Graduate Studies in BioE: Your Path Forward January 5, 2021

Today's Student Panelists



Luke Wang 3rd year PhD student



Xiaochen Qin 3rd year PhD student



Xay Rivera Gonzalez 1st year PhD student



Colin Herna 1st year PhD student



Kayleigh Atanasoff 1st year MS student

About Lehigh University



Located in Pennsylvania's beautiful Lehigh Valley, Lehigh is one of the most distinguished private research universities in the U.S. Through academic rigor, an entrepreneurial mindset, and collaborative opportunities, we challenge our students to become the leaders of the future. With five distinguished colleges and an ideal studentto-faculty ratio (9:1), Lehigh offers world-class academic opportunities on one of the nation's most beautiful campuses. [lehigh.edu]

Rossin College: A Snapshot



- 140 tenure track faculty in 8 academic departments
- 2,200 undergraduates, 850 graduate students
- The Rossin College generates >50% of Lehigh's Ph.D. graduates, journal publications, and research expenditures.
- 30% of current engineering faculty members are NSF CAREER Award recipients
- 31% of Lehigh engineering and 46% of Lehigh bioengineering students are female (versus the 18% national average)

Department of Bioengineering



- Initiated as an Interdisciplinary Program in 2002; Department established in 2017
- 16 core faculty members + 16 associated faculty members (ChBE, CEE, CSE, MSE, MEM, ECE, Chem, BioS)
- Graduate Program Established in 2010 30 graduate students and growing!
- Current research pillars
 - Biocomputations and Modeling; Materials and Therapies; Diagnostics, Sensors & Devices

Research activities





DIAGNOSTICS, SENSORS & DEVICES

- BioMolecular Modeling
- Bioinformatics
- Computational & Data
 Science
- Machine Learning
- Biomedical Image Analysis
- Biophysics

- Point of Care Diagnostics
- Personal Medicine Applications
- Neuroengineering
- Biosensors
- BioMems
- Drug Discovery & Delivery



MATERIALS AND THERAPIES

- Biomaterials
- Bio-inspired Nanomaterials
- Cell/Tissue Engineering & Regenerative Medicine
- Biotherapeutics
- Environmental BioE

Research Resources



Center for Advanced Materials

Center for Photonics and Nanoelectronics



Health Research Hub





Institute for Functional Materials and Devices (I-FMD)



Institute for Data & Intelligent Systems & Computation (I-DISC)



Institute for Cyber Phisical Infrastructure and Energy (I-CPIE)



Health Sciences and Technology Bldg



Graduate degrees in Bioengineering

- PhD in Bioengineering
- MS in Bioengineering
 - With thesis
 - Coursework, only (project optional)
- Opportunity to include graduate-level certificates in
 - Nanotechnology
 - Polymer Science and Engineering
 - Healthcare Systems Engineering
 - Technical Entrepreneurship



Graduate Admissions

- Deadline for consideration of financial support: Jan. 15
- Final deadline for fall admission: July 15
- GRE not required for 2021 admission
- App waivers available; email: <u>gwh214@lehigh.edu</u>

For international students:

Minimum TOEFL

- Reading: 20
- Listening: 20
- Speaking: 23
- Writing: 22
- COMPOSITE: 85

Minimum IELTS

- Reading: 6.5
- Listening: 6.5
- Speaking: 7.0
- Writing: 6.0
- OVERALL: 6.5

Minimum ITP

- Reading: 56
- Listening: 54
- Writing: 53
- OVERALL: 543



PhD Student support

• First-year support

- Presidential Fellowships (~1)
- University Fellowships (~1)
- Rossin Teaching Fellowships (~4)
- Subsequent support
 - Research Assistantships
 - Teaching Assistantships
 - Other Fellowships



PhD requirements

- Minimum of 72 credit hours after BS degree, or 48 credit hours after MS degree
- Four core courses (12-credits in bioengineering, biology, and mathematics)
- Minimum 4 technical electives
- TA Requirement: 1-2 full time TA (20 hrs/week)
- Independent Research in a faculty research group

MS requirements

- 30 credits, including 12-credit core in bioengineering, biology, and mathematics
- At least 18 credit hours in BioE
- Thesis or Coursework Options
 - Independent Research in a faculty research group (MS w/Thesis)
 - 1-2 semester project option (Coursework MS)
- Highly Customizable to meet individual academic goals
 - May be combined with graduate certificates for additional industry-relevant training
- Coursework MS Option can be completed in 12 months





Decisions, Decisions, Decisions....

- Think about and articulate your motivations for graduate study
- Keep a running record of your experiential learning opportunities
 - Summarize your activities, technical skills you gained, what you liked, disliked, learned and where you still have room to develop
- Talk to faculty mentors, discuss pros/cons, request recommendations
- Peruse department/program websites to gather information
- Consider your personal "needs" and "wants" for a graduate program

 - Research opportunities Curriculum customization vs defined curriculum Cost (and funding opportunities) Faculty Engagement Educational Experiences Campus Environment and Student Community Professional Development Support Alumni Networking, etc.

Ask your questions!

- Reach out to graduate program directors, faculty members Connect with graduate students "Visit" through virtual info sessions & open houses, zoom video chats, and in person, when permissible before AND after applying

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Thanks for participating!



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