

Publications of the Week

Directed Differentiation of Mouse Pluripotent Stem Cells into Functional Lung-Specific Mesenchyme

First Author: Andrea Alber | Senior Author: Darrell Kotton (*pictured*)
Nature Communications | Boston University



The authors generate a mouse induced pluripotent stem cell (iPSC) line carrying a lung-specific mesenchymal reporter/lineage tracer. They identify the pathways necessary to specify lung mesenchyme and find that mouse iPSC-derived lung mesenchyme expresses key molecular and functional features of primary developing lung mesenchyme. [Abstract](#)

Optimal Dose of Cryoprecipitate in Massive Transfusion Following Trauma

First Author: Ander Dorken-Gallastegi | Senior Author: Jonathan Parks (*pictured*)
The Journal of Trauma and Acute Care Surgery | Massachusetts General Hospital and Harvard Medical School



The authors evaluated the optimal red blood cell to Cryo transfusion ratio (RBC:Cryo) during resuscitation in massively transfused trauma patients. Compared to no Cryo administration, only RBC:Cryo ratios \leq 8:1 were associated with a significant survival benefit, while lower doses of Cryo were not associated with decreased 24-hour mortality. [Abstract](#)

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Awards

Two Whitehead Institute Researchers Receive Prestigious Fellowships from Pew Charitable Trusts

Whitehead Institute



Dr. Sinisa Hrvatin (*pictured, left*) is one of 22 scientists selected to receive this year's honor to be a Pew Scholar, chosen from among 188 nominations submitted by leading US academic and research institutions. In addition, the Pew Latin American Fellows Program in the Biomedical Sciences has selected Dr. Luiza de Oliveira Saad (*right*) to be one of ten postdoctoral fellows from across Latin America to receive two years of funding to conduct research. [Read More](#)

Picower Postdoc Earns Burroughs Wellcome Fund Award

The Picower Institute



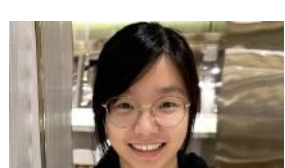
The Burroughs Wellcome Fund (BWF) announced that Picower Institute postdoctoral fellow, Dr. Rebecca Pinals (*pictured*), is among nine winners of its prestigious 2023 Career Awards at the Scientific Interface. The competitive awards recognize "exceptional researchers whose work exemplifies the collaborative spirit necessary for breakthrough discoveries," according to BWF. [Read More](#)

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Local News

Studying Phages Far from Home

MIT News



For the past two and a half years, graduate student Tong Zhang (*pictured*) has been figuring out how bacteria protect themselves against phages — the viruses that infect them. All the while, doing so as a student far from her hometown of Beijing, China. Phages and bacteria are in a constant arms race, which those in the field call the Red Queen Conflict: Alice in Wonderland running to stay in place, the queen making chase. [Read More](#)

Without Key Extracellular Protein, Neuronal Axons Break and Synaptic Connections Fall Apart

The Picower Institute



Perhaps the most obvious feature of a neuron is the long branch called an axon that ventures far from the cell body to connect with other neurons or muscles. If that long, thin projection ever seems like it could be vulnerable, a new MIT study led by Dr. Troy Littleton (*pictured*) shows that its structural integrity may indeed require the support of a surrounding protein called Perlecan. [Read More](#)

Immunotherapy for Brain Cancer Metastases Shows Clinical Benefit

Massachusetts General Hospital



In a Phase II clinical trial of the immune checkpoint inhibitor pembrolizumab, investigators with Dr. Priscilla Brastianos (*pictured*) found that 42 percent of patients with metastatic brain cancer benefited from the therapy. The authors caution that these benefits must be weighed against risk of toxicity, but, overall, the study shows promising results that warrant larger studies and efforts to identify patients most likely to benefit from this treatment. [Read More](#)

Atlas of Human Brain Blood Vessels Highlights Changes in Alzheimer's Disease

MIT News



MIT researchers with Dr. Manolis Kellis (*pictured*) characterize gene expression patterns for 22,500 brain vascular cells across 428 donors, revealing insights for Alzheimer's onset and potential treatments. They unveiled a systematic molecular atlas of human brain vasculature and its changes in Alzheimer's disease across six brain regions. [Read More](#)

Neurosurgery Researcher Working to Identify New Treatments for Children with Traumatic Brain Injuries

Bench Press




Dr. Beth Costine-Bartell (*pictured*), an Assistant Investigator in Neurosurgery at Mass General and an Assistant Professor of Neurosurgery at Harvard Medical School, is working to identify new treatments to help children with traumatic brain injuries. The primary research focus is the pathophysiology of traumatic brain injury (TBI) and the brain's ability to self-repair after TBI in children. [Read More](#)

Charlie Farquhar: Forger of Chemical and Social Bonds

MIT Chemistry



While developing targeted drug-delivery methods, PhD student Charlie Farquhar (*pictured*) advocates for inclusion, belonging, and collaboration. In one of their two main projects, Farquhar is developing a peptide that binds to a protein over-expressed in brain tumor cells while entering the cells to deliver a chemotherapy drug to the tumor, helping to decrease side effects from off-target interactions, and lower cost by requiring less of the drug for an effective treatment. [Read More](#)

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June 27 4:00 PM	MERIT Symposium at MassBio MassBioHub
July 10 8:00 AM	Shifting Your Mentality From Discovery to Development MassBioHub and Online
July 11 - 13 9:00 AM	4th RNA Editing Summit Hilton Boston Logan Airport
July 19 4:00 PM	Christmas in July - MassBioHub and Open House MassBioHub
July 20 1:00 PM	2023 Diversity, Equity, and Inclusion Conference MassBioHub and Online

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