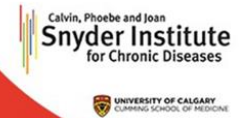




A NEWSLETTER FROM  
**The Snyder Institute  
for Chronic Diseases**



February 2024

## Research news

### **New study reveals that the interactions between microbes (including bacteria and fungi) and nutrition affect the gut microbiome maturation in human infants**



After birth, the human infant gut microbiome undergoes primary ecological succession to develop into a stable, mature community at around 3 years of age. Most of the current literature examines only the bacterial community and makes comparisons between individuals. But these approaches miss the vast number of fungi that also reside in the gut, as well as potentially important shifts within individual microbiota over time.

To address these gaps, [a recent study](#) published in *Microbiome* by first author Emily Mercer, PhD candidate (Arrieta lab) and principal investigator [Dr. Marie-Claire Arrieta](#) and their research team examined the gut fungi and bacteria from 100 infants at 3 and 12 months of age. More than 40 percent of the infants had divergent patterns of gut

bacterial or fungal community maturation, which makes divergent microbiome maturation more common than previously thought and may point to variable maturation rates. These findings highlight the importance of inter-kingdom interactions in community succession during early life, and reveal new insight into gut microbiome maturation patterns. [Watch the video.](#)

### **Alberta is urged to take strong steps to prevent outbreaks against measles as Europe battles outbreaks**



As cases of measles surge in Europe, there are calls for public health officials in Alberta to take stronger steps to prevent outbreaks. The World Health Organization recently warned of a dramatic rise in cases in Europe and a travel-related case was reported in Montreal last week.

Measles, a highly contagious and potentially deadly virus, can hang in the air for up to two hours after an infected person leaves a room. In severe cases, it can lead to serious complications resulting in the loss of hearing or sight, intellectual disabilities and even death.

But immunization rates in the province are dropping. Snyder Institute member [Dr. Craig Jenne, PhD](#), says that right now, without measles necessarily being in the province, "this is our opportunity to ensure we offer vaccines, we remind parents, we make this convenient." [Read more.](#)

## **Serious bacterial infections causing pneumonia and meningitis are on the rise in Alberta**



Experts are watching closely as cases of invasive pneumococcal disease rise in Alberta. The potentially life-threatening illness is caused by bacteria known as *Streptococcus pneumoniae*, which often strike after viral illnesses. These bacteria — including 100 different variations — can live in the respiratory tract, in many cases triggering no symptoms at all. In their milder form they can cause problems such as middle-ear infections. But when they invade normally

germ-free parts of the body, and become invasive, people can develop pneumonia, meningitis and sepsis.

"At all age groups there's been an increase in the cases and an increase in the rate of cases to the highest levels that I've ever seen," says [Dr. Jim Kellner, MD](#), a University of Calgary infectious diseases specialist and member of the Snyder Institute who's been studying invasive pneumococcal disease patterns in Calgary since 1998. [Read more.](#)

## **British Columbia fights to stop the spread of fatal 'zombie deer disease' in Yellowstone National Park, a nature reserve**



British Columbia has released a strategy to combat the spread of chronic wasting disease (CWD) as it continues to move across North America. Officials in B.C. have ordered the testing of any road-killed deer, moose, elk and caribou after two cases were confirmed at the end of January. Both cases – in a mule deer and a white-tailed deer – were found in the Kootenay district. The province also placed restrictions on the movement and disposal of deer in the area.

Snyder member [Dr. Hermann Schätzl, MD, PhD](#), says the rapid spread of the disease across North America and Scandinavia – and the likelihood of it becoming more variable over time – should raise concerns.

The fatal disease is caused by misfolded proteins known as prions and affects species in the cervid family. It infects the host's brain and nervous system, leaving deer drooling, stumbling, lethargic and with a blank stare, leading some to call it "zombie deer disease". The province has asked residents to report any cervids that appear sick immediately. [Read more](#).

## Published papers

- Contributing author Jacqueline K. Reid, lead author **Dr. Hedwich Kuipers, PhD** et al. [Regulatory T cells use heparanase to access IL-2 bound to extracellular matrix in inflamed tissue](#). **Nature Communications**, Volume 15, article number 1564, (2024).
- Miriam Carrillo Diaz de Leon (first author and Mitacs summer studentship), Keith Keane, Simon Roizes, Dr. Shan Liao, PhD, Dr. Pierre-Yves von der Weid, PhD, **Dr. Matthew Stephens, PhD**. [Not just fibrotic: endothelial-derived TGFβ maintains contractile function and lymphatic muscle phenotype during homeostasis](#). **AJP Cell Physiology**, 09 JAN 2024. \*This paper was highlighted by the American Physiological Society as a Select article for the month of February. Congratulations!
- Lukas Syriste, Deepak T Patel, Dr. Peter J Stogios, PhD, Tatiana Skarina, Dhruvin Patel, **Dr. Alexei Savchenko, PhD**. [An acetyltransferase effector conserved across Legionella species targets the eukaryotic eIF3 complex to modulate protein translation](#). **mBio**, 2024 Feb 9:e0322123. doi: 10.1128/mbio.03221-23. Online ahead of print.

## Congrats



- **Dr. Hedwich Kuipers, PhD**, awarded a CIHR project grant for: [Heparan sulfate as a platform to boost regulatory T cell suppression of autoimmunity](#).
- **Dr. Antoine Dufour, PhD**, and Dr. Roman Krawetz, PhD's paper [Tryptase β regulation of joint lubrication and inflammation via proteoglycan-4 in osteoarthritis](#) was voted a [Top 10 Research Advancement for 2023](#) by Arthritis Society of Canada.
- **Dr. Aline Ignacio, PhD**, postdoctoral fellow (McCoy Lab) is receiving a [CIHR REDI Early Career Transition Award](#), Infectious Disease and Immune System research area. This funding opportunity is a new, transformative program

available to post-doctoral researchers, clinicians, and research associates from specific underrepresented groups to help them launch their research faculty careers in Canada, with a goal to increase the diversity of highly qualified health researchers who have independent research careers in Canada.

- **Dr. Niki Cho, PhD**, finished 2<sup>nd</sup> in the [2024 Postdoc Research Slam](#), where competitors deliver a three-minute thesis (3MT) presentation, and are scored based on communication style, comprehension, and engagement. Niki's presentation was *Harnessing the gut microbiota as immunotherapy to prevent infections in the ICU*.

## Past notable achievements

Snyder Institute member **Dr. Francis Green, MD, Clinical Professor Emeritus of Pathology and Laboratory Medicine:**

- **University of Illinois Chicago School of Public Health Research Article Awards**  
Cohen, R. A., Rose, C. S., Go, L. H., Zell-Baran, L., Almberg, K. S., Sarver, E., Lowers, H. A., Iwaniuk, C., Clingerman, S., Richardson, D., Abraham, J. L., Cool, C., Franko, A., Hubbs, A. F., Murray, J. D., Orandle, M. S., Sanyal, S., Vorajee, N. I., Petsonk, E. L., Zulfikar, R., & **Green, F. H. (2022)**. [Pathology and mineralogy demonstrate respirable crystalline silica is a major cause of severe pneumoconiosis in US coal miners](#). *Annals of the American Thoracic Society*, 19(9). This research involved establishing an international group of pathologists to identify the cause for the resurgence of very severe lung disease in coal miners. Dr. Cohen, a respirologist in Chicago, was the principal investigator. Dr. Green was the senior pathologist.
- **CDC/NIOSH Alice Hamilton Science Award for Research leadership in science and publishing**  
Cummings KJ, Stanton ML, Nett RJ, Segal LN, Kreiss K, Abraham JL, Colby TV, Franko AD, **Green FH**, Sanyal S, Tallaksen RJ. [Severe lung disease characterized by lymphocytic bronchiolitis, alveolar ductitis, and emphysema \(BADE\) in industrial machine-manufacturing workers](#). *American journal of industrial medicine*. 2019 Nov;62(11):927-37. As a key player in this major achievement, **Dr. Green** was senior pathologist for the **US Centers for Disease Control (CDC)** public health multidisciplinary study of a previously unrecognized lung disease in machine manufacturing workers. The disease identified was new to medical science. It had a unique pathology, and a fascinating cause, involving the addition of genetically engineered bacteria (*pseudomonas*) to the machine oil. The CDC employs more than 1,000 PhD/MDs.
- **Successful outcome of a Phase II clinical trial of a new biophysical treatment for Cystic Fibrosis (CF).**  
Shrestha G, Githumbi R, Oslanski B, Venkova D, Lachman N, Montgomery B, Jarand J, Bjornson CL, Parkins M, Skolnik K, Fairservice L, Claire Smith,

**Francis Green**, Mark Montgomery. [A Phase IIa Open Label Study to Evaluate the Safety, Tolerability and Efficacy of S-1226 Administered by Nebulization in Subjects with Cystic Fibrosis Lung Disease.](#) *medRxiv*. 2021 Jan 1. This clinical trial was the result of 10 years of research showing the benefits of extrinsic CO<sub>2</sub> as a relaxant of airway smooth muscle tension, combined with the benefits of surface lowering surfactants on mucus secretion. The technology is approved by Health Canada for human studies and has US patent protection. The article documents many benefits for CF patients.

Congratulations, well done everyone!

## Education news

### Snyder Graduate Seminar Series – March



All lectures begin at noon. Pizza: first come first served; best to arrive by 11:50 am (limit 2 pcs. per person please)

#### **March 4**, Theatre One:

- Bjoern Ziehr, MDMI PhD Graduate Student  
Dr. MacDonald's Laboratory, Department of Biochemistry and Molecular Biology

- Paula Brandt, MDSC PhD Graduate Student  
Dr. Stys' & Dr. Muruve's Laboratories, Dept. of Medicine

#### **March 11**, Theatre One:

- Eymi Cedeno, MDIM MSc Graduate Student  
Dr. Canton's Laboratory, Department of Comparative Biology and Experimental Medicine
- Hobin Seo, MDIM MSc Graduate Student  
Dr. Jacquelot's Laboratory, Departments of Biochemistry & Molecular Biology and Microbiology, Immunology & Infectious Diseases

#### **March 18**, Theatre One:

- Carmina Isidoro, MDIM MSc Graduate Student  
Dr. Deniset's Laboratory, Department of Physiology and Pharmacology
- Esha Kaul, MDIM MSc Graduate Student  
Dr. Jenne's Laboratory, Department of Microbiology, Immunology & Infectious Diseases



### March 25, Theatre One:

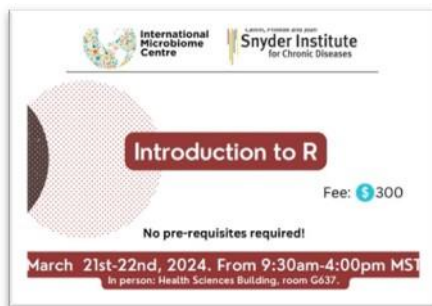
- Katherine Heger, MDMI MSc Graduate Student  
Dr. Sycuro's Laboratory, Department of Medicine
- Shane Ram, MDMI PhD Graduate Student  
Dr. Savchenko's Laboratory, Department of Microbiology, Immunology & Infectious Diseases

## SITC Postdocs and Research Associates Seminar Series



As part of the series of events on professional development and education for members within the Snyder Institute, the Snyder Institute Trainee Committee (SITC) holds a seminar series dedicated to Postdocs and Research Associates seeking an opportunity to present their research or improve their teaching skills by giving a chalk talk for the Snyder community. The seminars take place monthly. If you are interested in joining this and further opportunities, please provide your contact information [here](#).

## Introduction to R – March 21/22, 9:30 am – 4 pm



R has become one of the most popular programming languages globally and is used in diverse research areas, including bioinformatics, physics, math, social sciences, and many more. Join Sahar Bagheri, MSc, and Dr. Ewandson Luiz Lameu, PhD, as they smoothly guide you through the most fundamental and some other more advanced capabilities of R. Brought to you by the Snyder Institute and the International Microbiome Centre. For more info and to register, [visit here](#). And if you have questions, please email [Sahar.bagheri1@ucalgary.ca](mailto:Sahar.bagheri1@ucalgary.ca) or [ewandsonluiz.lameu@ucalgary.ca](mailto:ewandsonluiz.lameu@ucalgary.ca).

## Project Management by Mitacs, March 26/27, 8:45 am – 4:45 pm, Foothills campus (HSC)



The Mitacs Project Management course\* blends core PM knowledge with key interpersonal skills to help you succeed in your delivery of real-world projects, while advancing your formal project management skills.  
\*Qualifies for 16 hours of credit towards your PMP exam.

This is a **two-day interactive in-person learning experience**, designed, and delivered by industry experts. Applying the Project Management Institute's latest guidelines (PMBOK® Guide 7), as well as drawing from Agile, Lean Six Sigma, and real-world

leadership expertise, you'll leave with a depth of professional abilities to design, control, collaborate, and better lead projects. [Learn more and register.](#)

[More upcoming SITC events](#)

## Save the Date!

- **April 18, 2024** – Snyder Institute Endowed Chair Seminar Series featuring Dr. Jay Kolls (hosted by Dr. Margaret Kelly)
- **May 16, 2024** – Snyder Institute Endowed Chair Seminar Series featuring Dr. William Agace (hosted by Dr. Kathy McCoy)

**One Health Summer Institute 2024, June 9-15, 2024. Register by March 29.**



The One Health Summer Institute (OHSI) 2024 is a week-long class and field-based program exploring a One Health approach to watershed planning. Learn how human activity impacts the Bow River Basin, which begins in the Rocky Mountains of Alberta, and is a critical source of water supporting the basin's human, animal, plant and ecosystem health and services as well as numerous economic activities in the region. Gain

insight into the science, management strategies, and collaborative transdisciplinary skills necessary for sustaining the health and viability of the basin and the diverse ecosystems it contains. **Application deadline is March 29, 2024.** [Find out more & apply here.](#)

## Welcome



We are pleased to welcome **Samantha McCain, BSc**, the Snyder Institute's new Biobank Research Coordinator. After graduating from Brock University in 2022 with a BSc in Medical Sciences, Sam moved to Calgary about a year ago and has fallen in love with the city. She brings work experience in administration and a laboratory setting, and is looking forward to applying her business knowledge and combining it with her passion for science. Sam is located in HSC 1685; feel free to stop by and say hello.

## Other news

### Video: Snyder member Dr. Marie-Claire Arrieta shares insights into her lifelong study of the human microbiome



Dr. Arrieta, recently inducted into the Royal Society of Canada's College of New Scholars, Artists and Scientists, discusses her research program, which studies the establishment of the microbiome during early life and its influence in pediatric immune, metabolic and neurological development. [Learn more.](#)

### Video: Snyder member Dr. Joe Harrison discusses new approaches in chronic infectious disease treatments



Recently inducted into the Royal Society of Canada's College of New Scholars, Artists and Scientists, Dr. Harrison's discovery of heat-sensing enzymes and biofilm susceptibility to toxic metals are examples of applications that arise from fundamental research that many never thought possible. [Learn more.](#)

**Call for Abstracts: AbSPORU** is looking for presenters to submit abstracts for their annual conference: 2024 NorthWest SPOR Collaborative Forum, May 23-24, Calgary, AB. Abstract deadline is March 1, 11:59 pm. [Learn more here.](#)

### Nominate visionary UCalgary alumni for the 2024 Arch Awards by March 3

Celebrate alumni who are shaping the world, creating innovative solutions and redefining what is possible — nominate an outstanding UCalgary graduate for an Arch Award before March 3. [Learn more and nominate here.](#)

### SPARK Alberta – Spring application open until March 3

Are you a researcher in digital health? Do you want to realize the impact of your digital health technology? Learn how SPARK Alberta can support your innovation. SPARK Alberta is located at the W21C Research & Innovation Centre, supported by Innovate Calgary, and funded by Alberta Innovates. Visit <https://www.w21c.org/spark/> and apply by March 3, 11:59 pm.



## UCalgary Study - Call for Participants: How are Faculty Members with Disability across Canada Transforming Higher Education and Academia?

This study is exploring the lived experiences of faculty members with disabilities in Canadian postsecondary institutions, specifically to understand their transformative work and desires to create a more inclusive, welcoming space for students and colleagues with disabilities. The research team is looking for faculty members (tenured, sessional, associate, retired) with any disability to participate in telephone or Zoom interviews (45-60 minutes). Participants will receive a \$30 honorarium. Potential participants can contact the corresponding author, Dr. Alan Martino, by email at [alan.martino@ucalgary.ca](mailto:alan.martino@ucalgary.ca) or by phone/text message at 343-262-6484.

## International Neutrophil Institute Grant Opportunity

A [grant opportunity](#) is being offered through the [Society for Leukocyte Biology](#). The focus of their FY2024 grant cycle is on research that evaluates whether or not neutrophils have an exclusive “don’t eat me” signal. Grants are for \$100k/year over 4 years with a maximum of 12% indirect costs. Applications will be accepted until June 30, 2024.

**The Cancer Research Institute** is offering three tracks of postdoctoral fellowships providing career development, training, and diversity building in cancer immunology and immune-informatics. [Learn more](#).

## 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](#)

## Upcoming events

**The Snyder Institute presents Mini-Medical School: Bacterial Biofilms and Wound Healing, March 11, 6:30 – 8 pm, in-person and online**



Join us for the Snyder Institute’s Mini-Medical School, presented in person and also online by **Dr. Ranjani Somayaji, MD**, and **Dr. Joe Harrison, PhD**. Learn about how bacterial microfilms can affect wound healing. This interactive lecture will be presented in person at Health Sciences Centre Theatre 4, UCalgary’s Foothills campus, and also online via zoom. Mini-Medical School lectures are free, but you must register to attend. [Register here](#).

## Snyder/MIID Coffee Meet-ups for Faculty: Next meet-up March 12, 10 – 11 am, HRIC 4AC56



Snyder Faculty members, come and get to know your Snyder/MIID colleagues! Please join us for coffee and treats in an informal setting on **March 12, 10 – 11 am**. \*We'll provide the coffee and treats; please bring your own mug or cup if possible. Back to our original location: HRIC 4AC56.

[More info here.](#)

## Snyder Community Resource Open House, March 20, 9:30 am – 4:15 pm



Open to all UCalgary researchers, the Snyder Community Resource Open House is a day to allow all UCalgary researchers to learn about the Snyder Community Resources Laboratories and how they can help advance your research.

This onsite event will include an informational session, networking opportunity, and interactive sessions that allow researchers to check out the Snyder Community Resource Laboratories. [Learn more and register.](#)

## Snyder EDI Action Group next meeting March 25, 10:30 – 11:45am, HSC G382



[Dr. Laura Sycuro, PhD](#), is the Portfolio Lead of the Snyder EDI Action Group. Launched in Fall 2022 by Snyder trainees Dr. Karen Lithgow and Diana Changirwa, the Group currently has ~30 members working to initiate policies and advance practices that address structural inequities, celebrate diversity and promote an inclusive environment for all.

Three sub-committees have formed and will be managed by Action Leaders: one faculty member and one staff or trainee member for each group.

**\*\*Open to all faculty, trainees & staff who want to get involved\*\***

There are opportunities to join as a member-at-large or sub-committee leader. After this one, the next meeting will be May 27, 10:30 am in HSC G382. Learn more about the [Snyder Institute EDI Action Group](#).

## The 2024 Banff Pathology Course Oct. 9-12. Register soon.



Registration now open for The 2024 Banff Pathology Course, taking place in the beautiful resort town of Banff Alberta, Oct 9-12, 2024. The focus of the course is Endocrine Pathology. The course aims to bring together professionals, researchers, practitioners, and trainees to foster collaboration and cutting-edge share knowledge in endocrine pathology. [Learn more](#).

### Do you have new trainees or new staff working with you?

If yes, please send us their contact information so we can add them to our mailing list and ensure they receive all pertinent Snyder news. Email [snyderadmin@ucalgary.ca](mailto:snyderadmin@ucalgary.ca).

### 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)
- Twitter, 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 Holly if you have any questions ([holly.kerr@ucalgary.ca](mailto:holly.kerr@ucalgary.ca)). Thank you.

For the latest news and information, visit us at [snyder.ucalgary.ca](http://snyder.ucalgary.ca),  
and at



If you have news to share, please send it to Holly Kerr,  
[holly.kerr@ucalgary.ca](mailto:holly.kerr@ucalgary.ca)

[snyder.ucalgary.ca/](https://snyder.ucalgary.ca/)

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Cumming School of Medicine

University of Calgary  
3280 Hospital Drive NW  
Calgary, Alberta, T2N 4N1

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