

NEWSLETTER

Photo from Bellini & Oakes labs.

Note from the Chair:



As the frigid Boston cold of the past couple of months turns to a warmer Spring, we look forward to welcoming the flowers and birds that signal a new beginning. The department is finalizing the process for bringing in the new cohort of BS, MS and PhD students and we look forward to having these excellent students join our department. Northeastern University and the Department of Bioengineering have seen an exponential increase in national and international interest in our programs. Through our commitment to experiential education and research that

serves society we are making progress towards our vision for connecting the needs of our students with the opportunities of tomorrow through our educational and research programs.

I am excited to let you know that two of our faculty members, Associate Professor Ambika Bajpayee, and Associate Professor Eno Ebong, **were selected as PECASE Awardees**. The Presidential Early Career Award for Scientists and Engineers (PECASE) is **the highest honor bestowed by the U.S. government on outstanding scientists and engineers**. They are making significant impact through their exciting research and educational programs, and I am looking forward to seeing how their research findings influence their fields.

Congratulations to Professor Guohao Dai on being selected as a BMES Fellow. This recognition is a testament to his exciting research program on stem cells and vascular bioengineering. Professor Dai is also a fellow of AIMBE and AHA.

One of the first graduates of our PhD Bioengineering program, Codi Gharagouzloo, was selected as a **COE Young Alumni Impact Award**. Codi is the scientific founder and CEO of Imaginostics.

The department will be hosting the **Global Summit on Mechanobiology and Mechanomedicine** on March 6-7th. This conference is being organized by Northeastern University's **Institute for Mechanobiology, under the leadership of Professor Ning Wang**. The conference will bring together the leading scientists in the field of Mechanobiology who will present their work and lead discussions on the state of Mechanobiology. I encourage you to register and be part of this exciting conference.

In my next letter, I will update you on the plans for the Spring and Summer and the outcomes of the activities of the Spring semester.

Sincerely,

Abraham Joy
Professor and Chair of the Department of Bioengineering

MIE Associate Teaching Professor Yustianto Tjiptowidjojo and MIE/BioE Associate Professor Rouzbeh Amini published research from a Dialogue of Civilizations on “An Experiential Learning Opportunity in Norway: Computation for Bioengineering and Mechanical Engineering Students” in the Journal of Biomechanical Engineering.

Northeastern students explore the engineering and ethics of wind farms during experiential learning opportunity in Norway.



When people think of places leading the way on technology, many Americans’ minds go to Silicon Valley. But outside the United States, Norway is on the cutting edge, especially when it comes to work in renewable energy.

That’s why **Rouzbeh Amini**, an associate professor of mechanical and industrial engineering and bioengineering at Northeastern University, began taking students to the Nordic country in 2022 as part of a **Dialogue of Civilizations course** in which students learn from local experts about the country’s wind farms and the ethical questions surrounding them.



“I am a strong believer that you have to have tangible and hands-on knowledge that you give to a student and this is really important for increasing the confidence of the student,” Amini said. “I wanted to have a dialogue where we don’t just go and see the wind farm, but we hike around the wind farms.”

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College of Engineering Faculty and Staff Awards 2025

Faculty and staff were recognized at the 27th Annual College of Engineering Faculty and Staff Awards for their exceptional service and dedication in support of students, the COE community, and the university during the 2024-2025 academic year.

Not pictured: Erel Levine, Associate Professor of Bioengineering, who received the Fostering Engineering Innovation in Education Award.

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[Read more about the faculty and staff awards.](#)



Gregory Abowd, Professor of Electrical and Chemical Engineering and Dean of the College of Engineering, posing

with Saige McGinnis, Lab Coordinator, who received the Going the Extra Mile Award.



Gregory Abowd, Professor of Electrical and Chemical Engineering and Dean of the College of Engineering, posing with Lee Makowski, Professor of Bioengineering and Chemistry and Chemical Biology, who received the Impact Award.



Gregory Abowd, Professor of Electrical and Chemical Engineering and Dean of the College of Engineering, posing with Sara Rouhanifard, Assistant Professor of Bioengineering, who received the Søren Buus Outstanding Research Award.



Gregory Abowd, Professor of Electrical and Chemical Engineering and Dean of the College of Engineering, posing with Esin Sozer, Assistant Teaching Professor of Bioengineering, who received the Diversity Recognition Award.



Gregory Abowd, Professor of Electrical and Chemical Engineering and Dean of the College of Engineering, posing with Anand Asthagiri, Professor of Bioengineering, who received the COE Faculty Fellow recognition.

New Faculty Spotlight

Lital Davidi joins the Bioengineering department in August 2024 as an Assistant Professor with a joint appointment in Biology.

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New Faculty Spotlight

Caroline Blassick joins the Bioengineering department in August 2024 as an Assistant Teaching Professor.



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Northeastern Team Awarded the Vivli AMR Surveillance Data Challenge Student Innovation Prize



microBIS team members, L to R: Alexander Kwakye, Thomas Lim, Harry Akligoh, and Charlie Huh.

A team of Northeastern graduate students and alumni, led by Harry Akligoh, PhD '28, bioengineering, participated in the 2024 **Vivli Antimicrobial Resistance (AMR) Surveillance Data Challenge** and were awarded the **Student Innovation Prize** for their Microbiological Information Management System (microBIS) project.

When Harry Akligoh, PhD '28, bioengineering, arrived at Northeastern in 2023, he had conducted preliminary research to develop a system that would assist lab technicians in identifying bacteria and screening them against a range of antibiotics, while also creating a structured database to effectively track results.

Encouraged by the collaborative and entrepreneurial environment at Northeastern, he decided to continue research on his project, Microbiological Information Management System (microBIS), and reached out to peers to work with him. Within a year, that group was participating in the 2024 **Vivli Antimicrobial Resistance (AMR) Surveillance Data Challenge** and were awarded the **Student Innovation Prize** for their microBIS project.

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Engineering for Women's Health Conference 2024 Focuses on Interdisciplinary Solutions



Seeking to highlight the need for interdisciplinary and collaborative approaches to women’s health, a group of bioengineering and mechanical engineering PhD students organized the inaugural **Engineering for Women’s Health Conference 2024** . It focused on the intersection of engineering, biology, and medical approaches to health issues like pregnancy and menopause.

“We realized that there are a lot of people involved in women’s health in the Boston area, but we don’t really have a chance to collaborate,” says Soha Ben Tahar, a PhD mechanical engineering student who helped organize the event.

The student team, advised by Chiara Bellini, associate professor of bioengineering, and Rouzbeh Amini, associate professor of mechanical and industrial engineering, and bioengineering, received a National Institutes of Health grant to fund the conference. They handled all aspects of the event, from selecting topics and speakers, and reviewing submitted papers to engaging with students, faculty, researchers, and industry representatives during the conference.

At the conference, more than 100 attendees heard from experts in engineering, biology, and medical disciplines. The goal was to lay the groundwork for partnerships, research, and advocacy for women.

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Rebecca Carrier, Distinguished Professor of Chemical Engineering and Abraham Joy, Professor and Chair of Bioengineering



Chiara Bellini, Associate Professor and Associate Chair for Graduate Studies of Bioengineering

Using Computational Models and Deep Learning for Personalized Cancer Treatment



BioE Assistant Research Professor Kiran Vanaja uses computational models and deep learning to predict cancer cell behavior and develop multistep therapeutic strategies for personalized cancer treatment.

Advancements in diagnostics are shaping the future of personalized medicine, particularly in the fight against complex, hard-to-cure diseases like cancer and diabetes. At the forefront of this innovation are computational models and deep learning technologies that are transforming how we predict, diagnose, and treat diseases.

By combining cutting-edge biological research with engineering and computational sciences, researchers at the Roux Institute at Northeastern University, including Kiran Vanaja, assistant research professor of bioengineering, are paving the way for more precise and effective treatments. Their pioneering work brings revolutionary approaches to cancer diagnostics and opens new possibilities for managing diseases across multiple fields.

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Blending Bioengineering With Business for a Dynamic Career



As the social media coordinator and engagement team manager at the Galante Engineering Business Program, Onn Ye Young, E'24, MS'25, bioengineering, is combining the technical aspects of bioengineering from her classes and co-ops with her business knowledge, opening the doors for a multifaceted career after graduation.

Onn Ye Young is currently pursuing her MS in bioengineering and previously completed her BS in bioengineering, concentrating in systems, synthetic, and computational bioengineering, in May 2024. During her time within the Galante Program, Young has significantly transformed its social media presence as social media coordinator, in addition to managing the engagement team, which drives meaningful engagement initiatives such as mentorship within the program and with industry professionals, as well as promoting program awareness & outreach.

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New Approaches to Treatment-Resistant Tumors

Shaobo Yang, PhD'24, bioengineering, advised by BioE Associate Professor Chiara Bellini, published research on “Non-Pathogenic *E. Coli* Displaying Decoy-Resistant

IL18 Mutein Boosts Anti-Tumor and CAR NK Cell Responses” in Nature Biotechnology. The focus is on the use of genetically manipulated, non-pathogenic E. coli to induce anti-tumor responses in treatment-resistant solid tumors.

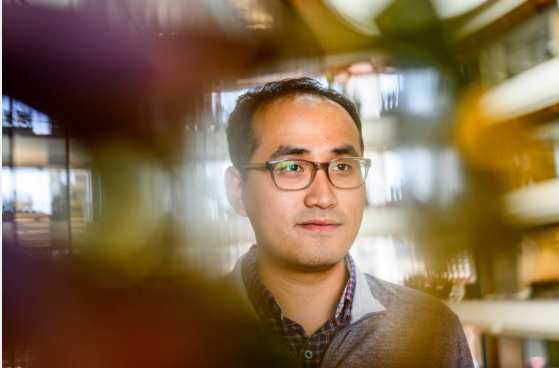
Northeastern researcher uses engineered bacteria that fights cancer by shrinking tumors, showing potential for new treatments

He admits it sounds a little bit scary. But a Northeastern University researcher says a new method using live bacteria to shrink tumors in mice has proven safe and effective in a recent study.

“Generally, what we are trying to do is we use bacteria to cure cancer,” says Shaobo Yang, a PhD student at Northeastern’s College of Engineering. “It sounds a little bit dangerous, but a lot of bacteria are nonpathogenic, meaning they don’t secrete toxins.”

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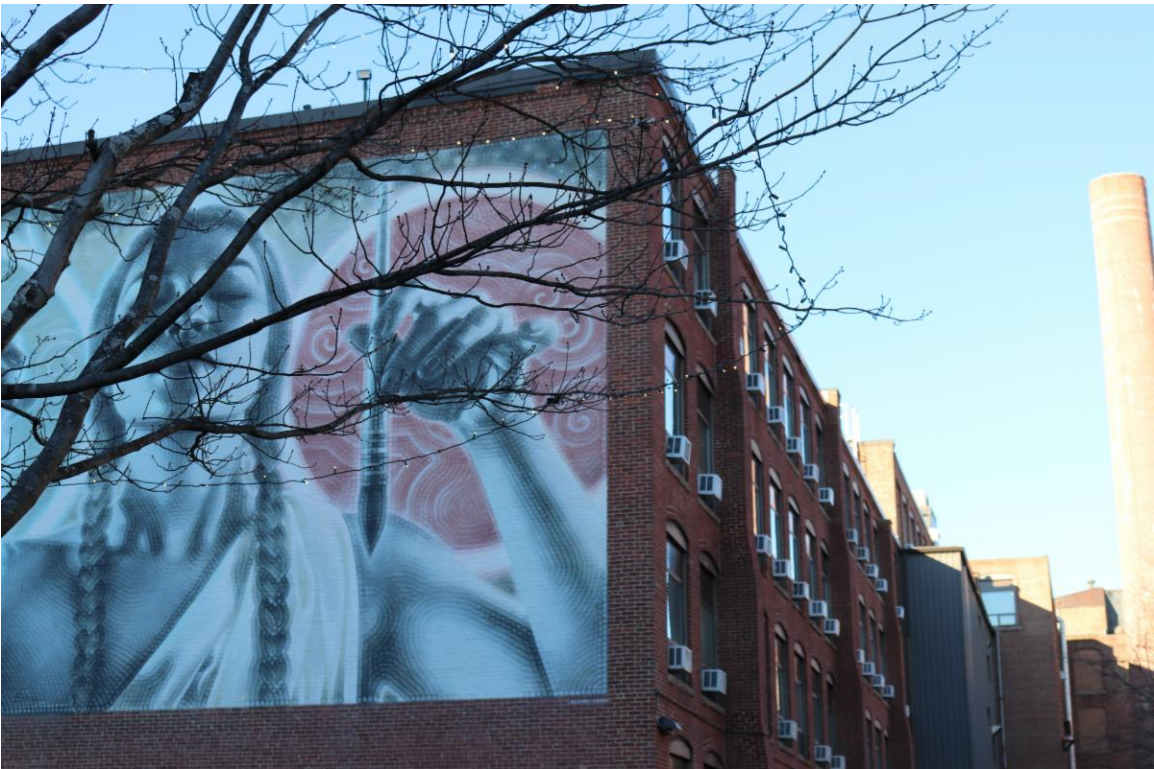
[Read more.](#)



Shaobo Yang, a PhD student at Northeastern's College of Engineering, says the bacteria elicits an immune response that targets tumors.



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