

Publications of the Week

Reversible, Tunable Epigenetic Silencing of TCF1 Generates Flexibility in the T Cell Memory Decision

First Author: Kathleen Abadie | Senior Authors: Jay Shendure, Junyue Cao, and Hao Yuan Kueh *(pictured)*
Immunity | Brotman Baty Institute, Allen Discovery Center, Howard Hughes Medical Institute, and UW



The immune system encodes information about the severity of a pathogenic threat in the quantity and type of memory cells it forms. T cells will maintain or lose memory potential early after antigen recognition. However, following pathogen clearance, T cells may regain memory potential if initially lost. Here, researchers propose that flexibility and stochasticity in cellular decisions ensure optimal immune responses against diverse threats. [Abstract](#) | [Press Release](#)

De Novo Design of Modular Protein Hydrogels with Programmable Intra- and Extracellular Viscoelasticity

First Authors: Rubul Mout and Ross Bretherton | Senior Authors: Cole DeForest *(pictured)* and David Baker
Proceedings of the National Academy | Seattle Children's Research Institute and UW



Protein-based hydrogels have many applications in cellular engineering and medicine. Most genetically encodable protein hydrogels are made from naturally occurring proteins or protein-polymer hybrid constructs. Here, researchers describe *de novo* protein hydrogels and systematically investigate the impact of microscopic properties of the building blocks on the resultant macroscopic gel mechanics, both intra- and extracellularly. [Abstract](#) | [Press Release](#)

Efficient and Sustained FOXP3 Locus Editing in Hematopoietic Stem Cells as a Therapeutic Approach for IPEX Syndrome

First Authors: Swati Singh and Cole Pugliano | Senior Author: David Rawlings
Molecular Therapy Methods & Clinical Development | Seattle Children's Research Institute and UW



Immune dysregulation, polyendocrinopathy, enteropathy, X-linked (IPEX) syndrome is a monogenic disorder caused by mutations in the *FOXP3* gene, which is required for generation of regulatory T cells. Here, researchers demonstrate efficient editing of *FOXP3* utilizing co-delivery of Cas9 ribonucleoprotein complexes and adeno-associated viral vectors to achieve homology-directed repair rates of >40% *in vitro* using mobilized CD34⁺ cells from multiple donors. [Abstract](#)

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Awards

Jeff Chamberlain Receives 2024 MDA Legacy Award

UW Medicine



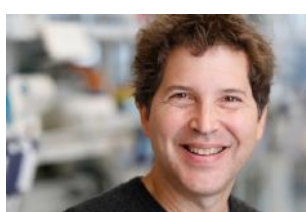
The Muscular Dystrophy Association (MDA) announced that Dr. Jeffrey Chamberlain *(pictured)* will receive the 2024 MDA Legacy Award for Achievement in Research for his achievements in translational research. Dr. Chamberlain is a leading Professor in gene therapy focused on Duchenne muscular dystrophy at the UW Institute for Stem Cell and Regenerative Medicine. [Read More](#)

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Local News

Nature: "Seven Technologies to Watch in 2024"

Institute for Protein Design



The RFdiffusion software developed by Dr. David Baker *(pictured)* and his lab at UW appeared in the *Nature* article "Seven technologies to watch in 2024". The software allows designers to computationally shape proteins around non-protein targets such as DNA, small molecules, and even metal ions. The resulting versatility opens new horizons for engineered enzymes, transcriptional regulators, functional biomaterials, and more. [Read More](#)

Autoimmune Disease and Pregnancy: ISB Study Challenges Prevailing Wisdom, Unveils Nuances

Institute for Systems Biology (ISB)



In a recent study in the journal *Lancet eClinical Health*, ISB and Providence researchers showed nuanced pregnancy outcomes for pregnant individuals with autoimmune disease. The findings reinforce that there isn't a one-size-fits-all approach, and provides important new avenues for further investigation. ISB Associate Professor Dr. Jennifer Hadlock *(pictured)* led the study. [Read More](#)

Dr. Nora Disis Passes Directorship of ITHS to Dr. John Amory

UW Medicine



After twelve years as Founding Director, Dr. Mary "Nora" Disis will pass directorship of the UW Institute of Translational Health Sciences (ITHS) to Dr. John Amory *(pictured)*. Dr. Amory is particularly interested in supporting early phase clinical research studies to test new treatments. Upon transitioning into the directorship, Dr. Amory will step away from his long-time role as section head of UW Medical Center. [Read More](#)

NUCDF Highlights Dudley Lab Breakthrough in Urea Cycle Disorder Research

Pacific Northwest Research Institute (PNRI)



The National Urea Cycle Disorders Foundation (NUCDF) highlights the PNRI's Dudley Lab. Dr. Aimée Dudley *(pictured)* and her team have made tremendous strides using yeast genetics to pinpoint the impact of thousands of variants of a gene responsible for the most common urea cycle disorder: ornithine transcarbamylase deficiency. [Read More](#)

Seattle Area Single Cell User Group to Launch February 13

Brotman Baty Institute (BBI)



BBI is kicking off the first meeting of a new Seattle Area Single Cell user group on February 13. "We are looking to create connections among single cell researchers at BBI's three member organizations — Seattle Children's, Fred Hutch, and UW Medicine — as well as other Seattle-area researchers by discussing experiences and exchanging ideas," said Dr. Mary O'Neill, who is leading this endeavor. [Read More](#)

Sound Pharma to Present Positive Interim Data from Its Phase IIB Cystic Fibrosis Stop Ototoxicity Trial

Sound Pharmaceuticals



Currently, there are no FDA approved therapies for the prevention/treatment of aminoglycoside ototoxicity or the treatment of any other type of sensorineural hearing loss, tinnitus, or dizziness. Sound Pharmaceuticals will present positive Phase IIB results of an ototoxicity intervention trial in humans undergoing antibiotic treatment for pulmonary exacerbation. [Read More](#)

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Upcoming Events in Seattle

- February 18 2:30 PM **Microbiology Essentials**
SoundBio Lab
- February 22 2:00 PM **ITHS Biomedical Innovation Fireside Chats: Legal Issues and Intellectual Property**
Online
- February 28 8:00 AM **Seattle BioTech & Bagels Morning Virtual Meetup**
Online
- March 7 2:00 PM **Pacific Northwest Regional Resources for Biomedical Entrepreneurs**
Online
- March 8 9:00 PM **Mad Science**
Here-After

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Science Jobs in Seattle

- Youth Program Assistant Facilitator**
SoundBio Labs
- Scientist/Sr. Scientist, Gene Editing & Cell Therapy**
Bristol Myers Squibb
- Assistant/Associate Member**
The Center for Systems Immunology at Benaroya Research Institute
- Postdoctoral Fellow, Gern Lab**
Center for Global Infectious Disease Research, Seattle Children's
- Research Associate Professor/Research Professor, Senior Epidemiologist**
UW General Internal Medicine

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