

Publications of the Week

Generation of Functionally Distinct T Cell Populations by Altering the Viscoelasticity of Their Extracellular Matrix

First Authors: Kwasi Adu_Berchie and Yutong Lio | Senior Author: David Mooney (*pictured*)
Nature Biomedical Engineering | Wyss Institute and Harvard University



The authors show that functionally distinct T cell populations can be generated from T cells that received the same stimulation by altering the viscoelasticity of their surrounding extracellular matrix (ECM). They show that ECM viscoelasticity regulates T cell phenotype and function via the activator-protein-1 signaling pathway, a critical regulator of T cell activation and fate. [Abstract](#) | [Press Release](#)

Defining Diurnal Fluctuations in Mouse Choroid Plexus and CSF at High Molecular, Spatial, and Temporal Resolution

First Author: Ryann Fame | Senior Author: Maria Lehtinen (*pictured*)
Nature Communications | Boston Children's Hospital and Harvard Medical School



The authors developed a platform to analyze diurnal variations in male mouse choroid plexus (ChP) and cerebrospinal fluid (CSF). Ribosome profiling of ChP epithelial cells revealed diurnal translational differences in metabolic machinery, secreted proteins, and barrier components. Using ChP and CSF metabolomics and blood-CSF barrier analyses, they observed diurnal changes in metabolites and cellular junctions. [Abstract](#)

[View All Publications](#) 

Awards

Rhushikesh Phadke Receives Brenton R. Lutz Award

Boston University Biology



Molecular Biology, Cell Biology, and Biochemistry PhD candidate Rhushikesh Phadke (*pictured*) of the Cruz-Martín Lab is the recipient of this year's Brenton R. Lutz Award. Rhushikesh's research explores the impact of the immune complement pathway on synaptic plasticity in neurological disorders like schizophrenia and Alzheimer's disease. [Read More](#)

BU's Five NSF Grant Winners Are Changing Conversations in Robotics, Computing, Mass Incarceration, Neurology, and More

The Brink



Researchers including Dr. Hadi Nia (*pictured*) receiving the Faculty Early Career Development Program awards are laying the foundation for the next generation of scientists by using the funding to support students and youth educational programs and to diversify STEM. With his award, Dr. Nia will be studying lung function in real time, at the cellular level, using a tool developed in his lab, called crystal rib cage. [Read More](#)

Inaugural Merkin Prize in Biomedical Technology Awarded to Dr. Marvin Caruthers for Developing Technology That Efficiently Synthesizes DNA

Broad Institute



Dr. Marvin Caruthers (*pictured*) of the University of Colorado, Boulder, has won the inaugural Richard N. Merkin Prize in Biomedical Technology for developing an efficient, automated technology for synthesizing DNA. The chemical reactions that he discovered in the early 1980s to accurately and quickly assemble nucleotides into strands of DNA provided an essential element in the development of modern molecular medicine. [Read More](#)

[View All Awards](#) 

Local News

Neha Kapate on Backpacking Her Way into a New Frontier for Treating Incurable Diseases

Wyss Institute



Dr. Neha Kapate (*pictured*) sees cell-based therapies as a new frontier in disease treatment. Driven by a strong desire to help patients, she's using her chemical engineering background and a new cell therapy method, cellular "backpacks," to find better ways to help patients with conditions that currently lack cures, like multiple sclerosis, or treatments, like traumatic brain injury. [Read More](#)

Clinical Study Aims to Identify Early Molecular and Biological Signatures of Vitiligo

UMass Chan



Drs. John Harris (*pictured, left*), Manuel Garber (*center*), and Mehdi Rashighi (*right*), will lead a \$3.75 million clinical study at UMass Chan Medical School funded by the National Institute of Allergy and Infectious Diseases to identify preclinical genetic, molecular, and biological signatures among an at-risk population that may predispose them to developing vitiligo. [Read More](#)

Unraveling Connections Between the Brain and Gut

McGovern Institute



Researchers with Dr. Polina Anikeeva (*pictured*) demonstrated that they could induce feelings of fullness or reward-seeking behavior in mice by manipulating cells of the intestine. In future work, they hope to explore some of the correlations that have been observed between digestive health and neurological conditions such as autism and Parkinson's disease. [Read More](#)

When It Comes to Immunity, You Are What You Eat

Harvard Medical School



The precise mechanisms that explain just how diet alters the function of our cells, tissues, and organs have remained poorly understood. Now, a study led by Dr. Dennis Kasper (*pictured*) sheds light on this process, pinpointing a critical intermediary between food and health — the gut bacteria that make up our microbiome, or the collection of microorganisms that live in symbiosis with humans. [Read More](#)

Does the COVID Vaccine Affect Menstruation? New BU Study Finds No

McGovern Institute



Many said their menstrual cycles were arriving earlier with heavier bleeding and greater pain after receiving a COVID vaccine. Now, a new Boston University (BU) School of Public Health–led study with Dr. Amelia Wesselink (*pictured*) has found that the vaccines are likely not to blame for any major changes to the menstrual cycle; any changes people did notice were likely the result of their body's immune system responding to the vaccine. [Read More](#)

[View All Articles](#)  | [Submit an Article](#) 

Upcoming Events in Boston

- 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 13 - 16
9:00 AM **Protein Society 37th Annual Symposium**
The Westin Boston Seaport District
- July 19
4:00 PM **Christmas in July — MassBioHub Open House**
MassBioHub
- July 20
1:00 PM **2023 MassBio Diversity, Equity, and Inclusion Conference**
MassBioHub and Online

[View All Events](#)  | [Submit an Event](#) 

Science Jobs in Boston

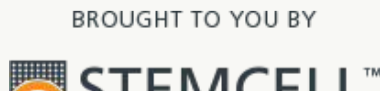
- Senior Medical Science Liaison, Vaccines**
Sanofi
- Healthcare Data Analyst**
UMass Chan Medical School
- Cell Manufacturing Associate, CRISPR**
Editas Medicine
- Associate Scientist I, Molecular Biology**
Editas Medicine
- Research Assistant III, Immunology**
Harvard Medical School

[View 75 Other Science Jobs](#)  | [Submit a Job](#) 



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