

Publications of the Week
Cholesterol and Matrisome Pathways Dysregulated in Astrocytes and Microglia

 First Author: Julia TCW *(pictured)* | Senior Author: Alison Goate
 Cell | Boston University School of Medicine


The impact of apolipoprotein E ε4 (APOE4), the strongest genetic risk factor for Alzheimer's disease, on human brain cellular function remains unclear. The authors investigated the effects of APOE4 on brain cell types derived from population and isogenic human induced pluripotent stem cells, post-mortem brain, and APOE targeted replacement mice. [Profile](#) | [Abstract](#)

Genetic Variation Associated With Condensate Dysregulation in Disease

 First Authors: Salman Banani and Lena Aleyan | Senior Author: Richard Young *(pictured)*
 Developmental Cell | Whitehead Institute, Brigham and Women's Hospital, MIT, Harvard Medical School, and Massachusetts General Hospital


A multitude of cellular processes involve biomolecular condensates, which has led to the suggestion that diverse pathogenic mutations may dysregulate condensates. The authors comprehensively map pathogenic mutations to condensate-promoting protein features in putative condensate-forming proteins and find over 36,000 pathogenic mutations that plausibly contribute to condensate dysregulation in over 1,200 Mendelian diseases and 550 cancers. [Abstract](#) | [Press Release](#)

[View All Publications](#)
Awards
Don Ingber Awarded Animal Free Research UK's Pioneer Medal

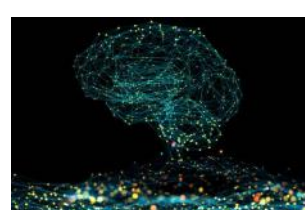
Wyss Institute



Wyss Institute Founding Director Dr. Donald Ingber *(pictured)* was awarded the Animal Free Research UK's Pioneer Medal. The annual Pioneer Award recognizes researchers leading the way in animal free research with the potential to deliver more effective treatments for human diseases faster than current methods. In 2010, Dr. Ingber developed the first lung-on-a-chip and has continued to lead the field by developing numerous other organ chip models. [Read More](#)

[View All Awards](#)
Local News
Using Artificial Intelligence to Study Autism

Boston College



Differences in behavior among people with Autism Spectrum Disorder (ASD) are closely related to differences in neuroanatomy — the shape of a brain — a team of Boston College neuroscientists report in a recent issue of the journal *Science*. This discovery could help to understand the causes of ASD, and to develop personalized interventions. [Read More](#)

Collaborative Effort Led by Marian Walhout Spotlights Worms as Model for Personalized Medicine

UMass Chan Medical School



Using four unrelated strains of the microscopic nematode *C. elegans* originating from different parts of the world, biologists led by Dr. Marian Walhout *(pictured)* have developed a model system to study individual differences in metabolism. The use of *C. elegans* allowed the team to study the unique and complex interplay between genetics, diet, microbiota, and other environmental factors that can affect fundamental metabolic processes in different individuals. [Read More](#)

Study Points to Link Between Genetic Ancestry and Genetic Signature of Lung Cancer

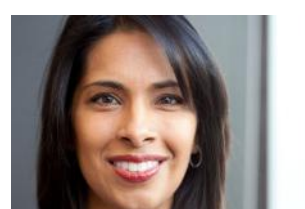
Dana-Farber Cancer Institute



Even as science has removed all doubt about the link between environmental factors like tobacco smoke and lung cancer, the role of genetics in people's risk of the disease has been much harder to pin down. A study by Dana-Farber investigators provides new evidence that, in people with lung cancer, genetic ancestry can influence the molecular signature of their cancer — the mix of mutated and normal genes in their tumor cells. [Read More](#)

Tissue Model Reveals Key Players in Liver Regeneration

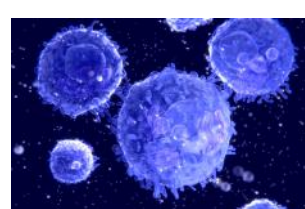
MIT News



MIT engineers have created a new liver tissue model that allows them to trace the steps involved in liver regeneration more precisely than has been possible before. The new model can yield information that could not be gleaned from studies of mice or other animals, whose biology is not identical to that of humans, says Dr. Sangeeta Bhatia *(pictured)*, the leader of the research team. [Read More](#)

Boot Camp for the Immune System

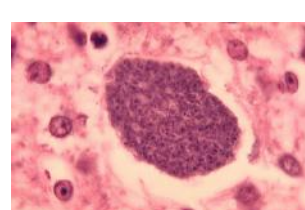
Harvard Medical School



A new study led by researchers at Harvard Medical School identifies a new mechanism that explains how the body's most powerful immune troops — T cells — learn to tell self and non-self apart. The research shows that the thymus gland — the organ where T cells are born and trained — educates nascent immune cells by exposing them to proteins made by thymus cells that mimic various tissues throughout the body. [Read More](#)

How the Body Senses an Essential Amino Acid

Whitehead Institute



A new paper from Whitehead Institute researchers reveals how mice sense an essential amino acid called leucine, which many people get from eating fish, eggs, or nuts. Down the line, the work could inform research into creating drugs that target specific parts of a key metabolic and growth-regulating pathway called the mTOR pathway to treat some cancers or other metabolic diseases. [Read More](#)

Brain Practices New Tasks While We Sleep

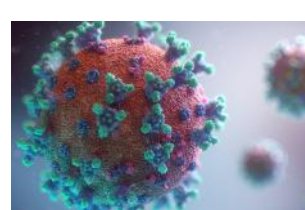
The Harvard Gazette



Why do we sleep? Scientists have debated this question for millennia, but a new study adds fresh clues for solving this mystery. The findings, published in the *Journal of Neuroscience*, may help explain how humans form memories and learn, and could eventually aid the development of assistive tools for people affected by neurologic disease or injury. [Read More](#)

Which COVID-19 Vaccine Type and Timing Are Best During Pregnancy?

Ragon Institute



Although pregnant individuals and newborns may face elevated risks of developing more severe cases of COVID-19 following SARS-CoV-2 infection, data indicate that COVID-19 vaccination during pregnancy can help to protect both the mother and child. New research collaboratively led by investigators at Massachusetts General Hospital and Brigham and Women's Hospital and published in *Nature Communications* examined how different COVID-19 vaccines and the timing of vaccination during pregnancy impact the extent of this protection. [Read More](#)

Uchida Lab Connects Machine Learning Theory to Biological Brains

Harvard University Department of Molecular and Cellular Biology



In a new study published in *Nature Neuroscience*, researchers in Dr. Misuko Watabe-Uchida's lab found evidence that rodent brains use a specific form of learning called temporal difference (TD) learning. TD learning has been widely used in both animal learning models and artificial intelligence. In each case, an agent learns from an unexpected reward to repeat the actions that lead to reward. [Read More](#)

[View All Articles](#) | [Submit an Article](#)
Upcoming Events in Boston

July 12 1:30 PM	Boston Life Sciences Roundtable MassBio
July 18–20 8:00 AM	LEAP HR: Life Sciences East 2022 Hilton Boston Logan Airport
July 19 8:00 AM	Turning Great Ideas into Dollars: The Life-Cycle of a Start-Up – Part Two MassBioHub
August 2 11:00 AM	American Heart Association Funding Webinar Online
August 11 5:00 PM	STAT Locals Cambridge Brewing Co., Kendall Square

[View All Events](#) | [Submit an Event](#)
Other Science Jobs in Boston

- Cancer Biology Research Fellow**
Dana-Farber Cancer Institute
- Research Associate I, Proteomics Platform**
Broad Institute
- Research Technician**
Massachusetts General Hospital
- Principal Scientist/Senior Scientist, Gene Editing**
Garuda Therapeutics
- Preclinical Safety Study Scientist**
Novartis

[View 45 Other Science Jobs](#) | [Submit a Job](#)

We Want Your Feedback!
Take our survey and you could win a Goldie Wireless speaker.

 Submit your articles and events by reaching out to us at info@scienceinboston.com.

BROUGHT TO YOU BY



- STEMCELL Technologies**
Products | Services
- STEMCELL Science News**
Free Weekly Updates on Your Field
- The Stem Cell Podcast**
Interviews and Updates on Stem Cell Science