THE FACULTY SENATE

September 16, 1997

Dr. Ray M. Bowen
President
Texas A&M University

Dear President Bowen:

At its regular meeting held September 8, 1997 the Faculty Senate considered and approved a "Proposal to Create an Intercollegiate Faculties of Materials Science and Engineering (MSE).

Enclosed is the document considered by the Senate. Please advise me of your decision on this new proposal.

Sincerely,

[Signature]
Wayne E. Wylie
Speaker, 1997-98

Enclosure
pc: Dr. Ronald G. Douglas, Executive Vice President & Provost
    Dr. Abraham Clearfield, Department of Chemistry
    Dr. John C. Slattery, Department of Chemical Engineering

APPROVED

DATE
A Proposal to Create a Faculty of Materials Science and Engineering

Abraham Clearfield
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Texas A&M University
College Station, TX 77843-3255
Article I. Background and Purpose

The unprecedented progress of Science and Engineering since World War II has advanced our understanding of the world, helped to develop a strong global economy and been utilized in the defense of freedom. In this context, materials research and development stands out as a twentieth century phenomenon. By Materials Research we mean the fundamental science underlying the preparation, characterization and utilization of materials such as catalysts, polymers and plastics, ceramics, semiconductors, metals and alloys and combinations or composites of these materials. The discovery of the transistor, the development of semiconductor devices such as computer chips and the preparation of engineered plastics, tough ceramics and advanced metallic alloys illustrates how materials research has shaped our economy and our society. The recent exciting discovery of high temperature superconductors promises to further revolutionize science and its technological applications.

In 1986 the Regents of Texas A&M University initiated a program to "Shape the New Economy of Texas." Several ongoing research areas were targeted for enhanced funding and new ones created. Among the latter was a new Materials Science and Engineering Program (MSEP). Dr. Abraham Clearfield, Professor of Chemistry was named as coordinator of the program. Based upon ongoing work and perceived strengths in both the College of Science and the College of Engineering eight major research projects were emphasized, each being interdisciplinary in nature.

(1) Growth of single crystals for optical and electronic applications
(2) Amorphous metal alloys
(3) Single crystal and thin film superconductors
(4) Fabrication of nanometer sized electrical conductors
(5) Catalysis and surface science
(6) Polymers
(7) Ceramics
(8) Composites
While the initial number of faculty participating in the program represented only a portion of the faculty involved in materials research, their success was quite marked. External funding nearly tripled and more than two million dollars worth of equipment was donated by interested industrial concerns. Doherty Hall is in the process of being renovated as a Materials Research Center with financial support of the National Science Foundation and plans are underway to equip a materials characterization laboratory for general faculty use.

In addition to the above program there are significant ongoing materials research and engineering related efforts in the Colleges of Engineering and Science. Among them we may mention the Mechanics and Materials (MEMA) Program, the Polymer Technology Center, the Center for Mechanics of Composites in the Aerospace Department and several others. Faculty interests may be broader than indicated by these centers and programs, but still connected with materials research to some degree. Thus, the number of faculty with interest in materials related research is considerable. However, except for the fledgling Materials Science and Engineering Program, there is very little coordination among the several Centers and Programs. There is no doubt, based upon the experience with MSEP, that closer cooperation of materials research activities would benefit all participants. Materials research by its very nature is interdisciplinary in nature. However, given the very strong departmental structure at TAMU the desired interaction between departments has been lacking. In addition there is no recognizable interdisciplinary, interdepartmental academic program covering the materials area. This lack translates into a lowered external recognition of the extensive and high quality materials research that is a major part of Texas A&M’s efforts. In order to correct this situation and to broaden the scope of materials related activities at TAMU we propose to create a Faculty of Materials Science and Engineering referred herein as "the Faculty" or "FMSE". The purpose of this Faculty is to foster interdepartmental materials research, provide an academic program on the graduate level commensurate with the research activities and coordinate these programs for greater effectiveness. The membership of the faculty would be expected to include all faculty members with a primary focus in materials research, as well as those in affiliated areas with a significant materials interest.
Article II. Academic responsibilities

It is the intent of the Faculty of Materials Science and Engineering Program to develop requirements for graduate study leading to the M.S. or Ph.D., within the participating departments, with a major in either Materials Science or Materials Engineering depending upon the college of choice. The requirements for such a degree will be interdisciplinary in nature and therefore may depart from a traditional degree in any single academic department. The degree requirements must be approved by the Dean of the College in which the degree is granted.

An annual modest budget shall be submitted to the Deans of the College of Engineering and College of Science for approval and implementation. These funds will be used for secretarial help, mailings to prospective graduate students, for seminar speakers and associated administrative support.

Faculty for the program will be drawn from the already existing faculties. Each participating department may be requested to appoint new faculty members in materials related disciplines including Mechanics and Materials in order to strengthen and enrich the Program and at the same time serve the needs of the Department.

A certain number of graduate assistantships (GATS and GANTS) may be assigned to the MSEP each year on a case by case basis in consultation with the Heads of the participating departments.

Article III. Membership

A. Qualifications

1. A member of the Graduate Faculty of Texas A&M University who is qualified to direct the research of candidates for M.S. and Ph.D. degrees in Materials Science or Materials Engineering is eligible for full membership. To be qualified the faculty member should be actively engaged in scholarship and/or research in the field of materials research and teaching graduate or undergraduate courses in materials related subjects. Evidence of scholarly competence may be presented by membership in nationally recognized scientific and engineering societies requiring nomination and election to the society, publication in refereed journals where review is provided by
materials scientists and engineers and/or authorship of textbooks and other evidence of scholarship.

Continued evidence of interest, including willingness to present a graduate seminar at least biennially, is a criterion for continued membership.

2. Faculty with temporary academic or postdoctoral appointments to Texas A&M University or the Graduate Faculty, who are qualified to conduct materials related research, are eligible for associate membership. Associate membership is conferred by the Executive Committee of the Faculty.

3. Subsequent nomination and election to membership.
   a. Following adoption and approval of these By-Laws, nominations for additional membership may be made by any member of the Faculty and shall be made in writing to the Membership Committee of the Faculty (FMSE).
   b. The Executive Committee shall (1) identify potential members and facilitate their participation in Faculty functions, (2) screen nominations for full and associate members to the Faculty, and (3) each fall semester, update the Faculty Research Directory and the Membership Roster.
   c. The Chair of the Faculty shall present the names of nominees at the annual meeting.
   Full membership shall be conferred by a majority vote of those full members present at the meeting.

Article IV. Executive Committee

A. The Executive Committee shall be composed of the Chair and three members of the Faculty from each participating College, all of whom are elected by members of the Materials Faculty.

B. The term of office for Executive Committee members shall be three years. Elections of at least two members of the Committee will be held annually, so that the terms of the Committee members overlap to maintain continuity. Committee members may serve consecutive terms as determined by election of the faculty. The Chair shall be elected from and by the Executive
Committee and shall serve two years from the date of election. The Chairperson should be someone with executive committee experience. Provision for release time, supplemental pay or other support for the Chair will be left up to the Dean of the College of the Chairperson.

C. The Executive Committee shall fill by appointment any vacancies that may occur among its selected members during the year. All appointed positions will be declared open at the time of the next annual election.

D. The Chair of the Executive Committee shall be the chief officer and Chair of the Faculty and representative of the Executive Committee. The Chair shall preside over meetings of these bodies and shall appoint, with the approval of the other members of the Executive Committee, members of committees. The Chair will serve as the liaison with the several Department heads, other administrative officers, and the Faculty Senate. Sufficient office space, secretarial help and other resources necessary to the functioning of the Faculty shall be supplied by the College involved.

E. The Vice-Chair shall serve as Secretary of the Faculty, prepare and distribute minutes of the Faculty and Executive Committee meetings to the general membership, and maintain other appropriate records of Faculty activities. The Vice-Chair shall also serve as chief officer and Chair of the Faculty and Executive Committee in the absence of, or when designated by, the Chair.

F. The Parliamentarian shall monitor all meetings of the Faculty and the executive committee according to Robert's Rules of Order.

Article V. Election to the Executive Committee

A. A Nomination and Election Committee composed of three persons from the general membership, excluding members of the Executive Committee, shall be appointed by the Executive Committee prior to the annual meeting.

B. The Nomination and Election Committee shall recommend two candidates for each vacant position on the Executive Committee. Additional nominations, with the prior consent of the nominee, by any full member, may be made from the floor during the annual meeting.
C. The Nomination and Election Committee shall conduct the election and report the results to the membership.

D. Elections shall be conducted by mail ballot to be distributed immediately after the annual meeting with the names of all nominees listed. Each member shall vote for no more candidates than the number of positions to be filled. Those persons receiving the most votes, with the exceptions noted in Article IV of the By-Laws, shall be declared elected. Election results shall be mailed to the general membership promptly and elected members shall normally assume their duties at the next scheduled meeting.

E. The first election, conducted for the initial organization of the Faculty, shall be conducted by the Steering Committee for the formation of the Faculty, acting as the Interim Executive Committee. The Steering Committee will appoint a Nomination Committee and conduct the election. The Steering Committee will be dissolved, and the newly elected Executive Committee will begin its duties immediately upon written announcement of the election results to the Faculty Steering Committee. Members of the Steering Committee will be eligible for nomination to the first list of candidates for the Executive Committee.

Article VI. Functions of the Executive Committee

A. The principal functions of the Executive Committee shall be:

1. Administer the Graduate Program in the discipline ensuring an appropriate degree of uniformity of the program as sponsored in several departments of Texas A&M University.

2. Develop and publish a Program Description and Faculty List which will describe the detailed rules for admission, selection of graduate advisor, degree requirements, examinations, and other information necessary for the program.

3. Receive and rule on the admission of new associate members as required.

4. Provide leadership in short and long-term planning for the program and advise on matters of new faculty selection and hiring. Represent, as appropriate, the Graduate Faculty of Materials Science and Engineering in College and University meetings.

5. Coordinate recruitment of students into the graduate program in Materials Science and
Engineering.

6. The Executive Committee is responsible for approving all degree plans of graduate students in the Materials Science and Engineering Program. The Committee will solicit input and consider the concerns of the Department Heads and the Deans of the respective Departments and Colleges as to the academic requirements.

7. Work closely with Heads of Departments to secure GAT, GANT and GAR support for students in the discipline. Develop a selection process for awarding GATs and GANTs to graduate students and provide recommendations to Heads of Departments in which members of the faculty group reside.

8. Review graduate programs with the faculty making recommendations for changes and new courses as appropriate.

9. Develop and maintain a strong seminar program in the discipline.

10. Establish the agenda of the annual meeting and distribute it to the FMSE membership one week prior to the meeting.

11. Annually appoint members of Committees to serve from July 1 to June 30.

12. Coordinate activities for the discipline which are not directly related to the Graduate Program.

B. Additional procedures of an administrative nature which pertain to graduate degree program may be administered through the appropriate channels of the administrative department of the student's major professor.

Article VII. Meetings

A. The annual meeting of the Faculty of Materials Science and Engineering shall be held during the month of January each year. Items for the agenda must be submitted in writing to the Executive Committee at least two weeks prior to the annual meeting.

B. Special meetings for the Faculty of Materials Science and Engineering may be held at the call of the Chair or by written application to the Executive Committee by at least five members
of the Faculty of Materials Science and Engineering.

C. A regular meeting of the Executive Committee shall be held on a bi-monthly basis, unless otherwise determined by vote of the Faculty. Other meetings of the Executive Committee may be held as frequently and for such purposes as are deemed desirable by the Executive Committee.

D. The minutes of each Annual and Executive Committee meeting shall be approved by the Executive Committee and distributed to all members of the Faculty of Materials Science and Engineering within ten days after the meeting. Corrections, if needed, will appear in the minutes of the next meeting.

E. At Executive Committee and Faculty meetings, Robert's Rule of Order shall be followed in matters of parliamentary procedure.

Article VIII. Standing Committees

A. Nomination and Election Committee. See Article V, Sections A, B, and C.

B. Graduate Admissions and Recruitment Committee. One faculty advisor from each of the Departments represented in the Program shall be appointed by the Executive Committee to serve on the Graduate Admissions and Recruitment Committee. The committee will develop literature which publicizes the graduate program in Materials Science and Engineering, including the list of faculty and a brief description of their research. The committee shall organize recruitment for professional meetings, respond to inquiries from potential graduate students, maintain a file of and screen all current applicants, recommend acceptance or rejection of applicants to the Office of Graduate Studies through the appropriate department, and facilitate equitable access to applicants and their files for all full members of the Faculty of Materials Science and Engineering.

Article IX. Other Committees

A. Other committees may be created by action of the Faculty or the Executive Committee.

Article X. Student Participation

A. A graduate student representative shall be appointed by the Chair to committees as deemed
appropriate by the Executive Committee.

B. Suggestions for changes in Curriculum, Program, Seminar, Admissions, or items of similar interest to students may be submitted in writing at any time by any registered graduate student to the Executive Committee.

Article XI. Amendments

Suggestions for amendments to the By-Laws may be submitted in writing at any time by any member of the Faculty to the Executive Committee. The Executive Committee will schedule discussion by the Faculty of any such amendments at its next scheduled annual meeting, and submit such suggestions for mail ballot. All amendments to the By-Laws must be approved by at least two-thirds of the votes cast by the full members of the Faculty via a mail ballot.
MEMORANDUM

TO: Ronald G. Douglas  
Executive Vice President and Provost

FROM: R. E. Ewing, Dean  
College of Science

and

C. R. Haden, Dean  
College of Engineering

SUBJECT: Proposal to Create a Faculty of  
Materials Science and Engineering

DATE: October 23, 1996

We have reviewed the attached proposal to create a faculty of Materials Science and Engineering submitted by Professor A. Clearfield of the Department of Chemistry and D. Allen of the Aerospace Engineering Department. It is our recommendation that this proposal be approved by your office and forwarded to the President for implementation. In support of this proposal, we have agreed to provide $15,000 per year from each college and are requesting an additional $15,000 from your office for a total of $45,000 per year. These commitments would continue for three years at which time the program will be reviewed. The primary purpose of these funds will be used to promote and support the formation of this faculty. It is our opinion that establishing an interdisciplinary faculty comprised of members from both the College of Science and the College of Engineering will significantly enhance the national prominence and quality of our individual efforts.

Thank you for your consideration. In the event you have any questions or require any additional information, please do not hesitate to contact one or both of us.

xc: G. P. F.  
A. Clearfield  
D. Allen  
Department Heads