>122</td>
</tr>
<tr>
<td>Purdue</td>
<td>111</td>
</tr>
<tr>
<td>Iowa</td>
<td>68</td>
</tr>
<tr>
<td>Kansas</td>
<td>84</td>
</tr>
<tr>
<td>Kentucky</td>
<td>68</td>
</tr>
<tr>
<td>Louisiana at Monroe</td>
<td>42</td>
</tr>
<tr>
<td>Maryland</td>
<td>78</td>
</tr>
<tr>
<td>Maryland Eastern Shore</td>
<td>3</td>
</tr>
<tr>
<td>MCPHS-Boston</td>
<td>63</td>
</tr>
<tr>
<td>Northeastern</td>
<td>51</td>
</tr>
<tr>
<td>Michigan</td>
<td>96</td>
</tr>
<tr>
<td>Wayne State</td>
<td>15</td>
</tr>
<tr>
<td>Minnesota</td>
<td>106</td>
</tr>
<tr>
<td>Mississippi</td>
<td>76</td>
</tr>
<tr>
<td>Missouri-Kansas City</td>
<td>36</td>
</tr>
<tr>
<td>Montana</td>
<td>20</td>
</tr>
<tr>
<td>Nebraska</td>
<td>45</td>
</tr>
<tr>
<td>Rutgers</td>
<td>55</td>
</tr>
<tr>
<td>New Mexico</td>
<td>22</td>
</tr>
<tr>
<td>A&amp;M Schwartz</td>
<td>18</td>
</tr>
<tr>
<td>St. John's</td>
<td>68</td>
</tr>
<tr>
<td>New York at Buffalo</td>
<td>49</td>
</tr>
<tr>
<td>North Carolina</td>
<td>87</td>
</tr>
<tr>
<td>North Dakota State</td>
<td>24</td>
</tr>
<tr>
<td>Ohio State</td>
<td>96</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>20</td>
</tr>
<tr>
<td>Toledo</td>
<td>44</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>25</td>
</tr>
<tr>
<td>Oregon State</td>
<td>31</td>
</tr>
<tr>
<td>Duquesne</td>
<td>52</td>
</tr>
<tr>
<td>Temple</td>
<td>22</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>49</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>35</td>
</tr>
<tr>
<td>South Carolina</td>
<td>30</td>
</tr>
<tr>
<td>South Dakota State</td>
<td>20</td>
</tr>
<tr>
<td>Tennessee</td>
<td>29</td>
</tr>
<tr>
<td>Texas Southern</td>
<td>17</td>
</tr>
</tbody>
</table>
Colleges in the Nation (www.aacp.org) | Ph.D. Enrollment in Pharmacy Schools in the year 2015
--- | ---
Texas Tech | 45
Houston | 63
Texas as Austin | 123
Utah | 48
Virginia Commonwealth | 64
Washington | 64
Washington State | 20
West Virginia | 38
Wisconsin-Madison | 64

**Total** | **3,294**

The following tables reflect employment information obtained from the individual institutions. There are variations in the number of graduates each year when compared with the THECB data. This could be the result of the use of different time periods for each year. The THECB data is also included for comparison and completeness.

### UT Austin Pharmaceutical Sciences Graduates and Their Employment

<table>
<thead>
<tr>
<th>Number of Ph.D. Graduates</th>
<th>Placement</th>
<th>Year</th>
</tr>
</thead>
</table>
| 13                        | 6 post-doctoral  
                          | 3 academic faculty position  
                          | 4 corporate position | 2011 |
| 19                        | 4 post-doctoral  
                          | 3 academic faculty position  
                          | 10 corporate position  
                          | 2 other – 1 non-profit, 1 med school | 2012 |
| 12                        | 4 post-doctoral  
                          | 2 academic faculty position  
                          | 5 corporate position  
                          | 1 other – law school | 2013 |
| 18*                       | 4 post-doctoral  
                          | 2 academic faculty position  
                          | 10 corporate position  
                          | 1 government position  
                          | 2 want to start families | 2014 |
| 13                        | 3 post-doctoral  
                          | 7 corporate position  
                          | 1 government position  
                          | 2 other – 1 start family, 1 family business | 2015 |

* The graduation number is presented as 19 by UT Austin in personal correspondence
### U of Houston Pharmaceutics Graduates (51.2003.00) and Their Employment

<table>
<thead>
<tr>
<th>Number of Ph.D. Graduates - U of H Data</th>
<th>Number of Ph.D. Graduates - THECB</th>
<th>Placement</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>1 post-doctoral 1 academic faculty position 1 corporate position 1 family business</td>
<td>2011</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>2 post-doctoral 3 academic faculty position corporate position 2 other – 1 non-profit, 1 med school</td>
<td>2012</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1 corporate position</td>
<td>2013</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>2 post-doctoral 1 corporate position</td>
<td>2014</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>1 post-doctoral 3 corporate position 1 at home</td>
<td>2015</td>
</tr>
</tbody>
</table>

### U of Houston Pharmacology Graduates (51.2004.00) and Their Employment

<table>
<thead>
<tr>
<th>Number of Ph.D. Graduates - U of H Data</th>
<th>Number of Ph.D. Graduates - THECB</th>
<th>Placement</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>9</td>
<td>2 post-doctoral 1 academic faculty position 5 corporate position 1 family</td>
<td>2011</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>2 post-doctoral</td>
<td>2012</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>1 post-doctoral 1 academic faculty position 1 Abstract reviewer</td>
<td>2013</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2 post-doctoral</td>
<td>2014</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3 post-doctoral</td>
<td>2015</td>
</tr>
</tbody>
</table>

### TTU Pharmaceutical Sciences Graduates and Their Employment

<table>
<thead>
<tr>
<th>Number of Ph.D. Graduates - THECB</th>
<th>Number of Ph.D. Graduates - TTUHSC Data</th>
<th>Placement</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>9</td>
<td>4 academic faculty position 4 corporate position 1 government position</td>
<td>2011</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>3 post-doctoral 2 academic faculty position 4 corporate position</td>
<td>2012</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>3 post-doctoral 1 academic faculty position 1 corporate position</td>
<td>2013</td>
</tr>
</tbody>
</table>
C. Student Demand

Provide short- and long-term evidence of student demand for the proposed program. Types of data commonly used to demonstrate this include increased enrollment in related and feeder programs at the institution, high enrollment in similar programs at other institutions, qualified applicants rejected at similar programs in the state, and student surveys (if used, include data collection and analysis methods). Surveying students currently enrolled in feeder programs provides limited data about actual student demand. Information that demonstrates student interest includes the development of a student interest group. Provide documentation that qualified applicants are leaving Texas for similar programs in other states.

The RCOP receives numerous inquiries each year about the existence and development of a new Ph.D. program. Within the month of October 2016, there were eight inquiries about the Ph.D. program. New enrollment in several feeder colleges within Texas A&M has risen. RCOP total enrollment in its PharmD program has increased from 87 students in 2006 to approximately 450 in 2016. Feeder colleges, such as engineering, have also seen BS new enrollment growing from 2,395 new students in 2011 to 4,039 new students in 2015. Similarly, new enrollment in Veterinary Medicine and Agriculture and Life Sciences (Agri-Life) has also risen significantly from 2011 to 2015. To our knowledge, published data doesn’t exist to indicate the number of qualified applicant that are rejected in Ph.D. programs in pharmaceutical sciences. Informal discussions and emails with Texas Tech faculty indicate that generally more than 75% of the qualified candidates are rejected in their Ph.D. program in pharmaceutical science. At the University of Houston, in the Pharmaceutical Health Outcomes & Policies Ph.D. program, there were 39 applicants in 2015, and seven were admitted (20%). In that same year, in Pharmaceutics, out of 44 applicants, three were admitted (7%) and in Pharmacology, out of 69 applicants, seven were admitted (10%). A new Ph.D. program in PHSC is likely to provide excellent opportunities for career jobs in industry, academia, and regulatory industries. Support letters from Texas A&M deans of Engineering, Agri-Life, Veterinary Medicine, and Medicine indicate a strong support for this Ph.D. program as it provides a breadth of opportunities for their graduates as well as research collaboration opportunities for their faculty. In the year 2015, UT Austin awarded 13 Ph.D.s; University of Houston awarded 11 Ph.D.s; Texas Tech awarded 10 Ph.D.s; and Texas Southern awarded 2 Ph.D.s. To better serve South Texas, there is a dire need of a Ph.D. program in PHSC. RCOP is strategically located in two locations to cater to this need and, thus, can become the first pharmaceutical sciences Ph.D. program in South Texas.
As shown in the table above, THECB website data indicates that for 2015, the University of Texas at Austin had an enrollment of 66 Ph.D. students; the University of Houston (pharmaceutics and pharmacology) had an enrollment of 33 students; Texas Tech had an enrollment of 45 students; and Texas Southern had an enrollment of 11 students in their respective graduate programs in pharmaceutical sciences. Considering the depth of a Ph.D. program, enrollment is high and further enrollment of students is highly unlikely. Further, all Ph.D. graduates who sought employment readily found jobs in academia, industry, and regulatory agencies. US schools of pharmacy have a combined Ph.D. enrollment of 3,294 students, and the average number of graduates each year is about 565. As shown in the table above from the AACP, a total of 61 pharmacy programs currently have Ph.D. programs in one or more disciplines of the pharmaceutical sciences.

D. Student Recruitment

Plans to recruit students are realistic and based on evidence of student demand and unmet need in similar programs in Texas. Indicate if the proposed program and its discipline are projected to have a special attraction for students of a particular population. Be specific about efforts to recruit students from underrepresented groups.

The RCOP maintains a highly qualified and ethnically diverse student population. The student body (Pharm.D. Classes 2018 to 2021) is comprised of 461 students. Thirty-four percent of current students hold at least a bachelor’s degree, and 36.4% are underrepresented minorities (URM). Ninety-eight percent of the student body is from the state of Texas, and 35% is from South Texas.

The RCOP ranked first in the nation in percentage of Hispanic graduates in 2010 and 2011, per the American Association of Colleges of Pharmacy (AACP). It remains among the top five programs in the nation with respect to matriculation and graduation rates of Hispanic students. In fact, the vital statistics record from AACP indicates that Texas A&M ranks third in the nation with respect to under-represented minority Pharm.D. graduation, ranking behind only Puerto Rico and the University of the Incarnate Word.

With a strong commitment to diversity, the RCOP has initiated and implemented a variety of activities (e.g., boot camps, information sessions, virtual fairs, pre-pharmacy student advisement, community and health fairs and career guidance) aimed at facilitating student engagement at all levels. In the border region of Texas, students from the under-represented demographic groups are strongly encouraged to apply and are actively recruited. Current recruitment efforts for the RCOP include annual visits to state universities and public colleges. At these venues, staff from the RCOP engage with pre-pharmacy student organizations and individual students who meet pre-pharmacy curriculum requirements. The Office of Student Affairs also hosts informational seminars and tours for high school students from the surrounding areas. These efforts will be expanded to target interested students in undergraduate and graduate biology and chemistry departments who may be qualified to enter the Ph.D. program in PHSC.

One of the newest and most effective recruiting tools is the participation in a virtual fair that attracts several hundred potential applicants as it is coordinated through PharmCAS, the application software used for the PharmD program. Similar to PharmCAS, the RCOP intends to utilize PharmGRAD for its Ph.D. program if approved. The use of PharmGRAD will provide real-
time reports of the applicant pool statistics including ethnicity. This will help the RCOP monitor its outreach to increase its diversity.

The RCOP continues to receive numerous inquiries from non-pharmacy Texas A&M students in undergraduate and graduate programs regarding the implementation of a Ph.D. program in pharmaceutical sciences. Together, the Office of Student Affairs and the Graduate Program Committee will increase efforts to attract more students from within Texas A&M University and other institutions within Texas.

Like it has successfully done in the Pharm.D. program, upon approval of the Ph.D. program in PHSC, the College’s Graduate Program Committee will work closely with the Office of Student Affairs to recruit talented and diverse students through its website, announcements in the national list of graduate programs, and announcements in professional organizations such as NIPTE, AAPS, ACS, ASPET and AACP. List-erves and the distribution of electronic and print brochures to feeder schools in all Texas universities will also be utilized.

E. Enrollment Projections

Enrollment projections are realistic and based on demonstrable student demand. Projections take into account student attrition, graduation rates, and part-time students. Attrition calculations should be based upon the average rates of related supporting graduate programs at the institution, if available.

Complete Table 1 to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the proposed program, including the ethnic breakdown of the projected enrollment (White, African American, Hispanic, International, Other). Include summer enrollments, if relevant, in the same year as fall enrollments. Subtract students as necessary for projected graduations or attrition. Provide explanations of how headcounts, FTSE numbers, projections for underrepresented students, and attrition were determined. Define full-time and part-time status.

<table>
<thead>
<tr>
<th>Table 1. Enrollment Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>African American</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>International</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Total New Students</strong></td>
</tr>
<tr>
<td>Attrition</td>
</tr>
<tr>
<td><strong>Cumulative Headcount</strong></td>
</tr>
<tr>
<td>FTSE</td>
</tr>
<tr>
<td>Graduates</td>
</tr>
</tbody>
</table>

*FTSE for pharmacy education in an HRI is calculated by total semester credit hours divided by 18 (i.e. Year 1 has 10 students enrolled with 180 semester credit hours total, FTSE is 180/18=10).

These projections are based on the diversity of enrollment parallel to the diversity of admission in RCOP. This data is routinely tracked for incoming students within the Rangel College of Pharmacy. Further the national average enrollment in Ph.D. programs in pharmaceutical science from American Association of Colleges of Pharmacy has also been considered. The ethnicity
data of the enrollment projections are also based on informal discussions with administrators from similar programs in Texas with graduate programs. The enrollment of 10 Ph.D. students per year for a total of 40 is based on the number of faculty available to support the dissertation research as well as the laboratory and office space availability. These projections are for full-time students who enroll in at least nine credit hours of courses in Fall and Spring, and six credit hours in Summer. The proposed program is only for full-time students at this time. Part-time students who are unable to take a full course load will be referred to the Graduate Program Committee for consideration on a case-by-case and graduate assistantships will not be provided to such students.

II. Academics

A. Accreditation

If the discipline has a national accrediting body, describe plans and timeline to obtain accreditation. For disciplines where licensure of graduates is necessary for employment, such as clinical psychology, plans for accreditation are required. If the program will not seek accreditation, provide a detailed rationale. If doctoral-level accreditation is not available but is projected to become so within the next five years, include that information. It is not necessary to provide copies of the accreditation criteria.

There is no discipline-specific accreditation requirement for pharmaceutical sciences. However, Texas A&M’s existing Ph.D. programs are accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). The professional pharmacy Pharm.D. program of the RCOP is accredited by the Accreditation Council for Pharmaceutical Education (ACPE).

B. Admissions Standards

Admissions standards are set to admit the most qualified students through a rigorous and competitive process. Standards are appropriate for the discipline. Standards are set to ensure full enrollment, as projected in the proposal, and will allow the program to become nationally recognized.

Describe the institution’s general graduate admissions standards and the program-specific admissions standards for applicants of the proposed program. The description addresses how the proposed program will seek to become nationally competitive. Provide specific information about minimum grade point averages, standardized test score, and TOEFL iBT score requirements. Explain how students will be assessed for readiness to enroll in program coursework. Include any policies for accepting students transferring from other graduate programs. Explain whether the proposed program will accept full-time and part-time students.

The general admission standards used in Texas A&M will be followed. In line with the mission of Texas A&M and RCOP, rigorous efforts will be made with respect to identification, recruitment, retention, and successful training of highly qualified students. Prospective students may apply to the Ph.D. program in PHSC facilitated by the Texas A&M Office of Admissions. A PHSC Ph.D. Program Committee will exercise general supervision over the PHSC Ph.D. program and will make recommendations to the RCOP Vice Dean regarding admission of the students into the program, award of graduate assistantships, appointment of major advisors and advisory committees, preparation and administration of qualifying examination, and content and conduct of graduate courses. It will also serve the advisory role of students until appointment of an
advisory committee has been made. The PHSC Ph.D. Program Committee will be chaired by the
director of graduate programs. Once an advisory committee is appointed, it will be responsible
for all aspects of doctoral candidate’s progress and compliance with all TAMU requirements with
help from director of graduate program as needed.

Admissions criteria will include an evaluation of the entire record of the applicant and availability
of resources. Admission will be based on:
1. Official transcripts of a 4-year or more baccalaureate degree in science or engineering,
   preferably pharmaceutical science, or PharmD from a college or university of recognized
   standing (recognized as equivalent to a baccalaureate degree or PharmD from an accredited
   institution in the United States), and the transcripts of any higher degrees in science or
   engineering.
2. Demonstration of promise of academic and intellectual ability, as evidenced by a minimum
   of three letters of recommendations from persons capable of judging the applicants’
capabilities, a statement of purpose essay, a GPA of >3.0 and valid GRE scores that are
   required to be submitted at the time of application. A score of at least 152 each in verbal
   and quantitative sections is desired.
3. All international applicants must submit a transcript analysis that provides the English
   translation of their official transcripts as well as course-by-course listing of USA grade point
   equivalencies and degree statements. International students whose native language is not
   English are required to fulfill an English proficiency requirement through the Test of English
   as A Foreign Language (TOEFL), which is administered by the Educational Testing Service in
   over 200 centers around the world.

C. Program Degree Requirements

Describe the similarities and differences between the proposed program and peer programs in
Texas and nationally. Indicate the different credit hour and curricular requirements, if any, for
students entering with a bachelor’s degree and students entering with a master’s degree.
Minimum semester credit hours should be comparable to peer programs. Texas Education Code
61.059 (l) limits institutions from receiving formula funding for doctoral students who have
taken more than 99 total semester credit hours. Provide a justification if the program requires
more than 60 semester credit hours beyond the master’s degree or 90 hours beyond the
baccalaureate. Acceptable justifications may include licensure or accreditation requirements.

Complete Table 2 to show the degree requirements of the proposed program. If requirements
vary for students entering with a master’s degree or comparable qualifications, provide an
explanation. Modify the table as needed. If necessary, replicate the table to show more than
one option.
Table 2: Semester Credit Hour Requirements by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>SCH Entering with a Bachelor's</th>
<th>SCH Entering with a Master's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td>26</td>
<td>18</td>
</tr>
<tr>
<td>Prescribed Electives</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Dissertation</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>Other (Specify, e.g., internships, clinical work, residencies)</td>
<td>Lab rotations, seminars (2)</td>
<td>Lab rotations, seminars (2)</td>
</tr>
<tr>
<td><strong>TOTAL</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>90</td>
<td>60</td>
</tr>
</tbody>
</table>

<sup>1</sup> Texas Education Code 61.059 (l) limits funding for doctoral students to 99 SCH. Programs may be allowed to require additional SCH, if there is a compelling academic reason.

This Ph.D. program is consistent with other Ph.D. programs in Texas A&M with respect to Texas A&M requirements and the SCH requirements for students with or without master’s degrees. Further, unlike other programs with separated disciplines of pharmaceutics, pharmaceutical chemistry, pharmacology, or pharmacy administration, the proposed program will have only one administrative unit. Regardless of the discipline interest of students, they will take the required core courses followed by a qualifying examination conducted by the PHSC Ph.D. Program Committee with help from the course instructors and advisory committees. Following the completion of six-week lab rotations, students will select mentors and an advisory committee. This advisory committee will select prescribed electives to advance the student experience and training depending upon the discipline interest; the advisory committee will work with the PHSC Ph.D. Program Committee to develop content for the qualifying examination and take part in the progress evaluation of research throughout students’ stay in the program. The advisory committee, with assistance from the PHSC Ph.D. Program Committee, ensure the general requirements of the Texas A&M graduate catalog are met. At the end of the second year, or any time prior, students will present their research proposal to the advisory committee and larger departmental audience in consultation with the major advisor. They will also take questions to demonstrate the mastery of the subject in which they are conducting dissertation research. Furthermore, students are required to participate in the RCO’s seminar series and make a presentation on their respective dissertation topic at least once every year.

At the end of every year, students will present their progress report to their advisory committee or present departmental seminars on research progress, and complete their dissertations at least one month before the final defense. The dissertation must be defended in an open presentation followed by in-depth questions and examination on the research content by the advisory committee. Dissertations must be submitted to the Office of Graduate and Professional Studies (OGAPS) as per their requirements.

*Complete Table 3 to provide a comparison of the proposed program to existing and/or similar programs in Texas in terms of total required semester credit hours (SCH). Modify the table as needed.*
### Table 3. Semester Credit Hour Requirements of Similar Programs in Texas

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program CIP Code</th>
<th>Degree Program</th>
<th>SCH*</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Texas at Austin</td>
<td>51.2010.00</td>
<td>Ph.D.</td>
<td>30</td>
</tr>
<tr>
<td>University of Houston</td>
<td>51.2003.00</td>
<td>Ph.D.</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>51.2004.00</td>
<td>Ph.D.</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>51.2007.00</td>
<td>Ph.D.</td>
<td>70</td>
</tr>
<tr>
<td>Texas Tech University HSC</td>
<td>51.2010.00</td>
<td>Ph.D.</td>
<td>72</td>
</tr>
<tr>
<td>Texas Southern</td>
<td>51.2010.00</td>
<td>Ph.D.</td>
<td>74</td>
</tr>
</tbody>
</table>

*Per the institution’s THECB Program Inventory

The existing programs in Texas do not distinguish between students entering the Ph.D. program with or without master’s degrees. Additionally, while their didactic course requirements are fairly similar to the proposed Texas A&M program (e.g. Texas Tech has didactic course requirements of 48 hours and Texas A&M has 52 hours), their dissertation research requirements vary, which explains the difference in dissertation credit hour requirements. The Texas A&M proposed Ph.D. program requires a full time student enrollment of nine hours per semester until all required courses have been completed. Students would spend about two years of time for rigorous hypothesis-driven research for the dissertation, similar to other Texas A&M Ph.D. programs. The requirements of 90 SCH after BS and 60 SCH after MS are required because of the multidisciplinary nature of our program, as well as comparable programs nationally. As an example, the University of Illinois Pharmacy Ph.D. program requires 64 SCH after a MS degree and 96 SCH after a bachelor’s degree. The amount and type of coursework included in the proposed program is necessary in order to fully educate students in pharmaceutical sciences and prepare them for employment in pharmaceutical industry and government labs involved in drug discovery and testing for the most complicated/complex products under development. An example of complex products is the discovery and development of literally hundreds of herbal products isolated by Texas A&M scientists in the College of Agriculture. Despite several years of research in the area of herbal products, there are only two FDA approved products. One is for Invagen for treating genital warts, and the other is Crofelemer for treating diarrhea. The translation of discoveries at Texas A&M to products for patients on the bedside requires a thorough multidisciplinary research understanding with research collaborations from the College of Agriculture and Life Sciences, College of Engineering, College of Science, and College of Medicine, in addition to College of Pharmacy. This aspect of modern research is very consistent with the FDA call for critical path research as explained in our introductory section. This kind of research cannot be accomplished by traditional programs of research within a single institution and research discipline. Similarly, there is dissertation research for other very complex pharmaceuticals that require integration of many disciplines with 38/28 SCH of dissertation research. Reference for programs with similar SCH requirements are provided ([https://catalog.uic.edu/gcat/colleges-schools/pharmacy/psop/phd/](https://catalog.uic.edu/gcat/colleges-schools/pharmacy/psop/phd/); [https://www.ndsu.edu/pharmacy/dual_degrees/pharmd_phd/](https://www.ndsu.edu/pharmacy/dual_degrees/pharmd_phd/); [https://hilo.hawaii.edu/catalog/ffd_phd](https://hilo.hawaii.edu/catalog/ffd_phd)).

Although the THECB Program Inventory for the UT-Austin Ph.D. program states 30 SCH, the UT-Austin Department Chair confirmed that the program consists of 42 SCH of course work in the first two years, followed by the qualifying exam and 21 SCH/year for two to three years until the Ph.D. is completed. This results in a total of 84 SCH for completing the Ph.D. in four years, and 105 SCH if completed in 5 years. Additionally, the UT-Austin program aggressively recruits students who already have MS degree from Austin or related programs and 3-4 years of
experience in the industry. The proposed program at Texas A&M with 90 SCH including 38 SCH of dissertation research provides the necessary training to all students admitted regardless of industry experience. The most modern research in process analytical technologies and quality by design requires a thorough understanding to link chemistry, pharmacology, and analytical sciences of small as well as large molecules so that the product attributes and manufacturing sciences of complex pharmaceutical products are linked to therapeutic needs of the patients with a combination of ailments. This paradigm shift caters to a combination of diseases rather than a single ailment. Such an education and rigorous dissertation research experience will better prepare the students for jobs in the current market, and makes this demanding program accessible to all students who meet the admissions requirement. The College faculty discussed and unanimously requested the approval for 90 SCH to be able meet the discovery and development challenges of developing complex products and for understanding their physicochemical and biological mechanism.

D. Curriculum

Describe the educational objectives of the proposed program. For the description of educational objectives, distinguish between aspects of the curriculum that are standard for the field and aspects that would be unique to the proposed program.

If the proposed program has a unique focus or niche, describe it in relationship to peer programs. Indicate how the niche or specialties of the proposed program are appropriate for the job market and student demand, and describe how they complement other peer programs in the state (or nation, if relevant).

Describe how the proposed program would achieve national prominence. Indicate if the proposed program is designed to have a particular regional focus.

Provide an explanation of required, prescribed, and elective courses and how they fulfill program requirements.

Describe policies for transfer of credit, course credit by examination, credit for professional experience, placing out of courses, and any accelerated advancement to candidacy. Provide a plan that would allow a student entering with relevant work experience to rapidly progress through the program or provide an explanation why this would not apply.

Identify any alternative learning strategies, such as competency-based education, that may increase efficiency in student progress in the curriculum. If no such policies are in place to improve student progression through a program, provide an explanation.

Complete Tables 4, 5, and 6 to list the required/core courses, prescribed elective courses, and elective courses of the proposed program and semester credit hours (SCH). Note with an asterisk (*) courses that would be added if the proposed program is approved. Modify the tables as needed. If applicable, replicate the tables for different tracks/options.

The educational objectives of the proposed program have been described on page 2. It is important to emphasize that the proposed program is different than other graduate programs in Pharmaceutical Sciences across the nation and in the state of Texas, in particular, which are
mostly traditional Ph.D. programs with little or no emphasis on process or product development of pharmaceutical products by quality by design and process analytical technologies with chemometrics and big data management techniques. The proposed Ph.D. program will be the first of its kind offering graduate training and education based on the FDA’s critical path and cGMPs of the 21st century initiatives and the National Institute for Pharmaceutical Technology and Education’s (NIPTE) recommendations for modernization of pharmaceutical development. Specialized courses such as pediatric dosage forms, vaccine delivery, chemometrics and big data management, process and product development with PAT and QBD tools are not offered as prescribed electives or electives in other institutions. These unique courses will help modernize the pharmaceutical industry as needed by the FDA and pharm industry. Texas A&M is uniquely positioned to accomplish this because of the qualifications of the faculty in the RCOP as well as the state-of-the-art infrastructure in Texas A&M.

The faculty in the RCOP is diverse, which is a strength for the integration of knowledge required for pharmaceutical science research. The core courses represent basic fundamental knowledge required for all majors within pharmaceutical science. After the students complete these courses and laboratory rotations, they will select Ph.D. advisory committees. Depending upon the specialty areas of the major advisor and advisory committee members, appropriate electives will be suggested. Another unique feature of the program is that students will understand the drug development from a regulatory standpoint so that they develop the ability to convert basic discoveries into actual dosage forms for targeted drug delivery, controlled drug delivery, biotech and vaccine product development, transdermal and topical drug delivery, as well as herbal drugs, nanotechnology for biomedical applications, and knowledge of big data management and chemometrics.

For transfer credits, a maximum of six credit hours will be allowed after the determination of competency-based equivalency with existing courses by the PHSC Ph.D. Program Committee. For professional experience, a student may be allowed to work in a pharmaceutical industry for a maximum of six credit hours of research with consent of the major advisor and approval of the PHSC Ph.D. Program Committee.

The RCOP has well-tested teaching strategies of active learning, problem-based learning, competency-based learning, and flip-teaching that have been evaluated by American Council on Pharmaceutical Accreditation when the college recently received its accreditation for Pharm.D. degree. The RCOP will also participate in the Texas A&M pedagogy project to enhance student learning and professional experiences.

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required/Core Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 610*</td>
<td>Biotech drugs and vaccine products</td>
<td>4</td>
</tr>
<tr>
<td>PHSC 611*</td>
<td>Drug delivery and formulations</td>
<td>4</td>
</tr>
<tr>
<td>PHSC 612*</td>
<td>Principles of drug actions</td>
<td>4</td>
</tr>
<tr>
<td>PHSC 613*</td>
<td>Laboratory rotations</td>
<td>3 + 3</td>
</tr>
<tr>
<td>PHSC 621*</td>
<td>Biostatistics or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 622*</td>
<td>Professionalism and ethics in research or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 623*</td>
<td>Seminar</td>
<td>1+1</td>
</tr>
</tbody>
</table>
The courses in Table 4 are the required courses for 26 SCH for all entering students without Master of Science (M.S.) degrees and 18 SCH with M.S. degrees. They build the foundation and bring consistency to a diverse group of incoming students. It is highly likely that some of these required courses have already been completed at the graduate level by students entering with M.S. degrees. Depending upon their backgrounds, only 18 out of the 26 credits will meet the requirements. If a student enters after a M.S. degree and is found to have taken more courses or their equivalents in an accredited program, the PHSC Ph.D. Program Committee may waive the required course and substitute that course with an elective based on the students’ background and dissertation advisory committee recommendations.

Table 5. Prescribed Elective Courses

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSC 724*</td>
<td>Principles of pharmacology and toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 725*</td>
<td>Biopharmaceutics and pharmacokinetics</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 731*</td>
<td>Process and product development or equivalent</td>
<td>2</td>
</tr>
<tr>
<td>PHSC 732*</td>
<td>Controlled and targeted drug delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 733*</td>
<td>Drug degradation and product stability or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 734*</td>
<td>Vaccine delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 735*</td>
<td>Industrial pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 736*</td>
<td>Physical pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 737*</td>
<td>Transdermal and topical drug delivery</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 738*</td>
<td>Cosmetic development</td>
<td>2</td>
</tr>
<tr>
<td>PHSC 739*</td>
<td>Pediatric dosage forms</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 741*</td>
<td>Analytical/Bioanalytical techniques and validation</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 742*</td>
<td>High throughput training in drug discovery and screening</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 743*</td>
<td>Polymer chemistry or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 744*</td>
<td>Chemometrics and big data management or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 689*</td>
<td>Topics in pharmaceutical science</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>PHSC 752*</td>
<td>Nanotechnology for biomedical applications</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 753*</td>
<td>Pk/PD and drug metabolism or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 754*</td>
<td>Toxicokinetics and predictive toxicology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 755*</td>
<td>In-vitro/in-vivo simulations and modeling</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 756*</td>
<td>Advanced pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 757*</td>
<td>Herbal drugs or equivalent</td>
<td>3</td>
</tr>
<tr>
<td>PHSC 758*</td>
<td>Research in pharmaceutical science</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>PHSC 691*</td>
<td>Dissertation research</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 6. Elective Courses.

Please see above. Prescribed electives vary depending upon the background of incoming students. If it is not prescribed, the students may elect to take the above courses or others from TAMU that their advisory committee
may recommend.

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Elective Course Title</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### E. Candidacy and Dissertation

*If the proposed program requires a dissertation, describe the process leading to candidacy and completion of the dissertation. Describe policies related to dissertation hours, such as a requirement to enroll in a certain number of dissertation hours each semester. If there is no dissertation required, describe the summative activities leading to the degree. Indicate if a master’s degree or other certification is awarded to students who leave the program after completing the coursework, but before the dissertation defense.*

The Ph.D. program in PHSC requires that the following conditions be met for candidacy:

- Complete all the core and prescribed electives, and other elective courses including the following requirements:
  - Complete three of the four 6-week laboratory rotations.
  - Complete at least two seminar courses with at least one seminar on the science topic of their interest.
  - A degree seeking graduate student is considered to be scholastically deficient if cumulative GPA or GPA for the courses listed on the degree plan falls below 3.00. The student will be required to bring their GPA back to 3.0 or higher in the next semester or risk dismissal from the program. More than one grade of less than B will also be a reason for dismissal or if courses are completed to fulfill the M.S. requirements, the student may be recommended for the award of M.S. degree if that degree program is approved. The M.S. degree may be awarded after completion of at least 36 SCH of required and prescribed electives in consultation with the advisor and PHSC Ph.D. Program Committee (without thesis) or 32 SCH with thesis. This M.S. degree will be without a thesis, unless the student and the major advisor agree to submit a thesis after six hours of research/dissertation credit hours. If a thesis is submitted after a defense presentation, an M.S. with a thesis option will be granted upon the advice of the PHSC Ph.D. Program Committee.
  - Select the major advisor and advisory committee comprised of at least three pharmaceutical science graduate faculty. At least one graduate faculty needs to be from other Texas A&M programs.
  - Pass the qualifying examination. If a student fails this exam, he/she will be given another exam after three months. A failure in the second attempt will be grounds for dismissal from the program or an opportunity to leave after completing the M.S. degree.
  - Defend the research proposal.
  - Continued participation in seminar courses throughout the length of study.
- Once the student completes all the above requirements, he or she will be admitted to the candidacy.
- Once the student is on candidacy, they will register continuously as a full-time student as per the Texas A&M guidelines for graduate studies. The candidate must conduct scholarly independent original research with evidence of new knowledge to the field. The thesis or dissertation must demonstrate the hypothesis of research, experimental plan and the mastery of the techniques of research, a detailed discussion of the experimental research,
and thorough understanding of the subject matter and its background with a high degree of skill in organizing and presenting the material by following all the Texas A&M requirements.

F. Delivery Modes, Use of Distance Technologies, and Delivery of Instruction

If an institution is offering more than 50 percent of its proposed program via distance education modality, the Learning Technology Advisory Committee will also review the proposed program. It is expected that if an institution offers any portion of its program via distance education that it will have sufficient technology resources to deliver doctoral-level education from a distance without sacrificing quality. Provide documentation that the distance education options are appropriate for the course content and built into the curriculum accordingly.

Describe the use of distance technologies in the program, including a description of interactions between students and faculty, opportunities for students to access educational resources related to the program, exchanges with the academic community, and in-depth mentoring and evaluation of students.

Describe the various delivery modes that will be used to deliver coursework and any special arrangements for specific sites where students will meet. Describe equipment, software, and connectivity needs for delivery of this program both for students and for the institution.

Include a specific emphasis on the delivery mode(s) and include the following information:

a. Describe the typical course and its delivery method.

b. Describe the presence of text, graphics, video clips, graphical interactions, and self-tests, etc.

c. Will courses be taught completely on-line or will they be hybrid? If a course or program will include face-to-face meetings, how will they occur?

d. What platform will be used to deliver the electronic components of the program?

e. How will sustained faculty-student and student-student interaction be facilitated?

Most courses will be taught didactically within the RCOP, and many opportunities exist to take courses at both the College Station and Kingsville locations, as needed. RCOP faculty routinely teach Pharm.D. courses via TTVN (video conferencing) infrastructure that connects and supports RCOP’s one program, two location Pharm.D. program model. The lectures are broadcasted live on both Kingsville and College Station locations, and any student that asks a question is projected on the screen. This TTVN technology will be utilized for team taught courses in the Pharmaceutical Sciences program. This technology has been vetted for utilization by the Accreditation Council for Pharmaceutical Education (ACPE) when they granted the accreditation in 2016. The accreditation body witnessed the demonstrations and actually participated in several electronic meetings and classroom discussions before granting full accreditation. The Pharm.D. program received the longest possible accreditation period of eight years from the ACPE. When desired, didactic elective courses may be taken at the College Station or Kingsville location. Group meetings and presentations will be completed via Zoom or Skype as routinely done for Pharm.D. students at both College Station and Kingsville locations. As an example, physical pharmacy course will have didactic lectures via TTVN, and the power point lectures will have font sizes of 54 for title, and 24-44 for text with bullets, and either scanned or excel derived figures. The course will be standardized through the College’s instructions design and support services via e-campus, and the tests will be through Examsoft®.
as used of professional students regularly or through proctor-conducted hard copies of questions papers for manual grading.

Another required course for all students is the lab rotations in four different laboratories. It doesn’t require the use of TTVN. The graduate program committee with oversight of the graduate admissions will help make a determination of the location of student based on their interest and faculty lab matching. When the student is selected for College Station campus, they will have rotations in College Station faculty labs. Likewise, when they are selected for Kingsville location, they will do their rotations with Kingsville faculty in their labs.

The sustained faculty:student interaction will be facilitated by face-face meetings, zoom meetings, WebEx, with assistance from departmental staff. This is routinely done for our professional students at both locations already.

When fully implemented, the anticipated student:faculty ratio is 2:1.

**G. Program Evaluation**

*Describe how the proposed program will be evaluated. Describe any reviews that would be required by an accreditor, and show how the proposed program would be evaluated under Board Rule 5.52.*

*Describe procedures for evaluation of the program and its effectiveness in the first five years of the program, including admission and retention rates, program outcomes assessments, placement of graduates, changes of job market need/demand, ex-student/graduate surveys, or other procedures.*

*Describe how evaluations would be carried out. Describe how the results of evaluation would be used to improve distance delivery.*

*The institution’s Characteristics of Doctoral Programs are current. Describe the plan for using the Characteristics of Doctoral Programs for ongoing evaluation of the proposed program and quality improvement. Include the link to the institution’s designated website for existing doctoral programs.*

The 18 Characteristics of Doctoral Programs in Texas A&M are current. Texas A&M uses the characteristics for ongoing evaluation of its programs and the proposed program in pharmaceutical sciences will also be evaluated. The following link provides more details on the 18 Characteristics: [http://ogaps.tamu.edu/Prospective-Students/Programs-and-Degrees/18-Characteristics-of-the-Doctoral-Programs](http://ogaps.tamu.edu/Prospective-Students/Programs-and-Degrees/18-Characteristics-of-the-Doctoral-Programs)

The Ph.D. program in PHSC will also be evaluated as instructed in Board Rule 5.52. At Texas A&M, however, the Academic Program Review (APR) process is a multi-year process that begins one year prior to the state’s required reporting deadline. The institution works with the program to develop a self-study document, identify external reviewers, and coordinate an on-site visit of the program. Specific details are available at [http://provost.tamu.edu/initiatives/academic-program-review](http://provost.tamu.edu/initiatives/academic-program-review) including a description of the institution’s requirements for reviewing undergraduate programs as appropriate. In addition to the State’s requirements, the institution requires the program to submit a follow-up report with the Provost and Executive Vice President.
within two months of the site visit, at which time the program’s department head as well as representatives from the dean’s office meet with the Provost and the APR administrative team. Finally, as part of the institutional effectiveness plan required by SACSCOC CR 2.5, the programs provide a follow-up report one and four years after the site visit. The follow-up reports are provided to the Provost, the APR administrative team, and the external reviewers who were on-site for the APR.

H. Strategic Plan and Marketable Skills

Describe how the proposed doctoral program fits into the institution’s overall strategic plan, and provide the web link to the institution’s strategic plan.

Describe how the proposed program will align with the state’s 60x30TX plan, and address the goals related to completion, marketable skills, and student debt. Specifically identify the marketable skills the students will attain through the proposed program. Explain how students will be informed of the marketable skills included in the proposed program.

Explain how the proposed program builds on and expands the institution’s existing recognized strengths.

The proposed doctoral program aligns very well with the 60x30Tx plan of providing higher education with minimal debt and maximized job potential in a global economy to at least 60% of Texas residents between 25 and 34 year olds by the year 2030. The 60x30Tx plan includes professional and doctoral degrees. This Ph.D. degree is highly marketable in the global economy where US-based drug products are developed and sold by the global pharm industry. Additionally, the RCOP self-study demonstrates the college is recognized for the high Hispanic graduation rates with lowest debt in the State. As the number of Hispanics are likely to grow by 2030, this Ph.D. program is likely to meet the objectives of the plan well.

Texas A&M is a TIER 1 research university with 93 doctoral and 170 MS programs, 14,935 graduate students, $866,000,000 in research expenditure per year (year 2015 figures), 22 National Academy members, and three Nobel Laureates. The lack of a Ph.D. program in PHSC presents a major gap to convert their basic discoveries into practical pharmaceutical dosage forms for the benefit of patients.

Institutions in the nation with strong pharmaceutical science programs have strong programs in engineering, life sciences, medical science and other allied health professions. Texas A&M’s strength and reputation in these areas is a huge advantage for developing a vibrant Ph.D. program in PHSC. It is clearly a timely endeavor, which will allow bridging the gap between the basic sciences and product development and advancing the institution’s research mission. By providing collaborations among students and faculty from all of the disciplines that are encompassed by the pharmaceutical sciences, the proposed Ph.D. program will offer an interdisciplinary, team-approach philosophy to problem solving needed by professionals today. Such an opportunity for interdisciplinary student interactions can create a dynamic, intellectual environment and improve the quality of research, research ideas, and information generated from such a program.
Texas A&M’s strategic plan supports doctoral programs. The strategic plan is provided in the following link: [http://provost.tamu.edu/initiatives/strategic-planning-2015-2020](http://provost.tamu.edu/initiatives/strategic-planning-2015-2020). Texas A&M’s strategic planning document Vision 2020 and road map to achieve this vision with 12 “imperatives” can be found at [http://vision2020.tamu.edu/](http://vision2020.tamu.edu/). The top two imperatives include elevation of faculty with teaching, research and scholarship, and the strengthening of graduate programs. The RCOP is already receiving solid support to hire established faculty with attractive start-up packages, equipment purchases, space for laboratories, and a new good manufacturing practice laboratory. The establishment of the proposed Ph.D. in PHSC supports the imperative of strengthening graduate programs.

This link: [http://pharmacy.tamhsc.edu/strategic/research.html](http://pharmacy.tamhsc.edu/strategic/research.html) reflects that the Health Science Center’s strategic plan 2015-2019 lists development of graduate programs as a key objective/strategic direction to achieve the institution’s aspirations of national ranking similar to other strong programs within Texas A&M. Additionally, in the most recent faculty retreat in Spring 2016, RCOP faculty overwhelmingly voted for development of Ph.D. program in PHSC as the top priority for RCOP.

The students will be informed of the marketable skills through several didactic courses on applied sciences and reinforcing of this knowledge through industrial collaboration, and industrial internships and ultimately through awareness on absorption of workforce in pharmaceutical industries, public universities, and government agencies such as FDA and others. The students are also expected to attend professional meetings with the mentors, and they will have a lot of opportunities to interact with potential recruiters. Please refer to section D on student recruitment for additional opportunities for students to learn and develop marketing skills.

The graduate program in pharmaceutical sciences will develop general skills on Critical Thinking and Problem Solving, Oral and Written Communications, building teamwork and collaboration, application of information technology in product development and marketing, development of leadership, professionalism and work ethics, and career management.

The specific skills will include; (a) Building knowledge base and concepts in pharmaceutical products, (b) Estimating the quantifiable characteristics of pharmaceutical products, (c) Evaluating information to determine product standards and biosafety compliance, (d) Processing and analyzing pharmaceutical product data or information. (e) Developing and applying range of skills needed to understand pharmaceutical products, given the complexity associated with modern day pharmaceutical products, (f) Developing critical/creative thinking to recognize the disciplinary preferences and complexity in pharmaceutical products and process development, (g) Developing knowledge and skills for scientific and marketable communication including arguments and narratives for pharmaceutical products. (h) Depending upon the dissertation plan, the candidates will be able to integrate knowledge from chemistry, engineering, medicine, agrilife, and veterinary medicine for successful development of delivery systems, and pharmaceutical dosage forms.

### I. Related and Supporting Programs

Provide data on existing bachelor's and master's programs that would support the proposed program, including applications, admissions, enrollments, and numbers of graduates. Provide
graduation rates of related and/or supporting master’s programs.

Complete Table 7 with a list of all existing programs that would support the proposed program. This includes all programs in the same two-digit CIP code, and any other programs (graduate and undergraduate) that may be relevant. Include data for the applications, admissions, enrollments, and number of graduates for each of the last five years. Modify the table as needed. The example provided in Table 7 shows degree programs that would relate to or support an additional Ph.D. in another area of chemistry, for example a proposal for a PhD in Chemistry (40.0501).

Table 7. Related and Supporting Programs

<table>
<thead>
<tr>
<th></th>
<th>Year</th>
<th>New Applications for Bachelors and Masters¹</th>
<th>New Admissions for Bachelors and Masters¹</th>
<th>New Enrollment for Bachelors and Masters¹</th>
<th>Number of Graduates²</th>
<th>Graduation Rates³</th>
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<td>BS</td>
<td>Masters</td>
<td>BS</td>
<td>Masters</td>
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<td>New Admissions for Bachelors and Masters¹</td>
<td>New Enrollment for Bachelors and Masters¹</td>
<td>Number of Graduates²</td>
<td>Graduation Rates³</td>
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<th>Number of Graduates²</th>
<th>Graduation Rates³</th>
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<th>Number of Graduates²</th>
<th>Graduation Rates³</th>
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<td>489</td>
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<td>119</td>
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<td>2012</td>
<td>480</td>
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<th>New Admissions for Bachelors and Masters¹</th>
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<th>Number of Graduates²</th>
<th>Graduation Rates³</th>
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<th>New Admissions for Bachelors and Masters¹</th>
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<th>Number of Graduates²</th>
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<td>47</td>
<td>27</td>
<td>25</td>
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<th>Department of Nutrition &amp; Food Sciences</th>
<th>Year</th>
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<th>New Admissions for Bachelors and Masters¹</th>
<th>New Enrollment for Bachelors and Masters¹</th>
<th>Number of Graduates²</th>
<th>Graduation Rates³</th>
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<td>124</td>
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<td></td>
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<td>363</td>
<td>168</td>
<td>109</td>
<td>134</td>
<td>79.0%</td>
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¹Numbers obtained from [http://accountability.tamu.edu/All-Metrics/Mixed-Metrics/Applied,-Admitted,-Enrolled](http://accountability.tamu.edu/All-Metrics/Mixed-Metrics/Applied,-Admitted,-Enrolled); based on search parameters: College Station, Bachelors, Masters and Department. The number of new enrollments is students who applied for admission to Texas A&M University during the specified admissions cycle as either FTIC or Transfer.


³Numbers obtained from [http://accountability.tamu.edu/All-Metrics/Mixed-Metrics/Student-Retention-and-Graduation](http://accountability.tamu.edu/All-Metrics/Mixed-Metrics/Student-Retention-and-Graduation). The graduation rates reflect the percentage of students who started within the designated program/college who graduated from the university within the specified number of years; the student may not have graduated from the same program they were originally admitted into.

⁴Effective Fall 2014, the College of Engineering admits all incoming freshmen into General Engineering rather than a specific major. The students then transfer into a major their second year. This is the reason for the drop in new undergraduate enrollments for the majors.
starting in 2014. The number of new enrollments in the majors reflects undergraduate students who were admitted to Texas A&M as transfer students and admitted into the major plus total graduate students.

The existing programs in chemical engineering, biomedical engineering, industrial and systems engineering, chemistry, veterinary medicine, biology, pharmacy, horticulture sciences, and nutrition and food sciences provide the feeder programs for incoming Ph.D. students. Additionally, depending upon the incoming students’ background, faculty from the respective colleges and programs will be sought for serving on students’ advisory committees as external members. This approach will eventually invite participation in dissertation research strategies and guest lecture participation for a broader knowledge base to the Ph.D. students of PHSC.

There are other programs in Texas A&M with a 51 CIP code. They include B.S. in Health, Dental Hygiene, Community Health, Public Health, and Nursing, M.S. in Oral Biology, Athletic Training, Laboratory Animal Medicine, Veterinary Public Health-Epidemiology, MSPH in Health Policy and Management, MPH in Environmental Health, MPH in Occupational Safety and Health, MHA in Health Administration, MPH in Health Policy and Management, MPH in Health Promotion and Community Health Sciences, MSN in Family Nurse Practitioner, MSN in Nursing Education, and the recently approved MSN in Forensic Nursing. These programs are not relevant to PHSC as the latter deals with physicochemical and pharmacological nature of drugs and dosage forms. It is unlikely that the graduates of these 51 CIP programs will seek admission in PHSC program or that the faculty involved in these programs will participate in the PHSC Ph.D..

J. Existing Doctoral Programs
The addition of a new doctoral program should build upon the success of the institution’s current doctoral programs. Proposals for new doctoral programs will be considered in context to the success of an institution’s existing doctoral programs. Provide the most recent five years of data on enrollments and numbers of graduates for existing doctoral programs.

Describe how existing closely related doctoral programs would enhance and complement the proposed program. Describe all interdisciplinary relationships of the proposed program with existing programs. Also, check to see if any of the institution’s doctoral programs are on the Low-Producing Programs list. If any existing doctoral programs are low-producing, list them and provide an explanation for the low productivity and plans for addressing the issue. For new doctoral programs approved during the last five years, check the Annual Progress Reports to determine if the program(s) are meeting institutional projections. Address how the proposed program would meet the proposed projections.

Please see Attachment 1 for the data on enrollments and numbers of graduates for existing doctoral programs at Texas A&M.

Texas A&M is a major land-, sea-, and space grant institution offering a total of 93 Ph.D. programs, with many achieving top ranking and national recognition of quality by the National Research Council. It is also ranked amongst the top 20 doctoral granting institutions by the National Science Foundation, ranked 6th among US institutions of doctorates awarded to Hispanics, and ranked 8th among US institutions of doctorates awarded to African Americans by the Chronicle of Higher Education. A complete list of all the programs and their statistics can be obtained from the institutions 18-characteristics of the doctoral programs provided, which can be found here: http://ogaps.tamu.edu/Prospective-Students/Programs-and-Degrees/18-Characteristics-of-the-Doctoral-Programs
Pharmaceutical science is a multidisciplinary area of research that entails the design, action, delivery and disposition of medications. A pharmaceutical scientist is required to integrate knowledge from chemistry, engineering, Agri-Life, biomedical sciences, and statistics for the development and utilization of pharmaceutical dosage forms for optimal patient care. There will be resource sharing, leading to an understanding of molecular basis for diseases with development and optimization of formulations to enhance therapeutics outcomes. The presence of Texas A&M’s existing doctoral degrees in engineering, veterinary medicine, Agri-Life and related areas would enhance the student interaction to provide the breadth and new knowledge that would be required for their dissertation research. The students in all these doctoral programs will also have the ability to take mutual courses of interest to advance their multidisciplinary research. The RCOP hired faculty researchers with extensive experience in pharmaceutical product development fields, and these investigators have established collaboration and product development between life scientists, physicists, engineers, doctors and clinical scientists in a very powerful and scientifically successful atmosphere on the Texas A&M campus, dramatically enhancing its capacity for national prominence. At a time when discoveries in individual disciplines are rapidly expanding, the RCOP faculty’s skills and knowledge in pharmaceutics, in manufacturing, in paths to licensing and in novel technologies will provide a quantum leap in bringing Texas A&M technologies into practice. It will address Grand Challenges, particularly in the One Health area, providing expertise for product development for plant, animal, and human health. The faculty’s expertise in novel technologies such as complex product design, nanoparticulate product design, and 3-D printing of pharmaceuticals will provide expertise to address precision medicine through collaboration with medicine, veterinary medicine and engineering. The faculty will partner with the National Center for Therapeutic Manufacturing (NCTM), Center for Innovation in Advanced Development & Manufacturing (CIADM), and Institute of Biosciences and Technology (IBT) within Texas A&M to move products from the University into manufacturing. The Ph.D. program in PHSC integrates the information from the programs listed above, and provides the breadth that is necessary in pharmaceutical dosage form development. Collaboration between the proposed Ph.D. program and the existing programs will be key, with all programs benefiting: the proposed Ph.D. program will benefit from the existing programs, while these programs will also benefit from the proposed Ph.D. program.

The students of pharmaceutical science will benefit by working in a very practical and highly marketable area of pharmaceutical sciences with diverse opportunities for employment. The available information from other Texas pharmaceutical science programs indicate that many graduates joined directly as faculty members in pharmacy schools in the Nation. The proposed program will help students to learn and become successful faculty members in addition to gaining employment in a variety of research opportunities. Numerous, important discoveries and inventions of scientists at Texas A&M and other universities go unnoticed for practical application. Out of every 12,000 innovative molecules that are discovered, only one is approved to enter the US market. Additionally, of the 100 products that enter clinical trials, roughly about 5% are approved for marketing in the US. Bottle-necking occurs primarily in the area of pharmaceutical sciences, and it is part of a fragmented, sequential product development approach that is currently in use. It is desired to provide a strong Ph.D. program in PHSC so that the students have the right advice and scientific bridge study to advance their discoveries for product development. This is an important area involving scientific integration of several disciplines to focus for future success of our graduates. It will provide tremendous leverage for
NIH funding and practical biopharmaceutical product development. To provide that training, Texas A&M has brilliant, discrete units of the Texas A&M University Health Science Center IBT, Texas A&M Institute for Preclinical Studies (TIPS), Texas Institute for Genomic Medicine (TIGM), NCTM and CIADM to support various colleges. The students will learn to utilize the opportunities to learn and integrate the cutting-edge science from various disciplines of these Centers and Institutes.

A review of the list of low producing Ph.D. programs in the State of Texas shows four Ph.D. programs in Texas A&M that are at risk of being declared low-producing for the three year period. These programs include Ph.D. in poultry science, microbiology, philosophy, and applied physics. These programs are very different from the proposed pharmaceutical science program with respect to needs, course contents, and marketability. However, for both poultry science and microbiology, based on FY16 graduates, we do not expect either of them to be low-producing for a third year as enrollment and degrees are both up. In the case of philosophy and applied physics, both are expected to be identified as low-producing for a third consecutive year despite improvements in enrollment and degree production. Enrollments should allow both to meet the requirements to not be low-producing in two and one year(s) respectively. The labor gap table on page 5 shows that biophysics programs are not in demand and the supply of graduates in these areas are greater than the demand. Medical scientists that include pharmaceutical scientists are actually in a short supply with a net need of 6570 scientists.

K. Recent Graduates Employment

For existing related and supporting graduate programs (master's and doctoral), provide an overview of graduate employment by listing the overall number and percentage of graduates employed within one year of graduation. Also, provide information on the specific jobs held by recent graduates of the programs, such as job titles, fields of employment, and the location and names of their employers.

The RCOP has graduated four Ph.D.s through interactions with Medical Sciences and Biomedical Sciences. All four doctoral graduates have obtained employment within one year of graduation, and are working in the United States as an Assistant Professor of Pharmaceutical Sciences in Utah College of Pharmacy or as research scientists in the pharmaceutical industry.

There are seven Ph.D. and professional programs with 51 CIP codes at Texas A&M. The Ph.D.s are in oral biology, veterinary pathology, and health services research. There are two DrPH programs: epidemiology and environmental health, and health promotion and community health services. There are four professional programs: the Pharm.D., M.D., DDS in Dentistry, and DVM in Veterinary Medicine. There are also a number of master's and graduate certificate programs, including: M.S. in Oral Biology, Athletic Training, Laboratory Animal Medicine, Veterinary Public Health-Epidemiology, MSPH in Health Policy and Management, MPH in Environmental Health, MPH in Occupational Safety and Health, MHA in Health Administration, MPH in Health Policy and Management, MPH in Health Promotion and Community Health Sciences, MSN in Family Nurse Practitioner, MSN in Nursing Education and the recently approved MSN in Forensic Nursing. These masters and certificate programs are not relevant to PHSC as the latter deals with physicochemical and pharmacological nature of drugs and dosage forms.
The available employment data from oral biology in the College of Dentistry indicates that all their graduates found employment readily after graduation within one year. They are working as post docs, orthodontics residents or in private practice. Their place of employment is UT San Antonio, University of Connecticut Health Science Center, North Carolina, Mexico, or Shanghai.

The professional Pharm.D. employment data also shows 84 out of the 86 graduates in 2015 as licensed, and >90% employment as pharmacists with most practicing in the State of Texas as pharmacists. Information about the other 10% is not currently available officially, but informal knowledge through their classmate friends indicate that they are practicing in other States. For those that have reported, their place of employment include McAllen Medical Center, Hendrick Medical Center, Fort Duncan Regional Medical Center, CHRISTUS Spohn hospital in Corpus Christi, CHI St. Luke’s Health Baylor College of Medicine, Methodist Sugarland Hospital, Baylor Scott and White, Edinburg Regional Medical Center, Houston Methodist Hospital, Shannon Medical Center, Metroplex Hospital, Corpus Christi Medical Center Bay Area, Citizens Medical Center, CHRISTUS Spohn hospital Kleberg, Advanced Pharma Inc., Pharmapendium Services, Baylor University Hospital, almost all chain pharmacies such as that of Walgreens, H.E.B., Sam’s Club, Walmart, CVS, Kroger, Saenz Medical Pharmacy. The remaining 10% are also licensed as pharmacists but their place of employment is unknown at this time.

The 188 2015 graduates of Texas A&M College of Medicine all found residency matching within one year of graduation. Typically all students get residency matching every year. In the year 2015, 108 of the 188 graduates that matched found residency within the State of Texas. The employers included Texas Tech University, University of Texas, Ochsner Clinic Foundation, Baylor University, Scott and White at multiple locations, UT Southwestern, UT at Austin Dell, John Peter Smith Hospital, and Methodist Health System. Residency positions outside of Texas were obtained in UCLA Medical Center, Dartmouth-Hitchcock Medical Center, University of Utah, University of South Florida, University of Massachusetts, University of North Carolina, University of New Mexico, University of Colorado, Children’s Hospital in Los Angeles, HOFSTRA NSLIJ SOM, Lenox Hill Hospital, Henry Ford Hospital, UC Davis Medical Center, University of Hawaii, Cooper Hospital in New Jersey, St. Joseph Hospital, University of Arkansas, Southern Illinois University, University of Cincinnati, University of Florida, Loma Linda University, Duke University Medical Center, St. Louis University, University of Virginia, Glendale Adventist Medical Center, Cedar-Sinai Medical Center, Medical University of South Carolina, Billings Clinic, University of Kentucky Medical Center, LSU Health Science Center, Tulane University, UC Irvine, University of Oklahoma, Keesler Medical Center, Carolinas Medical Center, Mayo Clinic, Emory University, Navy Medical Center, Wake Forest, Darnell Army Medical Center, University of Chicago Medical Center, University of Maryland Medical Center, and Vanderbilt University.

All Ph.D. in Health Services Research graduates of Texas A&M School of Public Health in 2015 got employed with one year. Their employment titles are Medical Resident, Assistant Professor, Postdoctoral fellow, and Associate Director of Medical Services. Their employment have been in Texas A&M University, Ohio State University, University of Arkansas, Harvard University, and University of Louisville, Kentucky.

The other graduate programs with two digit 51 CIP codes at Texas A&M are very different from the pharmaceutical science programs; they are not similar in education, job needs, course work, or market potential. Pharmaceutical science is an applied area of research with practical relevance, not the basic science area of research. It is a critical area of research for
pharmaceutical discoveries and development that requires integration of several areas of pharmacy.

III. Faculty

A. Faculty Availability

The core faculty members should already be employed by the institution. Core Faculty are full-time tenured and tenure-track faculty who would teach 50 percent or more in the proposed program or other individuals integral to the proposed program and who could direct dissertation research. The proposed program should currently have at least four full-time equivalent (FTE) qualified core faculty members. Faculty to student ratios should be comparable to peer programs. Existing programs should not be significantly weakened if core faculty are to be reassigned to the proposed program. Support Faculty are other full- or part-time faculty who would be affiliated with the proposed program. The addition of the newly proposed program should not negatively affect the existing programs in related areas. The stated specialties of the faculty should align with the proposed course offerings.

Complete Table 8 to provide information about Core Faculty. Add an asterisk (*) before the names of the individuals who would have direct administrative responsibilities for the proposed program. Add a pound symbol (#) before the name of any individuals who have directed doctoral dissertations or master’s theses. Modify the table as needed.

The RCOP’s Department of Pharmaceutical Sciences has about 10 faculty with graduate mentoring experience. It is expected that when the program finally matures in five years, the student to faculty ratio will range from one-to-three. This compares well with the faculty at UT Austin (24 faculty for 66 students) and Texas Tech (20 faculty for about 40 students). The faculty in the department are highly specialized in their respective areas of research. Academic workloads of faculty are balanced between teaching in professional and graduate degree programs, scholarly activities, and clinical science. Research faculty who will be involved in the PHSC program teach Pharm.D. courses minimally with some teaching only about 5 – 10 lectures per year, and their participation and engagement in the PHSC program will have minimal to no impact on the Pharm.D. program. These faculty have been hired with the expectation of performing research. Much of the dissertation and research work of Ph.D. students will be performed in these faculty members’ labs.

<table>
<thead>
<tr>
<th>Name and Rank of Core Faculty</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.: Robertson, David Assoc. Prof</td>
<td>PhD. in Molecular Genetics Univ. of Wisconsin-Madison</td>
<td>MG200, MG285 MG824 (Lab Only)</td>
<td>50%</td>
</tr>
<tr>
<td>*#Mansoor A. Khan Professor</td>
<td>Ph.D. in Industrial Pharmacy St. Johns University, NY</td>
<td>725, 731, 732, 735</td>
<td>50</td>
</tr>
<tr>
<td>*#David E. Potter Professor</td>
<td>Ph.D. in Pharmacology Univ. of Kansas Medical Center</td>
<td>756</td>
<td>50</td>
</tr>
<tr>
<td>Elmageed, Zakaria Assistant Professor</td>
<td>Ph.D. in Chemistry University of Helman, Egypt</td>
<td>754</td>
<td>50</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Ph.D. in Medicine or Field</td>
<td>Page(s)</td>
</tr>
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<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Hamed I. Aly-Ismail</td>
<td>Assistant Professor</td>
<td>Ph.D. in Medicinal Chemistry and Computer Aided Drug Design Okayama University at Japan</td>
<td>742, 743</td>
</tr>
<tr>
<td>Juan J. Bustamante</td>
<td>Assistant Professor</td>
<td>Ph.D. in Biology Unv. of Texas at San Antonio</td>
<td>612</td>
</tr>
<tr>
<td>Mahua Choudhury</td>
<td>Assistant Professor</td>
<td>Ph.D. in Medical Pharmacology University of Missouri, Columbia</td>
<td>622</td>
</tr>
<tr>
<td>Lacy Daniels</td>
<td>Professor</td>
<td>Ph.D. in Biochemistry Univ. of Wisconsin at Madison</td>
<td>610, 634</td>
</tr>
<tr>
<td>Simi Gunaseelan</td>
<td></td>
<td>Ph.D. in Chemistry Northeast Hill University, Shillong</td>
<td>611, 736</td>
</tr>
<tr>
<td>Ayman K. Hamouda</td>
<td>Assistant Professor</td>
<td>Ph.D. in Pharmacology and Neuroscience Texas Tech Univ. Health Science Center at Lubbock</td>
<td>612, 754</td>
</tr>
<tr>
<td>Dongin Kim</td>
<td>Assistant Professor</td>
<td>Ph.D. in Pharmaceutics and Pharmaceutical Chemistry Univ. of Utah at Salt Lake City</td>
<td>725, 743, 755</td>
</tr>
<tr>
<td>Narendra Kumar</td>
<td>Associate Professor</td>
<td>Ph.D. in Microbial Biotechnology IIT, India</td>
<td>610</td>
</tr>
<tr>
<td>Dai Lu</td>
<td>Associate Professor</td>
<td>Ph.D. in Pharmaceutical Sciences and Medicinal Chemistry Univ. of Connecticut</td>
<td>742</td>
</tr>
<tr>
<td>Michael Miller</td>
<td>Associate Professor</td>
<td>Ph.D. Health Outcomes University of Pittsburgh</td>
<td>621, 689, 758</td>
</tr>
<tr>
<td>Mohammad T. Nutan</td>
<td>Associate Professor</td>
<td>Ph.D. in Pharmaceutical Sciences Texas Tech Univ. Health Science Center at Lubbock</td>
<td>611, 736</td>
</tr>
<tr>
<td>Srinath Palakurthi</td>
<td>Associate Professor</td>
<td>Ph.D. in Pharmaceutics Indian Institute of Chemical Technology</td>
<td>734, 753</td>
</tr>
<tr>
<td>M.N.V. Ravi Kumar</td>
<td>Professor</td>
<td>Ph.D. in Drug Delivery IIT, Roorkee</td>
<td>611, 736, 757</td>
</tr>
<tr>
<td>Ziyaur Rahman</td>
<td>Associate Professor</td>
<td>Ph.D. in Pharmaceutics Hamdard University New Delhi, India</td>
<td>731, 735, 738, 739</td>
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<tr>
<td>Lixian Zhong</td>
<td>Assistant Professor</td>
<td>Ph.D. in Pharmaceutics Univ. of Tennessee Health Science Center at Memphis</td>
<td>621, 744</td>
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<tr>
<td>Name</td>
<td>Title</td>
<td>Education</td>
<td>Office Numbers</td>
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<tr>
<td>-----------------------------</td>
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<tr>
<td>Lin Zhu</td>
<td>Assistant Professor</td>
<td>Ph.D. in Pharmaceutics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Univ. of Tennessee Health Science Center at Memphis</td>
<td></td>
</tr>
<tr>
<td>Projected New Core Faculty in Year</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

732, 752 50
Support Faculty are other full- or part-time faculty who would be affiliated with the proposed program. Modify the table as needed. Complete Table 9 to provide information about Support Faculty.

**Table 9. Support Faculty**

<table>
<thead>
<tr>
<th>Name and Rank of Support Faculty</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program or Other Support Activity</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.: Robertson, David Assoc. Prof</td>
<td>PhD. in Molecular Genetics Univ. of Wisconsin-Madison</td>
<td>MG200, MG285 MG824 (Lab Only)</td>
<td>10%</td>
</tr>
<tr>
<td>Robert Hutchison Associate Professor</td>
<td>Pharm.D. (Pharmacy Doctorate) University of Arkansas</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>*#Indra K. Reddy Professor</td>
<td>Ph.D. in Pharmaceutical Science University of Florida</td>
<td>736, 737</td>
<td>10%</td>
</tr>
<tr>
<td>Mary L. Chavez Professor</td>
<td>Pharm.D. (Pharmacy Doctorate) Purdue University</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Andrea Luce Assistant Professor</td>
<td>Pharm.D. (Pharmacy Doctorate) University of Houston</td>
<td>TBD</td>
<td>5</td>
</tr>
<tr>
<td>Rabaa Al-Rousan Assistant Professor</td>
<td>Ph.D. in Biomedical Sciences Marshall Univ. at W. Virginia</td>
<td>689</td>
<td>25</td>
</tr>
<tr>
<td>Steven Peterson Professor</td>
<td>Ph.D. in Pharmacology and Toxicology, University of California at Davis</td>
<td>612, 724, 756</td>
<td>10</td>
</tr>
<tr>
<td>Jayshree Mishra</td>
<td>Ph.D. in Microbial Biotechnology, IIT, India</td>
<td>610</td>
<td>25</td>
</tr>
<tr>
<td>Projected New Support Faculty in Year __</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**B. Teaching Load**

Indicate the targeted teaching load for core faculty supporting the proposed program. Teaching load is the total number of semester credit hours in organized teaching courses taught per academic year by core faculty, divided by the number of core faculty at the institution the previous year. Provide an assessment of the impact the proposed program will have, if approved, on faculty workload for existing related programs at the institution.

A two-to-three load for faculty supporting a doctoral program should be the target. The teaching load may vary according to discipline, but it should be low enough to allow the faculty to continue advanced research, supervise dissertations, and provide advising for the proposed program’s students. The teaching load of faculty should be comparable to peer programs and meet the institution’s standards.

If the distance program will result in additional students, describe how faculty resources will be
The RCOP aspires to be a leader in pharmacy education and research. Consistent with these aspirations and the RCOP's mission and goals, faculty academic workloads are well balanced between teaching, scholarly activities, and clinical service. Most faculty are committed to teaching one professional Pharm.D. and one Ph.D./M.S. course per year. These courses are at least 3 SCH. It is recognized that some faculty will have a lower load and some, particularly those on the teaching tract, will have a higher teaching load. The presence of teaching assistants in the laboratories will free-up faculty time for more direct teaching contact with students for increased SCH teaching responsibilities. This course load is consistent with the loads in other pharmacy schools in Texas. While this information is not publicly available to our knowledge, the faculty who joined us from Texas Tech University School of Pharmacy confirmed this teaching load of a course each in Pharm.D. and Ph.D. every year. Since research faculty are already in place with reasonably low teaching loads, the proposed program will not affect the existing Pharm.D. program. The proposed program will not have a very significant impact on the current course load of most faculty. On the contrary, it will help faculty make their Pharm.D. courses current with new research and update knowledge with the Ph.D. degree.

C. Core Faculty Productivity

Scholarly activity is determined by calculating the number of discipline-related refereed papers/publications, books/book chapters, juried creative/performance accomplishments, and notices of discoveries filed/patents issued per core faculty member over the last five years. A minimum of two peer-reviewed publications per year is expected for research faculty, although this may vary according to the expectations of the discipline and the required professional activity of the faculty. Faculty supporting doctoral-level professional practice degrees should be engaged in research, applied or otherwise, that has the potential to improve clinical practice and appear in publications relevant to the field.

Complete Tables 10 and 11 to provide information about faculty productivity, including the number of publications and scholarly activities and grant awards. Table 10 shows the most recent five years of data by Core Faculty, including the number of discipline-related refereed papers/publications, books/book chapters, juried creative/performance accomplishments, and notices of discoveries filed/patents issued.

Where relevant to performing arts degrees, major performances or creative endeavors by Core Faculty should be included. Examples are provided below. Do not include conference papers, reviews, posters, and similar scholarship. The format of the tables and information may vary, as long as the information is conveyed clearly. Include a list of the key journals in the field.

Table 10 shows the core faculty that will participate in the graduate program instruction as mentorship or membership in graduate committees. A combined publication of 400 manuscripts in addition to book chapters, books, and patents show the strength and preparedness of the core faculty to implement the new Ph.D. program in PHSC. Faculty who are less experienced in graduate student training and advisement are expected to serve in an advisory capacity and teach courses instead of chairing the Ph.D. advisory committee. Upon strengthening their research productivity and increasing their publications and grant records, these faculty members may also serve as major advisors. In four years, the department and the faculty will easily have...
the capacity to handle the 40-student enrollment with an average of two students or less per faculty member.

Table 10: Total Faculty Publications and Other Scholarly/Creative Accomplishments for the Past Five Years

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Refereed Papers</th>
<th>Book Chapters</th>
<th>Books</th>
<th>Juried Creative/Performance</th>
<th>Patents</th>
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<tr>
<td>e.g., Mencimer, Jennifer</td>
<td>12</td>
<td>3</td>
<td>2</td>
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<td>5</td>
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<tr>
<td>e.g., Walker, Guy</td>
<td>22</td>
<td>8</td>
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<tr>
<td>Mansoor A. Khan, R.Ph., Ph.D.</td>
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<td>9</td>
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<tr>
<td>Alkhateeb, Fadi M.</td>
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<td>Al-Rousan, Rabaa</td>
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<td>Aly-Ismail, Hamed</td>
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<td>Choudhury, Mahua</td>
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<td>Elmageed, Zakaria</td>
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<td>Hamouda, Ayman</td>
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<td>0</td>
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<td>Kim, Dongin (Donoven)</td>
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<td>Kumar, Narendra</td>
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<td>Kumar, M.N.V. Ravi</td>
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<td>2</td>
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<tr>
<td>Lu, Dai</td>
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<td>6</td>
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<td>Miller, Michael</td>
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<td>Mishra, Jayshree</td>
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<td>Nutan, Mohammad T.</td>
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<td>Rahman, Ziyaur</td>
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<td>Zhu, Lin</td>
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<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 11 shows the number and amount of external grants by Core Faculty. If applicable to the field, faculty should be securing external research funds. For each core faculty member, provide the total amount of external funding generated within the past five years (consistent with the methodology used for calculating scholarly activity). Grants earned at institutions or organizations other than the applying institution should not be counted unless the grant money carries over with the faculty member to the applying institution.

Table 11. External Grant Awards for the Past Five Years

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Grant Source</th>
<th>Grant Subject</th>
<th>Dates</th>
<th>Total Grant Amount</th>
<th>Institutional Amount</th>
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<tr>
<td>Mansoor A. Khan</td>
<td>NIH/FDA</td>
<td>Pharmaceutical Sciences, Product</td>
<td>2010-2015</td>
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<td>Aly-Ismail, Hamed</td>
<td>Umm Al Qura University</td>
<td>Pharmaceutical Sciences</td>
<td>1/1/2015-12/31/2015</td>
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<td>Choudhury, Mahua</td>
<td>Bill and Melinda Gates Foundation</td>
<td>Flavonoid Antioxidant Embedded Solid Hydropolymer Condom</td>
<td>2014-2015</td>
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<td>Lu, Dai</td>
<td>NIH</td>
<td>CB1 Allosteric Modulators: Molecular, Cellular and In Vivo Pharmacology</td>
<td>2016-2021</td>
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<td>NIH</td>
<td>Novel CB1 Inverse Agonists for Investigation of Constitutive Signaling Activities</td>
<td>2015-2017</td>
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<td>Texas Clinical Science and Translational Research Institute Pilot Study Grant</td>
<td>Cannabinoid CB2 Receptor Selective Agonists to Improve Prognosis of Pancreatic Cancer</td>
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<tr>
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<td>Elmageed, Zakaria</td>
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<td>The role of exRNA in health disparity of prostate cancer</td>
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<td></td>
<td>NIH</td>
<td>Targeting tumor-derived exRNA-containing macrovesicles by high throughput screening</td>
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<td>Louisiana Clinical and Translational Science Center Pilot Grant Round</td>
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<td>Discovering the role of putative microRNA in prostate tumorigenesis</td>
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<td>Hamouda, Ayman</td>
<td>National Institutes of Health</td>
<td>Neuronal Nicotinic Acetylcholine Receptors (nAChRs)</td>
<td>2015-2018</td>
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<td>American Heart - South West</td>
<td>Identification of positive allosteric modulator binding sites in a4ß2 nicotinic acetylcholine receptor</td>
<td>2015-2016</td>
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<td>Kumar, Narendra</td>
<td>DHHS-NIH-National Institute of Diabetes and Digestive and Kidney Disorders</td>
<td>Role of Cytokine Signaling In Intestinal Restitution</td>
<td>2009-2014</td>
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<td>Crohn's and Colitis Foundation of America</td>
<td>Ccfa-Kumar: Role of IL-2 In Mucosal Wound Repair</td>
<td>2010-2011</td>
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<td>Kumar, M.N.V. Ravi</td>
<td>AM Biotechnologies, LLC</td>
<td>PK/PD model for the X-Aptamer Nanosponge (XANS) antivenom</td>
<td>2014-2015</td>
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<td>The Cunningham Trust</td>
<td>Understanding biodegradable nanoparticle toxicity: Tracking</td>
<td>2014-2015</td>
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Division of Academic Quality and Workforce
Updated 2.1.18
<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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<td>Formulating MI-peptide for better peroral delivery</td>
<td>2014-2016</td>
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<td>Foundation</td>
<td>Medimmune, Inc</td>
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<td>Mishra, Jayshree</td>
<td>American College of Clinical</td>
<td>A Literacy-Sensitive Approach to Improving Antibiotic Understanding in a Community-Based Setting</td>
<td>2014</td>
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<td>Pharmacy</td>
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<td>Miller, Michael Pharmacy Residency Research Skills Webinar Series</td>
<td>2015-2016</td>
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<td>University of Pittsburgh School of Pharmacy</td>
<td>Medications Frequently Implicated in Suicide in Older Adults: An Analysis of Poison Center Data</td>
<td>2011-2012</td>
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<td>Palakurthi, Srinath</td>
<td>National Corn Growers Association</td>
<td>Development of Zein (corn Protein) Nanoparticles for Nasal Delivery of Vaccines</td>
<td>2012-2014</td>
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<td>Rahman, Ziyaur</td>
<td>DHHS-Food and Drug Administration</td>
<td>Dissolution Methods for Topical Ocular Emulsions</td>
<td>2014-2015</td>
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<td>Disproportionation of Prasugrel Hydrochloride in the presence of excipients: analytical method</td>
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<td></td>
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</table>
D. Faculty Professional Development and Curriculum Support

Describe the training in delivering instruction via distance education faculty members currently have or will be given. Describe any support that will be available for the start-up development of the courseware.

Instructional Design and Support Services (IDSS), a subunit in the HSC Office of Academic Affairs serves the faculty based at the Kingsville and College Station locations. IDSS provides a variety of services including key services relevant to faculty professional development and new faculty orientation to the college’s instructional technology resources. The new faculty orientation is typically carried out over nine sessions during a 2-month period. The pertinent topics include: 1) an overview of all the instructional technologies the college has implemented, 2) how to add course content and assessments in eCampus, the college’s learning management system, 3) teaching in a videoconference environment—best practices, 4) teaching in a videoconferencing environment—practicum, and 5) how to create questions and administer exams using ExamSoft, the college’s computer-based testing system.

For curriculum support, IDSS facilitates in: 1) College courses to be created in eCampus; 2) applying the college’s template to all courses for an optimal student and faculty experience in the courses as well as for a uniform look and feel; and 3) backing up all eCampus courses at the end of a semester. IDSS also assists faculty in recording lectures to be available to the students in eCampus. Finally, IDSS provides consultation services on implementing new instructional strategies and on incorporating advanced features of various instructional technologies.

IV. Resources

A. Student Financial Assistance

To be competitive, it is critical that institutions offer comprehensive financial assistance packages to recruit and retain high-quality doctoral students. Providing financial assistance for doctoral students engaged in coursework and dissertation writing is recommended.

Identify the number of full- and part-time students who would be funded and the anticipated
amounts for each of the first five years. Provide a plan to provide financial support for at least 50 percent of the full-time students enrolled in the proposed program. Provide a description that demonstrates that the level of financial support will be comparable to or competitive with existing doctoral programs in the discipline. Provide examples of assistance for other similar programs. Budget information should address the amount of assistantships per student, tuition and fee arrangements, and benefits, if any.

Modify the table as needed to distinguish between Teaching Assistantships, Research Assistantships, and Scholarships/Grants. If student financial assistance is reliant upon grant funding, explain how funding will be consistently sustained if grant income falls short of projections. Additionally, show how the level of student support compares to the anticipated overall student cost of tuition and fees.

Some professional programs do not typically support doctoral students. In addition, some programs have high numbers of part-time students who work full-time (e.g., Education and Public Affairs), and financial support for such students is not expected.

**Table 12. Student Financial Assistance**

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td><strong>Teaching Assistantships</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td># of Full-time students</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Amount per student</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
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<tr>
<td># of Part-time students</td>
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<td>0</td>
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<tr>
<td>Amount per student</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td><strong>Research Assistantships</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td># of Full-time students</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Amount per student</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
<td>25K stipend plus tuition</td>
</tr>
<tr>
<td># of Part-time students</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Amount per student</td>
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<tr>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Amount per student</td>
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<td>N/A</td>
<td>N/A</td>
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<tr>
<td># of Part-time students</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>Amount per student</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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</table>

For funding details, please see item G before the appendices. This level of support is comparable to other Ph.D. students’ stipends in Texas A&M. As examples, the average stipend of PhD students in veterinary medicine is $26,688 (n=9), engineering is 25k (n=18), science is 24k (n=258), and chemistry is 24k (n=126). Out-of-state graduate students who receive an
assistantship will also be eligible for in-state tuition rates. This stipend should cover their fees and living expense. Tuition is also paid separately in addition to the above stipend.

B. Library Resources

A printout of the library’s relevant holdings or a list of the planned acquisitions is not necessary. A letter or other statement from the librarian describing the adequacy of existing resources is required (include as Item E in Required Appendices). Provide the library director’s assessment of both paper and electronic library resources necessary for the proposed program. Describe plans to build the library holdings to support the proposed program. Include the amount allocated to the proposed program.

Describe how students will access library resources, including print, electronic, and in person. Describe how communication with the library and interaction with the library staff and librarians occur. Describe how resources are made available in a format that is accessible to remote students.

RCOP students, faculty, and staff have access to all of the services and the online and print resources of the Texas A&M University Medical Sciences Library (MSL) in College Station, in addition to those of the general university Sterling C. Evans Library (located on the Texas A&M Main Campus in College Station), as well as from the Texas A&M-Kingsville Jernigan Library. The Evans Library has extensive collection resources in the basic science areas that would support this program, such as organic chemistry. Because the preference has long been for electronic resources, these are available online to students and faculty in Kingsville. Additionally, the library has established a purchase-on-demand plan with another book seller that automatically includes access to new electronic books in our catalog that are then purchased as they are used. Faculty and students at both locations enjoy a rich variety of resources and services available through the MSL, including:

- Access to thousands of clinical and research journals
- Direct delivery of articles (PDFs via email) and books (shipped to MSL at Kingsville for pick-up) through the “Get It for Me” service
- Expertise of highly-experienced medical librarian faculty and support staff

The MSL staffs and operates the library space in the RCOP building in Kingsville, managing a highly selective on-site print collection and providing reference and searching assistance for students, faculty, and staff. Students and faculty at the RCOP College Station location have access to the adjacent main MSL facility. An MSL faculty librarian serves full-time onsite in Kingsville and supervises a full-time library associate and a part-time associate; these MSL employees assist all faculty and students with information needs and requests.

The MSL is the primary library for the RCOP’s research and other scholarly and teaching activities. All faculty and students in RCOP enjoy a rich variety of resources and services, including access to 18,000 electronic journals, more than 25,000 electronic books, and more than 500 databases. Students, faculty, and preceptors have access to numerous evidence-based pharmacy and medical resources online and through mobile devices, including PubMed, Ovid MEDLINE, UpToDate, AccessPharmacy, DynaMedPlus, Epocrates Premium, Lexi-Comp, Ident-A-Drug Reference, ClinicalKey, STAT!Ref, Faculty of 1000, EMBASE, SCOPUS, Web of Science, AccessPharmacy, APhA Pharmacy Library, IPA: International Pharmaceutical Abstracts,
Stat!Ref, TOXNET, CHEMnetBASE Chemical Databases, JAMAEvidence, Drug Information Portal, GIDEON, Global Health, Agricola, PsycInfo, Clinical Pharmacology, uCentral eBooks for mobile devices, Joanna Briggs Institute Evidence-Based Practice Database, Essential Evidence Plus, Natural Medicines Comprehensive Database, Review of Natural Products, and The Dietary Supplements Labels Database. A special webpage, the Pharmacy LibGuide (http://guides.library.tamu.edu/pharmacy), provides convenient access to these and other resources. Electronically available required and recommended textbooks, literature databases and drug references are linked on this site. With an average of approximately 3,500 page views per month, this page consistently out ranks all other University Libraries LibGuides as the most heavily-used. Micromedex, licensed by the College, is available to the faculty and students, through both the web-based resource and the mobile application. Faculty and students are encouraged to request additional resources for the collection though a form on the MSL website, through email, or by phone.

Available library holdings contain about 90% of the journals listed on the American Association of Colleges of Pharmacy (AACP) list of 2014 Basic Resources for Pharmacy Education, 88% of the e-resources, 81% of the first purchase monographs and 62% of the supplemental purchase monographs. Library personnel are dedicated to benchmarking against the list to identify purchases to update and enhance the collection relevance.

The MSL collection policy prefers electronic resources over print resources so students and faculty can access them regardless of location or hours of operation. Faculty and staff also have direct access to electronic books in the health sciences as published. Interlibrary loan and document delivery, through the MSL “Get It for Me” service, allows students and faculty to receive books and other materials from the main print collection in College Station or from other lending libraries across the U.S. In addition to these resources, the MSL partners with numerous state and regional consortia to bring a wider range of resources to our users. These collaborations include the Texas Digital Library (TDL), the South Central Academic Medical Libraries (SCAMEL) Consortium and the Health Science Center Alliance of Libraries.

The MSL’s librarian at RCOP is experienced in pharmacy library services and resources, and holds the faculty rank of Instructional Associate Professor. This librarian teaches literature searching and evidence-based practice in several RCOP courses, serves on curriculum and other committees, and provides in-depth, targeted literature searches for pharmaceutical researchers and instructional faculty.

The Texas A&M University Libraries have a solid foundation of the information resources needed to support this new program. Major expenditures for new resources required to support the program are not anticipated. The Texas A&M University Libraries was ranked, for the 2014/2015 cycle, 13th among the Association of Research Libraries’ (ARL) 115 research libraries and 6th among ARL’s U.S. Public University Libraries. Further, among ARL U.S. Public University Libraries, the Texas A&M ranks first in both information resource and ongoing information resource expenditures. A full 57% of total funds expended by the libraries go toward information resources, compared to the University’s Vision 2020 Peers’ average of 40%.

C. Facilities and Equipment

Describe the availability and adequacy of facilities and equipment to support the proposed program. Describe plans for new facilities and equipment, improvements, additions, and
renovations.

Provide the amount of anticipated expenditures related to facilities and equipment, and include those amounts in the budget under "Costs and Revenues." Also, describe the status of all building project(s) related to the program and include the schedule for completion. For shared equipment and facilities, describe availability for the proposed program.

The RCOP is located at Texas A&M University (Texas A&M) in College Station and in Kingsville on the campus of Texas A&M University-Kingsville (TAMUK).

At the Kingsville location, the RCOP is housed in a three-story physical facility providing a total gross area of 63,000 square feet. The first floor houses the Dean's administrative suite, Instructional Design and Support Services, three lecture halls, study rooms, a student lounge, social and study rooms and conference rooms. The second floor has 20 faculty offices, a lounge, Library and Drug Information Center, three teaching laboratories (compounding, sterile products and physical assessment) and office suites for the Office of Experiential Education and the Departments of Pharmacy Practice and Pharmaceutical Sciences as well as three small group breakout/conference rooms, two small study rooms, a medium study room and a computer lab. The third floor is designated primarily for the research faculty engaged in bench research which houses 10 faculty offices and laboratories with sizes ranging from approximately 470 to 780 square feet, a common core equipment laboratory, a freezer room, cold room, a computer server room and storage room and administrative offices. Additional space is in adjacent buildings (Kleberg Hall 7,200 square feet, Rhode Hall 1,170 square feet). Kleberg Hall houses the Offices of Student Affairs, Human Resources, Development and Communication, a medium conference room, one student study room, one 90-seat classroom and one large office for student organizations. Rhode Hall houses two classrooms used for elective courses with a capacity of 30 seats each.

On the College Station campus, about 20,260 square feet of space in the Reynolds Medical Building has been designated for the RCOP. This space has an office suite comparable to the primary space in Kingsville and houses 12 offices, a large lecture hall with 148 seating capacity, one medium classroom with 40 seating capacity, an active learning laboratory, a sterile products and a compounding laboratory, six faculty research laboratories, shared instruction space that is reserved for physical assessment activities and ample student study and organization areas.

The compounding laboratories have 29 workstations at the Kingsville location and 20 workstations on the College Station campus. The sterile products laboratory at the Kingsville location has eight laminar cabinets; the College Station campus has five and a biological safety cabinet.

The Pharmaceutical Animal Research Facility, or Vivarium, located in Kingsville affords approximately 5,000 square feet of state-of-the-art Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC)-accredited animal research space for faculty researchers.

The Department of Pharmaceutical Sciences has common use research equipment valued at approximately $2M. Acquisition of common equipment is determined by faculty in consultation.
with the leadership team. Individual equipment items are located throughout the research laboratories on the third floor of the Kingsville main building and Vivarium. The list of equipment essentially includes state-of-the-art manufacturing, analytical, on-line PAT sensors, Gas and liquid chromatographies with mass spectrometers, thermogravimetric analyzer, differential scanning calorimeters, microscopes, several cell-culture facilities, viscometer/rheometer, microfluidizer, freezers and stability chambers, dissolution and permeability equipment in addition to several basic science equipment in individual faculty laboratories. Both Texas A&M College Station and Kingsville locations have central equipment facilities with almost all needed equipment for the Ph.D. program in Pharmaceutical Science. Additionally, a 21 CFR 211 compliant current Good Manufacturing Facility is under construction and slated to be completed in October 2016 in the Reynolds Medical Sciences Building, home to the RCOP’s second campus, in College Station.

D. Support Staff

Describe plans, if any, to increase or reallocate support staff in order to provide sufficient services for the projected increases in students and faculty. Provide confirmation that existing programs will not be significantly weakened if staff are to be reassigned to the proposed program.

A support staff member will be hired to help the director of graduate program. If additional support staff is needed, there is a commitment from Dean to provide that help. The existing PharmD program would not be affected as the new hire would be assigned exclusively to supporting the Ph.D. program. Further, if additional staff support is needed to sustain the Ph.D. program, the RCOP would support the hiring of student assistants and interns, which would provide reciprocal opportunities for interested, potential students of the graduate program.

E. External Learning

If the proposed program requires an Internship, Clerkship, Clinical Experience, or other external learning opportunity explain how and where this requirement would be met. Describe plans for developing and maintaining this aspect of the proposed program, and provide confirmation that the additional requirements would not negatively affect other programs at the institution. If specific plans for external learning are already developed, list the name of the facility, the city and county of location, a brief description of the facility and its services, and an estimated number of student placements. Explain the impact this new program would have, if approved, on the available number of external learning opportunities in Texas for this type of program.

All Ph.D. students will be eligible to work as summer interns in the pharmaceutical or biotech industries within the US. The students will learn practical aspects of product development and other pharmaceutical science when opportunities are provided. This experience will depend upon students ability to obtain internships. Students will find their own internships as this will not be a required activity by the program.

F. List of Potential Expert External Reviewers

Develop a list of suitable expert external reviewers for the proposed program who could provide a desk review and/or serve on a site visit team. Expert External Reviewers should have recognized expertise in the discipline and hold the rank of full professor or senior administrator.
at institutions with top-ranked programs. Potential expert external reviewers should not have close ties to the institution that could generate a conflict of interest. Potential expert external reviewers should be from institutions outside the state of Texas. Institutions are responsible for reimbursing the Coordinating Board for the travel expenses incurred by and fees paid to expert external reviewers used for desk reviews and site visits that are part of the doctoral review process.

Provide the names and contact information for six potential expert external reviewers to review the proposed program. Describe concisely the qualifications of each expert external reviewer.

Table 13. Institution’s Proposed Expert External Reviewers

<table>
<thead>
<tr>
<th>Reviewer #1</th>
<th>Name</th>
<th>Thomas Abbruscato, Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title and Rank</strong></td>
<td>Professor of Pharmaceutical Sciences and Department Chair</td>
<td></td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td>College of Pharmacy – Texas Tech University Health Science Center</td>
<td></td>
</tr>
<tr>
<td><strong>Phone #</strong></td>
<td>806-414-9234</td>
<td></td>
</tr>
<tr>
<td><strong>Email</strong></td>
<td><a href="mailto:Thomas.Abbruscato@ttuhsc.edu">Thomas.Abbruscato@ttuhsc.edu</a></td>
<td></td>
</tr>
<tr>
<td><strong>Qualifications/Expertise</strong></td>
<td>Pharmacology/Drug Delivery</td>
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</table>

<table>
<thead>
<tr>
<th>Reviewer #2</th>
<th>Name</th>
<th>Sunny Ohia, Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title and Rank</strong></td>
<td>Professor of Pharmacology</td>
<td></td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td>Texas Southern University</td>
<td></td>
</tr>
<tr>
<td><strong>Phone #</strong></td>
<td>713-313-7011</td>
<td></td>
</tr>
<tr>
<td><strong>Email</strong></td>
<td><a href="mailto:seo1156@gmail.com">seo1156@gmail.com</a></td>
<td></td>
</tr>
<tr>
<td><strong>Qualifications/Expertise</strong></td>
<td>Academic professor and former Dean (UoH) and Provost (Tx Southern)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<th>Name</th>
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</tr>
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<tr>
<td><strong>Title and Rank</strong></td>
<td>Chair and Professor, Director</td>
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<tr>
<td><strong>Institution</strong></td>
<td>The University of Mississippi, Department of Pharmaceutics and Drug Delivery, PII Center for Pharmaceutical Technology</td>
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</tr>
<tr>
<td><strong>Phone #</strong></td>
<td>662-915-1155</td>
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</tr>
<tr>
<td><strong>Email</strong></td>
<td><a href="mailto:marepka@olemiss.edu">marepka@olemiss.edu</a></td>
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<tr>
<td><strong>Qualifications/Expertise</strong></td>
<td>Ph.D. in Pharmaceutical Science, Academic Professor and Chair, AAPS Chair of Formulations Design and Development</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reviewer #4</th>
<th>Name</th>
<th>Robert Mangione, Ed.D., R.Ph.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title and Rank</strong></td>
<td>Provost and Professor of Pharmacy</td>
<td></td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td>St. John’s University</td>
<td></td>
</tr>
<tr>
<td><strong>Phone #</strong></td>
<td>516-375-8581</td>
<td></td>
</tr>
<tr>
<td><strong>Email</strong></td>
<td><a href="mailto:mangionr@stjohns.edu">mangionr@stjohns.edu</a></td>
<td></td>
</tr>
<tr>
<td><strong>Qualifications/Expertise</strong></td>
<td>Has authored or co-authored over 100 publications. Professional expertise includes Pharmaceutical Care for Patients with Celiac Disease, Pediatric Pharmacotherapy, and Poverty Issues in Healthcare and Education. Served for 10 years as a professional member of the New York State Board of Pharmacy.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reviewer #5</th>
<th>Name</th>
<th>Gintaras Reklaitis, Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title and Rank</strong></td>
<td>Deputy Director</td>
<td></td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td>Purdue University</td>
<td></td>
</tr>
</tbody>
</table>

Division of Academic Quality and Workforce
Updated 2.1.18
G. Five-Year Costs and Funding Sources Summary

Adding a new doctoral degree program will cost the institution some amount of money. Calculating the costs and identifying the funding sources associated with implementation of a new doctoral program requires several institutional offices to collaborate to present an accurate estimate.

Provide an overview of new and reallocated costs for the proposed program using the form Costs to the Institution of the Proposed Doctoral Program. Faculty salaries include all faculty assigned to the proposed program. If an existing faculty member is reassigned to the program, the salary is reflected as a reallocated cost. New faculty salaries need to be competitive for the discipline, and figures include start-up costs in proportion to the new faculty member’s allotted time in the proposed program. Faculty salaries do not include benefits or pensions. If the proposed program will hire new faculty, it is a new cost. Program administration includes all institutional costs associated with running the program, including amounts associated with the Dean’s office, Institutional Research, and other administrative costs. Graduate Assistant costs are identified either as new or reallocated, as appropriate. Clerical/Staff include specific costs associated with the new program. This includes the additional staff needed to organize applications, prepare for the proposed program, and for general administration of the proposed program. If the enrollments in the proposed program are projected to be large, the associated costs related to clerical/staff may also be more. New staff or purchases of new equipment should be adequate to support the stated goals and enrollments for the proposed program. Other program costs identified in the proposal should be realistic.

Total funding for the proposed program should meet or exceed total costs by the end of the first five years. On the forms provided, include a description of sources for existing and anticipated external funding. Include explanatory footnotes as needed.

Because enrollments are uncertain and programs need institutional support during their start-up phase, institutions should demonstrate that they could provide:

- sufficient funds to support all the costs of the proposed program for the first two years (when no new formula funding will be generated); and
- half of the costs of the proposed program during years three through five from sources other than state funding.

Funding sources may include formula income, other state funding, tuition and fees, reallocation of existing resources, federal funding, and other funding (such as awarded grants). The total
projected income of state funding, tuition and fees, and private funds will allow the proposed program to become self-sufficient within five years.

Consult with your institution’s Institutional Research department when calculating the formula funding.

When estimating program funding for new programs, institutions take into account that students switching programs do not generate additional formulas funds for the institution. For example, if a new doctoral program has ten students, but six of them switched into the program from existing master’s programs at the institution, only four of the doctoral students would generate additional formula funding.

The Other State Funding category could include special item funding appropriated by the Legislature, or other sources of funding from the state that do not include formula-generated funds (e.g., HEAF, PUF).

Reallocation of Existing Resources includes the salary of faculty reassigned who may be partially or wholly reallocated to the new program. Explain how the current teaching obligations of those faculty are reallocated and include any faculty replacement costs as program costs in the budget. If substantial funds are reallocated, explain how existing undergraduate and graduate programs will be affected.

Federal Funding (In-hand only) refers to federal monies from grants or other sources currently in hand. Do not include federal funding sought but not secured. If anticipated federal funding is obtained, at that time it can be substituted for funds designated in other funding categories. Make note within the text of the proposal of any anticipated federal funding.

Tuition and Fees includes revenue generated by the institution from student tuition and fees.

Other Funding category may include auxiliary enterprises, special endowment income, or other extramural funding.

H. Signature Page
The appropriate signature page must selected and signed by the required institutional official and board of regents.

V. Additional Distance Education Delivery Consideration
The current curriculum incorporates videoconferencing and distance education technology similar to the Pharm.D. course delivery in the College of Pharmacy. Lectures will be delivered synchronously face-to-face and through videoconference (electronic to group), originating from either Kingsville or College Station. Each course delivered by distance education technology will have an on-campus faculty coordinator or facilitator who is accessible to students.

A. Adherence to Principles of Good Practice
Submit the Certification Form or provide a statement from the Chief Academic Officer certifying adherence to Principles of Good Practice as well as adherence to Coordinating Board distance education rules and policies.
B. Administrative Oversight and Structure

Identify the person/office directly responsible for the overall management of the proposed program.

Indra K. Reddy, Ph.D., Professor and Dean

Identify other responsibilities of the person/office with primary responsibility and any modifications in responsibility made to accommodate the program.

The organizational structure exists for both delivery sites in the form of a Dean and a vice dean to provide oversight at each site and to facilitate seamless coordination between the two sites, i.e., Kingsville and College Station. At this time, Dr. Indra Reddy is the Dean at the Kingsville location while Dr. Mansoor Khan is the vice-dean at the College Station site to help each site with the planning and implementation. Both Drs. Reddy and Khan bring a wealth of expertise and experience to these roles. In addition to considerable administrative experience within The Texas A&M University System, each dean has a thorough understanding and working knowledge of the site on which they reside and responsibility to advance the College’s mission and vision. The two deans are part of the College’s Executive Committee.

Describe the ways in which the delivery method will affect the proposed program.

The delivery methods at both sites will be affected minimally because of the already existing trained faculty and the necessary infrastructures available for the Pharm.D. program. Face-to-face lectures in Kingsville will be available by videoconference in College Station and vice versa. This will facilitate the Kingsville-based faculty to further improve their distance education skills. A faculty development committee comprising of seven faculty from both sites is charged with developing and training faculty with workshops with internal and external consultants. Faculty development workshops are regularly held in summers. In addition, a mentorship program is in place where a Kingsville faculty member is paired with a distance faculty member located off campus and provides guidance in distance education. As the Pharm.D. program expanded in College Station an increasing percentage of the instruction also originates from College Station and delivered via videoconference to Kingsville with an on-site facilitator at both sites to address any issues that arise with delivery. Therefore, there is already a good precedence and understanding of the use of distance learning technology in the College of Pharmacy.

For online programs: Not applicable to the current application.

1. How will exam proctoring and monitoring be managed and evaluated?
2. How will user authentication be validated?
3. How will the proposed program assure compliance with accessibility standards and regulations (institutional, state, and federal) for instructional delivery, course materials, and other components of the proposed program?

C. Collaborative Arrangements

Describe all collaborative arrangements with other institutions that will be participating in the delivery of the proposed program. Be certain to identify the:

1. Responsibilities of each institution.

There are no other institutions participating in the delivery of this program.

2. Process for the credentialing of faculty at each participant site.
The College will credential faculty in College Station and Kingsville in the same manner. The Vice Dean and Department Chairs, with the help of members of graduate program committee will review transcripts of all potential faculty members to ensure that degree requirements have been met and that the potential faculty member has sufficient background qualifications to teach their assigned courses. The background, training, and experience is also considered for approvals by the graduate council in TAMU.

Adhering to the guidance of the Southern Association of Colleges and Schools, faculty will hold a doctorate or master’s degree with a concentration in the teaching discipline with a minimum of 18 graduate semester hours in the teaching discipline. The credentialing evaluation gives primary consideration to the highest earned degree in the discipline, but also considers competence, effectiveness, and capacity, including: undergraduate and graduate degrees, related work experiences in the field, professional licensure and certifications, honors and awards, continuous documented excellence in teaching or other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes.

3. Institution awarding credit.

Texas A&M University will confer the Ph.D. degree to students successfully completing the program.

D. Program Differences

If the proposed program will be delivered both on-campus face-to-face at the main campus and at a distance, describe all differences between on-campus and distance delivery, including:

1. Student admission and advisement.

Both sites will have the same criteria for the admission and will be assigned an advisor from the existing on-campus faculty.

2. Qualifying and other exams.

There will be no differences in the qualifying and other exams.

3. Independent study.

Currently, research lab with active programs are available for the independent studies at both the sites.

4. Courses and sequencing.

The same courses and sequences will be available to all the students at both sites; there will be no differences. Face-to-face lectures in Kingsville will be available by videoconference in College Station and vice versa.

5. Library access.

Students, faculty, and staff have access to all of the services and the online and print resources of Texas A&M University. The Kingsville site has the Jernigan Library at the Texas A&M University at Kingsville, and the College Station campus has the Medical Sciences Library (MSL) and the Evans
Library. The MSL is adjacent to the Reynolds Medical Building. It occupies over 44,000 square feet containing holdings of more than 120,000 print volumes and over 1,600 serial titles with collection expenditures over $1.8M. Most resources are electronic and available to the students at both sites. The MSL is open 24 hours and is limited to graduate and professional students only. Libraries at both sites have a number of group and individual study rooms. Moreover, the College of Pharmacy will ensure that access is comparable at both sites.

6. Discuss the accommodations available for students with special needs to assure accessibility to the course materials, activities, and support services related to the proposed program.

College Station students requiring an accommodation will contact Disability Services located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. Additional information are provided at [http://disability.tamu.edu](http://disability.tamu.edu). Kingsville students will contact the Disability Resource Center located in Student Health and Wellness or call 361-593-3991. Additional information is provided at [http://www.tamuk.edu/drc/index.html](http://www.tamuk.edu/drc/index.html).

E. Student Interactions

- Describe the orientation process. Beyond the courses, how are students oriented to the services of the institution – library, student support, etc.

The College will have one set of student policies for the Kingsville and College Station sites, and these policies will be written into the Student Handbook that is distributed to all students each year they enter the program. While it is anticipated that a single set of student policies will apply equally to students at both sites, it is possible that certain academic, professional, and conduct issues may be unique to either site. In such cases, the College leadership will develop a site-specific policy that addresses the issue(s) and inform all students of the new policy(ies) and they will be added/amended to the Student Handbook.

- Describe how electronic and on-campus students would interact. How will interactions occur between distance education students?

Students at both sites will have equitable representation on various committees of the College. Student members of college committees are elected from the student body and the College will have a procedure in place to ensure that the election process is comparable and fair at both sites. Additionally, the College will schedule committee meetings in such a way that all students, regardless of site, will be able to participate. The students will meet face-to-face during general orientation and other college events. They will also attend live lectures with the other site’s students visible on screen. All students will have opportunities to interact via a push button in the lecture halls or with zoom connections arranged by the department staff.

The elected leaders of each student organization, as well as elected class representatives from each class, comprise the Graduate Student Council (GSC). The GSC will provide opportunities for student organizations and class representative to discuss and share ideas, develop solutions for issues that affect students and relay important information about student issues to the College administration. The College intends to add seats to the Council so that class representatives and student organization leaders from the College Station site are included. The College will develop a procedure that ensures
students on the College Station campus, like those on the Kingsville campus, are represented on the Texas A&M Health Science Center-Graduate Student Government Association (HSC-GSGA).

- Describe how instructor and students will interact throughout the program. Include interactions both in and out of the classroom setting. How is the sense of community developed? As a doctoral program, detail how you can create a residency equivalent experience.

The program will be a combination of off-campus face-to-face and off-campus electronic-to-groups delivery. In most cases, the instruction will be delivered face-to-face on either the Kingsville or College Station campus and transmitted by live videoconference to the other campus. This is the existing mode of program delivery on the Kingsville campus.

- Describe residency requirements.

Students will be in residence at either the College Station or Kingsville site throughout the program.

- Describe the advisement process throughout the proposed program.

Upon admittance into the program, each student will complete four 6-week long rotations in research labs, complete the required coursework and select the major advisor and thesis advisory committee comprised of at least three pharmaceutical science graduate faculty and at least one graduate faculty from other Texas A&M programs. Until the selection of the student’s advisory committee, all students will be advised by the Chair of graduate program committee.

- Describe how you plan to address dissertation requirements, oversight, and mentoring during the dissertation process.

Once a student completes all the requirements of coursework and passes the qualifying examination, he or she will be admitted to the candidacy. A candidate student will register continuously as a full time student as per the Texas A&M guidelines for graduate studies. Full time students would need a minimum of nine SCH in Fall and Spring semesters, and six SCH in summer sessions until they complete all the required courses on their degree plan. The candidate must conduct scholarly independent original research with evidence of new knowledge to the field under the guidance of on-campus major advisor. Additionally, the progress of the student will also be overseen by Thesis Advisory Committee and Graduate Program Committee throughout the period of thesis work. The thesis or dissertation must demonstrate the hypothesis of research, experimental plan and the mastery of the techniques of research, a detailed discussion of the experimental research, and thorough understanding of the subject matter and its background with a high degree of skill in organizing and presenting the material by following all the Texas A&M requirements.

VI. Required Appendices

A. Course Descriptions and Prescribed Sequence of Courses

B. Five-Year Faculty Recruitment Plan/Hiring Schedule

C. Institution’s Policy on Faculty Teaching Load
   If teaching load policy is set at the departmental level, include that information.
D. **Itemized List of Capital Equipment Purchases During the Past Five Years**¹

*Equipment* means an article of nonexpendable, tangible personal property having a useful life of more than one year and an acquisition cost, which equals or exceeds the lesser of the capitalization level established by the governmental unit for financial statement purposes, or $5,000.

E. **Librarian’s Statement of Adequate Resources**

F. **Articulation Agreements with Partner Institutions**

Include copies of any agreements or Memoranda of Understanding related to the proposed program. These include formal and sustained arrangements with other universities, private businesses, or governmental agencies that contribute directly to the proposed program and student research/residency opportunities.

G. **Curricula Vitae for Core Faculty**

H. **Curricula Vitae for Support Faculty**

I. **List of Specific Clinical or In-Service Sites to Support the Proposed Program**

J. **Letters of Support from Peer Institutions and/or Area Employers**

Letters from regional and national companies who have made commitments to hire doctoral graduates from the proposed new program are particularly helpful. Also, include statements of support or commitments to shared research projects from other institutions in the state with similar doctoral programs.

---

¹ “Equipment” has the meaning established in the Texas Administrative Code §252.7(3) as items and components whose cost are over $5,000 and have a useful life of at least one year.
Costs to the Institution of the Proposed Program

Complete the table to show the costs to the institution that are anticipated from the proposed program.

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost Sub-Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
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<td>Faculty Salaries1</td>
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<tr>
<td>TOTALS</td>
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<td>$3,086,308</td>
<td>$12,913,777</td>
</tr>
</tbody>
</table>

1 Report costs for new faculty hires, graduate assistants, and technical support personnel. For new faculty, prorate individual salaries as a percentage of the time assigned to the program. If existing faculty will contribute to program, include costs necessary to maintain existing programs (e.g., cost of adjunct to cover courses previously taught by faculty who would teach in new program).

2 Equipment has the meaning established in the Texas Administrative Code §252.7(3) as items and components whose cost are over $5,000 and have a useful life of at least one year.
## Anticipated Sources of Funding

Complete the table to show the amounts anticipated from various sources to cover new costs to the institution as a result of the proposed program. Use the Non-Formula Sources of Funding form to specify each non-general revenue source.

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Formula Funding</strong>¹</td>
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<td></td>
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<td>$310,026</td>
<td>$847,936</td>
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<td><strong>II. Other State Funding</strong></td>
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<tr>
<td><strong>III. Reallocation of Existing Resources</strong></td>
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<td>$1,617,167</td>
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<td>$8,182,510</td>
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<tr>
<td><strong>IV. Federal Funding</strong> (In-hand only)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>V. Tuition and Fees</strong></td>
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<td>$216,700</td>
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<td>$450,000</td>
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<td>$550,000</td>
<td>$2,100,000</td>
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<tr>
<td><strong>TOTALS</strong></td>
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<td>$3,348,578</td>
<td>$13,607,654</td>
</tr>
</tbody>
</table>

¹ Indicate formula funding for students new to the institution because of the program; formula funding should be included only for years three through five of the program and should reflect enrollment projections for years three through five.

² Report other sources of funding here. In-hand grants, “likely” future grants, and special item funding can be included.
Non-Formula Sources of Funding

Complete the table to specify each of the non-formula funding sources for the amounts listed on the Anticipated Sources of Funding form.

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>Non-Formula Funding Sources</th>
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</thead>
<tbody>
<tr>
<td><strong>II. Other State Funding</strong></td>
<td>#1</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
<tr>
<td><strong>III. Reallocation of Existing Resources</strong></td>
<td>#1 Texas A&amp;M Irma Lerma Rangel College of Pharmacy/Health Science Center Funds to support salaries</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
<tr>
<td><strong>IV. Federal Funding (In-hand only)</strong></td>
<td>#1</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
<tr>
<td><strong>V. Tuition and Fees</strong></td>
<td>#1 State Tuition, Differential Tuition, Designated Tuition</td>
</tr>
<tr>
<td></td>
<td>#2 Fees</td>
</tr>
<tr>
<td><strong>VI. Other Funding</strong></td>
<td>#1 Anticipated Federal and Non-Federal Grants to support graduate stipends</td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
</tbody>
</table>
Budget Summary:

The funding to support the Rangel College of Pharmacy’s (RCOP) graduate program in pharmaceutical sciences is calculated using the **RCOP PHSC Projections Workbook**, which is included as an appendix in Excel with multiple, labeled spreadsheets.

If the Rangel College of Pharmacy enrolls the first group of students for the Fall 2018 semester, no formula funding will be available to support the program as FY19 is the last year of the current biennium. The formula funding model used calculates funding using the last year of the last biennium. The first year that the graduate program would receive formula funding would be FY20, beginning Fall 2019.

With 10 students enrolled in the Fall of 2018, $9000 in State Tuition would be generated based on the number of hours enrolled. In addition, $18,000 of Differential Tuition, $18,540 of Designated Tuition, and $28,660 in student fees will be generated. The college expects $200,000 in grant funding to be available to support stipends for Graduate Assistantships. The college will also provide $150,000 in additional support to cover programmatic expenses.

In the first year of the graduate program, the college will incur the following expenses: $10,000 for an administrative stipend for a senior administrator, $50,000 to support a new staff member dedicated to provide administrative support for the graduate program, $250,000 in graduate stipends for assistantships, $45,540 in tuition expenses for the 10 students on assistantships, and $43,945 in operational expenses. At the end of the first year of the program, the college will have an ending balance of $24,715 which will be used to support subsequent years of the graduate program.

In Year Two (FY20, beginning Fall 2019) of the graduate program, formula funding will be generated based on the previous year’s FTSEs (10 students). The Instruction & Operations (I&O) formula is expected to generate $164,144 of revenue for FY20. The calculations assume a weight of 1.670 and a rate of $9829 per full time student equivalent. These calculations can be viewed in the **RCOP GPPS Projections Workbook**.

The formula calculations include an assumption that the college will receive a Small Class Supplement which should generate $133,000 in revenue for year two, FY20. Additionally, the Infrastructure Formula should generate $12,882 in revenue for year two, FY20. These calculations can be viewed in the **RCOP PHSC Projections Workbook**.

In addition to the formula funding, the following sources and amounts of revenue should be available to the graduate program in Year Two, FY20: $18,000 in State Tuition, $36,000 in Differential Tuition, $37,080 in Designated Tuition, $57,320 in student fees, $350,000 in grant funding for graduate assistant stipends, and $75,000 in support from the college’s reserves.

In Year Two of the graduate program, the college will incur the following expenses: $10,300 for an administrative stipend for a senior administrator, $51,500 to support a staff position dedicated to provide administrative support for the GPPS, $500,000 in graduate stipends for assistantships, $91,080 in tuition expenses for the 20 students on assistantships, and $87,891 in operational expenses. At the end of Year Two, the college should have $142,655 as an ending balance.

In Year Three (FY21) of the graduate program, 30 students should be enrolled. The college should receive the same amount of funds from formula funding as Year Two since FY21 is the second year of the biennium. In addition to formula funding, the college should receive $26,000 in State Tuition, $52,000 in Differential Tuition, $53,560 in Designated Tuition, and $85,140 in student fees. Grant funds in the amount of $450,000 will be available to support Graduate Assistantships, and the college will provide $75,000 to cover operational expenses.
In Year Three of the graduate program, the college will incur the following expenses: $10,609 for an administrative stipend for a senior administrator, $53,045 to support a staff position dedicated to provide administrative support for the graduate program, $750,000 for graduate stipends for assistantships, $131,560 in tuition expenses for the 30 students on assistantships, and $131,836 in operational expenses. At the end of Year Three, the graduate program will have an annual balance of -$25,324. However, the ending balances for first two years of the program are $24,715 and $142,655 and these funds will be used to zero the negative ending balance for year three. As the state calendar goes into FY22 (Year Four of the graduate program), the formula funding numbers update to the last year of the last biennium which allows the program to have positive ending balances moving forward.

In Year Four (FY22) of the graduate program, the total formula funding generated is $847,936. In addition, the college will generate $34,000 in State Tuition, $68,000 in Differential Tuition, $70,040 in Designated Tuition, and $112,960 in student fees. Grant funds in the amount of $550,000 will be available to support Graduate Assistantships.

In Year Four (FY22) of the graduate program, the college will incur the following expenses: $10,927 for an administrative stipend for a senior administrator, $54,636 to support a staff position dedicated to provide administrative support to the graduate program, $1,000,000 for graduate stipends for assistantships, $172,040 in tuition expenses for the 40 students on assistantships, and $181,055 in operational expenses. The ending balance for Year Four will be $264,277.

In Year Five (FY23) of the graduate program, the total formula funding generated will be the same as it was in Year Four, $847,936. The program will have reached a full cohort of students in Year Four, so the tuition and fee revenue for Year Five will be the same as it was in Year Four: $34,000 in State Tuition, $68,000 in Differential Tuition, $70,040 in Designated Tuition and $112,960 in student fees. Grant funds in the amount of $550,000 will be available to support Graduate Assistantships.

In Year Five of the graduate program, the college will incur the following expenses: $11,255 for an administrative stipend for a senior administrator, $56,275 to support a staff position dedicated to provide administrative support to the program, $1,000,000 for graduate stipends for assistantships, $172,040 in tuition expenses for the 40 students on assistantships, and $181,055 in operational expenses. The ending balance for Year Five will be $262,310.

**Graduate Assistantships**
Funding for Year One (FY19) graduate assistantships ($250,000) is covered by grant funding and by reallocated RCOP/HSC funds, if necessary. Funding for Year Two (FY20) graduate assistantships ($500,000) will be supported by grant funding and by reallocated RCOP/HSC funds, if necessary. Funding for Year Three (FY21) graduate assistantships ($750,000) will be supported by grant funding and by formula funding and tuition and fees, if necessary. Funding for Year Four (FY22) and Year Five (FY23) graduate assistantships ($1,000,000 each year) will be covered by grant funding. In addition to stipends, the college will cover the tuition (State, Differential and Designated) for PhD students that receive assistantships.

**Alternative Funding**
In addition to grant funding, the college will continuously and actively seek alternative funding sources for graduate assistantships through development opportunities, industry partnerships and scholarship opportunities. Should grant funding and alternative fund sources fall short or not materialize to support graduate assistantships, the college will reallocate existing funds from various fund sources to cover the budget shortfall until additional funds can be secured to sustain the program.
H. Institutional and Board of Regents
Signature Page for Board Consideration

1. **Adequacy of Funding** – The Chief Executive Officer shall sign the following statement:

   I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.

   
   [Signature]
   
   June 21, 2018
   
   Carol A. Fierke
   Provost and Executive Vice President
   Texas A&M University

2. **Accuracy of Financial Estimates** – The Chief Financial Officer shall sign the following statement:

   I certify that the estimated costs and sources of funding presented in the proposal are complete and accurate.

   
   [Signature]
   
   May 23, 2018
   
   Joseph P. Pettibon, II
   Vice President for Enrollment & Academic Services
   Chief Financial Officer/Designee

3. **Reimbursement of Expert External Reviewer Costs** – The Chief Executive Officer shall sign the following statement:

   I understand that the doctoral proposal process includes the use of expert external reviewers. In the event that one or more expert external reviewer are contracted to review a doctoral proposal put forward by my institution, I understand that my institution will be required to reimburse the Texas Higher Education Coordinating Board for costs associated with the use of such expert external reviewers. By signing, I agree on behalf of my institution to provide reimbursement for expert external reviewer costs.

   
   [Signature]
   
   June 21, 2018
   
   Carol A. Fierke
   Provost and Executive Vice President
   Texas A&M University

4. **Board of Regents Certification of Criteria for Board Consideration** – The Board of Regents or designee must certify that the new program has been approved by the Board of Regents and meets the criteria under Texas Administrative Code (TAC), Title 19, Chapter 5, Subchapter C, Section 5.46.

   On behalf of the Board of Regents, I certify that the new program meets the criteria specified under Texas Administrative Code (TAC), Title 19, Chapter 5, Subchapter C, Section 5.46 and has been approved by the Board of Regents.

   
   Board of Regents (Designee)  
   Date
H. Board of Regents
Signature Page for Commissioner Consideration

5. **Board of Regents Certification of Criteria for Commissioner or Assistant Commissioner Consideration** – Typically proposals for doctoral programs are approved by the Board, supported with a recommendation for approval by the Commissioner. Under very limited circumstances, a program may be approved by the Commissioner. In this case only, the Board of Regents or designee must certify that the new program meets the criteria under Texas Administrative Code (TAC), Title 19, Chapter 5, Subchapter C, Section 5.50 (b) and (c).

TAC §5.50(b) The program:

1. has a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
2. has sufficient clinical or in-service sites, if applicable, to support the program;
3. is consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools Commission on Colleges and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
4. attracts students on a long-term basis and produces graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
5. does not unnecessarily duplicate existing programs at other institutions;
6. does not be dependent on future Special Item funding;
7. has new five-year costs that would not exceed $2 million.

TAC §5.50(c) The program:

1-2) is in a closely related discipline to an already existing doctoral program(s) which is productive and of high quality;
3) has core faculty that are already active and productive in an existing doctoral program;
4) has a strong link with workforce needs or the economic development of the state; and
5) the institution has notified Texas public institutions that offer the proposed program or a related program and resolved any objections.

*On behalf of the Board of Regents, I certify that the new program meets the criteria specified under Texas Administrative Code (TAC), Title 19, Chapter 5, Subchapter C, Section 5.50 (b) and (c) and has been approved by the Board of Regents.*

Board of Regents (Designee) ___________________________ Date ___________________________