



Publications of the Week

Targetable Leukemia Dependency on Noncanonical PI3Ky Signaling

First Author: Qingyu Luo | Senior Author: Andrew Lane *(pictured)*
Nature | Dana-Farber Cancer Institute and Harvard Medical School



Phosphoinositide-3-kinase-γ (PI3Ky) is implicated as a target to repolarize tumor-associated macrophages and promote antitumor immune responses in solid cancers. Here, by integrating unbiased genome-wide CRISPR interference screening with functional analyses across acute leukemias, researchers define a selective dependency on the PI3Ky complex in a high-risk subset that includes myeloid, lymphoid, and dendritic lineages. [Abstract](#) | [Press Release](#)

Structure and Assembly of a Bacterial Gasdermin Pore

First Author: Alex Johnson *(pictured)* | Senior Author: Philip Kranzusch
Nature | Dana-Farber Cancer Institute and Harvard Medical School



Studies of human and mouse gasdermin (GSDM) pores have revealed the functions and architectures of assemblies comprising 24 to 33 protomers, but the mechanism and evolutionary origin of membrane targeting and GSDM pore formation remain unknown. Here, researchers determine a structure of a bacterial GSDM pore and define a conserved mechanism of pore assembly. [Abstract](#) | [Press Release](#)

An AAV Capsid Reprogrammed to Bind Human Transferrin Receptor Mediates Brain-Wide Gene Delivery

First Author: Qin Huang | Senior Author: Benjamin Deverman
Science | Broad Institute of MIT and Harvard



Developing vehicles that efficiently deliver genes throughout the human central nervous system will broaden the range of treatable genetic diseases. Researchers engineered an adeno-associated virus (AAV) capsid, BI-hTFR1, that binds human transferrin receptor, a protein expressed on the blood-brain barrier. [Abstract](#) | [Press Release](#)

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Awards

2024 Marion R. Kramer Scholarship Recipients

Boston University Biology



Jillian Ness, a PhD student in the Wunderlich Lab, and Kathryn Atherton *(pictured)*, a PhD candidate in the Bioinformatics program and a trainee in the Bhatnagar Lab, received the 2024 Marion R. Kramer Scholarship. Jillian's work involves creating simplified enhancer models in *Drosophila* and analyzing how they work. Kathryn's research focuses on tree health via the microbes that live on tree leaves, roots, and soil. [Read More](#)

2024 Shark Tank Winners

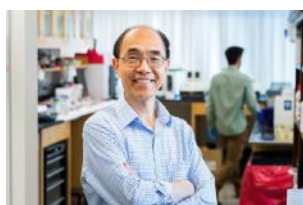
Brigham and Women's Hospital



Drs. Anastasia Kuzkina *(pictured, left)* and Lao-Tzu Allan-Blitz *(right)* were the recipients of the Health Technology Innovator Awards for their "Shark Tank" style presentations. Dr. Allan-Blitz's project is titled "The Development of Low-Cost, Point-of-Care Tests for Simultaneously Detecting Three Sexually Transmitted Infections". Dr. Kuzkina's project is titled "Identifying Triggers of Parkinson's Disease in Patient-Derived Brain Cells". [Read More](#)

Five MIT Faculty Elected to the National Academy of Sciences for 2024

McGovern Institute



The National Academy of Sciences has elected 120 members and 24 international members, including five faculty members from MIT. Drs. Guoping Feng *(pictured)*, Piotr Indyk, Daniel Kleitman, Daniela Rus, and Senthil Todadri were elected in recognition of their "distinguished and continuing achievements in original research." Membership to the National Academy of Sciences is one of the highest honors a scientist can receive in their career. [Read More](#)

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Local News

Building Better Breast Reconstruction for Cancer Survivors

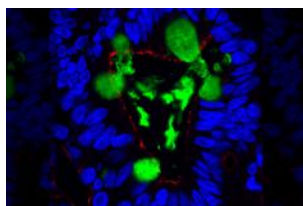
Wyss Institute



The ReConstruct Institute Project team at the Wyss Institute is on a mission to help breast cancer survivors live empowered, healthy lives with safe, long-term breast reconstructions. Harnessing innovations from the Wyss Institute's 3D Organ Engineering platform, ReConstruct creates living adipose tissue implants derived from a patient's own cells. [Read More](#)

How Malnourished Organoids Could Play a Key Role in the Quest for a Vaccine Against *Shigella*

BenchPress



Dr. Christina Faherty at Harvard Medical School has focused her research career on *Shigella* — a pathogenic bacteria that infects the human digestive tract. Faherty has used creative research techniques to capture two key elements of *Shigella* infection: the changes in bacteria's gene expression and function and what makes some individuals more vulnerable to infection than others. [Read More](#)

Circe Bioscience Licenses Technology to Decarbonize Industry with Microbes Developed at Wyss Institute at Harvard University

Wyss Institute



Circe, a startup developed at the Wyss Institute, spun out of Harvard, and led by Dr. Shannon Nangle *(pictured)*, has signed a worldwide, exclusive licensing agreement coordinated by Harvard's Office of Technology Development. This agreement will commercialize a novel bioproduction technology that could significantly reduce the carbon emissions of industries from food to aviation fuel. [Read More](#)

Study Models How Ketamine's Molecular Action Leads to Its Effects on the Brain

The Picower Institute



While scientists know ketamine's target in brain cells and have observed how ketamine affects brain-wide activity, they haven't known entirely how the two are connected. A new study by a research team co-led by Dr. Elie Adam *(pictured)* uses computational modeling of previously unappreciated physiological details to offer new insights into how ketamine works. [Read More](#)

"Reducing Barriers Through Open Data" Featuring Dr. Alex Shalek

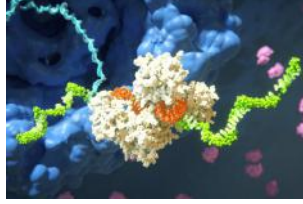
Lab Coats & Life™ Podcast



In a new episode of the Lab Coats & Life™ Podcast, Drs. Nicole Quinn and Jason Goldsmith chat with Dr. Alex Shalek *(pictured)*, the J. W. Kieckhefer Professor in the Institute for Medical Engineering & Science and the Department of Chemistry at MIT. He talks about ownership, reproducibility, and privacy considerations when sharing data. [Read More](#)

Taking RNAi from Interesting Science to Impactful New Treatments

MIT News



Anlyam Pharmaceuticals was founded by a group of MIT-affiliated researchers who believed in the promise of a technology — RNA interference, or RNAi. Anlyam now has five medicines approved by the U.S. Food and Drug Administration and a rapidly expanding clinical pipeline. The company's approved medicines are for debilitating, sometimes fatal conditions. [Read More](#)

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Upcoming Events in Boston

- May 29
7:00 PM

Secrets In Your Data
1 Guest Street
- June 5
3:00 PM

Origin Stories: How Broad's Earliest Days Sparked Two Decades of Innovation
Online
- June 6
11:30 AM

Lunch & Learn: Blood Fixation and Cell Isolation for Chromium Fixed RNA Profiling
STEMCELL Technologies
- June 8
9:00 AM

Consortium for Health Innovation Partnerships
MGH Institute of Health Professions
- June 10
8:30 AM

Lighting Up Neurobiology with Antibodies
Marshall A. Wolf Conference Center

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Science Jobs in Boston

- Associate Scientist/Scientist, Protein Science**
Schrödinger
- Medical Science Liaison**
Pacira BioSciences
- Principal Scientist, Data Science & Cell Therapy**
Regeneron
- Postdoctoral Researcher**
Broad Institute
- Clinical Science Lead, Neuroscience (Director)**
Bristol Myers Squibb

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