

Publications of the Week

## Circulating Tumour DNA Reveals Clinically-Actionable Somatic Genome of Metastatic Bladder Cancer

First Author: Gillian Vandekerkhove | Senior Author: Alexander Wyatt (*pictured*)  
Clinical Cancer Research | Vancouver Prostate Centre, BC Cancer Agency, and UBC



Circulating tumour DNA (ctDNA) is established in several solid malignancies as a minimally-invasive tool to profile the tumour genome in real-time, but is critically under-explored in bladder cancer. The authors demonstrated that ctDNA provides a practical and cost-effective snapshot of driver gene status in metastatic bladder cancer by identifying a wide spectrum of clinically-informative somatic alterations.

[Profile](#) | [Abstract](#)

## Systemic Inflammation Combined with Neonatal Cerebellar Hemorrhage Aggravates Long-Term Structural and Functional Outcomes in a Mouse Model

First Author: Sophie Tremblay | Senior Author: Daniel Goldowitz (*pictured*)  
Brain, Behavior, and Immunity | Centre for Molecular Medicine and Therapeutics and UBC



Despite the increased recognition of cerebellar injury in survivors of preterm birth, the neurodevelopmental consequences of isolated cerebellar injury have been largely unexplored and current understanding of the functional deficits requires further attention in order to translate knowledge to best practices. The authors developed a translational mouse model of cerebellar hemorrhage and/or inflammation to measure the short- and long-term outcomes in cerebellar structure and function. [Profile](#) | [Abstract](#)

## ReMixT: Clone-Specific Genomic Structure Estimation in Cancer

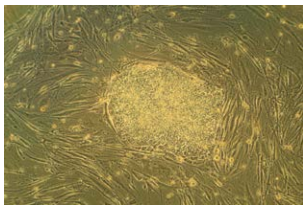
First Author: Andrew McPherson | Senior Author: Sohrab Shah (*pictured*)  
Genome Biology | BC Cancer Agency, UBC, and SFU



Somatic evolution of malignant cells produces tumours composed of multiple clonal populations. Whole genome sequencing mixes the signals of sampled populations, diluting the signals of clone-specific aberrations, and complicating estimation of clone-specific genotypes. The authors introduced ReMixT, a method to unmix tumour and contaminating normal signals and jointly predict mixture proportions, clone-specific segment copy number, and clone specificity of breakpoints. [Abstract](#)

## Amyloid Formation Disrupts the Balance between Interleukin-1 $\beta$ and Interleukin-1 Receptor Antagonist in Human Islets

First Author: Queenie Hui | Senior Author: Lucy Marzban  
Molecular Metabolism | UBC



$\beta$ -cell dysfunction and apoptosis associated with islet inflammation play a key role in the pathogenesis of type 2 diabetes. The authors used human islets in culture as an *ex vivo* model of amyloid formation to investigate the effects of amyloid on islet levels of the natural IL-1 receptor antagonist (IL-1Ra), and to examine if modulating the interleukin-1 $\beta$ /IL-1Ra balance can prevent amyloid-induced  $\beta$ -cell Fas upregulation and apoptosis. [Abstract](#)

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### Awards

## A Two Year Operating Grant Has Been Awarded to Dr. Connie Eaves by the Cancer Research Society

Terry Fox Laboratories



Congratulations to Dr. Connie Eaves of the Terry Fox Laboratories for receiving a 2-year operating grant from the Cancer Research Society. The project will focus on investigating the role of autophagy in directly isolated normal human breast cells obtained from consented reduction mammoplasty tissue. The experiments proposed will determine the normal and malignant human breast cell types in which autophagy is important, and whether manipulating autophagy might be advantageously exploited. [Read More](#)

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### Local News

## How Genomic Sequencing Is Changing BC's Health Care Policies

UBC Faculty of Medicine



Each year in Canada, more than 15,500 people will be diagnosed with epilepsy – 55% of those before the age of ten. In 50-60% of the cases, the cause is unknown. With funding from government and other sources, including a \$100,000 gift from the Alva Foundation, Dr. Matthew Farrer and Dr. Donald Rix are conducting research using whole exome sequencing to identify the genetic mutations that cause epilepsy. [Read More](#)

## Expanding the Cancer Toolkit to Tackle Acute Leukemia

Terry Fox Research Institute

Treatment for acute myeloid leukemia, one of the most aggressive forms of leukemia, involves chemotherapy drugs that many patients find difficult to tolerate and long-term survival is low. Dr. Keith Humphries and his program project team



based at the BC Cancer Agency are developing cell models of leukemia that could drastically change how leukemia research is conducted, and will use the latest genetic tools to search for targets for new therapies. [Read More](#)

## VIDEO: Understanding the G-Quadruplex

UBC Faculty of Pharmaceutical Sciences



How is the human genome sequence packaged in addition to the double helical structure? At the UBC Faculty of Pharmaceutical Sciences, Dr. Judy Wong and her team are investigating the formation of one alternate structure, the G-quadruplex. This rare DNA structure is implicated in an increasing range of biological roles, with links to the pathology of ALS and frontotemporal dementia. [Read More](#)

## Achieve Announces FDA Acceptance of the Investigational New Drug Application for Cytisine as a Smoking Cessation Treatment

Achieve Life Sciences via PR Newswire



Achieve Life Sciences Inc. announced that the U.S. Food and Drug Administration has accepted the Investigational New Drug application for cytisine, a plant-based alkaloid with a high binding affinity to the nicotinic acetylcholine receptor. It is estimated that over 20 million people have used cytisine to help combat nicotine addiction, including approximately 2,100 patients in Phase III clinical trials conducted in Europe and New Zealand. [Read More](#)

## Medical Marijuana, Inc. Major Investment AXIM Biotech Enters Clinical Study Agreement with University of British Columbia to Begin Clinical Trial on CBD Chewing Gum for Treatment of Drug-Related Psychosis

Medical Marijuana, Inc. via PR Newswire



Medical Marijuana, Inc. announced that its major investment company AXIM Biotechnologies, Inc. has entered into a Clinical Study Agreement with UBC to begin a clinical trial with its CanChew Plus® cannabidiol (CBD) chewing gum product to treat drug-induced psychosis in adult patients. UBC will work with Health Canada and their own ethics board to design the trial, which will be conducted at UBC, and will demonstrate the efficacy of AXIM's chewing gum product to treat drug-related psychosis. [Read More](#)

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### Interesting Articles

## Innovative Science Research in Canada Is Dying a Silent Death

Maclean's



In March, Canada's federal government announced its 2017 budget with no increase in funding for the Canadian Institutes of Health Research, the organization that provides the vast majority of biomedical research funding to labs in Canada. Dr. Kelly Marshall McNagny, a professor of medical genetics at UBC, discusses what this means for the future of research in Canada. [Read More](#)

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## Upcoming Events in Vancouver

- September 7 **The Beautiful Brain: A Celebration of Art and Neuroscience**  
3:00 PM Robert H. Lee Alumni Centre
- September 22 **UBC Postdoctoral Association Postdoc Appreciation Dinner**  
7:00 PM Royal Seoul House
- September 23 **17<sup>th</sup> Annual Pacific Northwest Prostate Cancer Conference**  
8:30 AM Paetzold Auditorium
- September 28 **Building Biotech**  
6:00 PM Coast Coal Harbour Hotel
- September 29 **Vancouver Nanomedicine Day**  
9:00 AM Vancouver Alpen Club

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## Science Jobs in Vancouver

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STEMCELL Technologies

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STEMCELL Technologies

### **Medical Director**

Zymeworks

### **Clinical Research Coordinator, Surgical Research**

Providence Health Care Research Institute

### **Grant Facilitator**

Providence Health Care Research Institute

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