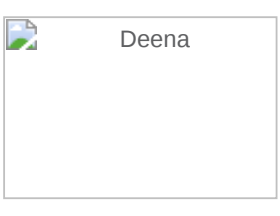
Volume 5.17: May 8, 2023

Publications of the Week

Dynamic Changes in Heparan Sulfate Nanostructure in Human Pluripotent Stem Cell Differentiation

First Author: Deena Al Mahbuba *(pictured, second from left)* | Senior Author: Laura Kiessling
ACS Nano | McGovern Institute, Koch Institute, the Broad Institute, and MIT



Heparan sulfate (HS) is a heterogeneous, cell-surface polysaccharide critical for transducing signals essential for mammalian development. Using expansion microscopy, the authors found that striking changes in HS nanostructure occur as human pluripotent stem cells differentiate, and these changes correlate with growth factor signaling. **Profile | Abstract**

Trehalose-Guanosine Glycopolymer Hydrogels Direct Adaptive Glia Responses in CNS Injury

First Author: Eric DuBois | Senior Author: Timothy O'Shea *(pictured)*
Advanced Materials | Boston University

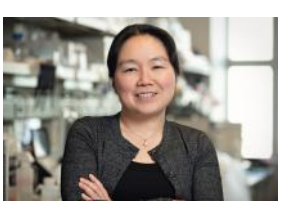
Neural tissue damaged after central nervous system (CNS) injury does not naturally regenerate but is instead replaced by non-neural fibrotic scar tissue that serves no neurological function. Scar-free repair to create a more permissive environment for regeneration requires altering the natural injury responses of glial cells. In this work, glycopolymer-based supramolecular hydrogels are synthesized to direct adaptive glia repair after CNS injury. **Abstract**

View All Publications

Awards

Whitehead Institute Member Yukiko Yamashita Elected to the American Academy of Arts and Sciences

Whitehead Institute



Whitehead Institute member Dr. Yukiko Yamashita *(pictured)* has been elected as a member of the American Academy of Arts & Sciences (AAAS). Election to the membership of AAAS — an independent policy organization with initiatives in science, arts, democracy, education, and global affairs — is one of the nation's most prestigious recognitions of highly accomplished individuals. **Read More**

View All Awards

Local News

Genomes from 240 Mammalian Species Reveal What Makes the Human Genome Unique

Broad Institute

Researchers with the Zoonomia Project have demonstrated how comparative genomics can not only shed light on how certain species achieve extraordinary feats, but also help scientists better understand the parts of our genome that are functional and how they might influence health and disease. The effort is led by Drs. Elinor Karlsson *(pictured)* and Kerstin Lindblad-Toh. **Read More**

A Protein Hidden in Plain Sight Helps Cells Time Their Escape

Whitehead Institute

If a cell's machinery detects errors while the cell is preparing to divide, division is paused until those errors are corrected. However, if division gets paused for too long, a state called being in arrest, the cell will eventually die. New research from Whitehead Institute member Dr. Iain Cheeseman *(pictured)* and postdoc Dr. Mary-Jane Tsang identifies a way in which cells set their timers for arrest. **Read More**

Mutant Protein Switches Sides in Melanoma

Harvard Department of Stem Cell and Regenerative Biology

Researchers from Dr. Len Zon's *(pictured)* lab at Harvard Stem Cell and Regenerative Biology have discovered a new mechanism that influences melanoma development, a finding that could have wide implications for patients across a variety of cancers. Dr. Megan Insco and her team found that the CDK13 protein acts as a tumor suppressor in melanoma and that mutation or loss of it can lead to the development of tumors. **Read More**

Machine Learning Model Finds Genetic Factors for Heart Disease

Broad Institute

To get an inside look at the heart, cardiologists often use electrocardiograms (ECGs) to trace its electrical activity, and magnetic resonance images (MRIs) to map its structure. Dr. Caroline Uhler *(pictured)* and a team at the Broad Institute have developed a machine learning approach that can learn patterns from ECGs and MRIs simultaneously, and based on those patterns, predict characteristics of a patient's heart. **Read More**

Researchers Use Base Editing to Probe Blood Cell Biology

Broad Institute

Researchers have used a highly precise genome-editing technology called base editing to make hundreds of direct edits to blood stem cells from patients' bone marrow. Their work is the first time that such high-throughput base editing, which can make many single-base substitutions in DNA in many cells at once, has been applied to blood stem cells. **Read More**

Researchers Make Ionocytes, Mysterious Lung Cells, in a Dish

Harvard Medical School

Researchers in Dr. Darrell Kotton's *(pictured)* group at Boston University have created ionocytes from patients for the first time using stem cell technology. The accomplishment means that ionocytes can now be studied in a dish to understand their biology — and their possible use as a treatment vehicle. These rare cells were making more than 90 percent of the protein that's diminished in cystic fibrosis. **Read More**

You Can't Learn Too Much: How Brain Representations of Complex Odor Mixtures Evolve with Experience

Harvard University Department of Molecular and Cellular Biology

The piriform cortex in the mammalian brain is the largest cortical region that receives direct sensory input from the olfactory bulb as well as complex top-down inputs from higher brain regions. How mice and the piriform cortex deal with a large number of odor mixtures with a huge diversity of compositional similarity is not known. Researchers in Dr. Venki Murthy's *(pictured)* group investigated if mice can distinguish a particular odor mixture, such as lemon, from numerous other mixtures. **Read More**

View All Articles | Submit an Article

Upcoming Events in Boston

May 11 1:00 PM	**Career Paths in Finance/Industry** Online
May 14 2:00 PM	**Life After Incubator: Finding Your Own Place and Meeting Your Vendor Matches** MassBioHub
June 5 8:30 AM	**Accelerate Access to EU Market : Biotech Valley in Wallonia (Belgium)** Tufts Launchpad BioLabs
June 6 6:30 PM	**Community Concert at BIO** Big Night Live
June 14-17 9:00 AM	**ISSCR 2023** Boston Convention and Exhibition Center

View All Events | Submit an Event

STEMCELL Jobs

Manager, Inside Sales, Immunology
STEMCELL Technologies

Senior Scientific Support Representative
STEMCELL Technologies

Scientific Sales Representative, Cell Culture
STEMCELL Technologies

Sales Coordinator, Primary & Cultured Cells
STEMCELL Technologies

Scientific Inside Sales Representative
STEMCELL Technologies

View 126 Other STEMCELL Jobs

Other Science Jobs in Boston

Research Assistant II
Harvard Medical School

Protein Analytical Chemist
MIT

Principal Scientist, Immunology
Biogen

Scientist I/II, Protein Biology
Voyager Therapeutics

Senior Scientific Writer
Broad Institute

View 38 Other Science Jobs | Submit a Job

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