

Publications of the Week

Controlling Donor and Newborn Neuron Migration and Maturation in the Eye Through Microenvironment Engineering

First Author: Jonathan Soucy (*pictured*) | Senior Author: Petr Baranov
The Proceedings of the National Academy of Sciences | The Schepens Eye Research Institute of Massachusetts Eye and Ear and Harvard Medical School



The “*in silico–in vitro–in vivo*” funnel holds significant potential for identifying targets to control cellular processes in research and clinical applications. In this report, researchers describe a framework for identifying, selecting, and applying chemokines to direct retinal neuron migration *in vivo* within the adult mouse retina.

[Abstract](#) | [Press Release](#)

iPSC-Derived Microglia Carrying the TREM2 R47H/+ Mutation Are Proinflammatory and Promote Synapse Loss

First Author: Jay Penney | Senior Author: Li-Huei Tsai (*pictured*)
Glia | Picower Institute for Learning and Memory, MIT, and the Broad Institute



A number of mutations in the microglial protein Triggering Receptor Expressed on Myeloid cells 2 (TREM2) have been associated with increased risk for developing Alzheimer’s disease, most notably the R47H/+ substitution. Researchers employed gene editing and stem cell models to gain insight into the effects of the TREM2 R47H/+ mutation on human-induced pluripotent stem cell-derived microglia.

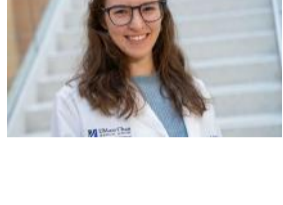
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Awards

PhD Student Valeria Sanabria Wins Zelda Haidak Scholarship in Cell Biology

UMass Chan Medical School



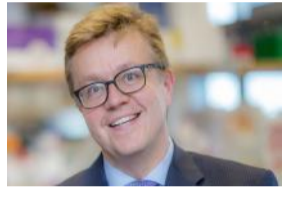
PhD student Dr. Valeria Sanabria (*pictured*) has earned the Zelda Haidak Scholarship in Cell Biology from the Morningside Graduate School of Biomedical Sciences at UMass Chan Medical School. “I’m really honored to have won this scholarship. The fact that it exists to support female researchers in science is important,” said Dr. Sanabria. [Read More](#)

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Local News

Dana-Farber Cancer Institute Faculty Among World’s Most Highly Cited Researchers

Dana-Farber Cancer Institute



Dana-Farber Cancer Institute announced that 34 of its researchers have been named to the Highly Cited Researchers list of 2023. Among the Dana-Farber faculty included in this year’s list is Dr. Pasi Jänne (*pictured*). Each researcher selected has authored multiple “Highly Cited Papers” which rank in the top 1% by citations for their field and publication year in the Web of Science over the past decade. [Read More](#)

Timing Is Everything: How Circadian Rhythms Influence Our Brains

Boston Children’s Hospital



A study led by Dr. Jonathan Lipton at Boston Children’s Hospital spells out the relationship between circadian rhythms — the body’s natural day/night cycles — and the brain connections known as synapses. The work is the first to provide a cellular and molecular explanation for natural fluctuations over the day in alertness, cognition, and the ability to learn and remember. [Read More](#)

Search Algorithm Reveals Nearly 200 New Kinds of CRISPR Systems

Broad Institute



Scientists at the Broad Institute, the McGovern Institute, and the National Center for Biotechnology Information have developed a new search algorithm that has identified 188 kinds of new rare CRISPR systems in bacterial genomes, encompassing thousands of individual systems. The algorithm, which comes from the lab of CRISPR pioneer Dr. Feng Zhang (*pictured*), uses big-data clustering approaches to rapidly search massive amounts of genomic data. [Read More](#)

Researchers Develop New Method for Prenatal Genetic Testing

Massachusetts General Hospital



A team of investigators from Massachusetts General Hospital, Brigham and Women’s Hospital, and the Broad Institute have developed a non-invasive genetic test that can screen the blood of pregnant individuals to survey all genes for fetal DNA sequence variants. Results from their proof-of-principle analysis are published in the *New England Journal of Medicine*. [Read More](#)

Cell Fate Choice During Adult Regeneration Is Highly Disorganized, New Study Finds

Whitehead Institute



A team of scientists at the Whitehead Institute and MIT led by Dr. Peter Reddien (*pictured*) has spatially mapped the choices stem cells make during tissue regeneration in flatworms, revealing an unexpected finding. Rather than being organized into homogeneous neighborhoods, the spatial pattern of stem cell choice is highly heterogeneous with adjacent stem cells choosing different fates.

[Read More](#)

New Clues into the Head-Scratching Mystery of Itch

Harvard Medical School



Scientists at Harvard Medical School, led by Dr. Isaac Chiu (*pictured*), have shown for the first time that a common skin bacterium — *Staphylococcus aureus* — can cause itch by acting directly on nerve cells. The research adds an important piece to the long-standing puzzle of itch and helps explain why common skin conditions like eczema and atopic dermatitis are often accompanied by persistent itch.

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What Shapes Your Dog’s Personality

The Harvard Gazette



Why do dogs behave so differently, even within their own breeds? Dr. Erin Hecht, Assistant Professor of Human Evolutionary Biology at Harvard, is seeking answers through The Canine Brains Project. “When we’re looking at dogs, as a natural experiment and brain behavior evolution, all we have to do is look at their brains and see what evolution did in order to satisfy those selection requirements,” said Dr. Hecht. [Read More](#)

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Upcoming Events in Boston

- December 2 - 6 **Cell Bio 2023**
8:00 AM Boston Convention and Exhibition Center
- December 4 **Biotech Networks Scientific Speed Networking**
6:00 PM Democracy Brewing
- December 5 - 7 **3rd ADC Target Selection Summit**
8:00 AM Hilton Boston Logan Airport
- December 6 **BioAgilytix Presents: Science After Hours at MassBioHub**
4:00 PM MassBioHub
- December 7 - 14 **Toward a Deep Understanding of the Structural Patterns that Govern Antibody Mediated Immunity**
12:00 PM Online

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Science Jobs in Boston

- Scientific Inside Sales Representative, Cell Culture**
STEMCELL Technologies
- Research Technologist**
Massachusetts General Hospital
- Scientific Liason, Infectious Disease**
The Broad Institute
- Research Associate II/Senior Research Associate, Molecular and Cell Biology**
eGenesis
- Staff Scientist, Patents**
Scismic

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