SCIENCE in BOSTON

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Publications of the Week

GUK1 Activation Is a Metabolic Liability in Lung Cancer

First Authors: Jaime Schneider *(pictured)* and Kiran Kurmi | Senior Author: Marcia Haigis
Cell | Harvard Medical School, Massachusetts General Hospital Cancer Center, Dana-Farber Cancer Institute, and Brigham and Women's Hospital

Little is known about metabolic vulnerabilities in oncogene-driven lung cancer. Here, researchers perform a phosphoproteomic screen in anaplastic lymphoma kinase (*ALK*)-rearranged patient-derived cell lines and identify guanylate kinase 1 (GUK1), a GDP-synthesizing enzyme, as a target of ALK signaling in lung cancer. The authors demonstrate that ALK binds to and phosphorylates GUK1 at tyrosine 74, resulting in increased GDP biosynthesis. **Abstract | Press Release**

Mussel-Inspired Cross-Linking Mechanisms Enhance Gelation and Adhesion of Multifunctional Mucin-Derived Hydrogels

First Author: George Degen *(pictured)* | Senior Author: Gareth McKinley
Proceedings of the National Academy of Sciences | MIT

The beneficial material properties and bioactivity of mucus stem from glycoproteins called mucins, motivating the development of mucin-derived hydrogels for wound dressings and antifouling coatings. Inspired by marine mussel adhesive structures, researchers use catechol–thiol bonding to drive gelation of native mucin proteins and synthetic mucin-inspired polymers, forming soft, adhesive hydrogels that can be coated onto diverse surfaces. **Abstract | Press Release**

View All Publications

Awards

DeKosky Honored With AAI ASPIRE Award for Excellence in Immunology Research

Ragon Institute

The Ragon Institute has announced that faculty member and Early Independence Fellow Dr. Brandon DeKosky *(pictured)* has been awarded a prestigious AAI ASPIRE Award by the American Association of Immunologists (AAI). This award recognizes outstanding early-career investigators who have made significant contributions to immunology research and demonstrate exceptional promise in the field. **Read More**

Two Northeastern Professors Receive Prestigious Early-Career Awards for Pioneering Bioengineering Research

Northeastern Global News

Drs. Eno Ebong *(pictured, left)* and Ambika Bajpayee *(right)* are pioneers in their respective forms of bioengineering, leading the way with work that aims to provide solutions to some of the most pressing challenges in modern medicine. They have both been bestowed with the federal government's highest honors given to early career scientists. **Read More**

PhD Candidate Jesse Lehman Receives Kirschstein Award to Study Immunology

UMass Chan Medical School

Jesse Lehman *(pictured)*, a PhD candidate at UMass Chan Medical School, has received a Ruth L. Kirschstein Predoctoral Individual National Research Service Award from the National Institute of Allergy and Infectious Diseases. This will help further his research on the innate immune response where immune cells rapidly create an inhospitable environment for infection-causing pathogens. **Read More**

Could Allergy-Free Peanuts Be the Future? This Northeastern Researcher Wants to Find Out

Northeastern Global News

As common as a potentially life-threatening peanut allergy is, little is known what bodily mechanisms and food interactions are responsible for the allergic reactions, says Dr. Jing-Ke Weng *(pictured)*. Dr. Weng and collaborator Dr. Seth Rakoff-Nahoum at Boston Children's Hospital are looking to unlock this mystery with the help of a recently awarded Pew Innovation Fund grant they say could lay the foundation for therapies to fight food allergies. **Read More**

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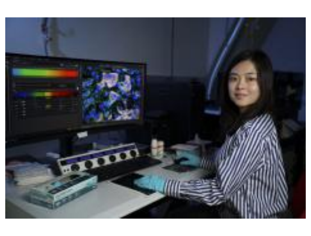
Local News

Mapping mRNA Through Its Life Cycle Within a Cell

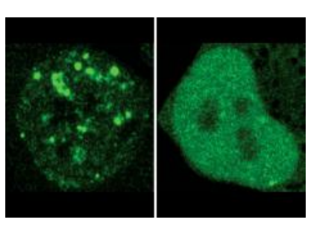
MIT Chemistry



Dr. Xiao Wang's *(pictured)* work on RNA brings together students from chemistry, biology, computer science, neuroscience, and other fields. In her lab, research is focused on developing tools that pinpoint where in a given cell different types of messenger RNA are translated into proteins — information that can offer insight into how cells control their fate and what goes wrong in disease, especially in the brain. **Read More**

New AI Model Deciphers the Code in Proteins That Tells Them Where to Go

Whitehead Institute



Protein structure has been studied for over half a century, culminating in the artificial intelligence (AI) tool AlphaFold, which can predict protein structure from a protein's amino acid code, the linear string of building blocks within it that folds to create its structure. AlphaFold and models like it have become widely used tools in research. **Read More**

Listen Now: Rare Diseases, Real Stories Podcast Series

UMass Chan Medical School

UMass Chan Medical School has launched Rare Diseases, Real Stories, a six-episode podcast series that shines a spotlight on the courage, resilience, and advocacy work of families affected by rare diseases. Each episode offers an intimate look into their lives. The stories illustrate how their collaboration with UMass Chan researchers is driving innovation and fostering new rare disease treatments. **Read More**

Wyss Institute at Harvard University Launches Its Diagnostics for Human and Planetary Health Platform Headed by David Walt

Wyss Institute

To address the diagnostic challenges of our times and prepare for the future of healthcare, the Wyss Institute is launching its "Diagnostics for Human and Planetary Health" platform. Wyss Core Faculty member Dr. David Walt *(pictured)* is at the helm of the newly founded platform and explains his motivations to innovate in the field of diagnostics in this Q&A. **Read More**

Seeing More in Expansion Microscopy

McGovern Institute

In biology, seeing can lead to understanding, and researchers in Dr. Edward Boyden's *(pictured)* lab at MIT's McGovern Institute are committed to bringing life into sharper focus. With a pair of new methods, they are expanding the capabilities of expansion microscopy—a high-resolution imaging technique the group introduced in 2015—so researchers everywhere can see more when they look at cells and tissues under a light microscope. **Read More**

Modeling Their Behaviors May Help in Development of New AI Systems

The Harvard Gazette

For Dr. Kanaka Rajan *(pictured),* electric fish are among the most intriguing specimens in nature's cabinet of curiosities. They "see" their world and each other by sensing—and generating their own—electric fields. This unique ability provides a key area of exploration for the emerging field of NeuroAI, which explores the perceptual and cognitive capacities of both natural and artificial systems. **Read More**

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Upcoming Events in Boston

February 25 9:30 AM	**Stories from the Lab: Three African Women Scientists on Building Capacity and Becoming a Leader** Online
February 25 1:30 PM	**10th Annual Rare Disease Day Event: An Era of Innovation for Rare Diseases** Broad Institute
February 26 6:00 PM	**Carl Zimmer at the Harvard Science Center** Harvard Science Center
February 28 3:00 PM	**A Scholar's Digital Footprint** Harvard University
March 11 - 12 8:00 AM	**OPT Congress: Oligonucleotides & mRNA Therapeutics** Seaport Hotel Boston

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Science Jobs in Boston

Laboratory Coordinator (RA II), Structural Biology
Takeda

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Monte Rosa Therapeutics

Scientist I
Sanofi

Research Associate II, Vallabh-Minikel Lab
Broad Institute

Research Fellow
Beth Israel Deaconess Medical Center

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