

# *Chemical & Biomedical Engineering*

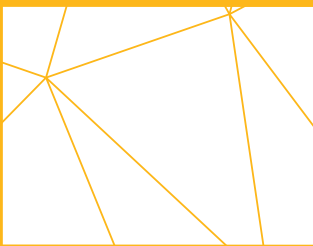




The Department of Chemical and Biomedical Engineering at Mizzou is dedicated to addressing critical challenges that affect both our health and the wellbeing of our planet. Our researchers are at the forefront of developing next-generation sensors, creating sustainable methods for manufacturing biodegradable plastics and producing innovative wearable bioelectronic devices.

We take pride in the accomplishments of our faculty, students and alumni, who continue to receive recognition from national organizations and within the Mizzou community. These successes highlight our commitment to equipping students with the skills to become leaders in solving real-world issues.

Thank you for your interest in and ongoing support of our work.



**Scan to learn more!**



**Kevin Gillis**  
**Chair, Professor**  
**Chemical & Biomedical Engineering**



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TO TAKE  
A TOUR!**

Step inside Mizzou Engineering with our 360° virtual tour of our classrooms, labs and student spaces. Learn about our degrees, extracurricular opportunities and support resources from the comfort of your home.

# Show Me **THE NUMBERS**

People in ChBME -----●

**470** Undergraduate Students

**58** Graduate Students   **30+** Faculty Members

Research Expenditures -----●

**\$5,550,948** FY24

Number of proposals in 2024: **60**

Research Areas -----●

**Biological / Biomedical Imaging**

Bioprocess and Food Process

**Engineering Catalysis**

Computational Materials Science

**Electrochemistry and Atomic**

**Layer Deposition**

Energy Conversion and Storage

**Materials for Environmental Sensing**

Micro / Nano Devices

**Neuroengineering**

Regenerative Medicine

**Soft Materials and Bioelectronics**

Theranostic Nano-Delivery Devices

**Thin Films and Nanocoatings**

Water Studies and Sustainability

**Tier I Research Institution • AAU Member**

# Research HIGHLIGHTS



**Zheng Yan** and a team of researchers added wireless charging through a magnetic connection to the team's existing on-skin wearable bioelectronic device. The device provides the foundation for gathering precise vital sign measurements like blood pressure and electrical heart activity.



**Xiangqun Zeng** is designing next-generation sensors that mimic how the human sensory system works to help turn the foundational understanding of the interface of biological and chemical interactions and reactions into tangible - and world-changing - innovations.



**Caixia "Ellen" Wan** is working with industry and academic partners to develop eco-friendly processes to manufacture biodegradable plastics from sustainable sources. The research received a second round of funding from the Department of Energy.



**Matthias Young** is developing a technique that could lead to new sensors to help farmers better measure nitrates and phosphates in the soil, allowing them to use fertilizer more efficiently. The research is funded through the U.S. Geological Survey.



**Sheila Grant** is the principal investigator on an Accelerating Research Translation award to set up Mizzou TechHub Technology, an Entrepreneurship and Commercialization Hub, supported by a four-year, \$5.5 million cooperative agreement with the National Science Foundation (NSF).



**Reginald Rogers** co-directed the National Science Foundation Research Experiences for Undergraduates Site (NSF REUs), "Creative Approaches to Materials Design and Processing." REUs help students conduct authentic research, receive mentoring, build knowledge and research skills and learn about career pathways in STEM.

# Student SUCCESS



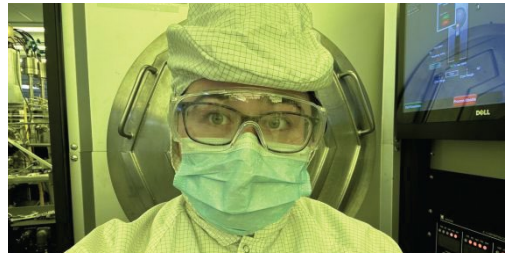
**Campbell Sweet** received a 2024 National Science Foundation Graduate Research Fellowship for her research on increasing the supply of clean energy.



**Mizzou AIChE** was selected as an Outstanding Student Chapter at the 2023 national student conference. Additionally, **Marissa Moore** and the **Chem-E-Car** team won awards at the AIChE Mid-America Regional Conference and **Ashley Kemm** and **Arren Mallott** received honors at the St. Louis AIChE Chapter Awards Ceremony.



**Selby Chipman** completed an internship with the National Human Genome Research Institute (NHGRI) where she did data analysis for the Undiagnosed Diseases program.



**Marissa Moore** attended the SENIC Research Experiences for Undergraduates (REU) program at the Georgia Institute of Technology in collaboration with the National Nanotechnology Infrastructure Corridor.



**Abby Law** was one of 28 students nationally selected to attend the Dow Diamond Symposium, intended to help students discover career paths, receive one-on-one mentorship, form connections with like-minded peers and engage with influential leaders.



Mizzou's **Torq'N Tigers Quarter-Scale Tractor Pulling Team** won multiple events at the American Society of Agricultural and Biological Engineers (ASABE) International Student Design Competition.

# ChBME ACCOLADES



## ***Kiruba Krishnaswamy***

received an Early Career Development (CAREER) award from the National Science Foundation in support of her FEAST framework to address hidden hunger.



## ***Xiaohua Liu***

was elected to the 2024 College of Fellows of AIMBE for his leading contributions to address challenges in dental biomaterials and craniofacial tissue regeneration.

## WELCOMING NEW FACULTY TO ChBME

**Susie Dai** Professor

**Yizhi Xiang** Associate Professor

**Xiao Yien “Rebecca” Lim**

Assistant Teaching Professor

**Xiangqun Zeng** Professor

## Alumni SPOTLIGHT

The Chemical Engineering Academy of Distinguished Alumni inducted three new members in November. The 2024 inductees are: **Lynn Andrews** (ChE '92) and **Baron Peters** (ChE '99). One member from 2022 was also inducted: **Paul Oppliger** (ChE '84).

Alumnus **Corey Staller** (ChE '14) received the Mizzou R.A.H. Award for exceptional professional achievement along with a demonstrated record of volunteerism, both on campus and in his local community.