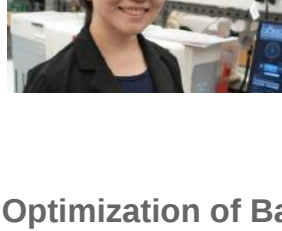


Publications of the Week

Dictionary of Immune Responses to Cytokines at Single-Cell Resolution

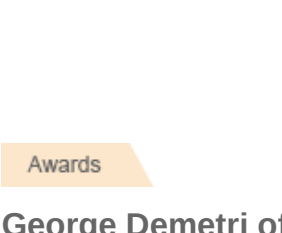
First Author: Ang Cui (*pictured*) | Senior Author: Nir Hacohen
Nature | MIT, Broad Institute, Harvard University, Dana-Farber Cancer Institute, Massachusetts General Hospital, and Brigham and Women's Hospital



Cytokines mediate cell-cell communication in the immune system and represent important therapeutic targets. There is a current lack of a global view of the cellular responses of each immune cell type to each cytokine. To address this gap, researchers created the Immune Dictionary, a compendium of single-cell transcriptomic profiles of more than 17 immune cell types in response to each of 86 cytokines in mouse lymph nodes *in vivo*. [Abstract](#) | [Press Release](#)

Optimization of Base Editors for the Functional Correction of SMN2 as a Treatment for Spinal Muscular Atrophy

First Author: Christiano Alves (*pictured*) | Senior Author: Benjamin Kleinstiver
Nature Biomedical Engineering | Massachusetts General Hospital and Harvard Medical School



Spinal muscular atrophy (SMA) is caused by mutations in *Survival Motor Neuron 1* (*SMN1*), a paralogous gene to *SMN2*. Here researchers show in fibroblasts derived from patients with SMA and in a mouse model of SMA that, irrespective of the mutations in *SMN1*, adenosine base editors can be optimized to target the *SMN2* exon-7 mutation or nearby regulatory elements to restore the normal expression of SMN. [Abstract](#) | [Press Release](#)

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Awards

George Demetri of Dana Farber Earns Lifetime Achievement Award in Medicine from Stanford University School of Medicine

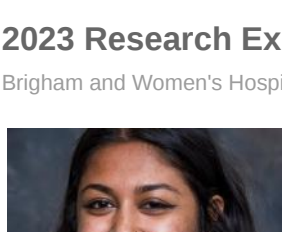
Dana-Farber Cancer Institute



Dr. George Demetri (*pictured*), Director of the Sarcoma Center at Dana-Farber Cancer Institute, is being awarded the prestigious J.E. Wallace Sterling Lifetime Achievement Award in Medicine from the Stanford Medicine Alumni Association. Dr. Demetri's career as a physician-scientist has been dedicated to developing therapeutics targeting specific oncogenic mechanisms to treat precisely defined subsets of sarcomas and other cancers. [Read More](#)

Elly Nedivi Receives 2023 Kreig Cortical Kudos Discoverer Award

MIT News



The Cajal Club has named Dr. Elly Nedivi (*pictured*), Professor of Neuroscience in The Picower Institute for Learning and Memory, the 2023 recipient of the Krieg Cortical Kudos Discoverer Award. Dr. Nedivi is recognized for her ongoing work to understand molecular and cellular mechanisms that enable the brain to adapt to experience. [Read More](#)

2023 Research Excellence Award Winners

Brigham and Women's Hospital (BWH)



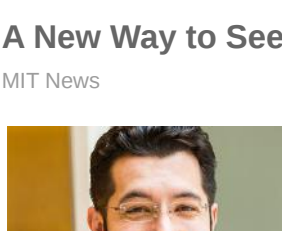
The Brigham Research Institute (BRI) has announced this year's Research Excellence Award winners. The BRI Research Excellence Awards, which promote the research of promising BWH junior investigators and trainees, were established in 2007 with support from a philanthropic gift from the Partners Research Accelerator Program. Among the recipients is Dr. Ritika Rastogi (*pictured*). [Read More](#)

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Local News

Overcoming Drug Resistance with EAI-432, an Allosteric EGFR Inhibitor for Non-Small Cell Lung Cancer

Dana-Farber Cancer Institute



Researchers at Dana-Farber Cancer Institute have developed a promising new drug candidate, EAI-432, to treat non-small cell lung cancers (NSCLC) driven by mutations in the *EGFR* gene, particularly the L858R mutation, which is present in about one-third of NSCLC patients. "EAI-432 has potential for NSCLC patients with these mutations who have developed resistance to osimertinib," explains the study's co-lead Dr. Pasi Jänne (*pictured*). [Read More](#)

A New Way to See the Activity Inside a Living Cell

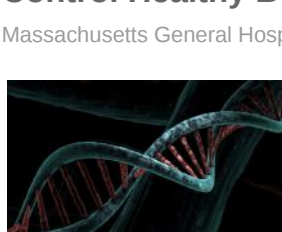
MIT News



Using fluorescent labels that switch on and off, MIT engineers can study how molecules in a cell interact to control the cell's behavior. "There are many examples in biology where an event triggers a long downstream cascade of events, which then causes a specific cellular function," says Dr. Edward Boyden (*pictured*), senior author of the study. [Read More](#)

Liqun Wang on Delivering Drugs to the Brain

Wyss Institute



Dr. Liqun Wang (*pitured*) has always been fascinated by neuroscience. Early in her career, she did basic biomedical research to better understand a rare neurodegenerative disease called Alexander Disease. This left her wondering, "What can I do to really help these patients?" Dr. Wang joined the Wyss Institute's Brain Targeting Program to develop technologies to better deliver drugs to the brain. [Read More](#)

How a Protein Called IKAROS Organizes the Genome in Nuclear Space to Control Healthy B Cell Development

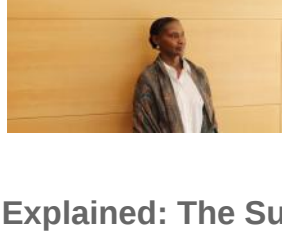
Massachusetts General Hospital



A cell nucleus is a busy place with cellular proteins twisting and pulling DNA to fold the genome into intricate 3D structures that allow critical parts to touch each other to turn genes on and off. So how does a protein called IKAROS help "weave" the genome into the correct structure required for B cell differentiation and generation of a life-saving repertoire of antibodies? [Read More](#)

Immune Action at a Distance

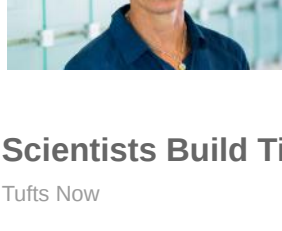
MIT News



For most metastatic cancer types, there are no reliably effective treatments. Therapies may slow the growth of tumors, but they will not eradicate them. Occasionally, however, treating a tumor in one location will cause untreated tumors elsewhere in the body to shrink or even regress completely — a dramatic but exceedingly rare phenomenon known as the abscopal effect. [Read More](#)

An Interview with Dr. Azza Idris, the Leading Malaria Researcher Joining the Ragon Faculty

Ragon Institute



Last month, the Ragon welcomed Dr. Azza Idris (*pictured*) as their newest faculty member. Dr. Idris holds a dual appointment between the Ragon and the Pediatric Infectious Diseases and Global Health Divisions at Massachusetts General for Children. A renowned researcher in malaria, Dr. Idris has worked to develop treatments and preventative measures for the malaria parasite. [Read More](#)

Explained: The Sugar Coating of Life

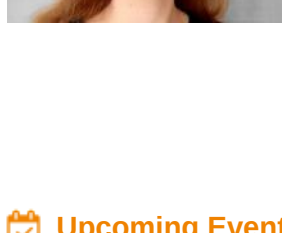
MIT Chemistry



"It's becoming increasingly clear that these glycans have a very important role to play in health and disease," says Dr. Laura Kiessling (*pictured*), the Novartis Professor of Chemistry. "It may seem daunting initially, but devising new tools and identifying new kinds of interactions requires exactly the sort of creative problem-solving skills that people have at MIT." [Read More](#)

Scientists Build Tiny Biological Robots from Human Cells

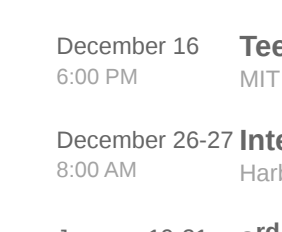
Tufts Now




Researchers at Tufts have created tiny biological robots that they call Anthrobots from human tracheal cells that can move across a surface and have been found to encourage the growth of neurons across a region of damage in a lab dish. The work follows from earlier research in the laboratories of Drs. Michael Levin (*pictured*) and Josh Bongard, in which they created multicellular biological robots from frog embryo cells called Xenobots. [Read More](#)

Researchers Develop Approach to Study Rare Gene Variant Pairs That Contribute to Disease

Massachusetts General Hospital (MGH)



Each gene in the human genome has two copies. When researchers detect two mutations within a particular gene in a patient's genome, it can be difficult or expensive to determine if those two mutations are present in the same copy of the gene or different copies of the gene. Investigators led by Dr. Kaitlin Samochoa (*pictured*) at MGH and the Broad Institute developed a strategy for inferring which of these phases is present for rare variant pairs within genes. [Read More](#)

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Upcoming Events in Boston

- December 7-14 12:00 PM **Toward a Deep Understanding of the Structural Patterns that Govern Antibody Mediated Immunity** Online
- December 14 8:30 AM **2023 Advancing Drug Development Forum** District Hall Boston
- December 16 6:00 PM **Teen Science Cafe** MIT Museum
- December 26-27 8:00 AM **International Conference on Science, Engineering & Technology** Harborside Inn
- January 19-21 8:00 AM **3rd Cell Therapy Potency Assay Summit** The Colonnade Hotel

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- Lead Research Tech, Belizaire Pathology Lab**
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