

**Publications of the Week**
**Characterization of Glycoproteoforms of Integrins  $\alpha 2$  and  $\beta 1$  in Megakaryocytes in the Occurrence of JAK2V617F Mutation-Induced Primary Myelofibrosis**

 First Author: Maissa Gay | Senior Author: Katya Ravid (pictured)  
 Molecular & Cellular Proteomics | Boston University School of Medicine


Amongst individuals diagnosed with primary myelofibrosis, the most prevalent mutation is the JAK2V617F somatic point mutation that activates the Janus kinase 2 (JAK2) enzyme. Their earlier reports on hyperactivity of  $\beta 1$  integrin and enhanced adhesion activity of the  $\alpha 2 \beta 1$  complex in JAK2V617F megakaryocytes led the authors to examine the new hypothesis that this mutation leads to post-translational modification via changes in glycosylation. [Abstract](#)

**Molecular Catastrophe, the Peritoneal Cavity, and Ovarian Cancer Prevention**

 First Authors: Ju Yoon Yoon, David Chapel, and Emily Goebel | Senior Authors: Wa Xian and Christopher Crum (pictured)  
 Brigham and Women's Hospital


The current theory of carcinogenesis for the deadliest of "ovarian" cancers — high-grade serous carcinoma (HGSC) — holds that the malignancy develops first in the fallopian tube and spreads to the ovaries, peritoneum and/or regional lymph nodes. Long term follow-up data from opportunistic or prophylactic salpingectomy should shed light on where malignant transformation occurs, as well as the time-line from precursor to metastatic HGSC. [Abstract](#)

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**Awards**
**Mriganka Sur Elected to the 2022 Class of the AIMBE College of Fellows**

The Picower Institute



The American Institute for Medical and Biological Engineering (AIMBE) has elected Dr. Mriganka Sur (pictured), Newton Professor of Neuroscience in the Department of Brain and Cognitive Sciences at MIT, to its College of Fellows. Peers and members of the AIMBE college nominated, reviewed, and elected Dr. Sur for developing technologies to image brain cells, synapses, and circuits, and applying them innovatively to elucidate neuronal plasticity and computations. [Read More](#)

**Forsyth Researcher Awarded R01 Grant to Study Regulation of Opportunistic Pathogens to Maintain a Balanced Oral Microbiome**

Forsyth Institute



In a healthy mouth, the diverse communities of microbes collectively known as the oral microbiome live in harmony with one another. When that balance is disturbed, some microbes capitalize on the chaos and use it to multiply rapidly and grow out of control. Luckily, our bodies have ways of keeping these opportunistic pathogenic bacteria in check. Dr. Xuesong He (pictured) has developed a hypothesis to explain one of these potential defense mechanisms. [Read More](#)

**Announcing the 2021 Beauty of the Brain Image Contest Winners**

Harvard Brain Science Initiative



Congratulations to the winners of the Harvard Brain Science Initiative's 2021 Beauty of the Brain image contest! Isle Bastille's (pictured) winning image shows molecularly diverse spiral ganglion neuron cell bodies stained for various subtype markers. These radial projections are organized according to the frequency of sound that they transmit from mechanically sensitive hair cells in the cochlea to the brain. [Read More](#)

**Whitehead Institute Director Ruth Lehmann Receives the 2022 Gruber Genetics Prize**

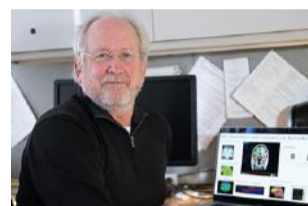
Whitehead Institute



Whitehead Institute Director Dr. Ruth Lehmann (pictured) has been awarded the 2022 Gruber Genetics Prize — one of the most prestigious recognitions in the field of genetics — along with fellow developmental biologists Dr. James Pruess of the Fred Hutchinson Cancer Research Center and Dr. Geraldine Seydoux of the Johns Hopkins University School of Medicine. [Read More](#)

**David Kennedy Awarded \$6 Million ReproNim Brain Imaging Grant**

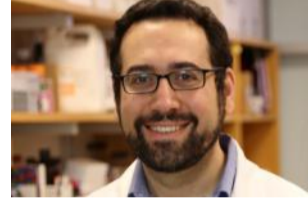
UMass Chan Medical School



UMass Chan Medical School neuroinformatics expert Dr. David Kennedy (pictured) has been awarded a five-year, \$6 million grant renewal for ReproNim: A Center for Reproducible Neuroimaging Computation. ReproNim aims to improve the reproducibility of neuroimaging science and extend the value of the national investment in infrastructure that supports brain imaging research. [Read More](#)

**Grant for Biologist's Diabetes Research**

Boston College



Assistant Professor of Biology Dr. Emrah Altindis (pictured) has received a \$110,000 grant from the Juvenile Diabetes Research Foundation (JDRF) to support his research into type 1 diabetes (T1D). "I am honored to receive this prestigious JDRF Innovative Grant that is specifically designed to support highly innovative research projects to better understand T1D," Dr. Altindis said. [Read More](#)

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**Local News**
**Study Published in *Nature Communications* Brings New Findings to Cardiac Arrhythmias**

UMass Chan Medical School



UMass Chan researchers have published a study that brings new understanding to cellular changes in heart attack scars associated with subsequent arrhythmias, a leading cause of death. Dr. J. Kevin Donahue (pictured), a co-author of the paper, said the team found increases in two proteins associated with changes in the heart's electrical function that explained the arrhythmias. [Read More](#)

**Meet a Whitehead Postdoc: Han Tran**

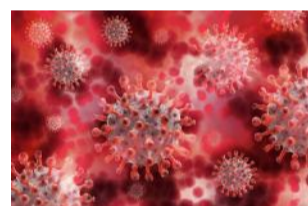
Whitehead Institute



Dr. Han Tran (pictured) is a Damon Runyon Postdoctoral Fellow in Whitehead Institute Director Dr. Ruth Lehmann's lab studying endoplasmic reticulum biology in the context of the cells that make eggs and sperm. The lab studies how germ cells are formed, how they're maintained, and how they get passed onto the next generation. [Read More](#)

**Does Nerve Damage Contribute to "Long-COVID" Symptoms?**

Massachusetts General Hospital



During the COVID-19 pandemic, some people infected with the SARS-CoV-2 virus continue to experience "long-COVID" symptoms persisting at least three months after recovery from COVID, even after mild cases. A new study led by researchers at Massachusetts General Hospital and the National Institutes of Health suggests that some patients with long-COVID have long-lasting nerve damage that appears to be caused by infection-triggered immune dysfunction. [Read More](#)

**Multi-Center Clinical Trial Launched to Investigate New Treatment for Pediatric Type 1 Diabetes**

Massachusetts General Hospital



Researchers at Massachusetts General Hospital, in partnership with New York University Langone Health, have launched a multi-center clinical trial to investigate a new treatment for pediatric type 1 diabetes even in subjects with established disease. Also known as juvenile onset diabetes, type 1 diabetes is a life-altering autoimmune disease predominantly diagnosed in children in which the body is no longer able to regulate blood sugars. [Read More](#)

**New Research Findings Could Help Improve Bone Marrow and Stem Cell Transplantation for Patients with Blood-Related Diseases**

Massachusetts General Hospital



Hematopoietic stem cells can grow and make healthy blood cells after being transplanted into patients with blood cell-related diseases. Researchers have now revealed the unique signature of genes expressed by these cells. "Our analysis will help us improve the process of bone marrow and stem cell transplantation," says co-senior author Dr. Alejandro Balazs (pictured). [Read More](#)

**Newly Diagnosed Diabetes in Patients with COVID-19 May Simply Be a Transitory Form of the Blood Sugar Disorder**

Massachusetts General Hospital



A new study shows that rather than causing a new form of diabetes, the inflammatory stress of COVID-19 may push people with pre-diabetes past the blood sugar threshold for diabetes diagnosis. "Our study showed these individuals had higher inflammatory markers and more frequently required admission to hospital ICUs than COVID-19 patients with pre-existing diabetes," says lead author Dr. Sara Cromer (pictured). [Read More](#)

**How Opioid Use Affects Offspring in Rats**

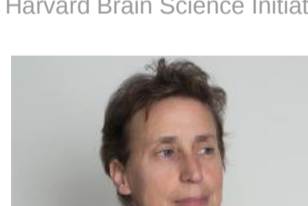
TuftsNow



New research from Dr. Elizabeth Byrnes' (pictured) lab at Cummings School of Veterinary Medicine suggests opioid use before pregnancy — even if not used during pregnancy itself — could result in a higher likelihood that a mother's male offspring will develop type 2 diabetes and metabolic syndrome, conditions that increase the risk of heart disease and stroke. [Read More](#)

**Neuronal Subtype Development Within the Space-Time Continuum**

Harvard Brain Science Initiative



How are diverse retinal neurons made at the perfect times and places to integrate into functional circuits throughout the retina? It was known that the major retinal cell types are generated in a conserved order, but very little was known about how the subtypes are made and distributed across space during development. A study from Dr. Connie Cepko's (pictured) lab tackled this question, using retinal bipolar interneurons as a model system. [Read More](#)

**Study Sheds Light on Antibiotics-Associated Diarrhea**

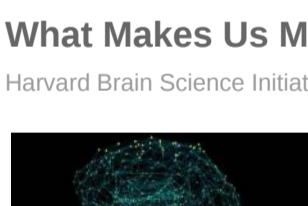
MIT News



A joint study by the Singapore General Hospital and Singapore-MIT Alliance for Research and Technology, MIT's research enterprise in Singapore, may have found the reason some patients experience diarrhea after taking the antibiotic amoxicillin-clavulanate, commonly known as Augmentin. "Our findings provide evidence that an individual's gut microbial composition can influence the risk of developing antibiotics-associated diarrhea," says Dr. Eric Alm (pictured). [Read More](#)

**What Makes Us Move?**

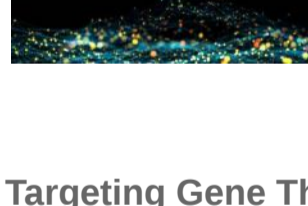
Harvard Brain Science Initiative



For decades, Parkinson's disease has suggested that dopaminergic activity is essential to our ability to move when we please. Yet, the role of the healthy dopaminergic system in movement initiation remains poorly understood. Harvard researchers found that dopaminergic activity slowly builds up over seconds and peaks just before movement initiation when mice are self-timing when to move. [Read More](#)

**Targeting Gene Therapy Directly into the Lungs**

TuftsNow



Tufts researchers are building a reputation for precision targeting in drug delivery. Their tools: tiny lipid-based nanoparticles (LNPs) fine-tuned to latch on to specific tissues, organs, or even cell types within the body. Their latest creation: LNPs that carry genetic instructions directly into the lungs. A team led by Dr. Qiaobing Xu (pictured) packed the LNPs with mRNA coding for a normal gene, Tsc2, that is mutated in individuals with a rare disease called lymphangioleiomyomatosis. [Read More](#)

**Obesity: What Does Immunity Have to Do With It?**

Boston University School of Medicine (BUSM)



BUSM researchers have shown that obesity in experimental models led to senescence of macrophages, an immune cell subtype within fat or adipose tissue. "In healthy individuals, those cells contribute to cleaning the tissue from dead adipocytes and help in the cellular turnover. We demonstrated that macrophages lost this capacity when they become senescent," explained Dr. Nabil Rabhi (pictured), an instructor of biochemistry at BUSM. [Read More](#)

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**Upcoming Events in Boston**

March 8 11:00 AM	<b>Nano Explorations: Implantable Soft Robotic Platform for Enhanced Drug Delivery</b> Online
March 8 12:00 PM	<b>PhD Career Prototype Series – Careers in the Pharmaceutical Industry</b> Online
March 8 4:00 PM	<b>Biology Colloquium Series: Seemay Chou, UCSF</b> Online
March 10 9:00 AM	<b>Harvard Startup Stories: Beacon Bio</b> Online
March 10 5:30 PM	<b>2022 Koch Institute Image Awards</b> Online

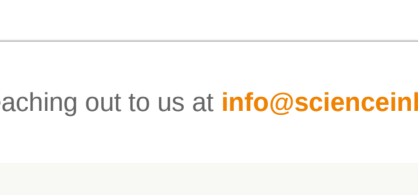
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