

ENMED

ENGINEERING & MEDICINE

Creating the future of health at Texas A&M—where engineering meets medicine



HOUSTON
Methodist
LEADING MEDICINE



INAUGURAL CLASS

EnMed is Texas A&M University's innovative engineering medicine track at Houston Methodist Hospital in the Texas Medical Center. Combining the Texas A&M College of Medicine's MD program and the College of Engineering's graduate degree program, EnMed will educate a new kind of doctor with an engineering mindset—a physician engineer, or “physicianeer”—who will invent transformational technology for health care's greatest challenges.

“THIS IS A TREMENDOUSLY EXCITING INITIATIVE FOUNDED ON A SOUND CONCEPT THAT HAS BEEN EMERGING INTERNATIONALLY FOR YEARS. AT ITS CORE IS THE UNDERSTANDING THAT THE MOST EFFECTIVE AND EFFICIENT SOLUTIONS TO OUR MOST DAUNTING HEALTH CARE CHALLENGES WILL COME FROM APPROACHES THAT **INTEGRATE ALL OF THE SCIENCES AND ENGINEERING.**”

RODERIC I. PETTIGREW, PHD, MD, Executive Dean of EnMed and CEO of EnHealth

WHY ENMED?

Advancements in technology are transforming health care at a rapid pace. The rate of technological change is faster and more complicated than can be absorbed by the medical workforce. A new type of educational program is needed that prepares professionals with the clinical skills to diagnose symptoms and treat patients, along with an engineering mindset to solve problems, invent new technologies and rapidly move these innovative ideas to practice in patient care. With Texas A&M's land-grant mission, world-class engineering program, emerging medical sciences and in collaboration with the state's top-ranked hospital, Texas A&M can lead in solving the most daunting health-related problems of the 21st century.

RETHINKING THE PHYSICIAN

EnMed is the nation's only program that allows graduates to receive both a doctorate of medicine and master's in engineering in four years. The proposed curriculum is a case-based format with integration of both medicine and engineering content to develop and improve student's clinical reasoning and problem-solving skills through real-world examples.

IN 4 YEARS:

48 months of medical training

MD

30+ credit hours of engineering

MEng

FACTS



LEADERSHIP

RODERIC I. PETTIGREW, PHD, MD
Executive Dean of EnMed
Chief Executive Officer of EnHealth

DOUG BAXTER, PHD
Associate Dean of EnMed

JOHN CRISCIONE, MD, PHD
Vice Dean of EnMed



FACULTY

In addition to faculty from Houston Methodist Hospital and the Texas A&M College of Engineering and College of Medicine, 25 new faculty will be hired.



EDUCATIONAL SPACE

EnMed will utilize instructional and research space in Houston Methodist Hospital, the Texas A&M University Health Science Center Institute of Biosciences and Technology and a recently purchased 18-story building on Holcombe Boulevard.

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FOCUS AREAS

ADVANCED INTERVENTIONAL TECHNOLOGIES
robotics, lasers, devices

REGENERATIVE ENGINEERING
biomaterials, nanomaterials, tissue engineering

IMAGING & DIAGNOSTICS
acquisition, analysis, devices

PREDICTIVE ANALYSIS
connected health, population health, bioinformatics

INNOVATIVE THERAPEUTICS
delivery, discovery, systems engineering

SHIFTING THE PARADIGM

At EnMed's core is the understanding that the most effective and efficient solutions to the greatest health care challenges will come from the integration of medicine and engineering. Fusing research and commercialization opportunities, every EnMed graduate will invent something transformational.

THE INAUGURAL CLASS

EnMed's inaugural class of students matriculated in July of 2019. They will be the nation's first students to graduate from a four-year, fully integrated engineering and medical education curriculum leading to both a doctoral degree in medicine and a master's degree in engineering.

The curriculum is a case-based format with integration of both medicine and engineering content to develop team-based learning and improve students' clinical reasoning and problem-solving skills through real-world examples. This program will be the forefront of a new type of medical education—an education that leads to translational health technology development.



MAKER SPACE

To honor the Holcombe building's history as a bank, the original vault door on the first floor will serve as the entrance to the maker space, referred to as "The Vault."

Complete with the latest equipment library, the space will contain a full fabrication shop and prototyping lab to bring ideas to life.

BUILDING ON OUR HOUSTON PRESENCE

EnMed builds on Texas A&M's long-standing research and education presence in Houston. The Texas A&M Institute of Biosciences and Technology was founded in 1986 in the Texas Medical Center to foster creative research related to medicine, agriculture, animal sciences and engineering and currently offers a PhD in medical sciences. In addition, students in the College of Medicine's MD and MD/PhD program are trained at Houston Methodist, a partnership that began in 2014 to bring more innovative research and medical education to the state and laid the groundwork for EnMed.

HOUSTON METHODIST

our key clinical partner

- #1 HOSPITAL IN TEXAS AND HONOR ROLL HOSPITAL
- NATIONALLY RANKED IN 9 ADULT SPECIALTIES
- NATIONALLY RANKED IN TOP 20 HOSPITALS OVERALL

GENERATING ECONOMIC IMPACT

EnMed will train doctors and allow them to invent new products and take their inventions to the marketplace. These discoveries will expand the health care technology market in the Texas Medical Center and increase economic growth for Texas through the attraction of health-related research and funding, and the creation of new start-up companies and jobs.

AT THE HELM

RODERIC I. PETTIGREW, PHD, MD
Executive Dean of EnMed and CEO of EnHealth

EXPERIENCE *Founding director of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) at the National Institutes of Health (NIH).*

EXPERTISE *A physician-scientist, internationally recognized leader in biomedical imaging and bioengineering, and elected member of both the National Academy of Medicine and National Academy of Engineering.*



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