



Publications of the Week

### Genomic Heterogeneity and Ploidy Identify Patients with Intrinsic Resistance to PD-1 Blockade in Metastatic Melanoma

First Author: Giuseppe Tarantino (*pictured*) | Senior Authors: Dirk Schadendorf and David Liu  
 Science Advances | Dana-Farber Cancer Institute, Harvard Medical School, Broad Institute, Brigham and Women's Hospital, and MIT



The introduction of immune checkpoint blockade (ICB) has markedly improved outcomes for advanced melanoma. However, many patients develop resistance through unknown mechanisms. Biomarkers to distinguish patients who would benefit from combination therapy versus antibody PD-1 (aPD-1) remain elusive. Researchers analyzed whole-exome sequencing of pretreatment tumors from four cohorts of ICB-naïve patients treated with aPD-1. [Abstract](#)

### A Tetramer of BCL11A Is Required for Stable Protein Production and Fetal Hemoglobin Silencing

First Authors: Ge Zheng, Maolu Yin, and Stuti Mehta | Senior Author: Stuart Orkin (*pictured*)  
 Science | Dana-Farber Cancer Institute, Boston Children's Hospital, Harvard Medical School, and the Howard Hughes Medical Institute



Down-regulation of BCL11A protein reverses the fetal (HbF,  $\alpha 2\gamma 2$ ) to adult (HbA,  $\alpha 2\beta 2$ ) hemoglobin switch and is exploited in gene-based therapy for hemoglobin disorders. Because of reliance on *ex vivo* cell manipulation and marrow transplant, such therapies cannot lessen disease burden. To develop new small-molecule approaches, researchers investigated the state of BCL11A protein in erythroid cells. [Abstract](#) | [Press Release](#)

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Awards

### Harvard Seniors with Concentrations in Neuroscience Named Rhodes Scholars

Harvard University Department of Molecular and Cellular Biology



Two Harvard University seniors, Aneesh Muppidi (*pictured, left*) and Ayush Noori (*right*), have been named Rhodes Scholars for 2024. Both students are pursuing joint concentrations in Neuroscience and Computer Science. The Rhodes Scholarship, established in 1902, provides full funding for study at the University of Oxford. [Read More](#)

### Dr. Priscilla Slanetz Honored by the American Association for Women in Radiology

Boston University Chobanian & Avedisian School of Medicine



Dr. Priscilla Slanetz (*pictured*), Professor of Radiology, is the recipient of the 2024 Marie Skłodowska-Curie Award, the highest honor from the American Association for Women in Radiology. The award is presented annually to an individual who has made an outstanding contribution to the advancement of women in radiology/radiation oncology. [Read More](#)

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Local News

### Cellular Traffic Congestion in Chronic Diseases Suggests New Therapeutic Targets

Whitehead Institute



Treating chronic disease has proven difficult because there is not one simple cause, like a single gene mutation, that a treatment could target. At least, that's how it has appeared to scientists. However, research from Dr. Richard Young (*pictured*) and colleagues reveals that many chronic diseases have a common denominator that could be driving their dysfunction: reduced protein mobility. [Read More](#)

### How HIV Research Has Reshaped Modern Medicine

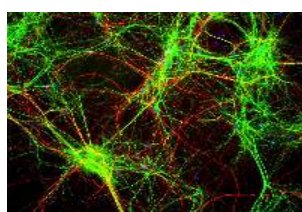
Harvard Medical School



In the 40-plus years since it was identified, scientists have made notable progress against HIV, transforming the infection from a death sentence into a manageable chronic condition, one that affects some 1.2 million people in the US and nearly 40 million worldwide. This decades-long quest for a cure for HIV has also yielded broader insights that have implications for the treatment of COVID-19, cancer, and other diseases. [Read More](#)

### How to Align Neural Representations

Harvard University Department of Molecular and Cellular Biology



The animal body is bilaterally symmetric, and most sense organs (eyes, ears and nose) occur in pairs. These paired sensory organs provide independent measurements of the environment in a way that can aid behavior. With a simple mathematical model, researchers showed that a random intercortical connectivity leads to uncorrelated representations. [Read More](#)

### Q&A: How a Broad Team Uses Cutting-Edge Spatial Technologies to Enable New Science

Broad Institute



Dr. Sami Farhi (*pictured*) began envisioning a service that would help users measure brain cell activity in a particular region of a mouse's brain as the animal completes a behavior, without having to conduct the experiment themselves. Dr. Farhi's instinct to help more users benefit from new technologies is being put to good use today in the Broad's Spatial Technology Platform, which he helped establish in late 2022 and now directs. [Read More](#)

### Innovative Tissue Engineering: ESCAPE, a Pioneering New Method Explained

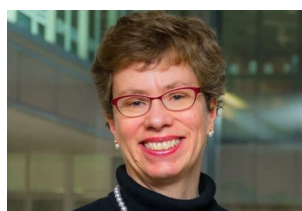
Wyss Institute



Dr. Christopher Chen (*pictured*) and his team have invented a new approach to solve this complex problem called ESCAPE (engineered sacrificial capillary pumps for evacuation). In new research published in *Nature*, the multidisciplinary team demonstrates how they used gallium, a soft silvery metal that melts just above room temperature, as a molding material for generating cell structures in a wide range of shapes and sizes that can be used to engineer tissue. [Read More](#)

### Combining BCL-2 and BTK Inhibitors Shows Promise in CLL

Dana-Farber Cancer Institute



A novel, fixed-duration drug combination — consisting of a second-generation BTK inhibitor, called acalabrutinib, plus a BCL-2 inhibitor (venetoclax), with or without a third blood cancer drug — shows deep and durable responses in patients with chronic lymphocytic leukemia (CLL). Dana-Farber Cancer Institute investigator Dr. Jennifer Brown (*pictured*) reports the new findings on behalf of the trial investigators. [Read More](#)

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### Upcoming Events in Boston

- December 17 12:00 PM **BWH Cancer Research Symposium**  
Brigham & Women's Hospital
- January 11 1:00 PM **Science, Technology, & Ethics in the Real World**  
MIT
- January 15 8:00 AM **8<sup>th</sup> Annual Neurophotonics Center Symposium**  
Boston University
- January 16 10:00 AM **AI, Health Equity, and Ethics Symposium**  
1 Main St.
- January 27 2:30 PM **Beyond the Lab: Journey from Scientist to Founder**  
MIT Media Lab

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### Science Jobs in Boston

- Research Assistant IV, Bioengineering and Biosensors**  
Wyss Institute
- Research Technician, Armstrong Lab**  
Dana-Farber Cancer Institute
- Science Writer**  
Harvard University
- Scientist, T Cell Immunology**  
Century Therapeutics
- Technical Associate I, Martin Lab**  
MIT

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