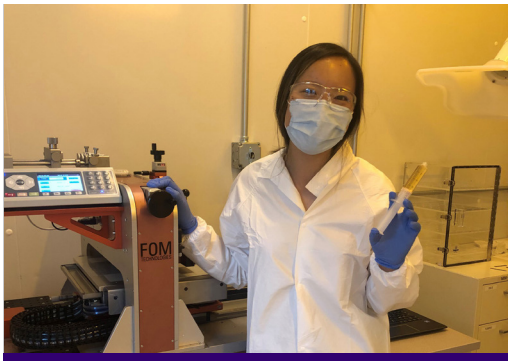
BIOENGINEERING

BIOENGINEERS ADDRESS UNMET CHALLENGES IN BIOLOGY, HEALTH AND MEDICINE TO IMPROVE LIVES AROUND THE WORLD.



QUICK FACTS

More than 90% of our students participate in undergraduate research.

BioE students join a cohort at the end of sophomore year, and progress together to graduation.

Past students are Goldwater, Luce, Rhodes & Gates Cambridge scholars; Fulbright fellows; Bonderman fellows; Engineering Dean's Medalists and more.

WHAT DO BIOENGINEERS DO?

Bioengineering is a uniquely interdisciplinary field bridging engineering, biology, physical science and medicine. Students gain the tools, opportunities and experiences needed to work in multidisciplinary teams, and can engage in research with renowned UW faculty in the College of Engineering and the School of Medicine.

WHAT PROBLEMS ARE BIOENGINEERS TRYING TO SOLVE?

Bioengineers make a difference in healthcare. They integrate creative ideas to solve open-ended problems in biology, health and medicine. Bioengineers work in diverse areas, including:

Neurorehabilitation - To improve the limited and minimally effective treatment options for neurological disorders like stroke and epilepsy, bioengineers:

- Work to better understand the neural mechanisms that cause these disorders.
- Invent technologies to rehabilitate and ultimately cure these conditions.

Diagnosing and treating disease - In search of ways to reduce the global burden of diseases like HIV, tuberculosis, flu and cancer, bioengineers:

- Develop ways to detect disease earlier, faster and inexpensively.
- Work to create and deliver more effective drugs right where needed.

Heart and organ failure - Heart attacks cause irreversible damage. As they seek to repair damaged organs, bioengineers:

- Drive advances to regenerate tissue and grow human organs from scratch.
- Engineer artificial tissues and design medical devices that the body does not reject.

WHERE DO BIOE ALUMNI WORK?

Industry and consulting – Around one-third of graduates work as engineers (application, biomedical, project, system, software, test), scientists (research, process development) and analysts (business, MRI, systems, analysts for innovations).

Accenture, Allen Institute for Brain Science, Anteris Technologies, Deloitte, EKOS, GE Healthcare, Johnson & Johnson, Just Biotherapeutics, Pacific NW National Laboratory, Philips, Sage Bionetworks, Seattle Children's, St. Jude Medical, Seattle Genetics, SonoSite, Stryker, U.S. Food and Drug Administration

Medical school and health-related degrees – Many become successful medical, dental, pharmacy and osteopathic students and well-rounded healthcare professionals.

Columbia Medical School, Duke University, Harvard, Johns Hopkins, Northwestern, Stanford, Uniformed Services University, UCLA, University of Illinois, University of Pennsylvania, UW Medicine and Dentistry, Yale School of Medicine

Graduate education – Graduates are accepted to a broad range of top-rated national and international programs, such as law, business, public health, thesis and applied master's, and Ph.D. programs.

Carnegie Mellon, Georgia Tech, Harvard, Massachusetts Institute of Technology, Northwestern Kellogg School of Management, Stanford, University of Michigan, University of Pennsylvania Wharton School, UW Foster School of Business and School of Law

STUDENT DESIGN PROJECTS

Recent projects include:

- Developing New Point-of-Care Detection for COVID-19
- Heart Disease in a Dish: Improving Resistance of Engineered Heart Tissues
- Improved Devices to Collect DNA Samples
- MyHeart Mobile Application to Monitor Heart Health
- HIV Drug Resistance Testing Device
- 3D Printed Rods with Electrical Stimulation for Promoting Spinal Fusion

WHAT MAKES BIOE SPECIAL?

As a small department, students are placed in a cohort and progress sequentially through a core curriculum, with opportunities for hands-on research. UW BioE faculty and graduate students mentor our students in core and elective classes, and during their senior capstone project. Seniors engage in an independent or team-based research and design capstone.
The UW student chapter of BMES, the professional bioengineering society, builds an inclusive community through social, service and academic events. Students can also make an impact through numerous clubs and through service on department committees. Bioengineers Without Borders, HuskyADAPT, BioExplore, and iGEM offer students a chance to incorporate classroom learning to solve real-life community challenges.

HOW CAN I LEARN MORE?

If you think UW BioE might be a good fit for you, there are many opportunities to explore. Consider taking a non-major class, such as BIOEN 215: Introduction to Bioengineering Problem Solving, ENGR 115: Engineering Transformation of Health, BIOEN 299: Introduction to Bioengineering, or BIOEN 509: Bioengineering Departmental Seminar.

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