

Publications of the Week

T Cell Receptor Sequences Are the Dominant Factor Contributing to the Phenotype of CD8⁺ T Cells with Specificities Against Immunogenic Viral Antigens

First Author: Daniel Chen | Senior Author: James Heath (*pictured*)
Cell Reports | Institute for Systems Biology, UW, and Fred Hutch



Antigen-specific CD8⁺ T cells mediate pathogen clearance. T cell phenotype is influenced by T cell receptor sequences and environmental signals. Quantitative comparisons of these factors in human disease can provide foundational insights into basic T cell biology. In this publication profile, Dr. Heath discusses how this work could have broad implications for personalized medicine in the treatment of both infections and cancers. [Profile](#) | [Abstract](#)

Embryo-Scale Reverse Genetics at Single-Cell Resolution

First Author: Lauren Saunders (*pictured*) | Senior Author: Cole Trapnell
Nature | UW, Brotman Baty Institute, Allen Discovery Center, Howard Hughes Medical Institute, and Fred Hutch



The maturation of single-cell transcriptomic technologies has facilitated the generation of comprehensive cellular atlases from whole embryos. Here, researchers present the 'zebrafish single-cell atlas of perturbed embryos': single-cell transcriptomic data from 1,812 individually resolved developing zebrafish embryos, encompassing 19 timepoints, 23 genetic perturbations, and a total of 3.2 million cells. [Abstract](#) | [Press Release](#)

Probing Cerebral Malaria Inflammation in 3D Human Brain Microvessels

First Author: Caitlin Howard (*pictured*) | Senior Author: Ying Zheng
Cell Reports | UW and Seattle Children's Research Institute



Sequestration of *Plasmodium falciparum*-infected erythrocytes in the brain microcirculation is a hallmark of cerebral malaria (CM), which leads to endothelial activation, brain swelling, and death. Here, researchers probed CM inflammation in a perfusable 3D human brain microvessel model. 3D brain microvessels supported *in vivo*-like capacities for parasite binding and maturation *in situ*. [Abstract](#) | [Press Release](#)

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Awards

Phase Genomics Named Metagenomics Innovation of the Year for 2023 by BioTech Breakthrough Awards

BusinessWire



Phase Genomics has been awarded the "Metagenomics Innovation of the Year" distinction for 2023 in the third annual BioTech Breakthrough Awards program. "The rapid, scalable, resource-efficient metagenomics solution from Phase Genomics unlocks immense improvements across the fields of global, public and environmental health," said Bryan Vaughn, Managing Director of BioTech Breakthrough. [Read More](#)

Paul Kinahan and Cross-Organizational Team Awarded ARPA-H Funding

UW Department of Bioengineering



In an important development for biomedical imaging research, Dr. Paul Kinahan (*pictured*), Professor of Bioengineering and Radiology, and a collaborative team have been awarded funding from the Advanced Research Projects Agency for Health (ARPA-H). The focus of the grant is to address a critical gap in medical research by providing a reliable and extensive source of curated medical images and associated data for the scientific community. [Read More](#)

Dr. Amy Orsborn Receives Distinguished Faculty Fellowship

UW Department of Bioengineering



Dr. Amy Orsborn (*pictured*), the Clare Boothe Luce Assistant Professor in Electrical & Computer Engineering and Bioengineering, is one of three UW faculty members chosen to be a part of the inaugural cohort of the Washington Research Foundation's Ronald S. Howell Distinguished Faculty Fellowship. This endowed fellowship is designed to support early-career faculty members with a research emphasis on neuroscience-related fields. [Read More](#)

Research into Targeted Treatments, Better Prediction Models in Breast Cancer Funded

Fred Hutch



Five researchers from Fred Hutch, UW, and Seattle Children's Cancer Consortium have received funding from the Breast Cancer Research Foundation to continue ongoing studies. The awardees include Drs. Anne McTiernan (*pictured, left*), Nancy Davidson (*right*), Chris Li, Nora Disis, and Mary-Claire King. The ongoing projects drill down into everything from the benefits of exercise for breast cancer survivors to a new vaccine to prevent breast cancer in obese women. [Read More](#)

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Local News

Sana Biotechnology Announces FDA Clearance of Investigational New Drug Application for SC291

The Wall Street Journal



Seattle-based company Sana Biotechnology, led by President and CEO Dr. Steve Harr (*pictured*), announced that the company's Investigational New Drug Application has been cleared by the FDA. They will now initiate a study of SC291 in patients with multiple B-cell mediated autoimmune diseases, including lupus nephritis, extrarenal lupus, and antineutrophil cytoplasmic antibody-associated vasculitis. [Read More](#)

Can Preventing Hearing Loss Reduce Dementia Risk?

Kaiser Permanente Washington Health Research Institute



Hearing impairment is linked to higher dementia risk, but researchers don't yet know exactly why there is a connection. Researchers at the Kaiser Permanente Washington Health Research Institute lead research looking at changes in the brain associated with hearing impairment in order to better understand whether preventing hearing loss could also reduce the risk of dementia. [Read More](#)

Pain, Fatigue, Fuzzy Thinking: How Long COVID Disrupts the Brain

National Public Radio (NPR)



There is a growing number of COVID "long-haulers" — those patients who suffer from persistent symptoms long after the initial infection has passed. Many of those symptoms, experts say, appear to be tied to COVID's effects on the brain and nervous system. NPR reached out to Seattle researchers Drs. Troy Torgerson (*pictured*) and Ziyad Al-Aly for more information on long COVID. [Read More](#)

Novartis' \$3.2B Chinook Buy Pays Off with Promising Phase III IgAN Data

BioSpace



Seattle-based Chinook Therapeutics announced a successful Phase III ALIGN study with its drug, atrasentan. Atrasentan, intended to treat various cancers, fulfilled its purpose of protein reduction in the urine of IgA nephropathy patients. With these data, Novartis is gearing up for an FDA submission in 2024 for a potential accelerated approval in the U.S. [Read More](#)

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Upcoming Events in Seattle

- December 1 **The Story Collider**
7:00 PM
Jewelbox Theatre
- December 2 **yEvo Workshop**
9:00 AM
Fred Hutch
- December 6 **Seattle BioTech & Bagels Morning Virtual Meetup**
8:00 AM
Online
- December 7 **Science in Medicine New Investigator Lecture with Dr. Azadeh Yazdan**
1:00 PM
Foegel Building
- December 15 **Mad Science**
7:00 PM
Here-After

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Science Jobs in Seattle

- Principal Scientist, Inflammation Biomarkers**
Amgen
- Lab Assistant I, Histology**
Virginia Mason Medical Center
- Research Associate II, Protein Chemistry**
Actalent
- Post-Doctoral Research Fellow**
Fred Hutch
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