

Department of Bioengineering Newsletter

Note From the Chair:

Boston is a beautiful city that transforms with the seasons. As we enter the hot summer months of the Boston summer, we celebrate the growth of the department and the successes of our students, staff and faculty. During the Spring graduation, we had **131 students graduate with a BS in Bioengineering, 82 graduated with an MS Bioengineering degree and 16 students were honored with a PhD in Bioengineering.** We look forward to



seeing the impact that these graduates will have in their professions by leveraging their knowledge and experiential learning from Northeastern University.

I am very happy to note that **Prof. Mona Minkara was awarded the NSF CAREER award** for 'Decoding the code for glycan-collectin interactions'. The award will focus on a computational approach to better understand the immune system and improve its response to pathogens.

Our PhD students organized the **5th Bioengineering Symposium**, which was a resounding success with research and poster presentations. Our network with industry and government labs keeps expanding and we were fortunate to have Dr. Kenneth Sims as a plenary speaker at the event, where he illustrated his research experience in industry and at Battelle.

Northeastern will be hosting the **2024 Regional Symposium (Northeast)** of the Society for Biomaterials in Fall (September 19-20, 2024). We look forward to a great line-up of speakers to inspire us to think about the challenges and opportunities in the field of Biomaterials and Tissue Engineering. The Bioengineering department will also be hosting the **Engineering for Women's Health Conference** on September 16, 2024. The conference aims to drive women's health innovation and advocacy and foster an inclusive environment committed to improving women's health outcomes. **I encourage you to register for both these conferences and we look forward to seeing you on campus.**

I look forward to providing you more information of the developments in our department and keeping you updated on our events, celebrations, successes and milestones.

Sincerely,

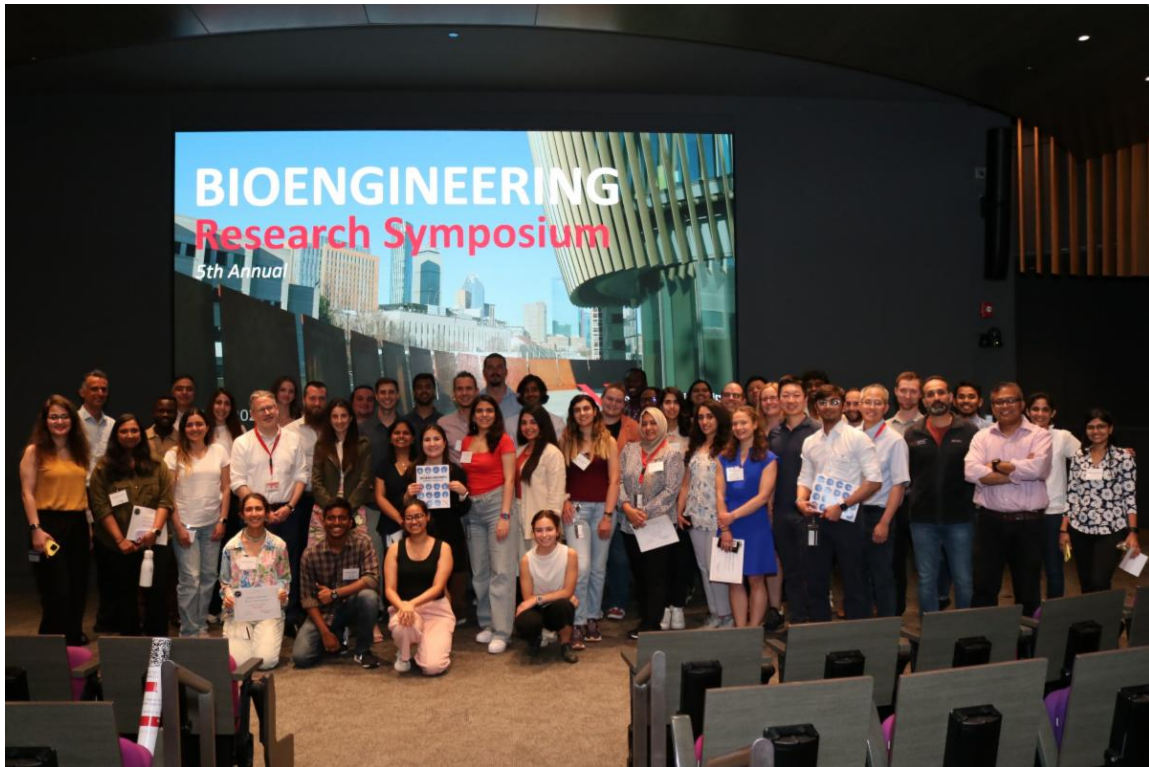
Abraham Joy, PhD, Chair of Department of Bioengineering

*ALUMNI: interested
in staying connected?*

Let us Know

We regularly have opportunities for alumni to engage with the department and are always looking for more co-ops, capstone sponsors and judges, IAB members, etc.

The 5th Annual Bioengineering Research Symposium



Bioengineering PhD students and faculty pose for a photo at the symposium.



PhD students presenting at the poster session.



Lunchtime in the Interdisciplinary Science and Engineering Complex Atrium.

The Department of Bioengineering celebrated the 5th Annual Bioengineering Research Symposium on June 20th.

The day was filled by presentations by our keynote speaker Ken Sims, PhD, Bioengineering Assistant Professor Elizabeth Libby, and all our PhD students.

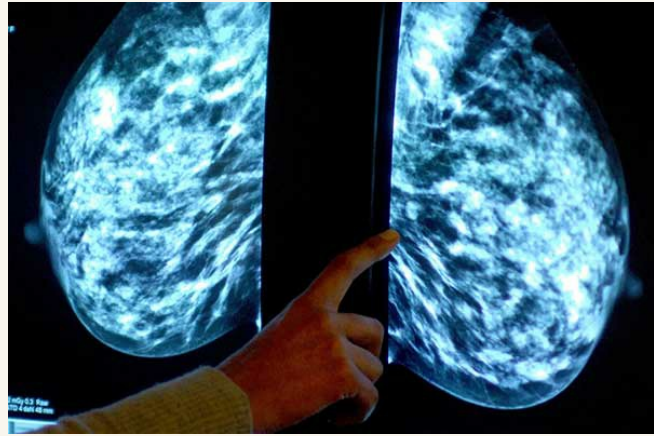
The event included oral presentations, poster sessions, a 5-minute Thesis competition, and much more.

[Check out the event booklet here.](#)

New AI Architecture Can Detect Breast Cancer With a

Near-Perfect Accuracy Rate

BioE Assistant Research Professor Saeed Amal is part of a team of Northeastern researchers who have developed AI architecture that can detect breast cancer with an almost perfect accuracy rate. Amal explains how the AI technology learned and how it can be implemented.



Can AI help with breast cancer diagnoses? Northeastern researchers develop new system that is nearly 100% accurate

Earlier this year, Northeastern University researchers **unveiled a web-based artificial intelligence tool** designed to diagnose prostate cancer at a faster and more accurate rate.

Now, the same group, led by bioengineering professor **Saeed Amal**, has developed a new AI architecture designed to detect breast cancer that the researchers say has achieved an accuracy rate of 99.72%.

Breast cancer accounts for 30% of new female cancer cases each year, and in 2024, an estimated 42,500 women will die from it, **according to the American Cancer Society**.

Research on the findings was recently **published in the journal Cancers**.

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[Read more.](#)

Summer '24 Conferences

Optica Biophotonics Congress: Biomedical Optics 2024



PhD candidates and faculty including Associate Professor Qianqian Fang, Professor Mark Niedre, Assistant Professor Abbas Yaseen, Assistant Professor Christa Hasse, postoc Alfredo Cardenas-Rivera, and many more!

2024 Summer Biomechanics, Bioengineering and Biotransport Conference



Amini lab members including Associate Professor Rouzbeh Amini, PhD candidates Turner Jennings, Mahsa Karamzadeh, and Ana Vargas, undergraduates Diego Acosta and Hayden DelCiello, as well as a postdoc from the Shefelbine lab, Vineel Kondiboyina.

Knight-Hennessy Scholarship Recipient Strives To Raise Malaria Awareness

Raising awareness about global health issues and developing therapeutics is the mission of Knight-Hennessy Scholarship recipient

Ten years ago, Kritika Singh, a Northeastern University graduate and **Young Global Leader**, heard for the first time the harrowing statistic that every minute a child somewhere dies from malaria.

She was a sheltered high school student, she says, taking part in a summer internship at a Boston biotech company where she was assigned to a malaria research project.

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Kritika Singh, E'20, bioengineering, has been awarded the Knight-Hennessy Scholarship, which will enable her to pursue a doctor of medicine degree at Stanford University. She received the Rhodes Scholarship in 2020.

Bioengineering Students Receive Fulbright Scholarships



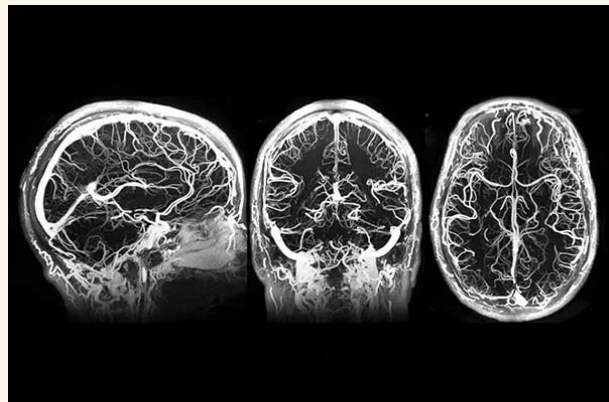
Bioengineering students Emin Abrahamian, E'24, Benjamin Field, E'24, and Matthew Hiller, E'24, received **Fulbrights**—scholarships that are awarded to exceptional students to research, study, or teach English abroad and fosters diplomacy and mutual understanding between the U.S. and other countries.

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[Read more about each awardee.](#)

Bioengineering PhD Develops and Commercializes Breakthrough MRI Technology

Codi Gharagouzloo, PhD'16, bioengineering, co-founded Imaginostics, commercializing a novel technology called QUTE-CE MRI, which is a platform technology for non-invasive imaging that transforms any MRI machine into a powerful quantitative diagnostic tool. Imaginostics was recognized as a finalist among more than 4,500 participants of Hello Tomorrow, a prestigious competition for deep tech startups.



Meet the Innovators: Northeastern grads promise early detection of diseases with breakthrough MRI technology

Codi Gharagouzloo, a physicist and bioengineer, enrolled in the Ph.D. program at Northeastern University in 2011, dreaming of curing cancer.

“I originally came in with this sort of magic bullet idea,” he says. “I thought nanoparticles were just going to be the cure to cancer.”

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[Read more](#)

Wanunu Receives Northeastern NAI Innovator of the Year Award



COS/BioE Professor Meni Wanunu received the Innovator of the Year award from the Northeastern University chapter of the National Academy of Inventors (NAI). Daniel Braconnier, a recent mechanical engineering PhD graduate, received the student innovator award.

Meni Wanunu, developer of sensitive biological sensors, receives Northeastern University NAI Innovator of the Year Award

Meni Wanunu works with small things — very small things, like individual molecules. But how can researchers observe the inner workings of something so miniscule? For advancements in sensors that stretch and scan molecules on their own level, Wanunu has **received the Innovator of the Year Award from the Northeastern University chapter of the National Academy of Inventors (NAI).**

Professor of both physics and chemistry and chemical biology, jointly appointed in bioengineering, at Northeastern, as well as the principal investigator of **the Nanoscale Biophysics Laboratory**, Wanunu develops sensors called nanopores, whose primary attributes are tiny holes on the molecular scale.

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[Read more.](#)

[Learn more about our degree programs and application process](#)

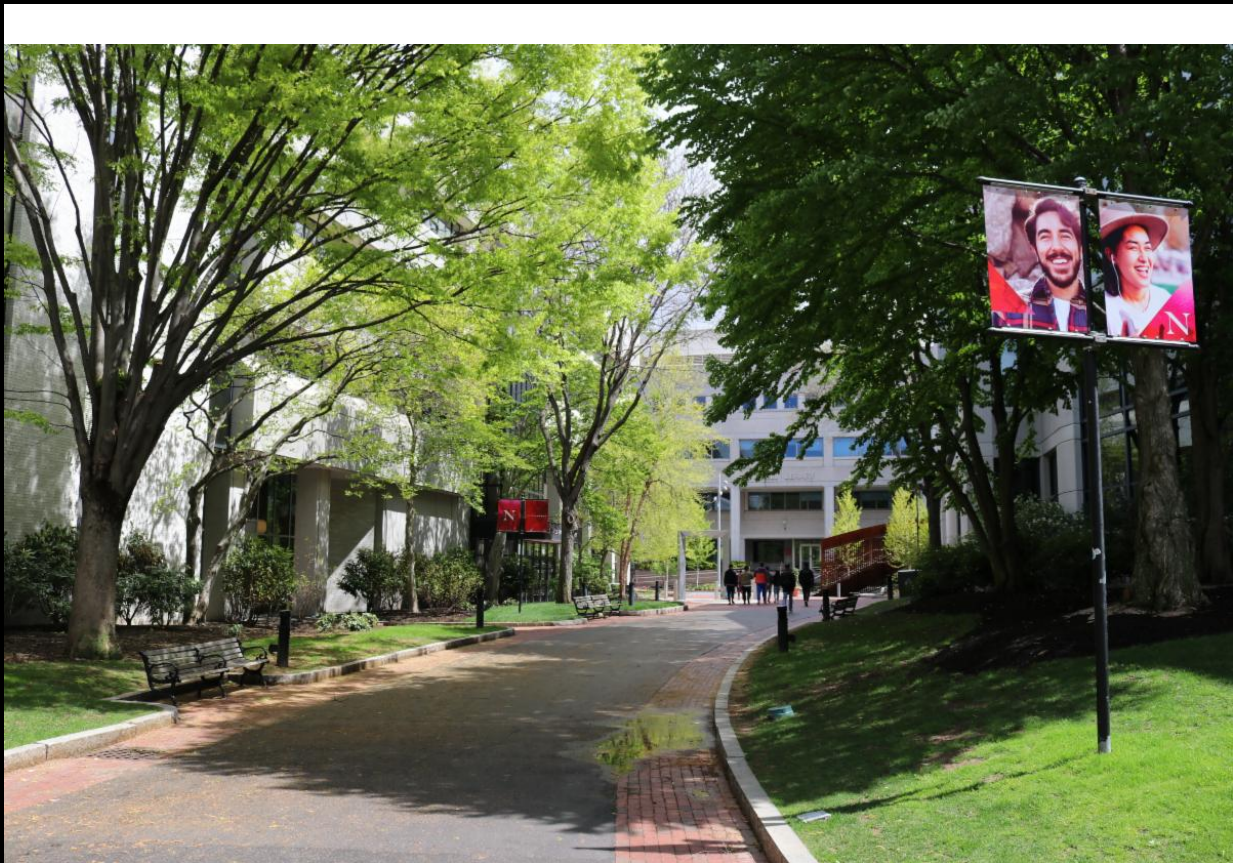
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