

Publications of the Week
Gene Inversion Potentiates Bacterial Evolvability and Virulence

 First Author: Christopher Merrikh (*pictured*) | Senior Author: Houra Merrikh
 Nature Communications | UW


Most bacterial genes are encoded on the leading strand, co-orienting the movement of the replication machinery with RNA polymerases. This bias reduces the frequency of detrimental head-on collisions between the two machineries. The negative outcomes of these collisions should lead to selection against head-on alleles, maximizing genome co-orientation. The authors' findings challenge this model. [Profile](#) | [Abstract](#)

Structure, Subunit Organization and Behavior of the Asymmetric Type IIT Restriction Endonuclease BbvCI

 First Author: Betty Shen | Senior Author: Barry Stoddard (*pictured*)
 Nucleic Acids Research | Fred Hutchinson Cancer Research Center


BbvCI, a Type IIT restriction endonuclease, recognizes and cleaves the seven base pair sequence 5'-CCTCAGC-3', generating 3-base, 5'-overhangs. BbvCI is composed of two protein subunits, each containing one catalytic site. Either site can be inactivated by mutation resulting in enzyme variants that nick DNA in a strand-specific manner. The authors demonstrate that the holoenzyme is labile, with the R1 subunit dissociating at low pH. [Abstract](#)

Cytokine Release Syndrome and Neurotoxicity after CD19 Chimeric Antigen Receptor-Modified (CAR-) T Cell Therapy

 Author: Kevin Hay (*pictured*)
 British Journal of Haematology | Fred Hutchinson Cancer Research Center

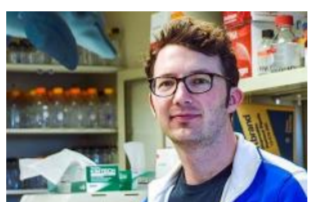

Chimeric antigen receptor-modified (CAR)-T cells have demonstrated impressive results in the treatment of hematological malignancies. However, cytokine release syndrome (CRS) and neurotoxicity are common toxicities which are potentially life-threatening in severe cases. Deeper understanding of the pathophysiology of underlying CRS and neurotoxicity will enable the development of novel approaches to reduce toxicity and improve outcomes. [Abstract](#)

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Spotlight
Chris Large Talks Brewing, Yeast, and Evolution


Chris Large (*pictured*) is a graduate student in the laboratory of Dr. Maitreya Dunham in the Department of Genome Sciences at the University of Washington (UW). Chris collaborates with Postdoc Brewing, a local brewery created by former UW Biochemistry alumnus Dr. Tom Schmidlin, to study the evolution of brewing yeast strains. [Read More](#)

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Awards
Dr. Cameron Howard Lee Named 2019 Helen Hay Whitney Fellow

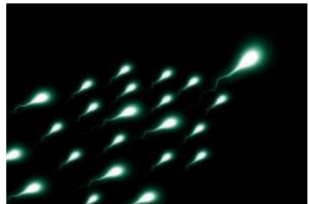
Fred Hutchinson Cancer Research Center



Dr. Cameron Howard Lee (*pictured*), a postdoctoral fellow in the laboratory of Dr. Sue Biggins at Fred Hutch, has been named a 2019 Helen Hay Whitney fellow by the Helen Hay Whitney Foundation. Lee will use the fellowship to investigate the potential relationship between protein production machinery and a cellular checkpoint that prevents abnormal separation of chromosomes during cell division. [Read More](#)

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Local News
First Trial Launches to Test Male Contraceptive Gel's Efficacy

UW Medicine



Three U.S. sites, including Seattle, are enrolling couples in the first clinical trial to test the safety and efficacy of a gel for men to prevent unintended pregnancy. The gel being tested is composed of Nestorone®, a progestin hormone used for female contraception, and testosterone. Nestorone® is a novel, reversible contraceptive for men designed to be absorbed through the skin on the upper arms and shoulders. [Read More](#)

FDA Approves Unique, DNA-Targeting Cancer Drug, Potentially Changing Care for Thousands

GeekWire



Larotrectinib, a unique new medicine that has been approved by the FDA to treat a huge variety of soft tissue tumors, has the potential to wipe out stubborn cancers with few to no negative side effects. The drug is a case study in a new generation of cancer treatments that target specific biological markers of cancer cells. Seattle Children's Hospital has operated the largest arm of the drug's pediatric trial, enrolling more patients than any other site. [Read More](#)

Virginia Mason Was a Clinical Trial Site for New Peanut Allergy Medication

Benaroya Research Institute at Virginia Mason



Virginia Mason served as a clinical trial site for a new oral medication awaiting federal approval that some officials say could be a game-changer for children and adolescents who suffer from peanut allergies. The medication would significantly reduce the frequency and severity of allergic reactions to peanuts and lower the risk for potentially life-threatening allergic reactions from accidental exposure. [Read More](#)

Stem Cells to the Rescue

UW Medicine Magazine



Heart failure is the world's leading cause of death, most of it related to the loss of muscle after heart attacks. Chuck Murry (*pictured*) and his colleagues at UW Medicine injected heart cells grown from human stem cells into monkeys' hearts. New heart muscle grew within the scar tissue, and, in some animals, heart function returned to over 90 percent of normal. [Read More](#)

Threatened Tropical Coral Reefs Form Complex, Ancient Associations with Bacteria, Researchers Say

UW News



When it comes to the well-being of coral reefs, for many years scientists focused on bleaching, an event that can endanger corals and the diverse marine ecosystems that they support. But over the last two decades, scientists have realized that other microbes are also critical for coral health, including communities of bacteria that live on coral surfaces and in their tissues. These bacteria constitute the coral microbiome. [Read More](#)

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Interesting Articles
Ethical Concerns Surround Gene-Edited Babies

UW Medicine



Earlier last week, He Jiankui, a scientist in China, announced he had genetically edited two human embryos, which were then implanted in a mother's womb, and reportedly resulted in a pregnancy and the live birth of twins. The news sparked an uproar among scientists and commentators worldwide by raising safety and ethical concerns. Dr. Malia Fullerton, Associate Professor of Bioethics and Humanities at the UW School of Medicine, provides context in this video. [Watch Now](#)

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Upcoming Events in Seattle

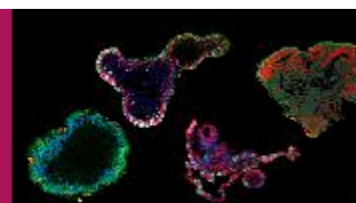
- December 4 - 5 **Allen Institute Showcase Symposium 2018**
8:00 AM Allen Institute
- December 4 **Science in the City: The Art of Healing**
7:00 PM Pacific Science Center
- December 6 **GeekWire Gala 2018**
6:00 PM The Showbox at the Market
- December 8 **Healthy for the Holidays**
8:30 AM Fred Hutchinson Cancer Research Institute
- December 9 - 11 **Metabolites as Signaling Molecules**
12:30 PM Motif Seattle

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Science Jobs in Seattle

- Research Scientist II, Immunotherapy Integration Hub**
Seattle Children's Research Institute
- Scientist I, Optical Physiology**
Allen Institute for Brain Science
- Postdoctoral Fellow**
Seattle Children's Research Institute
- Research Technician I-II**
Benaroya Research Institute at Virginia Mason
- Lab Aide**
Fred Hutchinson Cancer Research Center

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HURDLES TO TRANSLATION
Recorded panel discussion moderated by Dr. James Wells



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