

Publications of the Week

Adhesion to Fibronectin via $\alpha 5 \beta 1$ Integrin Supports Expansion of Megakaryocyte Lineage in Primary Myelofibrosis

First Author: Shinobu Matsuura (pictured, left) | Senior Author: Katya Ravid (right)
Blood | Boston University



Excessive accumulation of extracellular matrix (ECM) is a hallmark of bone marrow (BM) milieu in primary myelofibrosis (PMF). As cells have the ability to adhere to the surrounding ECM through integrin receptors, the authors examined the hypothesis that an abnormal ECM-integrin receptor axis contributes to BM megakaryocytosis in JAK²V617F⁺ PMF. [Profile](#) | [Abstract](#)

Transcriptome Analysis and Functional Characterization of Cerebral Organoids in Bipolar Disorder

First Author: Annie Kathuria | Senior Author: Rakesh Karmacharya (pictured)
Genome Medicine | Massachusetts General Hospital, Harvard Medical School and the Broad Institute



Cerebral organoids were generated from iPSCs of eight bipolar disorder patients and eight healthy control individuals. RNA-seq data comparing gene expression profiles in the cerebral organoids showed downregulation of pathways involved in cell adhesion, neurodevelopment, and synaptic biology in bipolar disorder along with upregulation of genes involved in immune signaling. [Abstract](#)

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Awards

The 2020 Harrington Prize for Innovation in Medicine: Stuart H. Orkin, MD

The American Society for Clinical Investigation



The seventh annual Harrington Prize for Innovation in Medicine has been awarded to Dr. Stuart Orkin (pictured), the David G. Nathan Distinguished Professor of Pediatrics at Harvard Medical School. Dr. Orkin is being recognized for breakthrough discoveries on red blood cells that offer new treatments for patients with sickle cell disease and beta-thalassemia, which are among the most common genetic disorders. [Read More](#)

UMass Exercise and Health Sciences PhD Candidate Receives National Student Research Award

UMass Boston News



The American College of Sports Medicine has selected Benjamin Kugler (pictured), a PhD candidate in UMass Boston's Exercise and Health Sciences Program, as one of the two recipients of this year's Charles M. Tipton Student Research Award. Kugler has received the award for his project, "Targeting Mitochondrial Quality Control to Alleviate Skeletal Muscle Insulin Resistance Associated with Obesity." [Read More](#)

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Local News

Researchers Identify Cells Likely Targeted by COVID-19 Virus

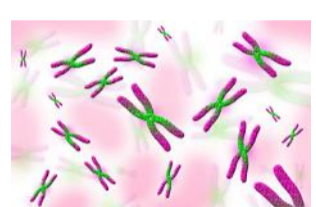
Broad Institute



A team co-led by Dr. Alex Shalek (pictured) from MIT has identified specific types of cells that appear to be targets of the coronavirus that is causing the COVID-19 pandemic. Using existing data on the RNA found in different types of cells, the researchers were able to search for cells that express the two proteins that help the SARS-CoV-19 virus enter human cells. [Read More](#)

A Drug Treatment for Telomere Diseases?

Boston Children's Hospital



A new study from the Dana-Farber/Boston Children's Cancer and Blood Disorders Center using the cells from a patient with the rare disease dyskeratosis congenita (DC) could be a breakthrough in treating DC and other so-called telomere diseases, in which cells age prematurely. The study identified several small molecules that appear to reverse this cellular aging process. [Read More](#)

Academic Labs Pivot to Fill Coronavirus Testing Gap

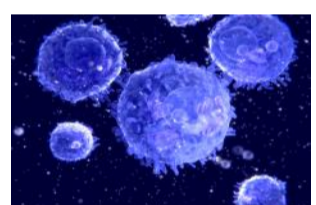
WBUR



According to the most recent data from the COVID Tracking Project, Massachusetts has run more than 20,000 tests per million people. But more than 50,000 coronavirus tests — about a third of the total in Massachusetts — have been conducted by hospital and academic labs. In an unprecedented pivot, these mostly small-scale labs have rapidly ramped up their capabilities, or totally reconfigured themselves, to fill the testing gap. [Read More](#)

Proteins May Halt the Severe Cytokine Storms Seen in COVID-19 Patients

MIT News



One of the defining features of COVID-19 is the excessive immune response that can occur in severe cases. This burst of immune overreaction, also called a cytokine storm, damages the lungs and can be fatal. A team of MIT researchers has developed specialized proteins, similar in structure to antibodies, that they believe could soak up these excess cytokines. [Read More](#)

Biogen, Broad Institute of MIT and Harvard, Partners HealthCare Launch Consortium to Build and Share a COVID-19 Biobank

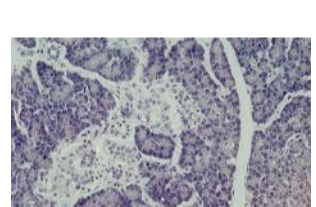
Broad Institute



Biogen, the Broad Institute of MIT and Harvard, and Partners HealthCare have announced a consortium that will build and share a COVID-19 biobank. The biobank will help scientists study a large collection of de-identified biological and medical data to advance knowledge and search for potential vaccines and treatments. [Read More](#)

Small Rises in Blood Glucose Trigger Big Changes in Insulin-Producing Cells

Joslin Diabetes Center



In diabetes, tiny clusters of insulin-producing "beta cells" in the pancreas don't produce enough of the hormone to keep people healthy, and their blood glucose levels climb. New work from the Weir lab at Joslin Diabetes Center lays out a wealth of new data about how beta cells behave at slightly raised levels of blood glucose. The work provides major additional evidence of a "glucose toxicity" effect that helps to drive the development of both type 1 and type 2 diabetes. [Read More](#)

Mass General Researchers Uncover Biomarkers that Could Lead to More Patients Getting Immunotherapy

Mass General News



A breakthrough class of cancer treatments — immunotherapies — may become available to a wider range of patients, thanks to new research led by Dr. Manish Gala (pictured) from Massachusetts General Hospital. The findings suggest that even more patients can be identified for immunotherapy by using a small number of genes that are already routinely tested for other therapeutics. [Read More](#)

Harnessing the Moonseed Plant's Chemical Know-How

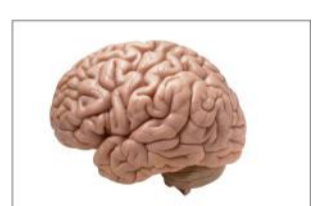
Whitehead Institute



In overgrown areas from Canada to China, a lush, woody vine with crescent-shaped seeds holds the secret to making a cancer-fighting chemical. Now, Whitehead Institute researchers in Jing-Ke Weng's lab have discovered how the plants do it. Colin Kim, a graduate student in the Weng lab, wanted to know how these plants were completing the tricky halogenation reaction using only their own genetic material. [Read More](#)

How Could COVID-19 and the Body's Immune Response Affect the Brain?

MIT Picower Institute



Though the most immediately threatening symptoms of COVID-19 are respiratory, neuroscientists are intently studying the pandemic from the perspective of the central nervous system. To get ahead of the possible long-term neurological problems from infection, multiple labs in the Picower Institute have begun pursuing research to determine whether and how it affects the brain, either directly or via the body's heightened immune response. [Read More](#)

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Interesting Articles

Untapped Potential: More US Labs Could Be Providing Tests for Coronavirus

Nature News



A survey of more than 4,000 researchers in the United States suggests that better coordination at an institutional and national level could make hundreds of thousands more tests for coronavirus available. The survey revealed that several top university laboratories that have received regulatory approval to process tests for SARS-CoV-2 are operating at half of their potential capacity. [Read More](#)

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Upcoming Events in Boston

- April 28 5:00 PM **Broad@15 Talk Series: The Human Cell Atlas: 'Google Maps' to Navigate the Human Body** Online
- April 29 11:00 AM **2020 Virtual Grant Writing Series** Online
- April 30 4:00 PM **MIT Alumni Research Slam: Course 7** Online
- May 1 10:00 AM **MassBio Chat on Emerging Technologies to Diagnose and Fight COVID-19** Online
- May 1 2:00 PM **Pre-/Post-Publication Peer Review** Online

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Science Jobs in Boston

- Research Scientist, Microbiome Host Immunology**
Broad Institute
- Senior/Principal Research Associate, Biological Science**
Moderna
- Principal Scientist, Rare Diseases, Neuroscience**
Novartis
- Senior Research Associate, Immunoassays**
Edias Medicine
- Research Fellow**
Ragon Institute

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