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Publications of the Week

Discovery of Synthetic Lethal and Tumor Suppressor Paralog Pairs in the Human Genome

First Authors: Phoebe Parrish and James Thomas | Senior Author: Alice Berger *(pictured)*
Cell Reports | Fred Hutch and UW

The authors develop paired guide RNAs for paralog genetic interaction mapping, a pooled CRISPR-Cas9 single- and double-knockout approach targeting more than 2,000 human paralogs. They apply pgPEN to two cell types and discover that 12% of human paralogs exhibit synthetic lethality in at least one context. They also identify ten tumor suppressor paralog pairs whose compound loss promotes cell proliferation. **Profile | Abstract | Press Release**

Antibodies to EGF Receptor Family Members Can Upregulate Tumor Immunity

First Author: Min Dai | Senior Author: Karl Hellstrom *(pictured)*
Journal of Immunotherapy | UW and the Washington Research Foundation

The authors tested the hypothesis that monoclonal antibodies (mAb) to epidermal growth factor receptor and tumor growth factor alpha (TGF-α), in addition to any other effects, can facilitate the generation of a tumor-destructive immunologic response. The mAb to TGF-α was most effective, and tumor lines releasing TGF-α were more sensitive than lines not releasing TGF-α. **Abstract**

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Awards

W.M. Keck Foundation Funds Liver Research in Stevens Lab

Institute for Stem Cell and Regenerative Medicine

The grant from the Keck Foundation will fund a three-year effort to shed light on the role of mechanical factors in liver regeneration. Specifically, Dr. Kelly Stevens *(pictured)* and her team will be using a method called Highly Parallel Tissue Grafting to explore the effect of hundreds of customized mechanical microenvironments on human liver regeneration in mice. **Read More**

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Local News

Hutch Scientists Use AI to Identify Potential Therapies

Fred Hutch

Researchers at Fred Hutch have used machine learning, deep neural networks and other artificial intelligence tools to screen, identify and validate a handful of Food and Drug Administration-approved compounds that inhibit the cytokine storm inflammatory response — at least in mice and cells. All they need now is a clinical trial — with people — to prove it's possible to calm COVID-19's cytokine storms and save patient lives with drugs that are already on the market. **Read More**

Impel NeuroPharma, Fresh off IPO, Gets FDA Approval for Nasal Spray That Treats Migraines

GeekWire

The US FDA has approved Impel NeuroPharma's Trudhesa to treat migraine headaches, which leverages Impel's upper nasal spray system to deliver a migraine drug to the blood and brain. "Pills don't really work for a lot of patients so there's a high unmet need," said Sheena Aurora *(pictured)*, a neurologist and Impel's Vice President of Medical Affairs. **Read More**

Home Blood Collection Device Works for COVID Antibody Test

UW Medicine

A device that could make it possible for patients to draw their own blood at home was successfully used to collect blood samples for measuring antibodies against SARS-CoV-2, the virus that causes COVID-19, researchers at UW School of Medicine report. The findings suggest the device could be used by patients to draw blood at home for other tests that currently require them to go to a clinic or lab and have blood drawn from a vein. **Read More**

Metabolic Changes in Plasma and Immune Cells Associated with COVID-19 Severity, May Predict Patient Survival

Institute for Systems Biology

Researchers from the Institute for Systems Biology, Fred Hutch and other organizations have uncovered underlying metabolic changes that regulate how immune cells react to COVID-19. These changes are associated with disease severity and could be used to predict patient survival. In plasma samples, the team found that increased COVID-19 severity is associated with metabolite alterations, suggesting increased immune-related activity. **Read More**

Tech Companies Are Breeding Grounds for Some Big Data Life Science Company Executives

BioSpace

Sujal Patel *(pictured)*, the Chief Executive Officer (CEO) of Seattle-based Nautilus Biotechnology, is one of four highlighted CEO's of life sciences companies who have made the leap from tech into the industry. Nautilus is developing a platform technology that is designed to quantify and "unlock the complexity" of the proteome. The company aims to democratize access to the proteome in order to allow advancements that will benefit human health. **Read More**

Study Looks at How Disease Scarring Disrupts Liver Regrowth

UW Medicine

Unlike healthy livers, those damaged by disorders like cirrhosis have difficulty repairing themselves. A new approach to try to understand what interferes with liver regeneration is underway in the laboratory of Dr. Kelly Stevens, Assistant Professor of Bioengineering and of Laboratory Medicine and Pathology. Dr. Stevens will examine the fundamental role of mechanical forces in shaping or hindering the re-formation of livers. **Read More**

Beyond Dopamine: New Reward Circuitry Discovered

UW Medicine

In the search for new therapies to treat addiction and psychiatric illness, researchers are examining pathways beyond dopamine that could play a role in reward and reinforcement. Scientists from Dr. Michael Bruchas *(pictured)*'s lab at UW Medicine have pushed the science forward on our reward pathways and found another such pathway. **Read More**

University of Washington Spinout A-Alpha Bio Snags $20M for Protein-Discovery Platform

GeekWire

A-Alpha Bio will build lab space in downtown Seattle and beef up its machine learning team with $20 million in new venture funding for its operation to identify therapeutic proteins. The funding propels the company from a grant-funded University of Washington spinout with $2.8 million in seed funding to a full-fledged biotech supporting the development of potential treatments for COVID-19 and other diseases. **Read More**

Common Virus That Besets Transplant Patients Is Study Focus

UW Medicine

Cytomegalovirus, or CMV, is a common virus that most of us contract at some point, typically with little or no illness for people with healthy immune systems. But in immunocompromised transplant recipients, CMV can become a life-threatening infection. UW Medicine researchers will lead a $21 million, seven-year US study of a novel vaccine's ability to disarm this virus that causes graft failure and death in solid-organ transplant recipients. **Read More**

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Upcoming Events in Seattle

September 14 6:00 PM	**Art Neureau 2021** Fremont Abbey	
September 16 10:30 AM	**Distinguished Seminar: Kay Tye** Online	
September 21 10:00 AM	**Open for (Cell) Science: Allen Cell and Structure Segmenter** Online	
September 21 3:30 PM	**Research Roundtable with Dr. Andrew Magis** Online	
September 22 11:00 AM	**WIB-National and WIB-Seattle: Life Sciences Virtual Career Fair** Online	

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OncoResponse

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Seattle Children's

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Fred Hutch

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