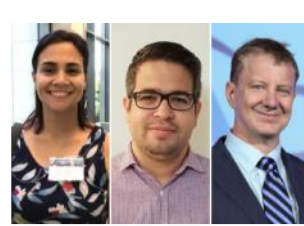


Publications of the Week

**Mechanistic Insights into COVID-19 by Global Analysis of the SARS-CoV-2 3CLpro Substrate Degradome**

First Authors: Isabel Pablos (pictured, left) and Yoan Machado (center) | Senior Author: Christopher Overall (right) | Cell Reports | Centre for Blood Research, Life Sciences Institute, and UBC



The main viral protease (3CLpro) is indispensable for SARS-CoV-2 replication. The authors delineate the human protein substrate landscape of 3CLpro by terminal amine isotopic labeling of substrates. They identify more than 100 substrates in human lung and kidney cells supported by analyses of SARS-CoV-2-infected cells. Enzyme kinetics and molecular docking simulations of 3CLpro engaging substrates reveal how noncanonical cleavage sites, which diverge from SARS-CoV, guide substrate specificity. [Abstract](#) | [Press Release](#)

**Age-Related Mitochondrial Alterations in Brain and Skeletal Muscle of the YAC128 Model of Huntington Disease**

First Author: Kristina Bečanović | Senior Author: Blair Leavitt (pictured) | Cell Aging and Mechanisms of Disease | Centre for Molecular Medicine and Therapeutics, St. Paul's Hospital, and UBC



Mitochondrial dysfunction and bioenergetics failure are common pathological hallmarks in Huntington's disease (HD) and aging. The authors used the YAC128 murine model of HD to examine the effects of mutant huntingtin on mitochondrial parameters related to aging in brain and skeletal muscle. They found a positive correlation between aging and the mitochondrial DNA copy number in striatum and skeletal muscle but not in cortex. [Abstract](#)

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Awards

**Dr. John Webb Wins Career Award for Contributions to Cardiovascular Science**

UBC Faculty of Medicine



Dr. John Webb (pictured), the McLeod Professor of Heart Valve Innovation at UBC, has received the 2021 Canadian Cardiovascular Society Achievement Award in recognition of his decades of outstanding contributions to cardiovascular science. Among his many achievements as a researcher and clinician, Dr. Webb helped pioneer a transcatheter aortic valve implantation procedure that makes heart-valve replacements much less invasive for most patients. [Read More](#)

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Local News

**Lymphoma Team Publishes Two Papers on Diffuse Large B-Cell Lymphoma in Major Journal**

The Terry Fox Research Institute (TFRI)



It has been a prolific quarter for TFRI's BC-based lymphoma research team. In the span of a few months, researchers in Drs. David Scott's (pictured) and Christian Steidl's labs published two major papers in *Blood*, an important scientific journal that focuses on diseases of the blood. Both papers help to better understand diffuse large B-cell lymphoma, a heterogeneous form of non-Hodgkin lymphoma that has an average five-year relative survival rate of 64 percent. [Read More](#)

**Four New Molecular Subgroups of Pancreatic Neuroendocrine Neoplasms Identified**

Canada's Michael Smith Genome Sciences Centre



Pancreatic neuroendocrine neoplasms (PNEs) are malignant tumors that arise from clusters of islet cells. In addition to being a rare type of pancreatic cancer, many PNEs have unique clinical and biological features that make it difficult to treat. In a study published by *Cell Reports*, four subtypes of PNEs are identified through transcriptome analysis, proteome profiling, and whole-genome sequencing. [Read More](#)

**RNA-Seq Is the Best Available Tool to Personalize Treatment for Patients with Acute Myeloid Leukemia, Study Finds**

The Terry Fox Research Institute (TFRI)



TFRI-funded researchers at BC Cancer demonstrated that a genomic test known as whole transcriptome sequencing (RNA-seq) is the best available tool to accurately provide risk stratification and therapy selection for patients with acute myeloid leukemia. "The work demonstrates that RNA-seq can be used as a clinically validated genomic test," says Dr. Aly Karsan (pictured), the study's senior author. [Read More](#)

**Does Parkinson's Start in the Nose? International Team Awarded Nine Million USD ASAP Grant to Find Out**

Life Sciences Institute



More than 80 percent of people with Parkinson's disease suffer from a reduced sense of smell, something that often occurs years before the onset of typical movement-related symptoms. Now, thanks to a nine million USD grant from the Aligning Science Across Parkinson's (ASAP) initiative, a Canadian-led international team hopes to determine whether scent-processing nerves that connect the inside of the nose to the brain may play a role in the development of Parkinson's disease. [Read More](#)

**Filling in the Gaps: GapPredict Can Complement Repertoire of Tools Used to Resolve Missing DNA Sequences in Genome Assemblies**

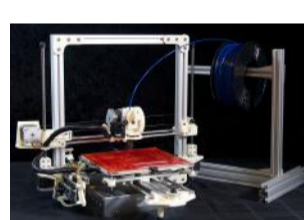
Canada's Michael Smith Genome Sciences Centre



Although the human genome was first sequenced three decades ago, there are still DNA regions that have yet to be resolved. These missing DNA regions represent sequencing gaps that can arise due to inconsistent read coverage depth and/or repetitive DNA sequences. Developed by researchers in Dr. Iana Brof's (pictured) lab, GapPredict uses deep learning to predict missing DNA bases in the unresolved regions of genome assemblies. [Read More](#)

**How Star Trek Inspired This Biotech Company to Create Living Human Tissues**

The Globe and Mail



Imagine a procedure that could reverse the effects of Type 1 diabetes by implanting in patients living tissue produced by a 3D printer that uses cells instead of ink or plastics. No more insulin shots. No daily blood tests. It is the stuff of science fiction. Or it was. Vancouver-based Aspect Biosystems is developing what's called microfluidic 3-D bioprinting of human tissues to do just that. [Read More](#)

**Warding Off the Post-Antibiotic Era: Stimulating the Pursuit to Visualize a Common Antibiotic Target**

Centre for Blood Research



Antibiotics are used to treat bacterial infections by killing or inhibiting the growth of bacteria. However, bacteria can develop resistance to antibiotics, which each year accounts for at least 700,000 deaths worldwide. This is becoming an increasingly dangerous threat to society as resistance continues to rise globally. To prevent entering a post-antibiotic era, there have been extensive attempts to develop novel antibiotic treatments. [Read More](#)

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Interesting Articles

**Introducing Alliance Missions Grants: A Special Call to Energize Canada's Economy and Stimulate Innovation**

Natural Sciences and Engineering Research Council of Canada (NSERC)



NSERC Alliance Missions grants provide a unique opportunity aimed at addressing critical science and technology challenges that can play a pivotal role in Canada's economy. Alliance Missions grants will provide \$100,000 to \$500,000 per year for two years, to initiate research collaborations between Canada's academic researchers and partners from private, public and/or not-for-profit partner organization(s). [Read More](#)

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**Upcoming Events in Vancouver**

- November 2 8:00 AM **15<sup>th</sup> Annual Earl W. Davie Symposium**  
UBC Robson Square & Online
- November 3-4 9:00 AM **Invest in BC Presented by Lumira Ventures**  
Online
- November 3 12:00 PM **Careers in Cannabis**  
Online
- November 4 7:00 AM **Exploring the Nexus of Equity, Poverty, & NTDs**  
Online
- November 6 9:00 AM **Girls and STEAM**  
Online

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**STEMCELL Jobs in Vancouver**

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- Quality Control Specialist, Raw Materials**  
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- Research Associate/BioEngineer**  
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- Sales Development Representative**  
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**Other Science Jobs in Vancouver**

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Canada's Michael Smith Genome Sciences Centre
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Zymeworks
- Research Technician, Analytical**  
Precision NanoSystems
- Research Scientist, Pancreas Tissue Engineering**  
Aspect Biosystems
- Postdoctoral Fellow, Wound Healing**  
UBC

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