

Publications of the Week
The FUS::DDIT3 Fusion Oncoprotein Inhibits BAF Complex Targeting and Activity in Myxoid Liposarcoma

 First Author: Hayley Zullo | Senior Author: Cigall Kadoch *(pictured)*
 Molecular Cell | Dana-Farber Cancer Institute, Harvard Medical School, and Broad Institute


Mammalian SWI/SNF (BAF) ATP-dependent chromatin remodeling complexes play critical roles in governing genomic architecture and gene expression and are frequently perturbed in human cancers. The authors demonstrate that the FUS::DDIT3 fusion oncoprotein hallmark to myxoid liposarcoma inhibits BAF complex-mediated remodeling of adipogenic enhancer sites via sequestration of the adipogenic transcription factor, CEBPB, from the genome. [Profile](#) | [Abstract](#)

Single-Cell Genomic Profiling of Human Dopamine Neurons Identifies a Population That Selectively Degrades in Parkinson's Disease

 First Authors: Tushar Kanath and Abulrazed Abulrazed | Senior Author: Evan Macosko *(pictured)*
 Nature Neuroscience | Broad Institute, Harvard University, and Massachusetts General Hospital


The loss of dopamine (DA) neurons within the substantia nigra pars compacta is a defining pathological hallmark of Parkinson's disease (PD). The authors developed a protocol to enrich and transcriptionally profile DA neurons from patients with PD and matched controls, sampling a total of 387,483 nuclei, including 22,048 DA neuron profiles. [Abstract](#) | [Press Release](#)

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Awards
Four HMS Faculty Elected to American Academy of Arts and Sciences

Harvard Medical School (HMS)



Four members of the HMS faculty have been elected members of the 2022 class of the American Academy of Arts and Sciences. They are among the 261 individuals recognized by the academy this year for their accomplishments and leadership in academia, the arts, industry, public policy, and research. The honorees from HMS include Dr. Chenghua Gu *(pictured)*, Professor of Neurobiology in the Blavatnik Institute. [Read More](#)

Gabriela Apiou, PhD, Named Inaugural Incumbent of the Endowed MGH Research Institute Chair in Translational Sciences

Bench Press



Dr. Gabriela Apiou *(pictured)* has been named inaugural incumbent of the recently established Endowed Massachusetts General Hospital (MGH) Research Institute Chair in Translational Sciences. This new chair was made possible through a generous and visionary gift from an anonymous donor to further the mission of translating cutting-edge research into improved clinical care for patients. [Read More](#)

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Local News
Why Do Some People Get Sicker than Others from COVID?

The Brink



A new study of SARS-CoV-2 in the lung suggests 11 "protection-defining genes" may help many avoid the worst symptoms of COVID-19. Dr. Florian Douam *(pictured)* a BU School of Medicine Assistant Professor of Microbiology, and Devin Kenney, a PhD student in Dr. Douam's lab, say their findings could propel the development of drugs that better prime immune systems for taking on the coronavirus. [Read More](#)

Researchers Use CRISPR to Build Melanoma Models from Scratch Using Human Cells

Broad Institute



Researchers have discovered thousands of genetic mutations in cancer, but understanding how they affect the growth and spread of tumors remains challenging because each patient's tumor can have many different mutations. Dr. Eran Hodis *(pictured)*, a study co-first and co-corresponding author, said the work is the first time scientists have made a human cancer model using precisely controlled genetic engineering and starting from fully differentiated cells rather than from stem cells, which are not relevant for every cancer type. [Read More](#)

Insulin Spray Improved Gait, Cognitive Function in Patients With and Without Type 2 Diabetes, Clinical Trial Shows

Beth Israel Deaconess Medical Center



An estimated 25 percent of people older than 65 have type 2 diabetes, a condition in which the body cannot produce enough insulin to effectively manage blood sugar. Insulin plays an important role in the brain, and people with prediabetes and diabetes are at increased risk of Alzheimer's disease and cognitive decline. Delivering insulin to the brain intranasally has been shown to improve verbal memory and has emerged as a potential treatment for cognitive decline in the elderly. [Read More](#)

New Details Behind the Body's Response to Tuberculosis Could Lead to a More Effective Vaccine

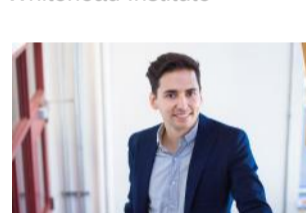
Massachusetts General Hospital



For years, scientists have been working to develop an effective tuberculosis (TB) vaccine, but current vaccines are only partially protective. New research by a team including investigators at Massachusetts General Hospital, MIT, the Ragon Institute, and the Harvard T.H. Chan School of Public Health has identified helpful and unhelpful aspects of the immune response that determine whether the body can keep TB infections under control. [Read More](#)

Novel Screening Approach Reveals Protein That Helps Parasites Enter and Leave Their Hosts

Whitehead Institute



Whitehead Institute Member Dr. Sebastian Lourido *(pictured)* and his lab members study the parasite *Toxoplasma gondii*. The parasite causes the disease toxoplasmosis, which can be dangerous for pregnant or immunocompromised patients. As the parasite evolved over millennia, its phylum split off from other branches of life, which poses a challenge to researchers hoping to understand its genetics. [Read More](#)

Hundreds of Families Share a Lethal Inheritance. This Kidney Researcher Hopes to Break the Chain

STAT News



Kidney disease was and is "severely neglected, hugely underserved. There is a tremendous unmet need," said Dr. Anna Greka *(pictured)*, Director of the Kidney Disease Initiative at the Broad Institute. She saw that as an opportunity: "There's a huge mismatch between the enormity of the clinical problem and the availability of scientific answers and, ultimately, therapeutic answers to the problem." [Read More](#)

SQZ Biotechnologies Announces First Data Presentation on Non-Clinical Studies of Point-of-Care Manufacturing System and Collaboration with STEMCELL Technologies on Research-Use-Only System to Fuel Preclinical Research

SQZ Biotechnologies



SQZ Biotechnologies has announced that the company will present data from the first non-clinical studies of its point-of-care manufacturing system at the 2022 American Society for Gene and Cell Therapy Annual Meeting on May 18. In addition, SQZ announced a collaboration with STEMCELL Technologies to co-develop and commercialize a research-use-only microfluidic intracellular delivery system. [Read More](#)

CAR T Drives Acute Myeloid Leukemia into Submission in Pre-Clinical Studies

Massachusetts General Hospital



Massachusetts General Hospital researchers have developed a novel treatment strategy that has the potential to bring the life-saving benefits of CAR T to patients with acute myeloid leukemia, the most common form of leukemia in adults. The method involves a combination of drug therapy to expand the number of targets on tumor cells, and an engineering approach to help the therapy adhere more tightly and durably to those targets. [Read More](#)

Tracing a Cancer's Family Tree to Its Roots Reveals How Tumors Grow

MIT News



Over time, cancer cells can evolve to become resistant to treatment, more aggressive, and metastatic — capable of spreading to additional sites in the body and forming new tumors. The more of these traits that a cancer evolves, the more deadly it becomes. MIT Professor Dr. Jonathan Weissman *(pictured)* and collaborators have developed an approach to track cancer cells through the generations, allowing researchers to follow their evolutionary history. [Read More](#)

A Tool for More Accurate Disease Risk Prediction Across Diverse Populations

Broad Institute



Polygenic risk scores (PRS) are promising tools for predicting disease risk based on genetics, but current versions have built-in bias that can affect their accuracy in some populations and result in health disparities. However, a team of researchers from Massachusetts General Hospital, the Broad Institute, and Shanghai Jiao Tong University in Shanghai, China, have designed a new method for generating PRS, dubbed PRS-CSx, that more accurately predicts disease risk across populations, which they report in *Nature Genetics*. [Read More](#)

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Upcoming Events in Boston

May 10 4:00 PM	Genomic Integration of the SARS-CoV-2 Virus and the Potential Relevance for the Course of COVID-19 May 10
May 11 12:00 PM	CircaVent: A New Platform for Bipolar Disorder Drug Discovery Online
May 17 9:00 AM	Securing the Future of Agriculture MIT
May 25 9:00 AM	Innovators in Therapeutics Speaker Series with Ted Love Koch Online
June 17 8:00 AM	20th Annual Cancer Research Symposium Koch Institute

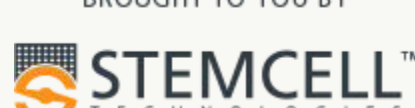
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Science Jobs in Boston

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