LEHIGH UNIVERSITY | P.C. Rossin College of Engineering and Applied Science

BIOENGINEERING
FALL 2026
NEWSLETTER

FEATURED ARTICLE

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## OUTGOING CHAIR MESSAGE

Six years as Chair of Bioengineering at Lehigh. It has been a privilege to lead and grow alongside our department in the Rossin College, and to watch our students flourish. What I am most proud of is the community we built together, faculty, staff, and students, and a department that grew stronger with every hire and every incoming class. It has been gratifying to watch your success, in the lab, in the classroom, and beyond Lehigh. Thank you all. You made this job a genuine pleasure.

I am delighted to welcome Professor Xuanhong Cheng as our next Chair. Xuanhong is a brilliant scholar and a generous leader, and I look forward to seeing the department and our students scale new heights under her leadership.

This is a farewell to one role, not to the department. I am stepping into a new position as Associate Dean for Global Engineering Initiatives, and Bioengineering stays close to the center of it, with health a pillar of our global strategy. Bioengineering will very much remain home, and I will be cheering from the sidelines and staying close to our joint adventures.

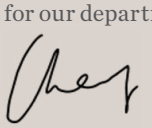
**ANAND RAMAMURTHI, PHD, FAHA**
PETER C ROSSIN PROFESSOR AND ASSOCIATE DEAN FOR GLOBAL ENGINEERING INITIATIVES

## NEW CHAIR WELCOME MESSAGE

First, I would like to extend my deepest gratitude to Dr. Anand Ramamurthi for his outstanding leadership over the past six years. Since I joined the Bioengineering program 18 years ago, I have had the privilege of witnessing our remarkable evolution. Together, we have transitioned into a full department, watched our undergraduate program continuously flourish, experienced the rapid, inspiring growth of our master's and PhD programs, and seen a rich diversification of our student body. I am incredibly proud to have been a member of this vibrant team for nearly two decades. To my colleagues, thank you deeply for your trust. I am incredibly honored to take on the role of Department Chair.

While we celebrate these achievements, we ought to also look toward our next chapter. To support our expanding student population, particularly our master's programs, we need to strategically grow our faculty to meet our evolving teaching needs and develop pioneering research thrusts. Furthermore, the dawn of the AI era presents unique educational challenges and opportunities. We should thoughtfully integrate these technologies to amplify our classroom outcomes. Finally, as the Lehigh Valley welcomes a growing wave of biotechnology industries, we have an incredible opportunity to forge powerful new partnerships in both cutting-edge research and student career placement.

I look forward to working closely with all my Bioengineering colleagues as we navigate our shared challenges and seize the exciting opportunities ahead. I am deeply committed to strengthening ties among our students, our alumni network, and regional industries. Together, we will create an even more vibrant and impactful future for our department.



**XUANHONG CHENG**
DEPARTMENT CHAIR

## *Lehigh Bioengineering through the years*

LAUNCHED UNDERGRADUATE PROGRAM
**2002**

GRANTED FIRST BACHELOR'S DEGREES
**2006**

LAUNCHED GRADUATE PROGRAM
**2010**

GRANTED FIRST MASTER'S DEGREES
**2017**

ANAND RAMAMURTHI APPOINTED AS DEPARTMENT CHAIR
**2020**

BIOE LAUNCHES PARTNERSHIPS WITH INDIAN UNIVERSITIES
**2024**

BIOE MAKES STRATEGIC INVESTMENT IN DIGITAL HEALTH RESEARCH & EDUCATION
**2025**

XUANHONG CHENG APPOINTED AS DEPARTMENT CHAIR
**2026**

# *Welcome*

## NEW BIOENGINEERING FACULTY & STAFF

**Tom Janis** joined the Bioengineering Department in March of 2026 as the Graduate Programs Coordinator. In this role, Tom provides support through graduate program administration and also interfaces and collaborates with other areas of the college for Bioengineering programs. Tom has a background in international higher education, working for several years with international students, studying abroad and exchange programs, and teaching ESL. He is a Lehigh alum with a MA degree in Comparative and International Education from the College of Education. Originally from Canada, Tom calls the Lehigh Valley home, but has also lived in several states and countries, including France and Turkey, where he was a Fulbright English Teaching Assistant. He enjoys travelling, playing music, and taking his rescue dog, a Jack Russell Terrier, on long walks.

*Dr. Niels Holten-Andersen*

# BIOENGINEERING IN ACTION

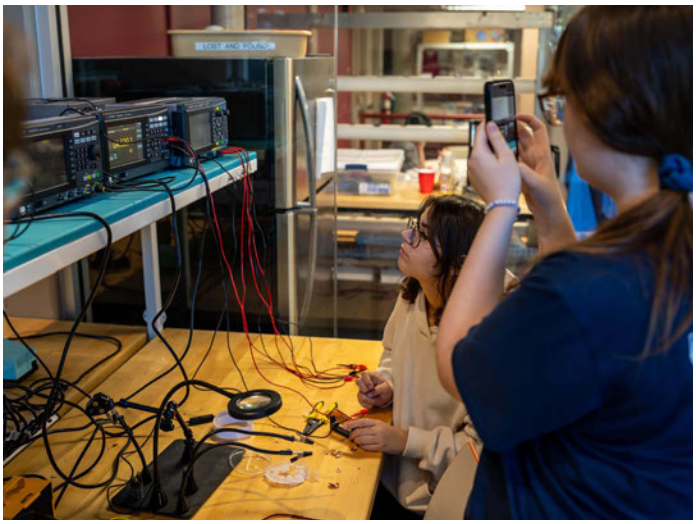
WRITTEN BY CHRIS QUIRK

The Lehigh Department of Bioengineering is continuing its progress to forge a unique curriculum that blends theory and practice to prepare students holistically for careers in the field. New courses at the undergraduate and graduate level incorporate dynamic experiential learning projects, and the First Year Rossin Engineering (FYRE) experience, which began this fall, will help undergraduate students connect fundamental math and science with hands-on experience to create a powerful base for future innovation and creativity.

## FYRE: IGNITING CURIOSITY & CONNECTIONS

Incoming undergraduates to the bioengineering program can participate in a new hallmark course of the FYRE program - *Integrated Engineering Practice.* At the core of this course is interdisciplinary learning, designed to connect the fundamental math and science crucial for success in engineering to the pragmatic and problem-solving aspects of the field. "It's really about integrating technologies and fundamentals," says **NIELS HOLTEN-ANDERSEN**, associate professor of bioengineering, who oversees the department's participation in FYRE. "It's going to help students realize the important connections between theory and practice right from the start of their Lehigh education."

Now in the scale-up, pilot phase, FYRE will center around a three-credit course with two seven-week, interdisciplinary modules, where students design solutions to real-world problems in a collaborative environment. "Experiential learning is at the heart of Lehigh's Bioengineering program," says **XUANHONG CHENG**, the BIOE Department Chair. "Our faculty bridge theory and practice through immersive, hands-on opportunities, from designing Human-Machine Interface modules for the FYRE program to offering specialized lab courses to leading impact-driven field research locally and globally. These real-world applications give our students a competitive edge and define the distinctive quality of the Lehigh bioengineering degree."



Holten-Andersen believes the FYRE experience is different from many other hands-on engineering offerings and will enhance students' grasp of the principles at work in their lab projects, while providing them the tools to be more creative problem solvers. "It's great to put students in the lab for five weeks, but we want students to see how the fundamental science is critical to being a successful engineer, as well as give them a concrete understanding of how that science is at work in their projects," he says. "It's asking a lot of students to make those connections on their

own, between what they learn in the lecture hall and their work in the lab. FYRE will make those connections tangible."

## BRIDGING CLASSROOM AND CLINIC

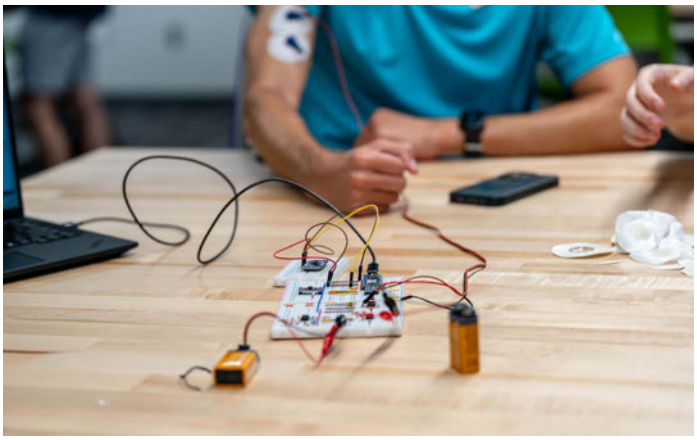
In addition to FYRE modules for first year students, the BIOE Department has options for continuing this hands-on teaching strategy during the whole undergraduate curriculum. One of those opportunities is a new course developed by **JUAN ACEROS**, associate professor of bioengineering with a joint appointment at Good Shepherd Rehabilitation Hospital. Aceros has established a new partnership with Good Shepherd for students to learn in a clinical environment. In his *Design of Adaptive and Assistive Technologies* course, undergraduate and graduate students work directly with Good Shepherd clinicians in developing projects to assist patients. "Initially the students shadow the clinicians. They see the patients, the type of technology being used, the human interface and all of that," Aceros says. "From there, they come back to the classroom with a better understanding of what the technology does, where the flaws are and possible ways to improve. Then they take on specific projects."

***Dr. Juan Aceros***

Students can take on projects like building a better walker or designing a specific technology for physical therapy or occupational therapy. "This semester, we had students designing an assistive device for treadmills used during rehabilitation," Aceros explains. The students created an adjustable, ergonomic hand-grip attachment to improve safety and confidence during treadmill rehabilitation. For each project, students work through the full design and engineering process. "They brainstorm, come up with ideas, identify the requirements and constraints of the project, including the budget, as well as technical limitations, and from there they prototype the devices, test them, and then at the end of the semester they provide them to the hospital, to be used in the field." The course culminated with presentations at the DISRUPT 2026 Health Care Innovation Summit, sponsored by Good Shepherd. Undergraduates **LUKE BLUM** and **JADE BOND** partnered with MS students **JILIANG HE** and **SONGYUAN WU**, to win the Best Student Poster Presentation Award at the Summit, for their interactive and low-cost light-based balance game to improve reaction time and postural stability, while reducing fall risk.

***From left to right: Juan Aceros, Luke Blum, Katelyn Amy, Jade Bond, and Jiliang He.***

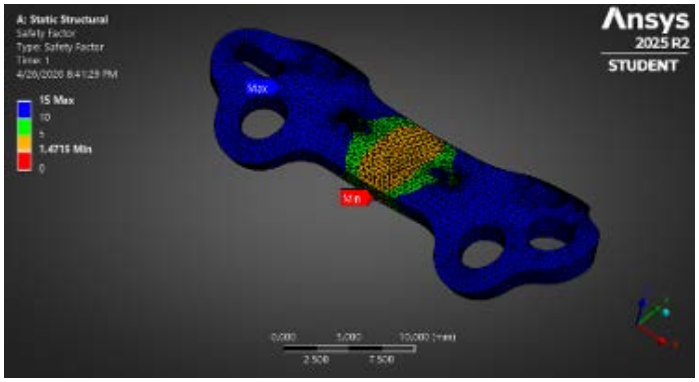
The *Capstone Design* course is another impactful experiential learning opportunity for undergraduate bioengineering students working with real-life industry and clinician-defined needs. Because the capstone design experience is a year-long course, students can go in depth as they develop solutions. "The projects are a little more complex, a little more difficult," says Aceros. "Students have more time to debug the prototypes and processes they're designing. They also get a lot of experience because they're interacting with industry partners, with therapies and with the clinical environment." This open-ended, real-world product and process design experience has a significant impact on students' growth as professional engineers— an experience which many students leverage to land professional opportunities in the medical device and pharmaceutical industries.



## MASTER'S STUDENTS DESIGNING FOR IMPACT

Bioengineering graduate students also have ample opportunities for hands-on training. Similar to undergraduates in the Capstone Design course, in a graduate-level *Integrated Product Development* class, taught by **GREGORY KOWALCZYK** (BS '96 MechE), vice president of Patient Specific at Zimmer Biomet, **SIVANI JAYANADH** and **ABHIRAM BABU** gained real-world biomedical product design experience. The course was a soup-to-nuts practicum in product development.

The duo and their group designed a metatarsophalangeal fusion plate for post-surgically securing the metatarsal phalangeal joint of arthritic patients. The course provided graduate students the chance to consult, conceive, design, and produce a completed device. While in the end, the final realization of their project was thwarted by the complexities of the international supply chain, Jayanadh and Babu learned a great deal about the real-world highs and lows of product development. "This course was an entirely different experience for me because I've never really have done anything this hands-on," says Jayanadh. Team members served in different roles for the project, so students were able to see all the aspects of what it takes to successfully create a new biomedical product. Jayanadh ran the regulatory side of the project, while Babu was project manager. "I had to bridge the engineering and commercial sides," says Babu. "I had exposure to the entire cycle of the product, which was a first for me."




*Metatarsophalangeal fusion plate design*

Jayanadh says another valuable part of the experience was having the opportunity to meet with surgeons, Dr. Selene Parekh from Duke University and Dr. Chris Gross from Stanford University, who served as key opinion leaders for the project. "We were able to present our ideas to them, ask clinical and technical questions, and receive feedback" she says. "Their input gave us a much better understanding of how engineers need to incorporate the surgeon's perspective, and real clinical needs throughout the product development process."

## DESIGNING FOR THE WORLD

In March 2026, through a new Bioengineering course offering, **DHRUV SESHADRI**, assistant professor of bioengineering, brought undergraduate and graduate students in his *Equitable Innovation* course to India and Kazakhstan to solve real-world problems for people in need there. "What we're doing is teaching students that just because a technology or a platform works in the United States—specifically in Bethlehem—does not mean that it's going to work globally in a country like India. That's really a fundamental thesis statement of my lab," he says. "How do you think globally as an engineer, working across borders, working across time zones, to develop sustainable solutions that can truly address some of the critical problems in the world today?"

In India, **HANS KUDER**, a junior on the biopharmaceuticals track, helped create a low-cost, alternative electrode using agricultural surplus like corn starch and rice flour. "The aim of this project sought to create a lower cost option to improve access to diagnostic monitoring in lower income populations," he says. "Being able to travel to India and witness what life was like there was crucial to our team's understanding of that context. We also collaborated with students from KGISL in Coimbatore, and it opened my eyes to international collaboration."

The students in Kazakhstan created a device called TremorTrack, an economical device that monitors tremors in patients with Parkinson's disease. One of the motives is to help with dosage adherence, and also break taboos centered around neurological care and neurological disorders, specifically Parkinson's in patients. "Traveling to Kazakhstan was a once-in-a-lifetime experience for me as we developed TremorTrack," says **ANYA MECCI**, a sophomore biocomputational and neuroscience major. "We had the opportunity to interact with clinicians, professionals, and patients to produce the best performance metrics for TremorTrack, as well as shadow several brain surgeries to gain a better understanding of Parkinson's disease. Our two weeks were laborious yet productive, and I made so many unforgettable memories with my team."

# BIOE GRADUATE RESEARCH

WHERE ENGINEERING INNOVATION IMPACTS HEALTH

## DEVELOPING TOOLS FOR IMPROVED PATIENT MONITORING - JOE AMITRANO - PHD STUDENT

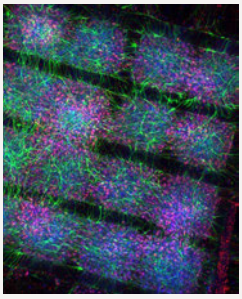
My research focuses on developing clinically translatable technologies for cardiovascular disease, with a primary focus on abdominal aortic aneurysms (AAAs). I integrate preclinical disease modeling, tissue analysis, biomarker discovery, and electrochemical biosensing to better understand disease progression and develop more accessible tools for monitoring patients over time. Beyond AAA research, I have contributed to projects in wearable health technologies, rehabilitation, sports performance, and physiological monitoring. I am passionate about using bioengineering to translate scientific discoveries into technologies that can meaningfully improve cardiovascular health and patient care. This passion extends beyond the laboratory through community involvement, including participation in the 2025 American Heart Association Heart Walk to support cardiovascular research, education, and awareness.

***Sensor prototype for biomarker discovery***

## PATTERNING NEURONS IN 3-D - LAYA DALIR - PHD STUDENT

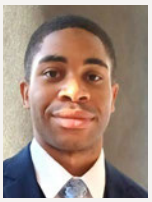
Brain organoids, small, lab-grown models of brain tissue, are increasingly used to study how the brain develops and functions. Although neurons in these models can connect and become active, reproducing more complex patterns of brain activity remains challenging. One example is traveling waves, in which coordinated activity moves across different areas of the brain. These waves are thought to play important roles in functions such as sensation, movement, attention, and memory.

In the brain, these activity patterns depend not only on which types of neurons are present, but also on how they are arranged and connected. In my research in Dr. Yevgeny Berdichevsky's Neural Engineering Lab, I use 3D-printed scaffolds to organize different types of neurons into specific spatial patterns. By giving engineered brain tissue a more controlled structure, we aim to better reproduce how activity travels through real brain networks and build more realistic models for studying brain function.



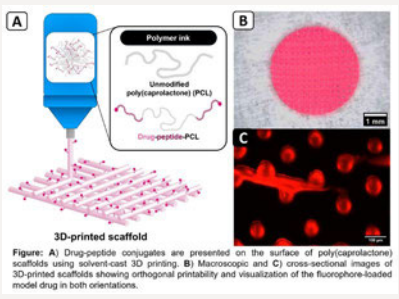
***iPSC-derived neurons (red) and astrocytes (green)***

## BUILDING STIMULI-RESPONSIVE DRUG DELIVERY SYSTEMS - CHIEBUKA OKPARA - PHD STUDENT



Osteoarthritis (OA) is one of the most prevalent musculoskeletal diseases, characterized by recurrent flare ups driven by fluctuating proteolytic enzyme activity. OA predominately affects articular cartilage, which undergoes irreversible structural and biochemical alterations due to elevated production of catabolic proteases. Oral or injectable-based drug delivery systems (DDS) are the standard methods for delivering therapeutics to diseased joints. However, these methods are limited by off-target delivery, tissue toxicity, and rapid drug clearance. DDS need to be optimized for precise, context-specific delivery to overcome these limitations. Advanced DDS can be tailored with stimuli-responsive features that enable controlled release of drugs, proteins, or nucleic acids with improved delivery efficiency and tunable release kinetics. Cleavable peptide sequences that respond to inflammatory proteases can function as linkers between the biomaterial and the drug, enabling therapeutic release to be synchronized with inflammation. My research focuses on engineering a stimuli-responsive biomaterial DDS that couples therapeutic release to proteolytic enzyme activity.

Chiebuka received the Best Poster Award at the Penn Center for Musculoskeletal Disorders Scientific Symposium (Fall '25) and the Rossin Research Scholars (RRS) Program Award in 2026. His abstract was also accepted for an oral presentation at the Tissue Engineering and Regenerative Medicine International Society - Americas (TERMIS-AM) 2026 Conference this fall.




***3D printed scaffolds presenting surface drug-peptide conjugates***

# LEHIGH BIOE MS PROGRAM

## MASTER'S STUDENTS MAKING REAL IMPACT

*"I can confidently say that the BioE master's program prepared me directly for a career in pharmaceutical manufacturing. Entering the workforce with an advanced degree allowed me to jumpstart my career as a Senior Scientist. This allowed me to earn managerial promotions within my first three years in industry. The technical rigor of my coursework and thesis research gave me the experience I needed to lead complex investigations, write technical protocols and reports, and communicate effectively with leadership. These skills, among many others, translated directly to the demands of syringe filling operations. Having a strong foundation in problem-solving helped prepare me for work in a high-stress environment where quality and compliance were at the forefront. More than any single skill, the program gave me confidence. As an undergrad, I wasn't sure what I wanted from my career. The program allowed me to pave my own path and focus on the skills that I wanted to develop, which eventually led me to continual success within my professional career."* - ***Kayleigh Atanasoff, Manager – Commercial Manufacturing (Radiopharma) at Eli Lilly, BioE MS 2022***

*"Balancing a full-time role at Amazon with part-time graduate coursework has pushed me to grow more focused and intentional about my goals. Pursuing my MS in Bioengineering while working full-time has been a great way to keep building on the foundation from my undergrad, and I'm excited for how it will open doors in pharmaceutical manufacturing and process development down the line."* - ***Danabel Fernando, Environmental Specialist at Amazon & Current Part-time BioE MS Student***

*"My co-op experience at Johnson & Johnson gave me valuable insight into the pharmaceutical industry and helped me better understand the skills I want to develop as I pursue a career in R&D. The Lehigh Bioengineering MS program is providing me with the opportunity to continue building my research abilities while exploring areas that align with my professional interests. I am excited to carry these experiences forward as I prepare for a career in pharmaceutical R&D."* -***Ryan Beam, Current BioE MS Student***

*"As a full-time professional, Lehigh's Bioengineering MS program has given me the opportunity to continue developing my technical knowledge while applying what I learn alongside my career. I chose the program because I wanted to broaden my understanding of bioengineering and better connect my background in software and healthcare technology with the science and engineering behind the field. I believe that the combination of professional experience and graduate education will help me take on increasingly interdisciplinary and impactful challenges throughout my career."* - ***Sal Anderson, Software Engineer at Elsevier & Current Part-Time BioE MS Student***

*"Studying at Lehigh has given me a new perspective, both in academics and in life outside the classroom. Coming here through the Semester Abroad Program (SAP) as an undergraduate pushed me to become more independent, adapt to a new environment, and grow both as a student and as a person, which ultimately made me want to return to Lehigh for my graduate studies in Bioengineering."* - ***Sree Vyasa Anbazhagan, UG SRM, Current BioE MS Student***

## 2026 FACULTY FUNDING AWARDS

YEVGENY BERDICHEVSKY and SVETLANA TATIC-LUCIC received an NSF Award for "EAGER: Electromagnetic Detection of Brain Activity," focused on using changes in the electrical transmission (dielectric) properties of neural tissue at radio and microwave frequencies to develop sensors of brain activity.

TOMAS GONZALEZ-FERNANDEZ was awarded the Rossin Innovation Grant for his project, "AI-Guided DNA Methylation Editing for Cartilage Regeneration in Osteoarthritis." The collaborative proposal brings together Gonzalez-Fernandez with Dr. Lifang He (Computer Science and Engineering) and Dr. Greg Carolan (Orthopedic Surgeon, St. Luke's Hospital), and focuses on developing epigenetic therapies for arthritic cartilage regeneration.

JUAN ACEROS was awarded the Rossin Innovation Grant for his project, "Integrated Oculomotor and Visuomotor Rehabilitation using Intelligent Robotic Blimps." This collaborative proposal brings together Dr. Aceros's lab with Dr. David Saldaña (Computer Science and Engineering) and Good Shepherd Rehabilitation Hospital vision therapists. It focuses on developing an intelligent micro-blimp system for safe indoor use and patient interaction, providing a controllable source of three-dimensional visual stimuli for rehabilitation tasks.

## RECENT PUBLICATIONS

Lehigh Bioengineering faculty members and Bioengineering students co-authored more than 40 publications that were accepted for print in the last 6 months. Some of the notable ones are listed below. (Names in BOLD are current Lehigh BioE faculty or current/former Lehigh BioE students)

Stand-on Ride-on Power Mobility Devices for Children with Cerebral Palsy: Pilot Study Protocol for Waitlist-Control Pre-Post Biomechanical Changes. GM Cesar, LY Mochida, K Flanagan, K McDonald, J Xu, D Depto-Hoffman, JC ACEROS. *Frontiers in Pediatrics 14, 1761608 (2026).*

Early Brain Functional Connectivity Changes Induced by Antidepressants and Placebo. X Tong, GA Fonzo, NB Carlisle, H Xie, Y BERDICHEVSKY, CJ Keller, DJ Oathes, CB Nemeroff, FV Lin, Y Zhang. *Nature Mental Health. Accepted (2026).*

Organic Mixed Ionic-Electronic Conductor Device Platforms for Emerging Biosensor Applications. S Qin, Z Sun, S SUN, J Wang, C Rahman, TE Gartner III, X CHENG, E. Reichmanis. *npj Biosensing 3 (1), 10 (2026).*

Simplified Wastewater Processing Using Ultrafiltration and Dipstick-Based RNA Extraction for SARS-CoV-2 Monitoring. S SUN, N Alqasawah, A YUNG, V Ware, K Jellison, X CHENG. *Journal of Water and Health 24 (4), 503-517 (2026).*

Integrative Multiomic Analysis Reveals How Non-Viral Delivery System Selection Shapes CRISPR Gene Editing Outcomes in Stem Cells. JP GRAHAM, AV ARTEAGA, AS MOGHADDAM, KL Spiller, DJ Laverty, T GONZALEZ-FERNANDEZ. *BioRxiv. Preprint (2026).*

Spatiotemporal Control of Genetic and Epigenetic Editing through Covalent Tethering of CRISPR Nanoparticles to Zwitterionic Microgels. JP GRAHAM, E Wheeler, K Leach, T GONZALEZ-FERNANDEZ. *BioRxiv. Preprint (2026).*

Mineral-Controlled Heat-Stiffening in Dynamically Crosslinked Polymer Networks. Q MAQBOOL, N HOLTEN-ANDERSEN. *ChemRxiv. Preprint (2026).*

Identification of Chemical Features for Improved Outer Membrane Permeation in Mycobacteria Using Machine Learning. I Lepori, Z Liu, N Evbarunegbe, S Feng, TP BROWN, K Mane, R Dash, M Wong, A Naick, A George, T Guo, AM Shelke, KB Shapless, J Dong, JS Freundlich, W IM, AG Green, MM Pires, MS Siegrist. *Nature Microbiology 11, 2647-2665 (2026).*

Dynamic Architecture of Mycobacterial Outer Membranes Revealed by All-Atom Simulations. TP BROWN, M Chavent, W IM. *eLife 14, RP108644 (2026).*

A Layer-Based Model for Frictional Sliding of Pillar Arrays. J Kaur, X Xiao, P Karnal, CY Hui, A JAGOTA. *Langmuir 42 (7), 5440 (2026).*

Enabling Equitable and Inclusive Travel Experiences for Dysphagia Patients: A Call to Action for the Aviation Industry. A CINO, UA Shashikumar, K Troxell, MA Seeley, DR SESHADRI. *Frontiers in Rehabilitation Sciences 7, 1623447 (2026).*

Designing Human-Centered Wearables for Parkinson's Patients. J Sferratore, T Patel, A Penza, E JOVANOVIC, L BLUM, D SESHADRI. *Human Factors in Healthcare 9, 100136 (2026).*

Computational Fluid Dynamics Simulations to Inform Cancer Therapeutics. E Roncali, A TAEBI. *Annual Review of Biomedical Engineering 28 (2026).*

Deep Learning for Cardiac Wall Motion Analysis: A Review of Methods, Challenges, and Clinical Applications. M MONFARED, B Kakavand, A TAEBI. *Annals of Biomedical Engineering, 1-21 (2026).*

The Effects of 3D Printed Models on Patient Understanding and Education, a Systematic Review. C MOHANTY, G Bevill, J ACEROS. *PEC Global, 2, Article 100015 (2026).*

WE'D LOVE TO HEAR MORE FROM YOU!
***Send your news to inbioe@lehigh.edu , or visit our home page, lehigh.edu/bioe and scroll down to our news update link!***

# NOTABLES AND MEDIA MENTIONS

After years of exceptional leadership, ANAND JAGOTA, will step down as Vice Provost for Research when his term ends next summer. During his tenure, Lehigh achieved R1 research status. We thank Anand for his dedication and service and wish him well in his next chapter. JAGOTA also gave invited talks this summer, including presentations at the Annual Meeting of the Electrochemical Society (Seattle, May 2026) and at the Gordon Research Conference on Tribology (June 2026).

We're pleased to congratulate ANAND RAMAMURTHI on his appointment as Associate Dean for Global Engineering Initiatives in the P.C. Rossin College, where he'll lead efforts to expand international partnerships and research collaborations, following six years as chair of the Department of Bioengineering. Congratulations, Anand!

Two members of the BioE community were among those recognized at the Rossin College annual awards ceremony. 2026 award recipients were ANAND RAMAMURTHI – ***Interdisciplinary Research Award*** and XUANHONG CHENG – ***Peer Mentoring Award***.

ANAND RAMAMURTHI and DHRUV SESHADRI have been named among the second cohort of LU/UN Faculty Fellows, giving them a consultative role with senior UN diplomats and Member States officials, NGO Presidents, and global thought leaders at the UN.

TOMAS GONZALEZ-FERNANDEZ was selected as BMES 2024 Young Pioneer in Drug Delivery, an award that highlights emerging leaders who are shaping the future of drug delivery and biomedical engineering. He was also named a 2026 TERMIS-AM Rising Star in Tissue Engineering and Regenerative Medicine, and received the 2026 TERMIS-AM Education, Training and Outreach Award.

AMIRTAHÀ TAEBI is chairing the Bioengineering Track at the 2026 ASME International Mechanical Engineering Congress and Exposition (IMECE). He also gave invited talks and served as a panelist at UC Davis, Lehigh Valley Heart and Vascular Institute, University of the Philippines Diliman, and the Philippine General Hospital. TAEBI was also named a runner-up for the Career Development Award by the North American Artery Society at their annual meeting, selected as a Global Teaching and Learning Fellow by Lehigh's Office of International Affairs, and served as a Lehigh Representative to the UN, where he authored and secured official acceptance for a joint CLAN-Lehigh oral statement on newborn screening for congenital conditions at the 2026 UN High-Level Political Forum.

JUAN ACEROS was an invited speaker at the DISRUPT: Health-Care Innovation 2026 Summit. ACEROS also presented two podium talks at the 48th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Toronto, Canada).

WILL XIA attended & was involved in hands-on teaching the Cold Spring Harbor Laboratory Asia imaging course in June.

# GRADUATE STUDENT NEWS

JOSH GRAHAM successfully defended his doctoral dissertation, "Engineering an Advanced CRISPR Toolbox for Regenerative Medicine Strategies." Graham, recipient of a 2023 NSF Graduate Research Fellowship and a 2026 Koerner Family Foundation Fellowship was advised by TOMAS GONZALEZ-FERNANDEZ. Dr. Graham recently started a postdoctoral fellowship in the Bosse lab at Children's Hospital of Philadelphia.

We're proud to announce that DEREK HAMMERSTONE, NICO CZECK and JACKSON GROTKE have earned their Master of Science degree in Bioengineering. Congratulations!

Doctoral student SAEED OMIDI (Berdichevsky Lab) completed a summer internship at Genentech in San Francisco during summer 2026.

Congratulations to CHIEBUKA OKPARA, who received the 2026 Rossin Research Scholars (RRS) Program Award.

# ALUMNI UPDATES

JING MEN **PhD'20** (BioE) started a new position as a System Engineer at Applied Materials. With an extensive experience in optical system engineering, Jing has been at the forefront of next generation optical instruments.

NICK HIRDT **BS'17** (BioE) has taken on a new role as Senior Systems Engineer at the CONMED Corporation, after over 5 years as a product development engineer at Proprio.

DAVID MORRA **BS'10** (BioE), MBA (PSU) Head, Enabling Healthcare Technologies at CSL is an invited speaker at the US Biotech Day 2026, in Philadelphia, Nov 16, 17.

IRIS ZENG **BS'26** (BioE) started a new position as an Associate Product Manager at Globus Medical

GEORGE BARAKAT **MS'26** (BioE) accepted a position as an Analytical Scientist I at Syneos Health, in Princeton, NJ.

MARY MAHONEY **BS'23** (BioE) is now a Senior Continuous Improvement Specialist at Integra LifeSciences

SIDNEY O'NEAL **BS'18** (BioE) earned an MBA from Northwestern University Kellogg School of Management and is an Associate at McKinsey & Company.

KAYLEIGH ATANASOFF BS'20 MS'22, a Manager – Commercial Manufacturing (Radiopharma) at Eli Lilly, recently returned to the Lehigh BioE department as an invited speaker in the department's Fall 2026 seminar series. As an extra bonus she also joined the student BMES organization for a Q&A session, where she provided wonderful insight on her educational and professional journey.

# UNDERGRADUATE

## STUDENT SUCCESS

ELIZABETH JENULIS '27 and VICTORIA DE BRUYN '27 were selected as members of the 2026–2027 Chile cohort of the ***Martindale Student Associates Honors Program***. . Jenulis noted, "Our cohort spent two weeks in Central and Northern Chile learning about the Chilean business and public policy landscape. Personally, I was fascinated to learn more about local efforts towards sustainable initiatives, especially within both the energy generation and transportation sectors." Post-trip, Jenulis split her time between a legal assistant position and a Lehigh research lab, while de Bruyn took a position at Avantik as a Quality Assurance Intern.

LUKAS WURSTER '27 spent the summer in Bar Harbor, ME as a 2026 Summer Undergraduate Research Fellow at MDI Biological Laboratory.

NANCY CARCAMO-PAIZ '27 and YANMIN ZHEN '27 traveled to Ireland during the 2026 summer, participating in independent research and gaining technical skills at the University of Galway.

Three Bioengineering undergraduate students are among the 2026-27 cohort of ***Rossin Research Scholars***, a yearlong, mentored-research program. JAKE GULYANSKY '27, NINO TEDORADZE '28 and JUAN PABLO AZMITIA DELGADO '27 were selected from a strong pool of applicants, and began their research experience in the spring 2026 semester and will continue through the fall 2026 semester culminating in contributing to a publication or an abstract, or attending a conference.

OWEN HOLST '27 spent 6 weeks in Bordeaux, France at the Chimie et Biologie des Membranes et des Nano-objets (CBMN) laboratory, on an Iacocca International Internship.

Following his return from Almaty, Kazakhstan on a trip with Lehigh's Creative Inquiry program, JACOB TEN BOSCH '27 spent the remainder of the summer as an intern with the Project Toxicology Team at Bristol Myers Squibb.

RENEE BLAKE '28 gained real-world experience at DSM-Firmenich Biomedical as a Quality Control Biomedical Intern where she learned about developing advanced biomaterials, and products testing & evaluation to ensure safety and compliance.

ELIZABETH JENULIS '27 was named a 2026 Clare Boothe Luce Research Scholar, awarded to those with excellence and motivation in academics and research.

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# CURRENT BIOENGINEERING RESEARCH AT LEHIGH UNIVERSITY

Names in **BOLD** are Lehigh BioE core faculty

## BIOCOMPUTATIONS AND MODELING

Biomolecular Modeling
Bioinformatics
Bioengineering Systems & Controls
Biophysics
Modeling of Biological Systems
Computational Bioengineering
Data Analytics
Biomedical Image Analysis

**Y. BERDICHEVSKY**, B. Chen, H. Dailey, **A. JAGOTA**, M. Kotare, D. Lopresti, **D. OU-YANG**, D. Vavylonis, A. Voloshin

## DIAGNOSTICS, SENSORS AND DEVICES

Biomedical Imaging
Biophotonics
BioMEMS
Biosensors
Microfluidics
Bioelectronics
Medical Devices
Bioinstrumentation

**Y. BERDICHEVSKY**, D. Brown, **X. CHENG**, H. Dailey, **W.IM**, D. Lopresti, **D. OU-YANG**, **D. SESHADRI**, **S. TATIC-LUCIC**, D. Vavylonis, **J. ACEROS**, **A. TAEBI**

## MATERIALS AND THERAPIES

Biomaterials
Molecular Bioengineering
Biopharmaceutical Engineering
Tissue Engineering & Regenerative Medicine
Nanotechnology & Nanomedicine
Biofluid & Solid Mechanics
Biomolecular & Cellular Mechanics
Environmental Bioengineering

**Y. BERDICHEVSKY**, A. Brown, D. Brown, **X. CHENG**, H. Dailey, M. Falk, **T. GONZALEZ-FERNANDEZ**, **N. HOLTEN-ANDERSEN**, **A. JAGOTA**, **S. JEDLICKA**, H. Jain, **D. OU-YANG**, **A. RAMAMURTHI**, **I. SEABRA**, **S. TATIC-LUCIC**, D. Thevenin

Fall 2026 Bioengineering Department

## *Department at a glance:*

**16**
CORE FACULTY MEMBERS

**11**
ASSOCIATED FACULTY MEMBERS

**5**
POST-DOCTORAL SCIENTISTS

**3**
ADMINISTRATIVE & 1 TECHNICAL STAFF

**31**
PHD LEVEL GRADUATE STUDENTS

**33**
MS LEVEL GRADUATE STUDENTS

**130**
DECLARED UNDERGRADUATE MAJORS IN 3 TRACKS
*(Biocomputational Engineering, Biomechanics & Biomaterials and Biopharmaceutical Engineering)*

***www.lehigh.edu/bioe***

*Photos courtesy of Douglas Benedict/Academic Image, Ryan Hulvat/Meris & Christa Neu*

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