

Proposal to Create the Intercollegiate School of Engineering Medicine

Texas A&M University
Faculty Senate
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Overview

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- Purpose and Benefits
- Mission/Vision
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Background and History

- National Movement - Converge Physical Sciences, Life Sciences & Engineering to advance health
- Today's pressing healthcare challenges best solved at the intersection of medicine and engineering
- Requires change in traditional paradigms for teaching, research, and translation
- Intercollegiate home proposed to accomplish this

Background and History

- EnMed Foundations
 - Promote convergence among engineering, innovation, basic medical sciences and clinical practice
 - Clinically inspired healthcare inventors
 - TAMU and Houston Methodist Hospital partnership
 - Integrated clinical and research program
 - Degrees concurrently awarded - MD degree awarded by COM and COE awards MEng (or PhD)
- Chronology –
 - June 2016 – Program Announcement and Letter of Intent
 - October 2016 – LCME Consultative Visit
 - 2016/2017 – Curriculum Discussions & LCME EnMed Approval
 - 2017/2018 – MD Plus program start to pilot Innovation courses
 - Winter 2019 – Operation 12th Man Developed Pre-Clerkship Curriculum
 - Fall 2019 – Four-year program started
 - Town Hall meeting of impacted faculty 21 June 2021
 - Ad hoc committee meetings 5, 12, 19 July 2021

Purpose and Benefits

- Purpose:
 - To be globally recognized as premier medical translational research and education program
 - Educate new type of healthcare professional - Physicianeer
- Benefits:
 - Program unique in the world
 - Produce uniquely prepared graduates
 - Place TAMU at forefront of research at the intersection of medicine and engineering
 - Attract world class researchers at this intersection
 - Platform for collaboration between COM and COE
 - New opportunities for faculty research funding

EnMed Mission and Vision

- **MISSION STATEMENT:** To develop a new healthcare professional, trained to be an exceptional physician who is also equipped to invent practical solutions to healthcare problems through the convergence of engineering and medicine. Such innovators will be Physicianeers.
- **VISION STATEMENT:** EmMed graduates will uniquely help to transform healthcare as Physicianeers. This will be achieved through convergence born innovations that improve the understanding and treatment of disease.

Rationale - Why an Intercollegiate School?

- Integrate disciplines across two distinct colleges
- Disciplinary integration brings
 - Blended curricular elements
 - Blended faculty
 - Blended understanding for students
 - Facilitated innovations with all students
- Attract game changing, leading researchers advancing the state of the art
- Develop clinically inspired healthcare inventors
- Deliver an efficient integration of disciplines in education, research and translation programs

Academic and Curricular Matters - Faculty

- Existing EnMed supported faculty – admin home in school (8)
- COM Faculty who teach in EnMed -- admin home remains unchanged (4)
- COE Faculty who teach in EnMed -- admin home remains unchanged (4)
- Houston Methodist Clinicians who teach in EnMed (10-15 in pre-clerkships; 70-100 in clerkships)
- New T/TT hires within FY22-FY25 – adhere to University Rules/SAPS
 - COE funded faculty to be hired (5)
 - COM funded faculty to be hired (3)
 - EnMed funded faculty to be hired (2)
 - Joint appointments possible
 - Startup funds – 50% TAMU and 50% hiring entity
- Promotion and Tenure
 - ISEM to be tenure home for EnMed faculty
 - Faculty (T/TT and APT) to follow established TAMU P&T processes
 - ISEM to establish internal process (T/TT and APT) as have other colleges/schools

Academic and Curricular Matters - Students

- Admission
 - Continue current practice - Students will be those admitted into EmMed through mutual COM and COE agreement
 - Must have Engineering BS
 - Must satisfy COM requirements for MD
 - Must satisfy COE requirements for Masters of Engineering in Interdisciplinary Engineering
- Cap enrollments at 50 per class

Academic and Curricular Matters - Curricula

- Curriculum for MD – same requirements as for all MD students
- Curriculum for MEng – same requirements as for all MEng students in Department of Multidisciplinary Engineering
- Additional learning opportunities – lectures, projects, seminars, Team Based Learning, etc, provide linkages between medicine and engineering

Research

- EnMed/COE/COM researchers to mentor students
- IDC to follow faculty appointments
- Houston based research in Houston Methodist Research Institute
- Research locations could expand

Facilities

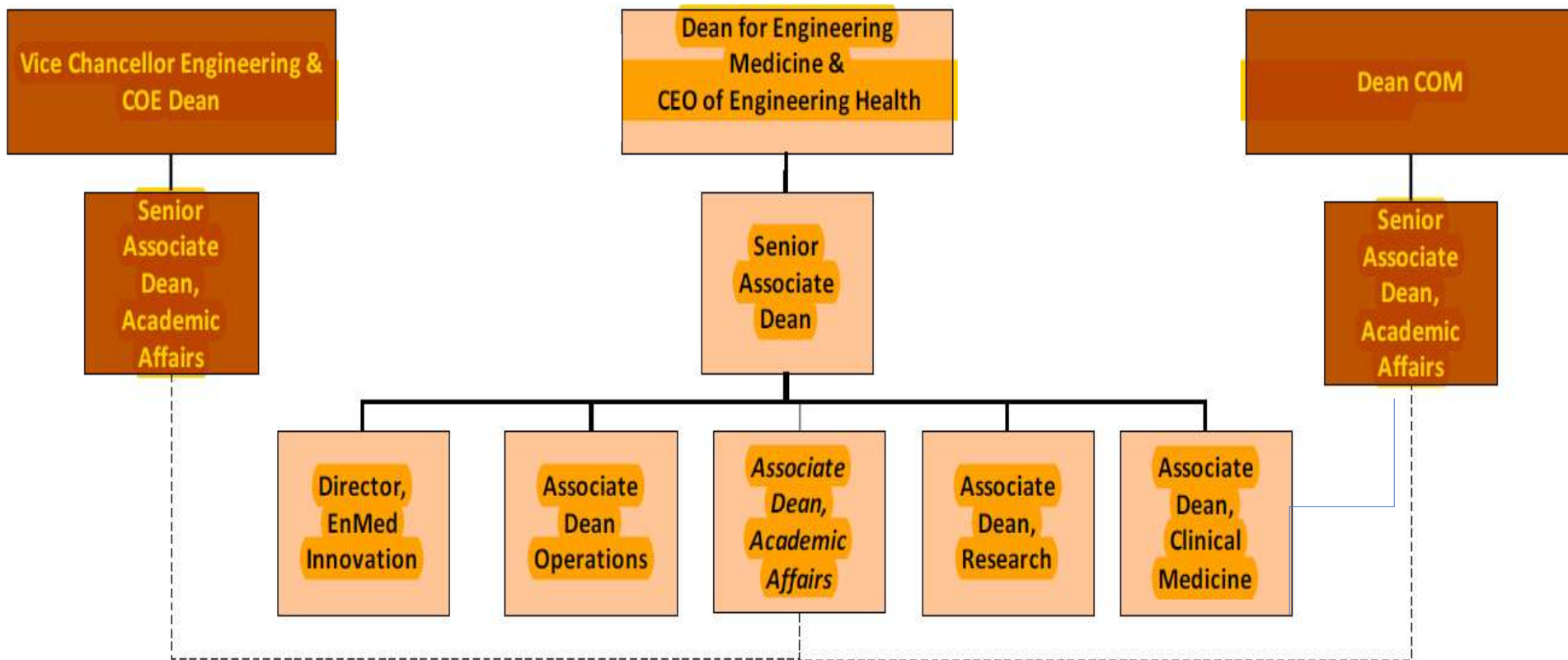
- Existing Structures in the TMC: Houston Methodist and TAMU
- Houston Methodist West Pavilion 6 (WP6) and Methodist Institute for Technology Innovation and Education (MITIE)
- New Building for EnMed in TAMU Innovation Plaza at 1020 Holcombe, Houston
- TAMUS purchased/renovated EnMed Building

Financials

- Funding sources - existing allocated resources from TAMU/S, COE, COM and standard graduate program revenue streams
- TAMU/S commitment of \$5M/yr for 10 years
 - First 5 years - \$3M/yr from TAMUS and \$2M/yr from TAMU
 - Final 5 years - \$5M/yr from TAMU
- EnMed student tuition/fees – FY22 and onward: 100% credited to EnMed
- Formula funding – FY22 and onward: 100% credited to EnMed
- Program fee – Currently \$10K (based on Graduate Program Fee). May increase to \$15K
- EnMed related HSC and COM fixed costs – paid by EnMed

Administrative

- All hires made in adherence with TAMU Rules/SAPS
- EnMed Dean search
- Administrative structure
 - Dean
 - Reports to Provost as with other deans
 - Deans of COM and COE provide ISEM Dean with engagement and support
 - Leadership team
- Departments – to be designed and implemented by ISEM
- Staff – TBD according to need
- Advisory Committees – Internal and External



Discussion