Enroll In Our Masters Degree Program!

TAUGHT BY BOTH YALE SCHOOL OF MEDICINE AND YALE SCHOOL OF ENGINEERING & APPLIED SCIENCE FACULTY

PROGRAM’S MISSION STATEMENT:
TO PREPARE BIOMEDICAL, MECHANICAL AND ELECTRICAL ENGINEERS, COMPUTER SCIENCE MAJORS, PRE-MED STUDENTS, MEDICAL STUDENTS AND PHYSICIANS WITH THE TOOLS TO DEVELOP INNOVATIVE 3D SOLUTIONS FOR PERSONALIZED MEDICINE AND SURGERY

Visit seas.yale.edu/pmae to schedule a virtual information session

APPLY NOW!
Deadline December 15 2023
WHAT YOU WILL LEARN

• 3D Technology to Address Surgical and Medical Conditions
• Practical Skills Through 8-Week Clinical Immersions Shadowing Clinicians Who Conduct Personalized Medicine
• Preoperative Surgical Planning and Custom 3D Printed Instrument Design
• The Production of XR Medical Education Tools
• Tissue Engineering and Manufacturing
• Diagnostic Image Analysis
• How to Develop Novel Diagnostics, Treatments, and Tools With a Dedicated Master’s Thesis Project
• Emerging Technologies

WHAT YOU WILL GET HANDS-ON EXPERIENCE WITH

• High-Resolution Medical Imaging
• Point of Care 3D Printing
• Robotics and Computer Navigation
• Extended Reality

JOBS/OPPORTUNITIES YOU WILL BE PREPARED FOR

• Medical Device Design Engineer
• Manager at a Point of Care Printing Center
• 3D Medicine Research Scientist
• Engineer with Specialized Image Processing and 3D Modeling Skills
• Medical School with Robust Engineering Toolkit

THE MANY DIFFERENT CLINICIANS YOU MAY SHADOW:

• Radiology
• Interventional Radiology
• Radiation Oncology
• General Surgery
• Orthopaedic Surgery
• Hand and Upper Extremity Surgery
• Total Joint Surgery
• Trauma Surgery
• Spine Surgery
• Sports Medicine
• Cardiology
• Electrophysiology
• Pain Management/Block Service
• Vascular Surgery
• Ear, Nose and Throat Surgery
• Anesthesia
• Regional Anesthesia
• Pediatric Critical Care Medicine
• Neurosurgery
• Neurology
• Neuro Intensive Care
• Dermatology
• Emergency Medicine
• Pulmonary Critical Care
• Urology
• Oncology
• Hematology
• Surgical Intensive Care
• Medical Physics
THE RANGE OF MASTERS THESIS PROJECTS PREVIOUS STUDENTS WORKED ON:

- Brain Tumors: MRI Based 3D Volumetric Analysis of Neurofibromatosis Type 2 Vestibular Schwannomas: Development of a Diagnostic and Visualization Tool
- Cardiology: Applying Machine Learning to Predict Heart Age
- Orthopaedics: Developing a Bone Density Algorithm from CT Scans and X-Rays for Total Knee Arthroplasty
- Vascular Surgery: 3-Dimensional Modeling from Ultrasound of Arteriovenous Fistulas Used for Hemodialysis
- Lung Cancer: A Lung Segmentation Tool For Surgical Planning of Sublobar Pulmonary Resections
- Orthopaedics: Mechanical Effects of Different Fulcrums on Balanced Cable Bone Segment Transport

JOBS THAT PREVIOUS GRADUATES FOUND:

- Medical Device Industry
- Tissue Engineering
- Research Lab
- 3D Printing Lab
- Medical School

QUOTES FROM CURRENT STUDENTS:

"The clinical aspect and shadowing really made this program different from other programs that are just course-based; the focus on virtual surgical tools and 3D printing for clinical engineering applications was unique compared to other top BME programs.”

"The length of the program allowed me to apply to medical school. I really enjoyed the clinical immersion rather than solely an engineering approach like many other programs. There is a collaborative nature with the hospital, the clinical environment and the research labs. The program was flexible to align with my personal interests and goals, but with enough structure that I felt well supported. We have tremendous access to Yale mentors, school resources, and the opportunity to network."

"As a hopeful physician-scientist, I wanted to garner an engineering background in addition to my biology experience to be able to provide better service in healthcare. As I was looking for biomedical engineering Masters programs, I noted that the Yale PMAE program explicitly merged practical clinical application with patient care.”

Questions?

CONTACT:

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2023

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