A NEWSLETTER FROM

The Snyder Institute for Chronic Diseases

Calvin, Phoebe and Joan Snyder Institute for Chronic Diseases

UNIVERSITY OF CALGARY CUMMING SCHOOL OF MEDICINE

June 2025

Snyder Member Uses Century-Old Approach to Treat Life-Threatening Infection

Snyder Institute member Dr. Stephen Vaughan, MD, an infectious disease specialist with Alberta Health Services and clinical associate professor at the Cumming School of Medicine, is helping pave the way for treating severe, drug-resistant infections using a century-old method—bacteriophage therapy. Once widely used before the advent of antibiotics, bacteriophage therapy is now re-emerging as a promising alternative as antimicrobial resistance (AMR) increases globally. Dr. Vaughan's patient, 76-year-old Boyd English, was one of millions worldwide affected by AMR, a condition where bacteria become resistant to antibiotics. The World Health Organization has identified AMR as one of the top global public health threats. Following the success of English's treatment, Dr. Vaughan and his team have since administered phage therapy to another patient and are evaluating a third case. Vaughan estimates that up to 20 patients in Alberta could benefit from this approach in the next one to two years. Congratulations to Dr. Vaughan on this groundbreaking work. Learn more.

Honoring Visionary Supporters: Geoff Cumming Named to Alberta Order of Excellence

The Snyder Institute proudly recognizes longtime University of Calgary supporter Geoff Cumming, who has been named to the 2025 Alberta Order of Excellence—the province's highest honor. This recognition celebrates his outstanding contributions to Alberta through exceptional leadership, philanthropy and community service. Philanthropic donations through the Cumming Medical Research Fund and other contributions have supported Snyder research initiatives, helped establish the International Microbiome Centre as a center of excellence and attracted top talent like Dr. Braedon McDonald, who credits Cumming's vision for enabling his research into life-threatening hospital infections. Geoff Cumming will be officially inducted into the Alberta Order of Excellence this October in Edmonton, joining six other honorees and bringing the total membership to 229. Read more.

Snyder Member Develops Rapid Intestinal Model for Biomedical Research

Snyder Institute member led research has developed a faster, more accurate gut-on-a-chip platform that mimics the human intestine using patient-derived organoids. Led by Dr. Amir Sanati Nezhad, this innovation enables researchers to model gut function in just three days—significantly faster than the typical 2-4 weeks—making it a powerful tool for drug testing, disease research and personalized medicine. About the size of a USB stick, the chip replicates key features of the intestine, including the mucus layer, immune signals and barrier function. Its speed and automation make it ideal for evaluating

how pharmaceuticals, pathogens and food additives interact with the gut. The platform also opens new avenues for exploring links between gut health and diseases such as cancer, inflammatory bowel disease (IBD) and neurodegenerative conditions. Read more.

Publications

- Bracey, N. A., Maltzman, J., Long, A., Dhanasekeran, R., Shankar, V., Mohsin, A., Kambham, N., Wernig, G., Gentles, A., Davis, M. M. & Charu, V The immune microenvironment of transplant glomerulitis. Kidney International Reports, 2025

- Delanne-Cuménal, M., Defaye, M., Delanne-Cuménal, A., Ahmed, M., Ho, V., Abdullah, N. S., Alhassoun, M., Svendsen, K., Mager, L., Schlessinger, J., Hirota, S. & Altier, C. (2025). Neuronal ALKAL2 and its ALK receptor contribute to the development of colitis-associated colorectal cancer Proceedings of the National Academy of Sciences of the United States of America, 2025

- Lee, C. T., Gandhi, S. A., Elmrayed, S., Barnes, H., Lorenzetti, D., Salisbury, M. L., Stewart, I. D., Barber, C., Peters, C. E., Feary, J. & Johannson, K. A Inhalational exposures associated with risk of interstitial lung disease: A systematic review and meta-analysis. Thorax, 2025

- Wongkrasant, P., Wallace, L. E., MacNaughton, W. K. & Sharkey, K. A Fructooligosaccharides slow colonic motility and activate myenteric neurons via calcium sensing and 5-HT3 receptors in the proximal colon. American Journal of Physiology-Gastrointestinal and Liver Physiology, 2025

Congrats

- Congratulations to PhD graduates Simmone D'Souza, Carlos Hiroki, Jared Schlechte, Julianna Svishchuk and Gerone Gonzales on successfully defending

their theses under the supervision of Drs. C. Coffin, B. Yipp, B. McDonald, M. Parkins, and J. Canton and R. Yates, respectively.

- Congratulations to Dr. Braedon McDonald on his appointment as Chair in Critical Care Research. In addition to this new role, Dr. McDonald serves as Director of Research and Innovation in the Department of Critical Care Medicine.

- Congratulations to Dr. Emily Mercer, recent PhD graduate, on receiving a Program Award in recognition of her thesis being recommended for a national or international award.

- Congratulations to Mr. Dorian, PhD student, on receiving the One Child Every Child Graduate Future Leaders Award.

- Congratulations to Dr. Marie-Claire Arrieta on her recent nominations and selections to serve on two prestigious boards: the American Gastroenterology Association Gut Microbiota Scientific Advisory Board and the Nestlé Nutrition Institute Global Scientific Council. A well-deserved recognition of her expertise and leadership in the field.

- Congratulations to upcoming postdoc Dr. Keely Shaw for being awarded the 2025 One to Watch Alumni Achievement Award by the University of Saskatchewan.

- Congratulations to Snyder members, trainees and postdoctoral researchers on their recent success in securing new research funding this past month.
    - Genome Canada – eDNA Surveillance Initiative: Drs. Michael Parkins and Casey Hubert
    - CIHR – Fellowship - PA: PPHE Research - Priority Areas: Dr. Colin MacKenzie; Supervisor: Dr. Braedon A. McDonald

- CIHR – Fellowship: Dr. Daiana Alvarez Olmedo; Supervisor: Dr. George Chaconas
- CIHR – Fellowship: Dr. Simone Paerregaard; Supervisor: Dr. Katharina Lahl
- CIHR – Doctoral Research Award: Canada Graduate Scholarships: Dr. Kenzie Birse; Supervisors: Drs. Laura Sycuro and Antoine Dufour
- CIHR – Doctoral Research Award: Canada Graduate Scholarships: Dr. Megan Kinzel; Supervisors: Drs. Nicolas Jacquelot and Aru Narendran
- CIHR – Doctoral Research Award: Canada Graduate Scholarships: Dr. Madeline Mellett; Supervisor: Dr. Kathy McCoy
- CIHR – Doctoral Research Award: Canada Graduate Scholarships: Dr. Armaan Mohan; Supervisors: Drs. Timothy Shutt and Derek McKay
- CIHR – Doctoral Research Award: Canada Graduate Scholarships: Dr. Hobin Seo; Supervisors: Drs. Nicolas Jacquelot and Douglas J. Mahoney.

In The News

- ### Global News

Wildfire smoke continues to trigger poor air quality alerts across Alberta

Dr. Richard Leigh talks about health impacts of wildfire smoke. Read more.

- ### CTV News

Tick-borne disease is spreading into new parts of Canada. Here's where you're at risk

Dr. George Chaconas talks about the growing number of tick-borne diseases. Read more.

- ### Calgary Herald

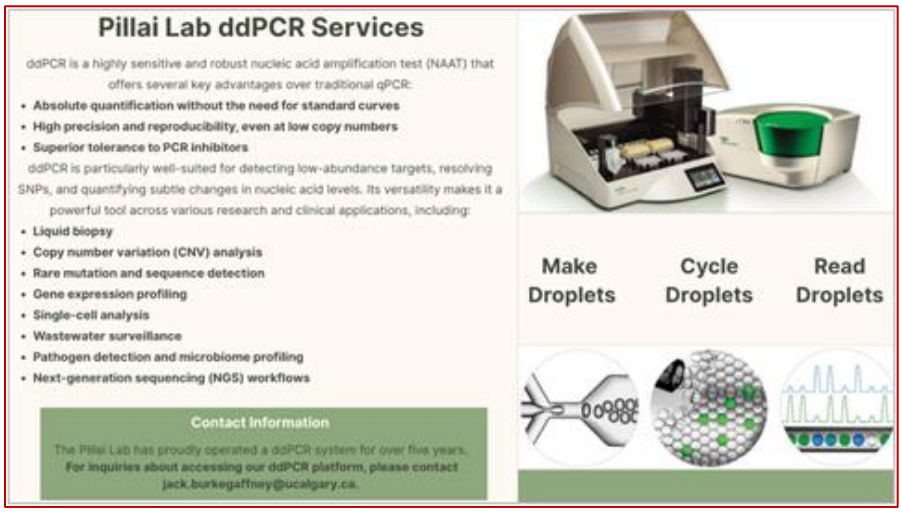
How will the measles outbreak in Alberta affect kids?

Dr. Daniel Gregson discusses the rise in measles cases among children and its impact. Read more.

Help Improve Recognition for Core Facility Staff – Take the Survey

Are you working in an Imaging Core Facility or a similar support role? Share your experience in a quick 5-minute survey on how core facility staff are recognized in publications, institutional policies on authorship, and how this affects careers. Your input will support advocacy for better recognition across the research community. Fill survey here.

Pillai Lab ddPCR Services



The Pillai Lab offers droplet digital PCR (ddPCR) services, providing a highly sensitive and precise nucleic acid amplification method. Unlike traditional qPCR, ddPCR enables absolute quantification without standard curves, maintains high accuracy even at low copy numbers and shows strong resistance to PCR inhibitors. This makes it especially useful for detecting low-abundance targets, identifying rare mutations and measuring subtle changes in nucleic acid levels.

Applications include liquid biopsy, copy number variation analysis, gene expression profiling, single-cell analysis, wastewater surveillance, pathogen detection, microbiome profiling and supporting next-generation sequencing workflows. Click here to learn more.

Design Support for Advanced Imaging and Prototyping: LCI ProtoLab

The LCI ProtoLab offers custom imaging adapters, fluidic devices, flow chambers, sample holders and more, enabling you to concentrate on your scientific endeavors. As a comprehensive design and prototyping laboratory, we specialize in meeting the unique needs of your experiments. Our extensive capabilities include adapters for various lab equipment, imaging flow chambers, Transwell insert tools, patterned substrate molds, custom culture inserts, flow and shear stress chambers, bubble traps, custom sample chambers and pumping devices. Allow us to provide the design advice and technical support necessary to help you achieve your experimental goals. For more information, contact Nicholas Pittner.

Other News

Snyder Institute Funding Reminder

- Snyder internal funding opportunities can be found on our website under Membership & Funding
- Snyder internal scholarship opportunities can be found on our website under Education & Scholarships

Awareness Information

Freezer Efficiency Matters: What You Need to Know

A new ultra-low temperature (ULT) freezer uses as much energy as an average household.

- Too many ULT freezers increase building heat load and strain HVAC systems.
- Freezer management helps cut costs, prevent failures, and improve performance.
- Try “Freezer Fridays” to clear out expired or unusable samples.
- Label all samples and keep an inventory—less time searching means less time with the door open.
- ULTs take ~10 minutes to recover for every 1 minute the door is open.
- Test older freezers (10–15+ years); some use 2–4x more energy and pose a risk to stored samples.

Would you like to contact someone at the Snyder Institute?

On our website, our Contact Us page has some useful contacts.

We want to hear from you! Send us your news

We invite all Snyder members, trainees and staff to send us your news about successes, lectures, workshops... anything that you would like to share with the membership. We will make every effort to post it, and the best ways for us to share your news are through our:

- Snyder Newsletter
- Snyder Website (as long as your news fits the site’s guidelines)
- X, LinkedIn, Instagram and Facebook channels

Do you want help publicizing your event/lecture/workshop? Send us the details **at least one month before the event date.** Please contact Anurag if you have any questions (anurag1@ucalgary.ca). Thank you.

For the latest news and information, visit us at snyder.ucalgary.ca, and at

If you have news to share, please send it to Anurag: anurag1@ucalgary.ca

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