

Publications of the Week

Structural Basis for Human Coronavirus Attachment to Sialic Acid Receptors

First Author: Alejandra Tortorici | Senior Author: David Veester (pictured, fifth from left)
Nature Structural & Molecular Biology | UW



Coronaviruses cause respiratory tract infections in humans and outbreaks of deadly pneumonia worldwide. To understand the molecular basis of coronavirus attachment to oligosaccharide receptors, the authors determined cryo-EM structures of coronavirus OC43 transmembrane spike glycoprotein trimer in isolation and in complex with a 9-O-acetylated sialic acid. [Profile](#) | [Abstract](#)

Single-Cell Activity Tracking Reveals that Orbitofrontal Neurons Acquire and Maintain a Long-Term Memory to Guide Behavioral Adaptation

First Author: Vijay Mohan K. Nambodiri | Senior Author: Garrett Stuber (pictured)
Nature Neuroscience | Allen Institute for Brain Science



The authors show that the orbitofrontal cortex contains several functional clusters of neurons distinctly encoding cue-reward memory representations, with only select responses routed downstream to ventral tegmental area. Unexpectedly, these representations were stably maintained by the same neurons even after extinction of the cue-reward pairing, and supported behavioral learning and memory. [Abstract](#)

Disentangling Strictly Self-Serving Mutations from Win-Win Mutations in a Mutualistic Microbial Community

First Author: Samuel Frederick Mock Hart | Senior Author: Wenyong Shou (pictured, front row right)
eLife | Fred Hutch



Mutualisms can be promoted by pleiotropic win-win mutations which directly benefit self and partner. Intuitively, partner-serving phenotype could be quantified as an individual's benefit supply rate to partners. The authors demonstrate the inadequacy of this thinking, and propose an alternative. Specifically, they evolved well-mixed mutualistic communities where two engineered yeast strains exchanged essential metabolites lysine and hypoxanthine. [Abstract](#)

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Awards

UW Researchers Selected to Join the Pew Scholars Program in the Biomedical Sciences

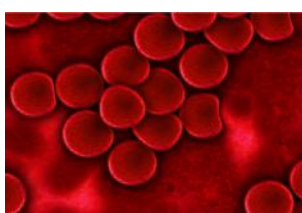
The Pew Charitable Trusts



Drs. Kelley Harris (pictured) and John Tuthill from UW are among the 22 early-career researchers who have been selected to join the Pew Scholars Program in the Biomedical Sciences. These promising scientists will receive four years of funding to invest in exploratory research to advance human health and tackle some of biomedicine's most challenging questions. [Read More](#)

Interlake High School Senior's Invention that Identifies Blood Diseases Wins Science Talent Search and \$40,000 Prize

KING 5 News



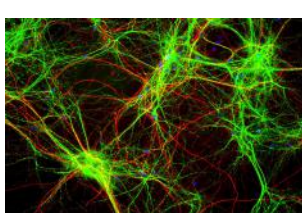
Interlake High School's Eshika Saxena recently received 10th place and a \$40,000 prize in the Regeneron Science Talent Search, the nation's oldest science and math competition for high school seniors. She designed a 3D-printed smartphone attachment that enables the camera to capture microscopic images of blood samples. [Read More](#)

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Local News

Sorting Neurons by Their Shape and Activity to Understand the Elements Making Up the Brain

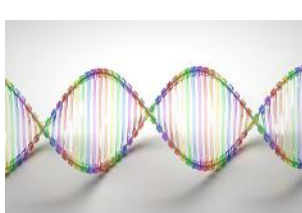
Allen Institute for Brain Science



New research from the Allen Institute for Brain Science describes a large profile of mouse neuron types based on two important characteristics of the cells: their 3D shape and their electrical behavior. The study, which yielded the largest dataset of its kind from the adult laboratory mouse to date, is part of a larger effort at the Allen Institute to discover the brain's "periodic table" through large-scale explorations of brain cell types. [Read More](#)

Lack of Diversity in Genetic Research Is Risky

Fred Hutch



The lack of diversity in genetics research has been highlighted again with a comprehensive multi-center analysis by a consortium of researchers, co-led by geneticists, epidemiologists and biostatisticians at Fred Hutch. This new analysis found even more evidence that large-scale genomic studies need to include diverse, multi-ethnic populations to accurately represent genetics-related disease risks in all populations. [Read More](#)

Two-Step Expansion and VR Technique Enlarges Tiny Microbes, Illuminating New Ways to Prevent and Treat Disease

Benaroya Research Institute at Virginia Mason



A combined research team from Carnegie Mellon University and Benaroya Research Institute at Virginia Mason is pairing a nanoscale imaging technique with virtual reality technology to create a method that allows researchers to "step inside" their biological data. By combining the technique, called expansion microscopy, with virtual reality (VR), scientists will be able to enlarge, explore and analyze cell structures far beyond the capabilities of traditional light microscopy. [Read More](#)

Research from the Doulatov Lab Offers Stem Cell-Aided Insights on MDS Onset

Institute for Stem Cell & Regenerative Medicine



Myelodysplastic syndromes (MDS) are heterogenous blood disorders that affect up to 170,000 people in the United States, primarily over the age of 60. Currently, there are few treatments for MDS and the causes remain poorly understood. Dr. Sergei Doulatov (pictured) is determined to help change that. His lab is reversing time by reprogramming patient-derived stem cells to a pre-malignant state. [Read More](#)

Adaptive Biotechnologies Co-Founder Leaves Fred Hutch; IPO Filing Warned of IP Risks from Dual Roles

GeekWire



Dr. Harlan Robins (pictured), co-founder and Chief Scientific Officer of Seattle-based Adaptive Biotechnologies, has stepped down from his role as head of the computational biology program at Fred Hutch. The departure came around the time that Adaptive filed to go public earlier this month. In documents for the initial public offering (IPO), the company warned investors that it faced risks related to the intellectual property (IP) it licenses from Fred Hutch. [Read More](#)

'Reimagine,' ISB's Annual Fundraiser, Raises Nearly \$35,000 for Groundbreaking Science

Institute for Systems Biology



Past, present and future were on display at "Reimagine," the Institute for Systems Biology's (ISB) annual fundraising event. Legendary biologist and ISB co-founder, Dr. Lee Hood (pictured), recalled starting the first-of-its-kind organization focusing on systems biology back in 2000. "Creating a cross-disciplinary environment is ideal for doing cutting-edge science," Hood said. [Read More](#)

Seattle and Los Angeles Lead STEM Job Growth in the U.S.

GeekWire



The West Coast's tech hubs are leading the nation in the race to grow employment in science, technology, engineering and math (STEM) fields. STEM jobs increased 8.2 percent in Los Angeles and 8.1 percent in Seattle from 2014 to 2018 — the fastest rates of any metropolitan areas in the U.S., according to commercial real estate firm CBRE. Overall, Seattle has added 19,090 new positions since 2014 and now counts 230,000 employees in STEM-related roles. [Read More](#)

New Faculty Profile: Aakanksha Singhvi

Genetics Society of America



In this New Faculty Profile presented by the Genetics Society of America (GSA), Dr. Aakanksha Singhvi (pictured) from Fred Hutch, who is establishing her first lab, introduces herself to the wider community. She talks about her research, the importance of societies like GSA, her favorite thing about science, and what she does with her free time. [Read More](#)

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Upcoming Events in Seattle

June 25 3:00 PM	Life Science Xchange: Closer to Convergence Cambria Grove
June 26 8:00 AM	BioTech & Bagels Morning Meetup in SLU Capital One Café
June 26 6:00 PM	Women in Bio: Building Strategic Partnerships 400 Dexter Avenue
July 18 11:30 AM	2019 Hutch Award Luncheon T-Mobile Park
July 25 8:00 AM	Exploring Frontiers: Predicting Biology Allen Institute

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Science Jobs in Seattle

Vice President, Translational Sciences

Zymeworks

Senior Product Manager, Life Sciences Research

Adaptive Biotechnologies

Senior Scientist, Oncology & Discovery

Bluebird Bio

Research Scientist, Biology

Gilead

Scientist, Therapeutic AAV Testing

Allen Institute for Brain Science

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