

Publications of the Week

### Defining the Impact of Mutation Accumulation on Replicative Lifespan in Yeast Using Cancer-Associated Mutator Phenotypes

First Author: Mitchell Lee (*pictured, middle*) | Senior Author: Alan Herr (*pictured, right*)  
PNAS | UW

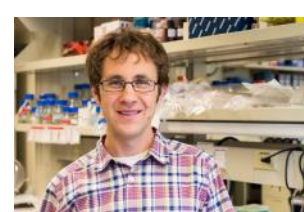


Human cancers driven by a mutator phenotype represent an intriguing model to test the hypothesis that mutational burden in somatic cells contributes to aging. However, it remains technically challenging to measure the replicative lifespan of individual mammalian cells. The authors modeled the consequences of cancer-related mutator phenotypes on lifespan using yeast defective for mismatch repair and/or leading strand or lagging strand DNA polymerase proofreading. [Profile](#) | [Abstract](#)

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### An Antigenic Atlas of HIV-1 Escape from Broadly Neutralizing Antibodies Distinguishes Functional and Structural Epitopes

First Author: Adam Dingens | Senior Author: Jesse Bloom (*pictured*)  
Immunity | Fred Hutch and UW



Anti-HIV broadly neutralizing antibodies (bnAbs) have revealed vaccine targets on the virus's envelope (Env) protein and are themselves promising immunotherapies. Although structural studies can define contacts between bnAbs and Env, only functional studies can define mutations that confer escape. The authors mapped how all possible single amino acid mutations in Env affect neutralization of HIV by nine bnAbs targeting five epitopes. [Abstract](#)

Awards

### Dr. Harmit Malik Elected Fellow of American Academy of Microbiology

Fred Hutch



Fred Hutch investigator Dr. Harmit Malik (*pictured*) has been elected a fellow of the American Academy of Microbiology, an honorific leadership group within the American Society for Microbiology. Annual fellow selection is a highly selective, peer-reviewed process that is based on nominees' records of scientific achievement and original, microbiology-advancing contributions. [Read More](#)

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Local News

### Two Million-Cell Experiment Traces How a Mammal Grows, Cell by Single Cell

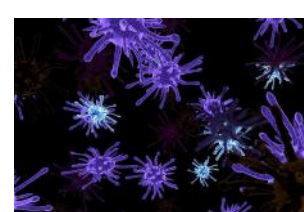
Allen Institute for Cell Science



New research from the the Allen Discovery Center at UW Medicine has traced that important period of organ formation, cell by cell, in the developing mouse. The research has captured the genes that switch on and off across two million different cells as they go from undistinguished cellular precursors to becoming the animals' stomach, muscles, brain, skin and everything else in between. [Read More](#)

### CRISPR Could Help Us Protect Ourselves from Viruses Like Flu and HIV

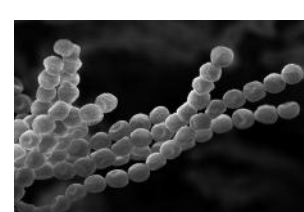
New Scientist



CRISPR gene editing could let us hack the immune system to give lasting protection against HIV and other infections. Experiments in mice suggest that the technique could be used to give people immunity from a range of viruses for which there are no effective vaccines. Justin Taylor and his colleagues at Fred Hutch have used the CRISPR technique on white blood cells called B-cells. [Read More](#)

### Allergic to Penicillin? Maybe Not.

UW Medicine



New research has shown that many patients eschew using the safest antibiotic in the mistaken belief that they are allergic to an entire class of antibiotics, including penicillins. Instead, they often rely on pricier drugs which are associated with higher rates of complications and treatment failure. Or, the patient is blasted with a broad-spectrum antibiotic which can increase the risk of antibiotic resistance. [Read More](#)

### Seattle Biotech Startup Good Therapeutics Raises \$11M to Make Smart Cancer Therapies

GeekWire



Good Therapeutics, a new Seattle biotech startup that aims to develop protein drugs that act only when needed, has raised \$11 million in an equity round. The startup is trying to "make safer, more effective drugs that act only when and where they are needed, limiting systemic toxicity without reducing therapeutic efficacy," according to its website. [Read More](#)

### Common Weed Killer Glyphosate Increases Cancer Risk by 41%, Study Says

CNN



Researchers from UW evaluated existing studies into the herbicide Glyphosate, found in weed killers including Monsanto's popular Roundup, and concluded that it significantly increases the risk of non-Hodgkin lymphoma, a cancer of the immune system. The potential carcinogenic properties of glyphosate are the subject of widespread scientific debate. [Read More](#)

### New VR Game Lets You Learn about Cells by Tossing Them

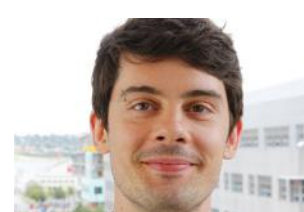
Allen Institute for Cell Science



If you slip on a virtual reality (VR) headset to play the Allen Institute for Cell Science's latest app, you'll find yourself inside a simulated, circular room with targets on the walls all around you. In the VR game, users learn the different stages of cell division, or mitosis, by picking up the cells and pitching them at the correctly labeled target on the wall. [Read More](#)

### All About the Human Microbiome

Institute for Systems Biology (ISB)



Are you curious about the human microbiome? Dr. Sean Gibbons (*pictured*), who joined ISB as a Washington Research Foundation Distinguished Investigator and Assistant Professor in June 2018, explained the nascent field of microbiome research in his Facebook Live Q&A. Gibbons' discussion ranged from general questions to factors that can affect the microbiome to exciting and emerging developments in the field. [Read More](#)

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Interesting Articles

### US Science Agencies Set for Budget Boost in Deal to Avert Government Shutdown

Nature News



With less than two days to go before the US government runs out of money, lawmakers in Congress were scrambling to pass a budget deal that would give small increases to NASA, the National Science Foundation, the Environmental Protection Agency and many other science agencies. *Nature* broke down how individual agencies would fare under the budget deal, and how they are working to recover from the shutdown. [Read More](#)

### Why Do Only Eight Percent Of Cancer Patients In the U.S. Participate In Clinical Trials?

Forbes



Most cancer clinical trials don't meet their enrollment targets and it has been previously thought that patient reluctance was behind this. New research from Fred Hutch challenges that by suggesting that other factors are primarily responsible. "Patients are often fearful of participating in clinical trials, and many consider trial participation as appropriate only for those with no other choices," said Dr. Joseph Unger, a health services researcher and biostatistician. [Read More](#)

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### Upcoming Events in Seattle

- February 25 7:00 PM **Science On Tap: Emerging Science at the Intersection of Ecology, Genetics and Policy**  
Ravenna Third Place - Cafe Arta
- February 25 - 26 **Training in Multi-Disciplinary Team Science**  
Seattle Children's Sand Point Learning Center
- February 28 3:00 PM **From Student to Postdoc: Experiences of Underrepresented Scientists**  
Foege Building
- March 3 3:30 PM **Exploring Frontiers Seminar: Christopher Mason**  
Allen Institute
- March 7 7:00 PM **Science in the City - The Art of Healing**  
Pacific Science Center

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### Science Jobs in Seattle

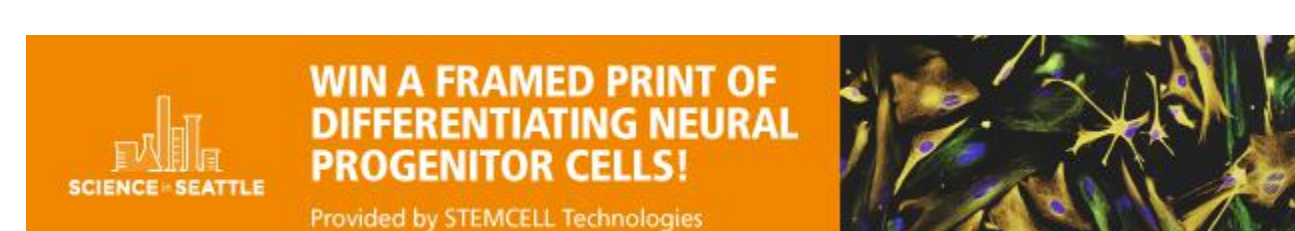
- Staff Scientist, Immunotherapy**  
Fred Hutch
- Postdoctoral Research Fellow, Nuclear Envelope Research**  
Fred Hutch
- Director, Cellular Therapy Development**  
Adaptive Biotechnologies
- Research Scientist**  
Novo Nordisk
- Manager/Senior Manager, Nonclinical Outsourcing**  
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