UCONN BOUND
SPRING 2020

Department of Biomedical Engineering
Welcome to UConn Bound Spring 2020 “Virtual Edition”

What is Biomedical Engineering?

Where do Biomedical Engineers Work?

What is Biomedical Engineering at UConn?
Biomedical Engineering (BME)

“Is the Integration of Engineering, Life Science and Medicine”

“Is a multidisciplinary approach to finding solutions in Healthcare

- **Engineering**
  - (Electrical, Mechanical, Material Science, Computer, ...)

- **Life Science**
  - (Physics, Biology, Chemistry, Physiology, ...)

- **Medicine**
  - (Surgery, Pharma, Internal Medicine, ...)
Where do Biomedical Engineers work?

Industry (manufacturing & research)
- Medical Product Companies (instrumentation, prosthetics, tissue grafts to name a few)
  - Including companies that develop software for medical applications
- Pharma

Government (regulatory & research)
- Federal Drug Administration (FDA)
- National Institute of Health (NIH)
- National Science Foundation (NSF)

Healthcare
- Hospitals (Clinical Engineering)
- Healthcare Organizations

Academia
- Research (Hospital & University based)
- Teaching

Others – Due to interdisciplinary nature of BME, graduates may find opportunities in new emerging areas of Biomedical Engineering as well as with other companies not traditionally associated with healthcare
Salaries for Biomedical Engineers

Starting Salary Range $50K to $65K*

Median Annual Wage $88K**

$50K
Academia

$88K
Healthcare

Medical Devices, R&D

$142K
Medical Equipment & Supplies

*National Association of Colleges and Employers

**https://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm
BME at UConn

Faculty [https://www.bme.uconn.edu/faculty-staff/](https://www.bme.uconn.edu/faculty-staff/)
- Core ≈ 40
- Affiliated ≈ 35

Faculty Research Space
- Engineering Science Building (ESB) ~12000 sq. ft.
- UConn Health Center – Farmington ~6000 sq. ft.

Undergraduate Teaching Lab Space – Bronwell Building (~8000 sq. ft.)
- Biomechanics / Biomaterials Lab
- Bioinstrumentation Lab
- Senior Design Lab
- Junior Design Lab
- 3D Printing Lab
- Bio-Optics Lab (Opening Fall 2020)
- Tissue Engineering Lab (Opened Spring 2020)
[https://news.engr.uconn.edu/tissue-engineering-lab-provides-bme-students-with-invaluable-experience.php](https://news.engr.uconn.edu/tissue-engineering-lab-provides-bme-students-with-invaluable-experience.php)

Student Population
- Freshman Class ~ 90
- Undergrad ~ 400

The BME Undergraduate Program is accredited by the Engineering Accreditation Commission of ABET [http://www.abet.org](http://www.abet.org)
Biomedical Engineering Curriculum
Focuses on four areas within Biomedical Engineering

Biomaterials / Tissue Engineering
- Implantable materials, stents & graphs, heart valves, joint replacement, dental implants, cell & tissue regeneration, drug delivery

Biomechanics
- Structure & function of biological systems, motion capture, mobility assist devices, kinetics

Computational & Systems Biology
- Cellular modeling, computational genomics, pharmacogenomics, pharmacokinetics, human simulation software, drug discovery & development

Instrumentation
- Devices that measure physiological systems and to provide diagnostic information or therapeutic treatment

[Click here for more information on these concentrations]
What courses will you take?

The freshmen and sophomore curricula are the same for all four Concentrations.

The curricula diverges significantly in the junior and senior years as the courses will focus on the students selected concentration.

- Biomaterials & Tissue Engineering Concentration
- Biomechanics & Mechanobiology Concentration
- Systems, Imaging, & Instrumentation Concentration
- Computational & Systems Biology Concentration

[Click here to view the curriculum for each of the concentrations]
Biomedical Engineering (BME)

Other sites to check out!

Organizations

- Biomedical Engineering Society (BMES) Student Chapter
- Alpha Eta Mu Beta (AEMB), BME National Honor Society
- Engineering World Health, UConn Student Chapter

- The Senior Design Experience in the School of Engineering

- Undergraduate Research Opportunities at UConn
Questions?

Please attend one of our 3 live chat sessions on Friday April 24:

11:00 AM Prof. Ki Chon – Department Head

1:00 PM: Prof. Dave Kaputa - Assistant Department Head & Director of Undergraduate Studies

3:00 PM: Prof. Krystyna Gielo-Perczak – Co-Director Senior Design