

Publications of the Week

Laminar Distribution and Arbor Density of Two Functional Classes of Thalamic Inputs to Primary Visual Cortex

First Author: Jun Zhuang (pictured) | Senior Author: Clay Reid
Cell Reports | Allen Institute for Brain Science



It is under debate whether motion/direction-sensitive inputs preferentially target the superficial layers in the primary visual cortex (V1), as opposed to the location-sensitive inputs, which preferentially target the middle layers. By using calcium imaging to measure the activity of motion/direction-sensitive and location-sensitive axons in V1, the authors find evidence against these cell-type-specific laminar biases at the population level. [Profile](#) | [Abstract](#)

Transcriptional and Functional Divergence in Lateral Hypothalamic Glutamate Neurons Projecting to the Lateral Habenula and Ventral Tegmental Area

First Author: Mark Rossi | Senior Author: Garret Stuber (pictured)
Neuron | UW and the Center for the Neurobiology of Addiction, Pain, and Emotion



To resolve the function of distinct glutamatergic neurons within the lateral hypothalamic area (LHA^{Vhlrt2}) populations, the authors systematically compared projections to the lateral habenula and ventral tegmental area using viral tracing, single-cell sequencing, electrophysiology, and *in vivo* calcium imaging. Their data illuminates the functional heterogeneity of LHA^{Vhlrt2} neurons, suggesting that reward and aversion are differentially processed in divergent efferent pathways. [Abstract](#) | [Press Release](#)

The Novel Anti-CRISPR AcrIIA22 Relieves DNA Torsion in Target Plasmids and Impairs SpyCas9 Activity

First Author: Kevin Forsberg | Senior Author: Harmit Malik (pictured)
PLoS Biology | Fred Hutch, Seattle University, and the Howard Hughes Medical Institute



To overcome CRISPR-Cas defense systems, many phages and mobile genetic elements encode CRISPR-Cas inhibitors called anti-CRISPRs (Acrs). Nearly all characterized Acrs directly bind Cas proteins to inactivate CRISPR immunity. Using functional metagenomic selection, the authors describe AcrIIA22, an unconventional Acr found in hypervariable genomic regions of clostridial bacteria and their prophages from human gut microbiomes. [Abstract](#)

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Awards

Azadeh Yazdan Receives \$3.2M Grant to Investigate Ways Neurotechnology Could Induce Targeted Changes in the Brain, Leading to Better Treatments for Stroke

UW Electrical and Computer Engineering



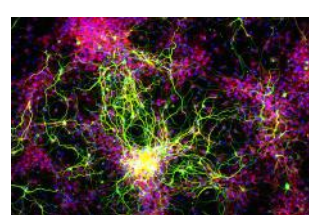
UW Electrical and Computer Engineering Assistant Professor Dr. Azadeh Yazdan (pictured) recently received a five-year grant from the National Institutes of Health to experiment with using optogenetic stimulation, a cutting-edge neurotechnology, to induce targeted changes in the brain. Her research could lead to better treatments for neurological disorders and diseases such as stroke. [Read More](#)

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Local News

Nudging Cells to Repair Damaged Retinas

UW Medicine



In an approach that could someday be used to help repair the retinas in patients who have lost vision due to such diseases as macular degeneration, glaucoma and diabetes, scientists at the UW School of Medicine have induced non-neuronal cells to become retinal neurons. "We see this research as opening up the possibility of gene therapies for diseases where retinal neurons are lost," said Dr. Tom Reh, Professor of Biological Structure at the UW School of Medicine. [Read More](#)

Looking Back and Projecting Ahead as AVE Celebrates One Year

Brotman Baty Institute



This October marks the one-year anniversary of the Atlas of Variant Effects (AVE) Alliance. AVE is an international collaborative whose mission is to galvanize and coordinate global efforts to produce multiplexed functional data for human and pathogen genes to inform human disease. Three of AVE's Executive Committee members, including Dr. Lea Starita of UW, reflect on this past year and also offer a glimpse into the future. [Read More](#)

NIH Supports Studies on Senescent Cells

UW Medicine



Efforts to understand aging cells in human tissues have received increased support from the National Institutes of Health. New grants, as part of the Cellular Senescence Network, have been awarded to several research teams across the country, including a group headed by Dr. Liangcai Gu at UW Medicine. Dr. Gu, an Assistant Professor of Biochemistry at the UW School of Medicine, will develop and apply strategies to search for harmful aging cells in different tissues. [Read More](#)

How Pandemic-Driven Talent Migration Will Change Where Biotech Companies Are Located

GeekWire



Just as Joel Marcus saw the rise of biotech and capitalized on it, he is reading the tea leaves as the pandemic fuels investor interest in biotech and upends business models. He talked about the future of the industry in Seattle and beyond in an interview with Life Science Washington CEO Leslie Alexandre, at the trade group's annual summit. They discuss how the pandemic revealed the need for complex therapeutics, making the Seattle area well positioned to forge the next generation of medicines. [Read More](#)

Antibiotics for Appendicitis: Study Findings Finalized

UW Medicine



Antibiotics are now an accepted first-line treatment for most people with appendicitis, according to final results of the Comparing Outcomes of antibiotic Drugs and Appendectomy (CODA) trial and an updated treatment guideline for appendicitis from the American College of Surgeons. Dr. David Flum, a Professor and Associate Chair of Surgery at the UW School of Medicine, was a Co-Principal Investigator of the CODA study. [Read More](#)

Mozart Therapeutics Launches with \$55 Million Series A Financing to Develop Disease Modifying Therapeutics for Autoimmune and Inflammatory Diseases

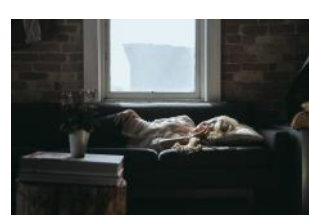
Mozart Therapeutics



Mozart Therapeutics, a new biopharmaceutical company targeting a novel immune pathway, announced a \$55 Million Series A Financing. "We aim to reset and restore the immune system balance by leveraging a novel pathway to develop first-in-class CD8 Treg modulators as disease-modifying therapeutics to address an unmet need across a spectrum of diseases," said Katie Fanning (pictured), CEO of the company. [Read More](#)

DOD Funds \$4.3M Human Trial on Device to Enhance Sleep

UW Medicine



The U.S. Department of Defense (DOD) is funding the first human trial of a device to speed up and enhance the natural system of brain cleansing that occurs when we sleep. The trial will be conducted among 90 people at three trial sites – UW School of Medicine, University of North Carolina, and a collaboration between Oregon Health & Science University and the Brain Electrophysiology Laboratory. [Read More](#)

Athira Pharma Announces Completion of Enrollment in Phase II ACT-AD Trial Evaluating ATH-1017 for Mild-to-Moderate Alzheimer's Disease

Athira Pharma



Athira Pharma announced that it has completed enrollment in ACT-AD, a Phase II randomized, placebo-controlled study of ATH-1017 in patients with mild-to-moderate Alzheimer's disease. ATH-1017 is a small molecule designed to enhance the activity of Hepatocyte Growth Factor at its receptor, MET, which are expressed in the central nervous system to promote brain health and function. [Read More](#)

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Upcoming Events in Seattle

- November 4 6:00 PM **The Promise of the Human Microbiome** Online
- November 10 6:00 PM **Reimagine Your Immune System** Online
- November 13 6:00 PM **Colton's Army Guild – Path to a Cure Virtual Auction** Online
- November 15 8:00 AM **Global Oncology Lecture Series** Online
- November 20 5:00 PM **Seattle Festival of Trees Gala** Fairmont Olympic Hotel

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Science Jobs in Seattle

- Scientist/Senior Scientist, Immuno-Oncology**
Systimmune
- Postdoctoral Fellow**
Seattle Children's
- Research Scientist, Antigen Map**
Adaptive Biotechnologies
- Research Technician II-III, Intestinal Immunity**
Fred Hutch
- Manager, Senior Process Engineer I**
Bristol Myers Squibb

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