ENGINEERING SCIENCE AND MECHANICS

Graduate Program Head	Albert Segall
Program Code	EMCH (M.Eng.); ESMCH (Ph.D., M.S.)
Campus(es)	University Park (Ph.D., M.S., M.Eng.)
Degrees Conferred	Doctor of Philosophy (Ph.D.) Master of Science (M.S.) Master of Engineering (M.Eng.) in Engineering Mechanics Integrated B.S. in Engineering Science and M.S. in Engineering Science and Mechanics Joint M.D./Ph.D. with the College of Medicine
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/?searchType=fac&prog=ESMCH)

Opportunities for graduate studies are available in interdisciplinary and multidisciplinary research areas including:

- Multiscale, multiphysical computational modeling and simulation
- Data Science AI, machine learning
- Brain Science, neural engineering, neuroethics
- Structural and health monitoring
- Advanced materials
  - elastodynamic metamaterials
  - electronic materials
  - twisted 2D materials
  - bioengineered materials
- Materials characterization
  - In-situ microscopy in extreme environments
  - Ultrasonic nondestructive evaluation
- Additive manufacturing
- Micro and nanomechanics
- Biomechanics and mechanobiology
- Quantum computation and information science
- Optoelectronics, nanophotonics, and lasers
- Dynamic systems, acoustics, and vibrations
- Emerging manufacturing process for materials, tissues, and devices
- Bionanoscience, biomedical electronics and devices
- Smart sensors
  - Flexible and stretchable biosensors
  - Label-free biosensors
  - Quantum sensors