INTRODUCTION
TO BIOMEDICAL ENGINEERING
At Purdue

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Weldon’s Areas of Excellence

- Neuro-Engineering
- Biophotonics and Medical Imaging
- Healthcare Systems Engineering
- Biomaterials & Tissue Engineering
- Orthopaedic Biomechanics
Why is our BME program unique?

• A Family Experience…..
• Ambassadors…share.
What are BME students doing NOW?

BME students are participating in:

- Industrial Co-Ops
- Industrial Internships
- Study Abroads
- Howard Hughes Medical Internships
- SURF Research
- NIH-Funded Clinical Internships
- Summer Courses
- Grubbs Research Fellowships

By graduation…

- 92% of our students obtain experiential learning experience in co-ops, internships, EPICS and/or research, with an average of 4.5 semesters
- 86% of our students have undergraduate research lab experience
- 67% of our students gain work experience in industry
-88% of students in the internship program were placed
-25% of the May 2012 graduates participated in a Co-Op
-BME has Co-Op agreements with highlighted companies
-International internships are available in Ireland through BME (and we are working on them in Copenhagen, Denmark.)
What can I do with a BME degree?

Where are BME Grads in Industry:

A sample…

- Abbott
- Bard EP
- Baxter Healthcare
- Biomet
- Boston Scientific
- Cook Medical
- DePuy Orthopedics
- GE Healthcare
- MED Institute
- Medtronics
- Roche Diagnostics
- St. Jude Medical
- Zimmer

US & Ireland Facilities:
- Fort Wayne Metals
- Hollister

Typical BME Post-Graduate Plans:

- Graduate School: 46%
- 5th yr BS/MS: 6%
- Medical School: 10%
- Industry: 31%
- Other: 6%

* Non-profit organization, medical missions, biking, teaching English internationally and physical therapy
What can I do with a BME degree?

Where are BME Grads in Graduate School:

- Columbia
- Cornell
- Duke
- Georgia Tech
- Johns Hopkins
- Marquette
- Northwestern
- Purdue
- UC Berkeley
- UCLA
- UC San Diego
- UC San Francisco
- Univ. of Colorado
- Univ. of Illinois
- Univ. of Pennsylvania
- Univ. of Pittsburgh
- Univ. of Michigan
- Univ. of Wisconsin
- Washington Univ.

Where are BME Grads in Medical School:

- Indiana University School of Medicine
- IUSOM/PU (MD/Ph.D)
- Ohio State University
- Washington State University
- UC Irvine (MD/Ph.D)
- Univ. of Medicine & Dentistry of New Jersey
- Warren Alpert School of Medicine at Brown Univ.
New Developments in… Study Abroad

BME Exchanges with:

Northern University of Ireland, Galway
Denmark Technical University, Copenhagen

• Future options may include Switzerland, Spain, Australia and Singapore
• BME students can spend the Summer in Ireland, Germany and China
BME Plan of Study

Third Semester
(3) BME 201  Biomolecules
(3) BIOL 230  Biology of the Living Cell
(1) BME 205  Analytical Methods of Biomolecular/Cellular Systems
(1) BME 290  Frontiers in BME
(4) MA 261  Multivariate Calculus
(3) ME 270  Basic Mechanics
(3) PHYS 241  Electricity and Optics
18 Credits

Fourth Semester
(3) BME 204  Biomechanics of Hard/Soft Tissue
(3) MSE 230  Structure and Properties of Materials
(1) BME 206  Lab Introduction to Biomechanics and Biomaterials
(3) BME 256  Physiology for Engineers
(4) MA 262  Linear Algebra & Ordinary Differential Equations
(3) ME 200  Thermodynamics
17 Credits
BME Plan of Study

Fifth Semester
(3) BME 301  Bioelectricity
(3) BME 305  Bioinstrumentation Lab
(3) BME 304  Bioheat and Mass Transfer
(3) General education elective
(3) General education elective or Ethics elective
15 Credits

Sixth Semester
(2) BME 306  Biotransport Laboratory
(1) BME 390  BME Professional Seminar
(3) ECE 301  Signals and Systems
(3) IE 330  Probability and Statistics in Engineering II
(3) General education or BME engineering elective
(3) General education or Ethics elective
15

Linked courses with elements of design integrated
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BME Plan of Study

Senior Design = 4 semester hours (currently fall only)

(1) BME 490—senior design lecture component—everyone
(1) BME 488—preliminary design lab — two sections
(2) BME 489—senior design project lab—two sections

Senior year ➔ ~31 semester hours/year

(3) BME Quantitative Breadth Technical Elective
(6) BME Engineering Elective
(3) BME Engineering or General Education Elective
(6) Life Science Elective
(6) Unrestricted Elective
(3) General Education Elective
BME Admission
GPA ≥ 3.20 or higher
We accept ~85-95 students

Do your homework!
It’s your FUTURE.
BME is Growing in Size!

• 90% of applicants offered admission (who completed FYE requirements)

• Average Overall GPA of Sophomore Cohort = 3.40

• Weldon School of Biomedical Engineering is growing! We increased our incoming class of 2013 to 82 students. Plans to increase our capacity to 96 students are in the works.

• BME is very proud to announce that women represent 54% of our students in the Fall 2012 cohort. This is an increase of approximately ~10% from previous years.
In Summary....

• Almost 100% of BME students participate in Experiential Learning opportunities during their time at Weldon.

• We are proud that our major attracts a large number of female engineers, with current class cohorts at approximately a 50/50 ratio.

• BME creates strong domestic & international partnerships that allow students to gain unique academic, practical & cultural experiences.

• Our small program size creates a very family oriented atmosphere where students get to know all their peers.

• ~90% graduate placement in industry, graduate or professional school within 3 months of graduation
Questions about BME?
Student Led Tours Daily
M-F, 1:30 pm MJIS 1021

Visit our website:  www.purdue.edu/BME

BME Fall Open House
November 21, 2013!
Questions?