



Publications of the Week

Bioresorbable RFID Capsule for Assessing Medication Adherence

First Authors: Mehmet Girayhan Say (*pictured*) and Siheng Sean You | Senior Author: Giovanni Traverso
Nature Communications | Koch Institute, Brigham and Women's Hospital, Harvard Medical School, Broad Institute, and MIT



Researchers have developed SAFARI (Smart Adherence via FARaday cage And Resorbable Ingestible), a bioresorbable, passive radio-frequency identification (RFID) system that enables precise monitoring of medication ingestion events. The platform incorporates a novel cellulose-metal particle-based radiofrequency shielding layer, effectively creating a Faraday cage that facilitates reliable signal detection. [Abstract](#) | [Press Release](#)

Inherited Resilience to Clonal Hematopoiesis by Modifying Stem Cell RNA Regulation

First Author: Gaurav Agarwal (*pictured*) | Senior Author: Vijay Sankaran
Science | Boston Children's Hospital, Harvard Medical School, Dana-Farber Cancer Institute, Broad Institute, and the Howard Hughes Medical Institute



Somatic mutations that increase the fitness of hematopoietic stem cells (HSCs) drive their expansion in clonal hematopoiesis (CH) and predispose individuals to blood cancers. Here, researchers identified a noncoding regulatory variant, rs17834140-T, that protects against CH and myeloid malignancies by selectively down-regulating the RNA-binding protein MSI2 in HSCs. [Abstract](#)

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Awards

Dr. Mariella Filbin Receives 2026 Emerging Leader Award from the Mark Foundation

Dana-Farber Cancer Institute



The Mark Foundation for Cancer Research has named Dr. Mariella Filbin (*pictured*), Research Co-Director of the Pediatric Neuro-Oncology Program at Dana-Farber Cancer Institute, the recipient of the 2026 Emerging Leader Award. This award recognizes her innovative work to advance treatment options for aggressive childhood brain tumors. [Read More](#)

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Local News

4D Nucleome Consortium Produces Detailed Models of the 3D Genome Over Time in Cells

UMass Chan Medical School



In its effort to correlate genomic structure with gene function, the 4D Nucleome Consortium, led by Dr. Job Dekker (*pictured*), has extensively mapped and analyzed the 3D folding of the human genome in human embryonic stem cells and immortalized fibroblasts over time. The result is the most detailed view of the 4D human genome available and the identification of more than 140,000 looping interactions between genes and long-range regulatory elements. [Read More](#)

Researchers Uncover Molecular Roots of Fibrosis or Tissue Scarring in Inflammatory Bowel Disease

Broad Institute



In earlier work, a team led Dr. Ramnik Xavier (*pictured*) discovered a key cell type underlying fibrosis in inflammatory bowel disease (IBD). Now, the team has characterized the crosstalk between this and other types of cells that leads to fibrosis. Their work also points to a molecule, GLIS3, that regulates this cell-to-cell communication and hadn't been linked to IBD before. [Read More](#)

Researchers Now Understand How a New Class of Antivirals Works

Harvard Medical School



Harvard Medical School researchers led by Dr. Jonathan Abraham (*pictured*) have uncovered crucial insights into how an emerging class of antiviral drugs works. The discovery sheds light on an important tool for fighting drug-resistant strains of herpes simplex virus and points to new pathways for treating herpesviruses and other kinds of DNA viruses. [Read More](#)

Celebrating Worm Science

MIT News



For decades, scientists with big questions about biology have found answers in a tiny worm. That worm — a millimeter-long creature called *Caenorhabditis elegans* — has helped researchers uncover fundamental features of how cells and organisms work. In a perspective piece by eleven biologists including Dr. Robert Horvitz (*pictured*), the authors celebrate Nobel Prize-winning advances made through research in *C. elegans*. [Read More](#)

Chemists Determine the Structure of the Fuzzy Coat That Surrounds Tau Proteins

MIT News



One of the hallmarks of Alzheimer's disease is the clumping of proteins called Tau, which form tangled fibrils in the brain. The more severe the clumping, the more advanced the disease is. Dr. Mei Hong's (*pictured*) lab has now shown, for the first time, that they can use NMR spectroscopy to decipher the structure of Tau's fuzzy coat that enables clumping. [Read More](#)

New Chemical Method Makes It Easier to Select Desirable Traits in Crops

Whitehead Institute



In a paper published in *PLOS Genetics*, Dr. Mary Gehring (*pictured*) and colleagues offer a new method for generating large-scale genetic changes without irradiation. The new approach exposes germinating seeds to etoposide, a chemotherapy drug, during early growth to interfere with an enzyme that helps manage DNA structure during cell division. [Read More](#)

How Nutrient Availability Shapes Breast Cancer's Spread

Harvard Medical School



Scientists have gained new insights into how nutrient availability in different organs affects the spread of breast cancer throughout the body. In a study in mice, Dr. Rakesh Jain (*pictured*) and researchers found that no single nutrient explains why breast cancer grows in one organ and not another. Instead, multiple nutrients and cancer cell characteristics work together to shape the spread of the disease. [Read More](#)

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Upcoming Events in Boston

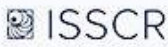
January 21 6:00 PM	The Biology of Time: From Embryos to Aging Cells MIT Museum
January 22 9:00 AM	Chemical Advances in Biomaterials and Therapeutics Northeastern University
February 25 1:30 PM	11th Annual Rare Disease Day Event Broad Institute
February 28 1:00 PM	SpaceTime TeaTime MIT Museum
March 18 - 19 8:00 AM	OPT Congress 2026 Seaport Hotel Boston

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Science Jobs in Boston

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