



Publications of the Week

### SKI Complex Loss Renders 9p21.3-Deleted or MSI-H Cancers Dependent on PELO

First Author: Patricia Borck | Senior Authors: Edmond Chan and Francisca Vazquez (pictured)  
Nature | Broad Institute, Dana Farber Cancer Institute, and Harvard Medical School



Cancer genome alterations often lead to vulnerabilities that can be used to selectively target cancer cells. Various inhibitors of such synthetic lethal targets have been approved by the FDA or are in clinical trials. Here, researchers analysed large-scale CRISPR knockout screening data from the Cancer Dependency Map and identified a new synthetic lethal target, *PELO*, for two independent molecular subtypes of cancer. [Abstract](#) | [Press Release](#)

### Highly Multiplexed Spatial Transcriptomics in Bacteria

First Authors: Ari Sarfatis (pictured) and Yuanyou Wang | Senior Author: Jeffrey Moffitt  
Science | Boston Children's Hospital, Harvard Medical School, and the Broad Institute

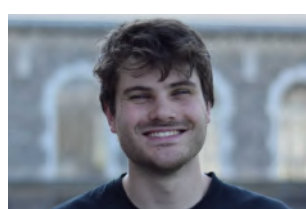


Image-based single-cell transcriptomic methods, which profile the transcriptome of cells in their local environments, offer a promising avenue for bacterial study. However, the extreme density of bacterial RNAs has challenged such methods. Researchers solved this challenge by developing a method called bacterial-MERFISH, which combines up to 1000-fold volumetric expansion with image-based transcriptomics. [Abstract](#) | [Press Release](#)

### First-in-Human Phase 1/2 Study (MYCHELANGELO I) of First-in-Class Epigenomic Controller OTX-2002 Targeting MYC Oncogene in Patients With Hepatocellular Carcinoma and Other Solid Tumors

First Author: Jonathan Mizrahi | Senior Authors: Chia-Chi Lin and Stephen Sicinski (pictured)  
Journal of Clinical Oncology | Omega Therapeutics



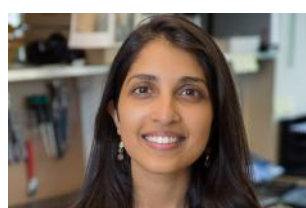
The c-MYC (MYC) oncogene is a master transcription factor of tumor cell and microenvironment regulation; it is often dysregulated in cancer, including hepatocellular carcinoma (HCC). OTX-2002 is a MYC-targeted epigenomic controller, an mRNA drug substance encapsulated in a clinical lipid nanoparticle. This first-in-human dose-escalation study investigated OTX-2002 monotherapy in HCC and other solid tumors. [Abstract](#)

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Awards

### Eleven MIT Faculty Receive Presidential Early Career Awards

MIT Chemistry



Eleven MIT faculty, including nine from the School of Engineering and two from the School of Science, were awarded the Presidential Early Career Award for Scientists and Engineers. Dr. Ritu Raman (pictured), the Eugene Bell Career Development Professor of Tissue Engineering in the Department of Mechanical Engineering, was one of the awardees. [Read More](#)

### Three BU Researchers Win National Honor for Early-Career Scientists and Engineers

The Brink



A Presidential Early Career Award is one of the highest honors the United States government can bestow on scientists and engineers—and now it's been conferred to three Boston University researchers: Drs. Elizabeth Bettini, Michelle Sander, and Zeba Wunderlich (pictured). Dr. Wunderlich studies how gene activation is encoded in DNA and what that means for cell development and immune response. [Read More](#)

### Announcing the Winners of the 2024 Mass General Research Institute Image Awards

Bench Press



The winners of the annual Mass General Research Institute Image Awards have been announced. Anika Wadhwa (pictured) is the winner of the "A Closer Look" category, one of seven categories for this annual award. Her image, "Orchestrating Repair: An Immune Concert" depicts how immune cells gather around a small injury in a mouse's skin. [Read More](#)

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Local News

### Leveraging Artificial Intelligence for Vaccine Development: A Ragon-MIT Advancement in T Cell Epitope Prediction

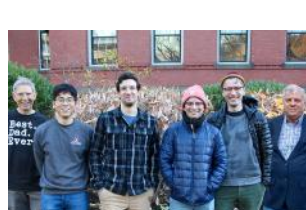
Ragon Institute



An exciting collaboration between the Ragon Institute and the Jameel Clinic at MIT has achieved a significant milestone in leveraging artificial intelligence to aid the development of T cell vaccine candidates. Drs. Gaurav Gaiha (pictured) and Regina Barzilay have introduced MUNIS — a deep learning tool designed to predict CD8<sup>+</sup> T cell epitopes with unprecedented accuracy. [Read More](#)

### How a Novel Chaperone Drives Folding of an Essential Protein at Its Inception

Harvard University Department of Molecular and Cellular Biology



The advent of AlphaFold has led to the production of many descendant programs enabling high-confidence predictions for a number of topics, but especially protein complexes. The Denic lab (pictured) used AlphaFold to uncover novel chaperone proteins. They investigated the novel chaperone protein to investigate how essential proteins are folded. [Read More](#)

### Study Finds Three New Safe, Effective Ways to Treat Drug-Resistant Tuberculosis

Harvard Medical School



Tuberculosis (TB) remains one of the top infectious disease killers worldwide, a challenge amplified by drug-resistant forms of the disease. Now, in a major step forward, an international clinical trial led by researchers at Harvard Medical School has found three new safe and effective drug regimens for TB that is resistant to rifampin, the most effective of the first-line antibiotics used to treat TB. [Read More](#)

### Modifying Macrophages in the Lung Could Head Off Pulmonary Hypertension

Boston Children's Hospital



As more infants survive premature births and develop bronchopulmonary dysplasia (BPD), a chronic lung disease, more are developing pulmonary hypertension. Dr. Stella Kourembanas (pictured) believes that focusing on manipulating macrophages could prevent pulmonary hypertension in clinically deteriorating infants with BPD, without harming normal lung development. [Read More](#)

### Cancer Vaccine Shows Promise for Patients With Stage III and IV Kidney Cancer

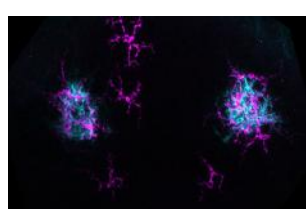
Dana-Farber Cancer Institute



Dana-Farber Cancer Institute researchers report that all nine patients in a clinical trial being treated for stage III or IV clear cell renal cell carcinoma (a form of kidney cancer), generated a successful anti-cancer immune response after initiation of a personalized cancer vaccine. This phase 1 trial was led by Drs. Toni Choueiri, Patrick Ott, and Catherine Wu (pictured). [Read More](#)

### A Planarian's Guide to Growing a New Head

Whitehead Institute



Cut off any part of this worm's body and it will regrow. This is the spectacular yet mysterious regenerative ability of freshwater flatworms known as planarians. A new study from the Reddien lab describes how planarians restore large portions of their nervous system — even regenerating a new head with a fully functional brain — by manipulating a signaling pathway. [Read More](#)

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### Upcoming Events in Boston

- February 19 - 21 8:00 AM **Optimizing Upstream & Downstream Process Development for Cell & Gene Therapies**  
Hilton Boston Back Bay
- February 20 7:30 PM **Generative AI and the New Dawn of Life Sciences and Healthcare**  
Museum of Science
- February 25 9:30 AM **Stories from the Lab: Three African Women Scientists on Building Capacity and Becoming a Leader**  
Online
- February 25 1:30 PM **10<sup>th</sup> Annual Rare Disease Day Event: An Era of Innovation for Rare Diseases**  
Broad Institute
- February 26 6:00 PM **Carl Zimmer at the Harvard Science Center**  
Harvard Science Center

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### Science Jobs in Boston

- Postdoctoral Research Fellow, Kadoch Lab**  
Dana-Farber Cancer Institute
- Senior Research Technician**  
Tufts University
- Research Associate Scientist, Antibody Production**  
Takeda
- Research Scientist**  
The Museum of Comparative Zoology
- Postdoctoral Research Fellow**  
Beth Israel Deaconess Medical Center

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