



Publications of the Week

Exocyst Stimulates Multiple Steps of Exocytic SNARE Complex Assembly and Vesicle Fusion

First authors: Chanwoo Lee, Dante Lepore, Seung-Hak Lee, and Tae Gyun Kim | Senior Authors: Mary Munson (pictured) and Tae-Young Yoon
Nature Structural & Molecular Biology | UMass Chan Medical School



Exocyst is a large multisubunit tethering complex essential for targeting and fusion of secretory vesicles in eukaryotic cells. Here, researchers use a combination of single-molecule and bulk fluorescence assays to investigate the roles of purified octameric yeast exocyst complexes in a reconstituted yeast exocytic sensitive factor attachment protein receptor (SNARE) assembly and vesicle fusion system.

[Abstract](#) | [Press Release](#)

Structural and Functional Analysis of the Nipah Virus Polymerase Complex

First Authors: Side Hu (pictured), Heesu Kim, and Pan Yang | Senior Authors: Rachel Fearns and Jonathan Abraham Cell | Harvard Medical School, Boston University Chobanian & Avedisian School of Medicine, University of Massachusetts, Brigham & Women's Hospital, Broad Institute, and the Howard Hughes Medical Institute



Nipah virus (NiV) is a bat-borne, zoonotic RNA virus that is highly pathogenic in humans. The NiV polymerase, which mediates viral genome replication and mRNA transcription, is a promising drug target. Researchers determined the cryoelectron microscopy structure of the NiV polymerase complex and performed structural, biophysical, and in-depth functional analyses of the NiV polymerase.

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Awards

Neuroscience Graduate Dr. Adam Lowet Wins Bowdoin Prize for Essay on Risk and Learning

Harvard University Department of Molecular and Cellular Biology



Dr. Adam Lowet (pictured), a recent graduate from Harvard's Program in Neuroscience, has been awarded the prestigious Bowdoin Prize for Graduate Essay in the Natural Sciences with his composition "Risky Business: How the Brain Learns from Uncertainty". The Bowdoin Prizes recognize exceptional essays in literature, philosophy, and the natural sciences and aim to celebrate graduate students' ability to communicate complex ideas to a broader audience.

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DARPA Supports Wyss Institute-Led Collaboration Toward Deeper Understanding of Anesthesia and Safe Drugs Enabling Anesthesia Without the Need for Extensive Monitoring

Wyss Institute



Currently, no anesthetic compound or cocktail can be used safely outside of a hospital facility. To reduce trauma associated with injuries, under a new Defense Advanced Research Projects Agency (DARPA) contract of up to \$18.8M over three years, a team led by Dr. Donald Ingber (pictured) at the Wyss Institute aims create a new class of drugs that can be safely administered to induce an anesthesia-like state in injured people outside of hospitals.

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Postdoc Spotlight: Loranzie Rogers

Harvard University Department of Molecular and Cellular Biology



Dr. Loranzie Rogers (pictured) of the Bellono Lab has been named as a 2024 Hanna H. Gray Fellowship from the Howard Hughes Medical Institute. The fellowship provides up to 1.5 million dollars of support to early career researchers as they complete their postdocs and launch their own labs. Fellowships like the Hanna Gray Fellowship help bridge the challenging transition from training to independence by providing financial stability and resources.

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Local News

Biopharma Investment Leader Maren Winnick Joins Whitehead Institute Board of Directors

Whitehead Institute



The Whitehead Institute Board of Directors has elected Maren Winnick (pictured), a leader in biopharma investment banking, for a six-year term beginning January 1, 2025. Winnick is a Senior Managing Director and Partner at Evercore, a global independent investment banking advisory firm with more than \$2 billion in annual revenue.

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From Data to Drugs: The Role of Artificial Intelligence in Drug Discovery

Wyss Institute



Drs. Milad Alucozai, Will Fondrie, and Megan Sperry (pictured, left to right) discuss the challenges of traditional drug discovery in the Wyss Institute's Code to Cure series. Traditional drug discovery is slow, expensive, and prone to high clinical failure rates. The pharmaceutical industry and academic and translational researchers are broadly interested in approaches that would accelerate this process.

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How One Brain Circuit Encodes Memories of Both Places and Events

MIT News



A new model developed by MIT researchers explains how place cells — cells within the brain's hippocampus that store memories of specific locations — can be recruited to form episodic memories, even when there's no spatial component. According to this model, place cells act as a scaffold that can be used to anchor memories as a linked series.

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Researchers Offer New Insights into X Chromosome Inactivation

Massachusetts General Hospital



Xist RNA, a long noncoding RNA molecule, is responsible for crumpling up one copy of an X chromosome in each female cell. Researchers have known that Xist is critically important; without it, an embryo will not develop. But what prevents Xist from inactivating other chromosomes in the cell? A new paper led by Dr. Jeannie Lee (pictured) offers insights on the forces that restrict the RNA's movement, with implications for how to treat X-linked diseases in the future.

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Upcoming Events in Boston

February 19 - 21 **Optimizing Upstream & Downstream Process Development for Cell & Gene Therapies**
8:00 AM
Hilton Boston Back Bay

February 25 **10th Annual Rare Disease Day Event: An Era of Innovation for Rare Diseases**
1:30 PM
Broad Institute

February 26 **Carl Zimmer at the Harvard Science Center**
6:00 PM
Harvard Science Center

February 16 **Adult Night at Science Park**
6:00 PM
Museum of Science

February 20 **Generative AI and the New Dawn of Life Sciences and Healthcare**
7:30 PM
Museum of Science

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Science Jobs in Boston

Postdoctoral Scientist
Howard Hughes Medical Institute

Postdoctoral Research Fellow, Heikamp Lab
Dana-Farber Cancer Institute

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MIT

Senior Scientist, Cell Biology Mechanistic Biology and Profiling
AstraZeneca

Laboratory Manager
Boston University

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