



Publications of the Week

Immunopeptidomics Can Inform the Design of mRNA Vaccines for the Delivery of *Mycobacterium tuberculosis* MHC Class II Antigens

First Author: Owen Leddy (*pictured*) | Senior Authors: Forest White and Bryan Bryson
Science Translational Medicine | Ragon Institute, Koch Institute, and MIT



Developing effective new vaccines requires identifying which *Mycobacterium tuberculosis* proteins are presented on major histocompatibility complex class II (MHC-II) by infected human phagocytes. This study's results identified substrates are enriched in the MHC-II repertoire and provided a strategy for tuberculosis vaccine design that is guided by bottom-up unbiased discovery. [Abstract](#) | [Press Release](#)

Prime Editing-Installed Suppressor tRNAs for Disease-Agnostic Genome Editing

First Authors: Sarah Pierce (*pictured*) and Steven Erwood | Senior Author: David Liu
Nature | Harvard University, Broad Institute, and Howard Hughes Medical Institute



For diseases that are caused by premature stop codons, suppressor tRNAs (sup-tRNAs) offer a more general strategy for precise genome-editing technologies. Here, researchers optimized prime editing agents to install an engineered sup-tRNA at a single genomic locus without overexpression and observed efficient readthrough of premature termination codons and protein rescue in human cell models of Batten disease, Tay–Sachs disease, and cystic fibrosis. [Abstract](#) | [Press Release](#)

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Awards

HMS Announces Blavatnik Institute Early Career Investigator Awards

Harvard Medical School (HMS)



Harvard Medical School has announced ten recipients of the Blavatnik Institute Early Career Investigator Awards. Totaling \$5 million, these grants are designed to fuel high-potential research conducted by some of the most exceptional junior faculty members on the HMS Quadrangle. Among the ten recipients is Dr. Sloan Devlin (*pictured*). [Read More](#)

Dana-Farber Cancer Institute Faculty Among World's Most Highly Cited Researchers

Dana-Farber Cancer Institute



Dana-Farber Cancer Institute announced that 38 of its researchers have been named to the Highly Cited Researchers list of 2025, released by the Institute for Scientific Information at Clarivate. Researchers selected include Dr. Catherine Wu (*pictured*) and have authored multiple papers which rank in the top 1% by citations for their field and publication year in the Web of Science over the past decade. [Read More](#)

National Science Foundation Honors Six BU Researchers with Career Awards

The Brink



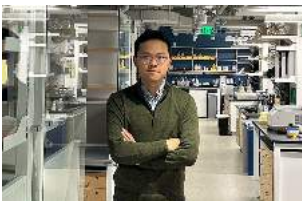
The National Science Foundation has honors six Boston University (BU) researchers with Faculty Early Career Development Program (CAREER) Awards. Honorees are selected based on the strength of their innovative research and community service. Among the six researchers is Dr. Kayhan Batmanghelich (*pictured*), whose research focuses on dissecting AI models for breast cancer and chronic lung disease diagnosis. [Read More](#)

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Local News

Using Click Chemistry to Drug ‘Undruggable’ Tumor Suppressors

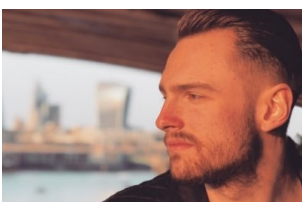
Harvard Medical School



Dr. Qinheng Zheng (*pictured*) is taking unusual approaches to find new ways to treat cancers. Rather than pursuing cutting-edge gene therapy or sophisticated biologics, he is banking on relatively simple chemistry to create affordable, game-changing small-molecule medicines. Dr. Zheng uses a technique called click chemistry to synthesize thousands of drug candidates overnight and identify the most promising ones. [Read More](#)

Beating Cancer Cells at Their Own Game by Stepping on Their cGAS

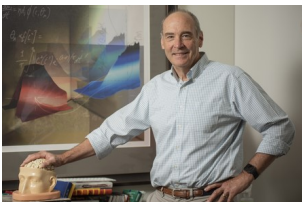
Wyss Institute



Cancer cells develop various strategies to paralyze immune cells to evade their attack in the complex tumor microenvironment. To accomplish this, cancer cells reduce or shut down the expression of the cGAS enzyme. New work by Dr. Alexander Cryer (*pictured*) and Dr. Natalie Artzi's lab were able to coerced cancer cells into producing significant amounts of cGAMP, essentially overridinh their immune-evading capability. [Read More](#)

MIT Study Shows How Vision Can Be Rebooted in Adults with Amblyopia

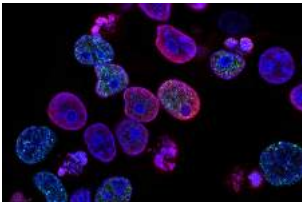
The Picower Institute



Amblyopia is a common vision disorder characterized by impaired vision in one eye during development. A new study in mice by neuroscientists in Dr. Mark Bear's (*pictured*) lab at the Picower Institute shows that if the retina of the amblyopic eye is temporarily and reversibly anesthetized for a couple of days, the brain's visual response to the eye can be restored even in adulthood. [Read More](#)

UMass Chan Experts on Rising Cancer Rates and Role of Alcohol, Environment, Lifestyle

UMass Chan Medical School



As global cancer rates continue to rise, researchers and physician-scientists at UMass Chan Medical School are helping to explain why and what can be done to reverse the trend. UMass Chan experts note that although population growth and aging remain key contributors, lifestyle and environmental exposures are becoming increasingly influential. Dr. Jan Fouad stated that lung cancer remains the leading cause of cancer death, but the underlying risks are shifting. [Read More](#)

New Computing Tool Accelerates Epilepsy Research

Harvard Medical School (HMS)



Researchers at HMS and the Kempner Institute for the Study of Natural and Artificial Intelligence at Harvard University have launched a new project to uncover how genetic mutations in the brain give rise to epilepsy. The project, led by Dr. Beth Stevens (*pictured*), combines a pioneering genetic technique developed at HMS with a compact desktop supercomputer. [Read More](#)

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Upcoming Events in Boston

December 3 5:00 PM	MassBioHub 2025 Annual Holiday Party Mixer 100 Technology Square
December 5 4:00 PM	MCB Community Forum Department of Molecular and Cellular Biology (MCB), Harvard University
December 11 8:00 AM	2025 Advancing Drug Development Forum UMASS Club
December 11-12 9:00 AM	Boston International Symposium: Accelerating PSC-Derived Cell Therapies Hyatt Regency Cambridge
December 11 4:30 PM	Better Together Ragon Institute

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Science Jobs in Boston

- Senior Field Service Engineer**
STEMCELL Technologies
- Assistant Professor, Biology and Biomedical Engineering**
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Rhythm Pharmaceuticals
- Laboratory Manager I**
Broad Institute
- Staff Scientist I**
Beth Israel Deaconess Medical Center

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