



Publications of the Week

Lithium Deficiency and the Onset of Alzheimer's Disease

First Author: Liviu Aron | Senior Author: Bruce Yankner *(pictured)*
Nature | Harvard Medical School and Boston Children's Hospital



The earliest molecular changes in Alzheimer's disease (AD) are poorly understood. Here, researchers show that endogenous lithium (Li) is dynamically regulated in the brain and contributes to cognitive preservation during ageing. Of the metals they analysed, Li was the only one that was significantly reduced in the brain in individuals with mild cognitive impairment, a precursor to AD.

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

A STUB1–CHIC2 Complex Inhibits CD8⁺ T Cells to Restrain Tumor Immunity

First Authors: Martin LaFleur and Lauren Milling *(pictured)* | Senior Author: Arlene Sharpe
Nature Immunology | Harvard Medical School, Brigham and Women's Hospital, Massachusetts General Hospital, Broad Institute, and MIT



In vivo CRISPR screens in CD8⁺ T cells have previously uncovered targets for cancer immunotherapy; however, a minority of the genome has been individually annotated. Here, researchers assessed 899 genes in CD8⁺ T cells responding to murine melanoma and identified the E3 ubiquitin ligase STUB1 as a new negative regulator of anti-tumor CD8⁺ T cell function. [Abstract](#) | [Press Release](#)

Initiation of Meiosis from Human iPSCs Under Defined Conditions Through Identification of Regulatory Factors

First Author: Merrick Pierson Smela *(pictured, right)* | Senior Author: George Church *(left)*
Science Advances | Wyss Institute, Ovelle Bio, Massachusetts General Hospital, Harvard University, and the Broad Institute



Meiotic failure is a major cause of infertility, but the lack of an *in vitro* model of human meiosis is a barrier to understanding its mechanism. Here, researchers establish a method to initiate meiosis directly from male or female human-induced pluripotent stem cells (iPSCs). DNMT1 inhibition, retinoid signaling activation, and overexpression of regulatory factors rapidly activates meiosis over a 15-day protocol. [Abstract](#) | [Press Release](#)

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Awards

Dr. Wong Receives Prestigious NSF CAREER Award

Ragon Institute



The Ragon Institute congratulates faculty member Dr. Harikesh Wong *(pictured)* on receiving the National Science Foundation's (NSF) Faculty Early Career Development (CAREER) Award — the NSF's most prestigious honor for early-career faculty. The CAREER Award recognizes teacher-scholars who excel in integrating research and education within the mission of their institutions.

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The Wyss Institute's 2025-2026 Validation Projects

Wyss Institute



Throughout recent years, the Wyss' Validation Project mechanism has proven to be a highly valuable instrument for selecting and kick-starting projects with early potential for positive impact on healthcare and the environment. This year, fourteen teams are being supported, including a project led by Dr. Kwasi Adu-Berchie *(pictured, center)* that will investigate tolerance-inducing biomaterials that can deliver Tregs to specific tissues. [Read More](#)

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Local News

MIT Imaging Tech Promises Deepest Looks Yet into Living Brain Tissue at Single-Cell Resolution

The Picower Institute



In a new study, a team of MIT scientists and engineers demonstrates a new microscope system capable of peering exceptionally deep into brain tissues to detect the molecular activity of individual cells by using sound. "The major advance here is to enable us to image deeper at single-cell resolution," said Dr. Mriganka Sur *(pictured)*, one of the senior authors on the study. [Read More](#)

Neural Circuit and Molecular Mechanism Underlying Social Hierarchy Identified

Harvard University Department of Molecular and Cellular Biology



The formation of social hierarchies is a fundamental aspect of group living, reducing conflict and guiding behavior across species — from animals to humans. Yet, the precise neural and molecular processes that underlie this behavioral adaptation remain poorly understood. A paper from Drs. Catherine Dulac, Vikrant Kapoor, and Adam Nelson *(pictured, left to right)* provides new clues. [Read More](#)

New ADA Forsyth Research Project Examines Role of Bacterial Trio in Clear Aligner-Related Gingivitis Progression

ADA Forsyth



Clear aligners cover the teeth almost all the time, they significantly reduce the access of saliva to the tooth surface, diminishing its natural ability to rinse away microorganisms and protect against microbial pathogens. Dr. Tingxi Wu *(pictured)*, an ADA Forsyth faculty member and practicing orthodontist, studies how wearing aligners may affect the balance of microbes in the mouth. [Read More](#)

New Research Paves the Way to a Better Understanding of Telomeres

Boston Children's Hospital



For more than a decade, Dr. Suneet Agarwal *(pictured)* has looked for a way to lengthen telomeres and turn back the cellular aging process. Much of his lab's work has focused on telomerase, an enzyme that builds back shortened telomeres. Could we manipulate telomerase to support telomere maintenance, potentially opening the door to new telomere biology disorders treatments? [Read More](#)

A New Model Predicts How Molecules Will Dissolve in Different Solvents

MIT News



Using machine learning, Lucas Attia *(pictured)* and fellow MIT chemical engineers have created a computational model that can predict how well any given molecule will dissolve in an organic solvent — a key step in the synthesis of nearly any pharmaceutical. This type of prediction could make it much easier to develop new ways to produce drugs and other useful molecules. [Read More](#)

Using Generative AI, Researchers Design Compounds That Can Kill Drug-Resistant Bacteria

MIT News



With help from artificial intelligence, MIT researchers have designed novel antibiotics that can combat two hard-to-treat infections: drug-resistant *Neisseria gonorrhoeae* and multi-drug-resistant *Staphylococcus aureus*. Using generative AI algorithms, the research team designed more than 36 million possible compounds and computationally screened them for antimicrobial properties. [Read More](#)

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📅 Upcoming Events in Boston

August 28
7:00 PM

Where Biology Ends and Bias Begins: A Conversation on the Science of Human Difference
Museum of Science

September 11
8:00 AM

Thriving in Biotech: Building Bridges, Breaking Barriers
LabCentral

September 15 - 18
8:00 AM

BioProcess International East
Hynes Convention and Exhibition Center

September 16 - 18
8:00 AM

Cell & Gene Therapy International
Hynes Convention and Exhibition Center

September 16
4:00 PM

Uncovering How Tissues Rewire in Disease Using Deep Learning
Whitehead Institute for Biomedical Research

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📁 Science Jobs in Boston

Scientific Data Management Associate Director
Vertex

Scientist, Discovery Protein Engineering
Bristol Myers Squibb

Senior Principal Scientist I
Sanofi

Scientist I, Brain Targeting Program
Wyss Institute

Research Scientist
Boston University

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