



Publications of the Week

### The KAT Module of the SAGA Complex Maintains the Oncogenic Gene Expression Program in MYCN-Amplified Neuroblastoma

First Author: Clare Malone | Senior Author: Kimberly Stegmaier (*pictured*)  
 Science Advances | Dana-Farber Cancer Institute, Harvard Medical School, and Broad Institute



Pediatric cancers are frequently driven by genomic alterations that result in aberrant transcription factor activity. Here, researchers used functional genomic screens to identify multiple genes within the transcriptional coactivator Spt-Ada-Gcn5-acetyltransferase (SAGA) complex as selective dependencies for MYCN-amplified neuroblastoma. [Abstract](#)

### Efficient Site-Specific Integration of Large Genes in Mammalian Cells via Continuously Evolved Recombinases and Prime Editing

First Authors: Smriti Pandey and Xin Gao | Senior Author: David Liu (*pictured*)  
 Nature Biomedical Engineering | Broad Institute, Harvard University, and Howard Hughes Medical Institute



Methods for the targeted integration of genes in mammalian genomes suffer from low programmability, low efficiencies, or low specificities. Here researchers show that phage-assisted continuous evolution enhances prime-editing-assisted site-specific integrase gene editing (PASSIGE), which couples the programmability of prime editing with the ability of recombinases to precisely integrate large DNA cargoes exceeding ten kilobases. [Abstract](#) | [Press Release](#)

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Awards

### Harnessing Cancer Metabolomics to Transform Therapeutic Discovery

Massachusetts General Hospital



A Massachusetts General Hospital research team is among the inaugural winners of a Breakthrough Award from the Krantz Family Center for Cancer Research. Their project, "Revolutionizing cancer metabolism studies for enhanced therapeutics," exemplifies the award's aim to drive innovative research and discovery that produce fundamental changes in cancer treatment. The team includes Dr. Nabeel Bardeesy (*pictured*). [Read More](#)

### Ragon Grad Student Awarded Jeffery Modell Prize

Ragon Institute



Dr. Sophie Giguere (*pictured*) is a graduate student in the Batista Lab who has been honored with the prestigious 2023 Jeffrey Modell Prize. This award, conferred jointly by the Jeffrey Modell Foundation and the Harvard Medical School (HMS) Graduate Committee of Immunology, recognizes HMS graduates for outstanding achievements in their doctoral research and overall excellence in immunology. [Read More](#)

### Dr. Alejandro Balazs Receives NIH Avant Garde Award for Innovative HIV and Substance Use Disorder Research

Ragon Institute



Ragon faculty member Dr. Alejandro Balazs (*pictured*) has been awarded a prestigious Avant-Garde Award for HIV and Substance Use Disorder Research from the National Institute on Drug Abuse, part of the National Institutes of Health. The project seeks to test whether engineered polyclonal immune responses will more effectively suppress HIV-1 infection than individual antibodies. [Read More](#)

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Local News

### New Target in Sight for HIV Vaccine Development

Ragon Institute



Decades into the HIV epidemic, there is as yet no effective vaccine to prevent new cases. In a recent *Nature Immunology* article, Dr. Rashmi Ray (*pictured*) and the Batista lab have preclinically validated a new HIV immunogen design approach from the Scripps Institute's Schief Lab targeting an unexplored site on the HIV-1 envelope protein (Env). [Read More](#)

### #WhyScience Q&A: A Biochemist Uses Mass Spectrometry to Find Proteins Involved in Cancer

Broad Institute



When Moe Haines (*pictured*) first moved from Beirut, Lebanon to the U.S. for college, his goal was to earn a degree in pharmacy. Haines was the first person in his family to pursue science, and most people he knew with similar interests had chosen a career in medicine. But his first few biology classes in community college exposed him to the possibility of a career in genetics, chemistry, or physics. [Read More](#)

### Research Spotlight: Unprocessed Genomic Uracil as a Targetable Vulnerability of Cancer Cells

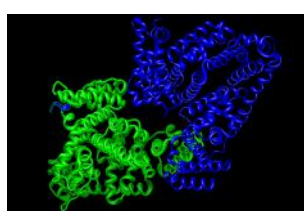
Massachusetts General Cancer Center



Dr. Sneha Saxena (*pictured*) is lead author of a recently published article in *Molecular Cell*. The study investigated if cancer cells that are harboring high levels of base alterations can be selectively targeted by ATR inhibitors. While asking this question, the research team had an unexpected finding: that uracil, a common type of base alteration in the genome, actually induces DNA replication stress. [Read More](#)

### Protein Study Could Help Researchers Develop New Antibiotics

MIT News



A bacterial enzyme called histidine kinase is a promising target for new classes of antibiotics. However, it has been difficult to develop drugs that target this enzyme, because it is a "hydrophobic" protein that loses its structure once removed from its normal location in the cell membrane. Now, an MIT-led team has found a way to make the enzyme water-soluble. [Read More](#)

### With Programmable Pixels, Novel Sensor Improves Imaging of Neural Activity

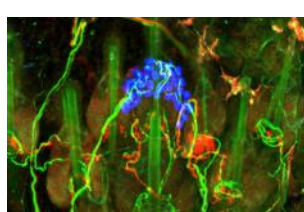
The Picower Institute



In a new paper in *Nature Communications*, MIT researchers describe a novel image sensor with the capability to substantially increase the ability to track how voltage changes in the brain. The invention led by Drs. Jie Zhang and Matt Wilson (*pictured*) is a new take on the standard complementary metal-oxide semiconductor technology used in scientific imaging. [Read More](#)

### Exploring Our Sense of Touch from Every Angle

Harvard Medical School



One of our most important senses is touch, which is the first to develop, starting only eight weeks into pregnancy. Research on touch has lagged behind work on other sensory systems such as vision and hearing. Harvard Medical School researchers have been leading the way, simultaneously studying the basic biology of touch and figuring out how to use this information to help people who experience abnormal touch. [Read More](#)

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### Upcoming Events in Boston

June 20 5:00 PM	<b>Summer Solstice Celebration: Night at the Harvard Museums of Science &amp; Culture</b> Peabody Museum of Archaeology & Ethnology
June 20 6:00 PM	<b>Liquid Lab Art Workshops</b> MIT Museum
June 21 8:30 AM	<b>Tumor Heterogeneity and Drug Resistance</b> MIT
June 24 8:00 AM	<b>Arthur and Sandra Irving Cancer Immunology Symposium</b> Boston Harbor Hotel
July 31 12:00 PM	<b>Plotting like a Pro: Data Visualization with ggplot2</b> Online

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### Science Jobs in Boston

- Molecular Biology Leader**  
Northwell Health
- Associate Scientist III, Biology/Hemoglobinopathies**  
Ensoma
- Scientist I**  
Center for Patient Derived Models
- Research Scientist**  
Mass General Brigham
- Statistical Science Associate Director**  
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