

Publications of the Week

**Structural Insight into YcbB-Mediated Beta-Lactam Resistance in *Escherichia Coli***

First Author: Nathanael Cavener (*pictured*) | Senior Author: Natalie Strynadka  
Nature Communications | The Centre for Blood Research and UBC



The bacterial cell wall plays a crucial role in viability and is an important drug target. In *Escherichia coli*, the peptidoglycan crosslinking reaction to form the cell wall is primarily carried out by penicillin-binding proteins that catalyse D,D-transpeptidase activity. However, an alternate crosslinking mechanism involving the L,D-transpeptidase YcbB can lead to bypass of D,D-transpeptidation and beta-lactam resistance. [Profile](#) | [Abstract](#)

**Inhibition of GLI2 with Antisense-Oligonucleotides: A Potential Therapy for the Treatment of Bladder Cancer**

First Author: Peter Raven | Senior Author: Alan So (*pictured*)  
Journal of Cellular Physiology | Vancouver Prostate Centre and UBC



The sonic hedgehog (SHH) signaling pathway plays an integral role in the maintenance and progression of bladder cancer (BCa), and SHH inhibition may be an efficacious strategy for BCa treatment. The authors utilized a GLI1 and GLI2 antisense oligonucleotide to bypass pathway mechanics and target the two SHH transcription factors directly. [Profile](#) | [Abstract](#)

**Cancer Stemness, Intratumoural Heterogeneity, and Immune Response across Cancers**

First Author: Alex Miranda | Senior Author: Brad Nelson (*pictured*)  
PNAS | BC Cancer and UBC



The impact of a stem cell-like tumour phenotype ("stemness") on the immunological properties of cancer has not been systematically explored. Using gene-expression-based metrics, the authors evaluated the association of stemness with immune cell infiltration and genomic, transcriptomic, and clinical parameters across 21 solid cancers. They found pervasive negative associations between cancer stemness and anticancer immunity. [Abstract](#)

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Awards

**Green Chemistry, Microbial Bioremediation Projects Receive \$1.2 Million in NSERC Funding**

UBC Science



UBC research into green chemistry and microbial bioremediation are among five UBC projects receiving funding through the Natural Sciences and Engineering Research Council of Canada's (NSERC) Strategic Partnership Grants program. Microbiologist Steven Hallam (*pictured*) is leading a collaboration to restructure cyanobacterial metabolism to produce high-value compounds. [Read More](#)

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Local News

**New Study Uses Artificial Intelligence, Whole Genome Sequencing to Make Accurate Cancer Diagnoses**

Canada's Michael Smith Genome Sciences Centre



A new study led by Jasleen Grewal (*pictured*) from BC Cancer's Genome Sciences Centre has demonstrated that computers can provide cancer diagnosis with precision, including for cases that had previously failed human assessment. The research shows a novel use of whole-genome sequencing and machine learning techniques—specifically, measuring expression of all of the genes in the genome—to provide a cancer diagnosis with quantifiable confidence. [Read More](#)

**Matchmaking for Healthier Bees**

UBC News



While poor hygiene may be a deal breaker in human relationships, in bee colonies it can be a matter of life and death. Which is why, for two weeks in May, beekeepers from across the Lower Mainland ship bees to the Foster lab at the Michael Smith Laboratories to be analyzed ahead of the spring swarm period, when bees mate and new honey bee colonies form. [Read More](#)

**Stress Can Lead to Heart Failure**

Canadian Light Source



There are times when emotional or physical stress causes the heart to beat with an irregular or abnormal rhythm, a condition called arrhythmia. New research by Dr. Filip Van Petegem (*pictured*) of the Department of Biochemistry and Molecular Biology at UBC sheds new light on how two proteins interact in the heart in cases of stress-induced arrhythmia, and on potential treatment. [Read More](#)

**Huntington Drug Successfully Lowers Levels of Disease-Causing Protein**

UBC News



An international clinical trial has found that a new drug for Huntington disease is safe, and that treatment with the drug successfully lowers levels of the abnormal protein that causes the debilitating disease in patients. Dr. Blair Leavitt (*pictured*), a Senior Scientist at the Centre for Molecular Medicine and Therapeutics at UBC, treated all the Canadian participants in this study. [Read More](#)

**Protein Potential**

UBC Science



Proteins are one of the building blocks of cells and one of the major components of living tissues. UBC's Proteomics Core Facility launched more than a decade ago as part of the Michael Smith Laboratories, and conducts more than 150 analytical projects a year ranging from breeding better bees, to improving spinal cord injury treatment, to helping solve crimes. [Read More](#)

**AbCellera Announces Partnership with NIAID Vaccine Research Center and Ichor Medical Systems to Tackle Pandemic Viral Outbreaks**

AbCellera



AbCellera has announced the addition of leading researchers from the Vaccine Research Center at the National Institute of Allergy and Infectious Diseases (NIAID) and Ichor Medical Systems to its Pandemic Prevention Platform team. Together, the team will build an end-to-end platform capable of developing field-ready medical countermeasures within 60 days of a viral outbreak. [Read More](#)

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Interesting Articles

**Fulbright Canada and Mitacs Foster International Research Exchange**

Mitacs



Dr. Michael Hawes, CEO of Fulbright Canada, and Dr. Alejandro Adem (*pictured*), CEO of Mitacs, have announced the Fulbright Canada – Mitacs Globalink Research program to support student mobility and educational exchange between Canada and the U.S. Over the next three years, this partnership will bring up to 75 senior undergraduate students from the U.S. to conduct research in Canada. [Read More](#)

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**Upcoming Events in Vancouver**

- May 14 2:00 PM **2019 BCREGMED Trainee Workshop**  
UBC Chemical and Biological Engineering (CHBE), Rm 102
- May 14 - 15 8:00 AM **International Infection, Immunity and Inflammation Conference**  
Life Sciences Centre, UBC
- May 20 - 22 7:00 PM **Pint of Science Festival**  
The Pint
- May 24 4:00 PM **D.R.I.N.K.S. (Discussions Relevant to Inspiring New Knowledge and Science)**  
Mahony and Sons, Stamps Landing
- May 26 9:00 AM **STEMCELL Science Fair Fun Run**  
Athletes Village Plaza

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**STEMCELL Jobs in Vancouver**

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STEMCELL Technologies
- Product and Scientific Support Specialist, Cell Culture**  
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- Scientist, Matrix Biology**  
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- Associate Product Manager, Primary & Cultured Cells**  
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- Research Associate, Business Operations Products**  
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**Other Science Jobs in Vancouver**

- Electrophysiologist/Research Scientist/Technical Sales**  
Aurora Biomed
- Associate Scientist, Analytical**  
Zymeworks
- Associate Scientist, Immuno-Oncology**  
Centre for Drug Research and Development
- Postdoctoral Fellow**  
BC Cancer
- Postdoctoral Fellow, Infectious Disease Bioinformatics**  
SFU

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**MODELING PANCREATIC DEVELOPMENT AND DISEASE**  
Webinar with Dr. Ray Dunn and Dr. Jamie Trott

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