

Publications of the Week

Transcriptional and Cellular Diversity of the Human Heart

First Author: Nathan Tucker | Senior Author: Patrick Ellinor (pictured)
Circulation | The Broad Institute



The human heart requires a complex ensemble of specialized cell types to perform its essential function. A greater knowledge of the intricate cellular milieu of the heart is critical to increase our understanding of cardiac homeostasis and pathology. The authors sequenced the transcriptomes of 287,269 single cardiac nuclei, revealing a total of 9 major cell types and 20 subclusters of cell types within the human heart. [Abstract](#)

Patient hiPSCs Identify Vascular Smooth Muscle Arylacetamide Deacetylase as Protective against Atherosclerosis

First Author: Takafumi Toyohara | Senior Author: Chad Cowan (pictured)
Cell Stem Cell | Beth Israel Deaconess Medical Center and Harvard University



Although susceptibility to cardiovascular disease (CVD) is different for every patient, why some patients with type 2 diabetes mellitus (T2DM) develop CVD while others are protected has not yet been clarified. Using T2DM-patient-derived human induced pluripotent stem cells, the authors found that in patients protected from CVD, there was significantly elevated expression of an esterase, arylacetamide deacetylase, in vascular smooth muscle cells. [Abstract](#)

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Awards

Five MCB Postdocs Receive Fellowships from the NIH, the NSF, and the German Research Foundation

Harvard University Department of Molecular and Cellular Biology



Five postdocs from Harvard's Department of Molecular and Cellular Biology (MCB) have recently been awarded prestigious fellowships that will support their work in neuroscience and molecular biology. Jessica Osterhout (pictured) of the Dulac lab and Joseph Zak of the Murthy lab received the NIH Pathway to Independence Award (K99/R00), which will help them continue their work at Harvard and then transition to running their own independent labs. [Read More](#)

HSCI Scientist Recognized for Outstanding Dermatology Research

Harvard Stem Cell Institute



Harvard Stem Cell Institute (HSCI) scientist Dr. Ya-Chieh Hsu (pictured) is the recipient of the 2020 LEO Foundation Award. The award recognizes extraordinary contributions to dermatology research that advance our understanding of skin diseases, and have the potential to pave the way for new and improved treatments. Hsu is the Alvin and Esta Star Associate Professor of Stem Cell and Regenerative Biology. [Read More](#)

Lawreen Connors Named Charles J. Brown Research Professor in Amyloidosis

BU School of Medicine



Dr. Lawreen Connors (pictured), Professor of Pathology & Laboratory Medicine at the Boston University School of Medicine, has been named the Charles J. Brown Research Professor in Amyloidosis, effective July 1, established by the estate of Charles J. Brown. Dr. Connors focuses her basic science research on uncovering the protein and genetic determinants that underlie the formation of amyloid. [Read More](#)

Jennifer Benanti Receives MIRA Grant to Advance Understanding of How Cells Proliferate

UMass Medical School



Dr. Jennifer A. Benanti (pictured), Associate Professor of Molecular, Cell & Cancer Biology at UMass Medical School, was recently awarded a federal Maximizing Investigators' Research Award, or MIRA grant, to advance her lab's study of molecular mechanisms of cell cycle control, a key factor in understanding cancer development. [Read More](#)

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Local News

Making Tissue Stretchable, Compressible, and Nearly Indestructible

MIT News



To make imaging cells and molecules in brain and other large tissues easier while also making samples tough enough for years of handling in the lab, the lab of Dr. Kwanghun Chung (pictured) at MIT has come up with a chemical process that makes tissue stretchable, compressible, and pretty much indestructible. The team developed ELAST amid work on a five-year project, funded by the NIH, to make the most comprehensive map yet of the entire human brain. [Read More](#)

New Insights on Allergies May Improve Diagnosis and Treatment

Massachusetts General Hospital



Results from a study led by investigators at Massachusetts General Hospital may help to improve the diagnosis and treatment of allergies, pointing to a potential marker of these conditions and a new therapeutic strategy. The researchers compared IgE antibodies from individuals with peanut allergies with IgE from individuals without any allergies. The analyses revealed an increase in a particular sugar residue called sialic acid on IgE from peanut allergic individuals. [Read More](#)

Translational Research Hub at BU Gets \$38.3 Million Renewal from NIH

BU School of Medicine



Further boosting Boston University's (BU) ability to move research science into the real world — and provide junior investigators with startup funds and infrastructure to begin studying promising but untested new ideas — BU's Clinical and Translational Science Institute has received \$38.3 million in renewal funding at a critical moment for global health, science, and research. [Read More](#)

Scientists Find a New Way to Reverse Symptoms of Fragile X

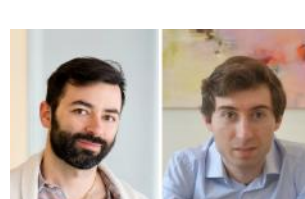
MIT News



MIT scientists have identified a potential new strategy for treating Fragile X syndrome, a disorder that is the leading heritable cause of intellectual disability and autism. In a study of mice, the researchers showed that inhibiting an enzyme called GSK3 alpha reversed many of the behavioral and cellular features of Fragile X. The small-molecule compound has been licensed for further development and possible human clinical trials. [Read More](#)

Researchers Study Single Cells to Ask Why Children Generally Fare Better Against COVID-19

Broad Institute



Just three months ago, Broad Institute scientists Dr. Alex Shalek (pictured, left) and Dr. Jose Ordovas-Montanes (right) were broadly studying single cell responses to inflammation, cancer, and various infections. Now, they are using their single-cell tools to learn which cell types SARS-CoV-2 attacks, characterize different therapeutic and prevention strategies, and uncover what causes protective responses in some patients and not others. [Read More](#)

MGH Research Scholars Stand Tall against COVID-19

Massachusetts General Hospital



With the speed and flexibility of elite athletes, scientists in the Massachusetts General Hospital (MGH) Research Scholars program are moving quickly to create solutions for the most pressing problems of the COVID-19 crisis. Thanks to the unrestricted support from the MGH Research Scholars program, more than a dozen researchers, including Dr. Ingrid Bassett (pictured) have pivoted in recent weeks to work on scientific solutions to help control the pandemic. [Read More](#)

Genetic Factors for Heart Failure and Arrhythmias Revealed

Broad Institute



Two of the most common forms of heart disease are heart failure and arrhythmias. Identifying genetic factors underlying these disorders has been challenging, but two large genetic studies, led by researchers at the Broad Institute and Massachusetts General Hospital, have taken a new approach and found hundreds of regions in the genome that contribute to these diseases. Many of the genomic regions had not previously been associated with heart disease. [Read More](#)

A Ticketmaster for Science Seminars

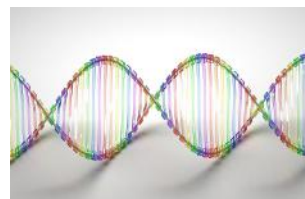
MIT News



The COVID-19 pandemic has put a pause on seminars hosted physically on university campuses. Enter [researchseminars.org](#), a website launched by a small team of MIT mathematicians, that serves as a sort of crowdsourced Ticketmaster for science talks. Instead of featuring upcoming shows and concerts, the new site lists more than 1,000 free, upcoming seminars hosted online by more than 115 institutions around the world. [Read More](#)

International gnomAD Consortium Releases Its First Major Studies of Human Genetic Variation

Broad Institute



For the last eight years, the Genome Aggregation Database (gnomAD) Consortium (and its predecessor, the Exome Aggregation Consortium), has been working with geneticists around the world to compile and study more than 125,000 exomes and 15,000 whole genomes from populations around the world. Now, in seven published papers, gnomAD Consortium scientists describe their first set of discoveries from the database, showing the power of this vast collection of data. [Read More](#)

Mass General Researchers Find Potential Drug Treatment Targets for Alcohol-Related Liver Disease

Massachusetts General Hospital



Alcohol-related liver disease (ALD) is a deadly condition affecting more than 150 million people worldwide with no treatment available besides transplant. But now, a team led by Dr. Jay Luther (pictured) at Massachusetts General Hospital has uncovered key molecular stepping stones in ALD that may provide targets for drug therapy development. [Read More](#)

Defects in Developing Frog Brain Can Be Prevented or Repaired with Bioelectric Drugs

Tufts University via Medical Xpress



Researchers led by biologists at Tufts University have discovered that the brains of developing frog embryos damaged by nicotine exposure can be repaired by treatment with certain drugs called "ionocoagulants" that drive the recovery of bioelectric patterns in the embryo, followed by repair of normal anatomy, gene expression and brain function in the growing tadpole. [Read More](#)

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U.S. Lawmakers Unveil Bold \$100 Billion Plan to Remake NSF

Science Insider



The National Science Foundation (NSF) would get a sweeping remake — including a new name, a huge infusion of cash, and responsibility for maintaining U.S. global leadership in innovation — under bipartisan bills that have just been introduced in both houses of Congress. The Endless Frontiers Act (S. 3832) proposes a major reorganization of the NSF. [Read More](#)

Will Trump White House Tear Down Journal Paywalls? Many Anxiously Await a Decision

Sciencetinsider



Scientific publishers, universities, librarians, and open-access advocates are waiting anxiously to see whether the Trump administration will end a long-standing policy and require that every scholarly article produced with U.S. funding be made immediately free to all. Such a mandate has long been fiercely opposed by some publishers and scientific societies that depend on subscription revenues from journals. [Read More](#)

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Upcoming Events in Boston

June 2 11:00 AM	MassBio Town Hall w/ Special Guest from HelixNano: How to Develop a Universal Coronavirus Vaccine Online
June 2 1:00 PM	STAT+ Conversations: A Conversation with the Chan Zuckerberg Initiative Online
June 3 11:00 AM	2020 Virtual Grant Writing Series Online
June 4 3:00 PM	Career Panel: Planning for Your Career During a Crisis Online
June 4 8:00 PM	Virtual Café Scientifique: Science Behind Combating COVID-19 Online

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Science Jobs in Boston

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