

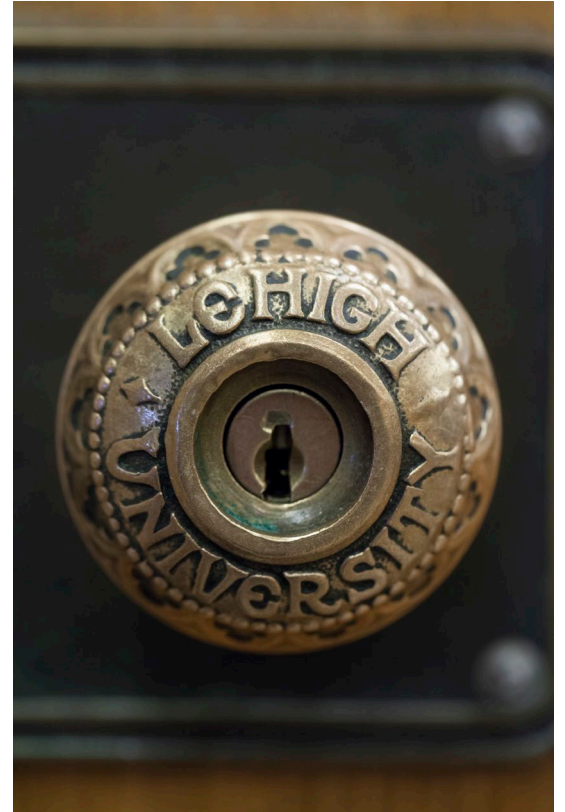


LEHIGH
UNIVERSITY

Graduate Programs
in Mechanical Engineering and Mechanics
January 22, 2021

Today's agenda

- **About Lehigh University**
- **MechE department overview**
 - Grad student and faculty achievement
 - PhD degree: Path and financial support
 - Master of Science (MS) degree: Multi-track options
 - Destinations of graduates
 - Admissions overview
- **Student Panel**
 - Personal insights into Lehigh's MechE program
- **Q&A/Discussion**



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 student-to-faculty ratio (9:1), Lehigh offers world-class academic opportunities on one of the nation's most beautiful campuses. [lehigh.edu]

About Lehigh Mechanical Engineering

Our community

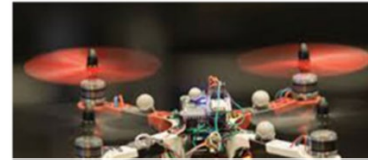
- 120 graduate students (48 MS, 72 PhD)
- 26 faculty

Research clusters

- Controls and robotics (6 faculty*)
- Fluid mechanics and flow-structure interaction (7)
- Mechanics of Materials (6)
- Thermo-Heat Transfer (5)
- Biomechanics (5)

**Research may be theoretical, computational, experimental...
or a combination of these**

**Some faculty belong to more than one research cluster*



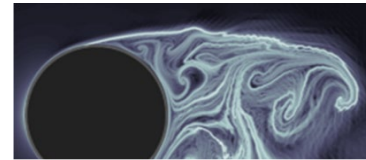
CONTROLS AND ROBOTICS



THERMO-HEAT
TRANSFER



MECHANICS OF MATERIALS



FLUID MECHANICS/FLOW-
STRUCTURE INTERACTION



BIOMECHANICS

About Lehigh Mechanical Engineering

Experimental Facilities

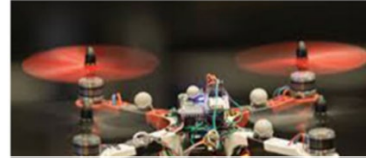
- 12 MechE research laboratories

Computational Capabilities

- Lehigh's computational clusters, Sol and Hawk, provide 4156 compute cores with a theoretical peak performance of 198.5 Tflops

Interactions/Links

- 11 national and international labs and centers



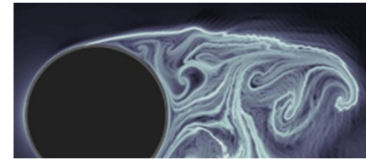
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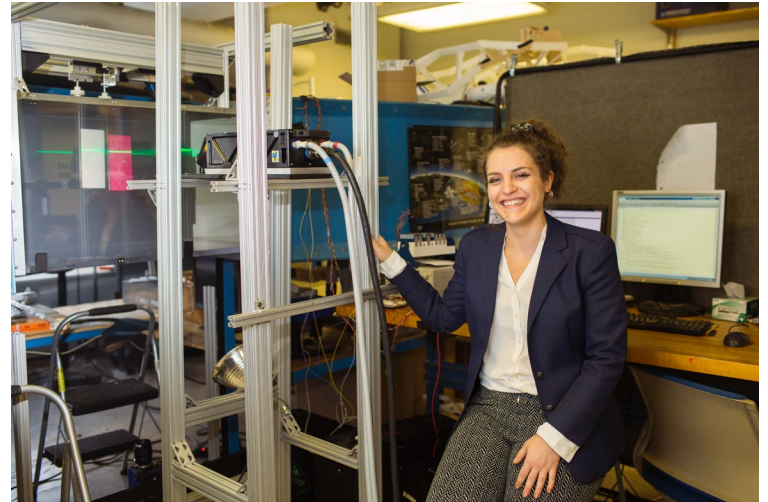
Graduate Student Awards and Recognition

Graduate students win **Fellowships**:

- National Science Foundation Graduate Fellowship
- Amelia Earhart Zonta International Fellowship
- International Institute of Education Fellowship

Grants/Fellowships for national/intl research projects and stays at major centers:

- Princeton Plasma Physics Laboratory
- Los Alamos National Laboratory
- European Organization for Nuclear Research
- University of Zurich (CERN)
- Air Force Research Laboratory
- Cambridge University (DAMPT)
- Army Research Laboratory



MechE faculty awards

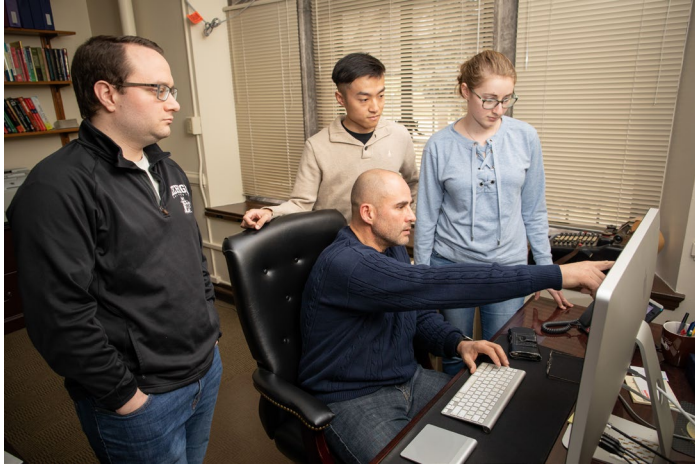
- Faculty have received **more than 45 awards** for outstanding accomplishments from professional societies and federal agencies
- 13 prestigious NSF CAREER Awards and DoD Young Investigator Awards



Support from national agencies including:

- **National Science Foundation**
- **National Institutes of Health**
- **Department of Energy**
- **Advanced Research Projects Agency**
- **DoD**

Path to PhD Degree



- **Completion of coursework**
Eight courses including five core courses completed with a minimum average GPA (Qualifying Procedure)
- **Formulation of research proposal**
Identification of major unknowns in a new field then development of proposed research in the format of a leading national agency (General Examination)
- **Collaboration on dissertation research**
Original (new) research contributions to your field with guidance from your faculty advisor
- **Completion of total credit hour requirement**
Minimum of 72 credit hours (credits for courses and dissertation) after BS degree, or 48 credit hours after MS degree acquired elsewhere

Financial Support for PhD Students

- **Presidential or University Fellowship**
No associated obligations
- **Rossin Fellowship**
No associated obligations
- **Research Assistantship**
Research with guidance from a faculty adviser
- **Teaching Assistantship**
Assistance with teaching a course in collaboration with a faculty instructor; opportunity to develop teaching and leadership skills through participation in the Teaching Practicum Program
- **Combination of Rossin Fellowship, Research Assistantship, and/or Teaching Assistantship**



Master of Science (MS) Degree*

Multi-Track Options

10 courses (30 credits) for all tracks:



- **Thesis Track**
Focus on Research: Counts for 2 courses
- **Project Track**
Focus on Design, Development, or Applied Research: Counts for 2 courses
- **Applied Engineering Track**
Focus on Deep MEM Knowledge Base through coursework: Counts for 2 courses
- **Interdisciplinary Track**
Focus on development of expertise in another discipline (concentration area) as a complement to an MEM core: Counts for 4 courses

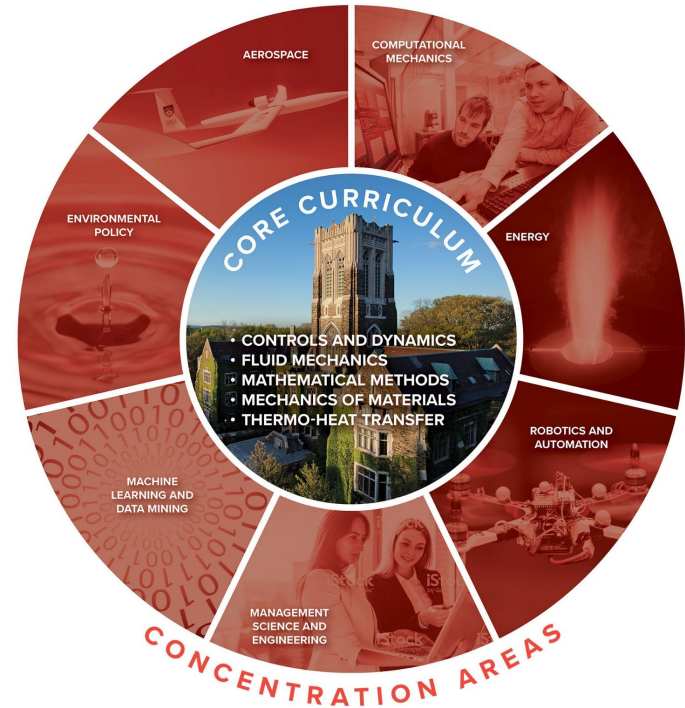
* All MS degree options must also satisfy generic University level masters degree requirements

Master of Science (MS) Degree

Interdisciplinary Track

Concentration Areas

- Aerospace
- Computational Mechanics
- Energy
- Robotics and Automation
- Management Science and Engineering
- Machine Learning and Data Mining
- Environmental Policy
- Technical Entrepreneurship
- Self-Designed Concentration



Best Masters Programs (BMP) Rankings

The Rossin College's online masters degree program in mechanical engineering was recently ranked **second in the nation** by the independent online guide *Best Masters Programs* (BMP.)

BMP's analysis, which aims to "help working professionals find a program with a real return on investment and career impact," considered tuition rate (IPEDS data), potential salary (College Scorecard data), and student satisfaction (Niche student reviews).



*Click or scan the QR code
above to access BMP's
press release*

Career paths: MS graduates



Durlav Mudbhari

*Stress Engineer
Gulf Aerospace
Systems
MS Lehigh 2017*



Elana Abrams

*Mechanical Engineer
Gyre9
(prod. dev. firm)
MS Lehigh 2019*



Xiangxingyu (Lucas) Lin

*Endurance Testing Engineer
Daimler Greater China Ltd
(Parent company, Mercedes Benz)
MS Lehigh 2014*

Booz | Allen | Hamilton

Destinations of MS and PhD grads



中国科学院深圳先进技术研究院
SHENZHEN INSTITUTE OF ADVANCED TECHNOLOGY
CHINESE ACADEMY OF SCIENCES



University of Zurich ^{UZH}

CORNING

Electrikus

OAK RIDGE
National Laboratory



COLUMBIA UNIVERSITY
MEDICAL CENTER



Gulfstream TM
A GENERAL DYNAMICS COMPANY



LOCKHEED MARTIN



ARL

PPPL
PRINCETON
PLASMA PHYSICS
LABORATORY

BOEING

SIEMENS



Sandia
National
Laboratories

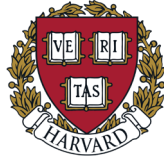
AIR
PRODUCTS

der Bundeswehr
Universität  München



CURTISS -
WRIGHT

MIT
Massachusetts
Institute of
Technology

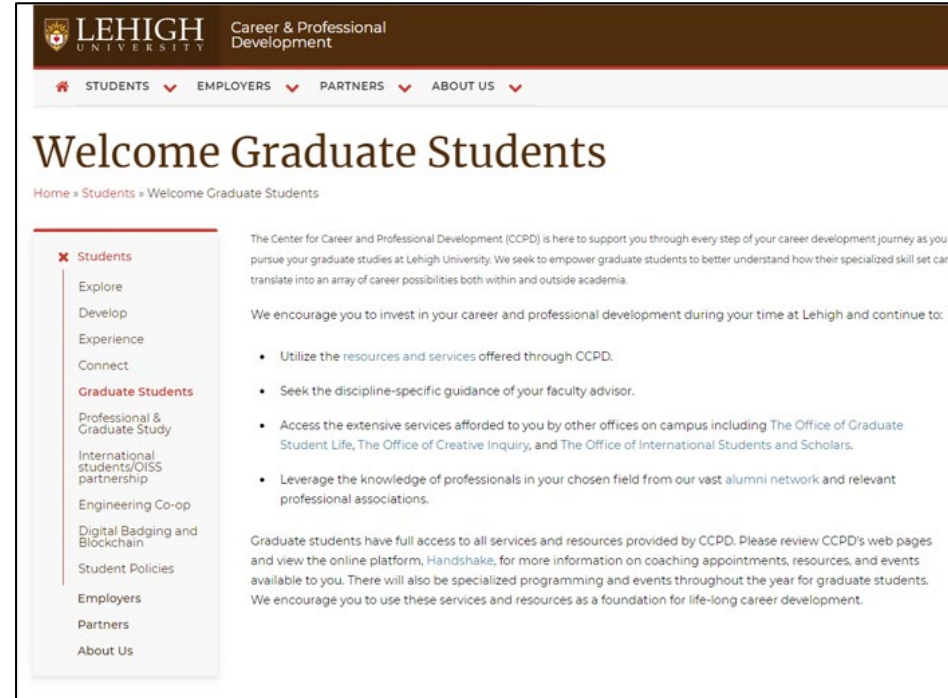


Lehigh's Center for Career and Professional Development



Ali Erk

**Associate Director
Graduate Student
Career Development**
alison.erk@lehigh.edu

A screenshot of the Lehigh University Career & Professional Development website. The header includes the Lehigh University logo and the text "Career & Professional Development". A navigation menu has links for "STUDENTS", "EMPLOYERS", "PARTNERS", and "ABOUT US". The main heading is "Welcome Graduate Students". Below this is a breadcrumb trail: "Home > Students > Welcome Graduate Students". On the left is a sidebar menu with "Students" selected, containing links for "Explore", "Develop", "Experience", "Connect", "Graduate Students", "Professional & Graduate Study", "International students/OISS partnership", "Engineering Co-op", "Digital Badging and Blockchain", "Student Policies", "Employers", "Partners", and "About Us". The main content area contains a welcome message from the Center for Career and Professional Development (CCPD), stating its purpose to support graduate students and empower them. It lists three key points: utilizing CCPD resources, seeking faculty advisor guidance, and accessing other campus services. It also mentions that graduate students have full access to all services and resources provided by CCPD.

LEHIGH UNIVERSITY Career & Professional Development

STUDENTS EMPLOYERS PARTNERS ABOUT US

Welcome Graduate Students

Home > Students > Welcome Graduate Students

Students

- Explore
- Develop
- Experience
- Connect
- Graduate Students**
- Professional & Graduate Study
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- Engineering Co-op
- Digital Badging and Blockchain
- Student Policies
- Employers
- Partners
- About Us

The Center for Career and Professional Development (CCPD) is here to support you through every step of your career development journey as you pursue your graduate studies at Lehigh University. We seek to empower graduate students to better understand how their specialized skill set can translate into an array of career possibilities both within and outside academia.

We encourage you to invest in your career and professional development during your time at Lehigh and continue to:

- Utilize the [resources and services](#) offered through CCPD.
- Seek the discipline-specific guidance of your faculty advisor.
- Access the extensive services afforded to you by other offices on campus including The Office of Graduate Student Life, The Office of Creative Inquiry, and The Office of International Students and Scholars.
- Leverage the knowledge of professionals in your chosen field from our vast alumni network and relevant professional associations.

Graduate students have full access to all services and resources provided by CCPD. Please review CCPD's web pages and view the online platform, [Handshake](#), for more information on coaching appointments, resources, and events available to you. There will also be specialized programming and events throughout the year for graduate students. We encourage you to use these services and resources as a foundation for life-long career development.

Click the image above or visit <https://careercenter.lehigh.edu> for more

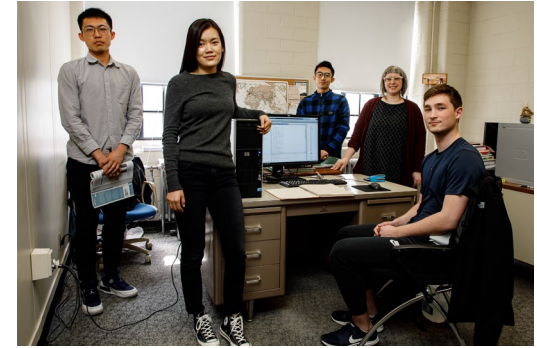
Lehigh's Office of Graduate Education & Life



Click the images above or visit <https://grad.lehigh.edu> for more

Graduate Admissions

- **Deadline for consideration of financial support: Jan 15**
- **Final deadline for fall admission: July 15**
- **GRE not required for 2021 admission**
- **Application waivers available**
- **Contact Allison Marsteller at alm513@lehigh.edu**



For international students:

Minimum TOEFL

- Reading: 20
- Listening: 15
- Speaking: 20
- Writing: 20
- COMPOSITE: 79

Minimum IELTS

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

Minimum ITP

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





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