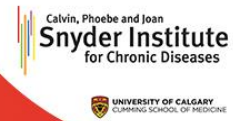




A NEWSLETTER FROM
**The Snyder Institute
for Chronic Diseases**



June 2023

Research news

UCalgary study provides insight into how the infectious *Leishmania* parasite uses immune cells as a Trojan Horse; the findings could bring researchers closer to developing an effective vaccine against the parasite

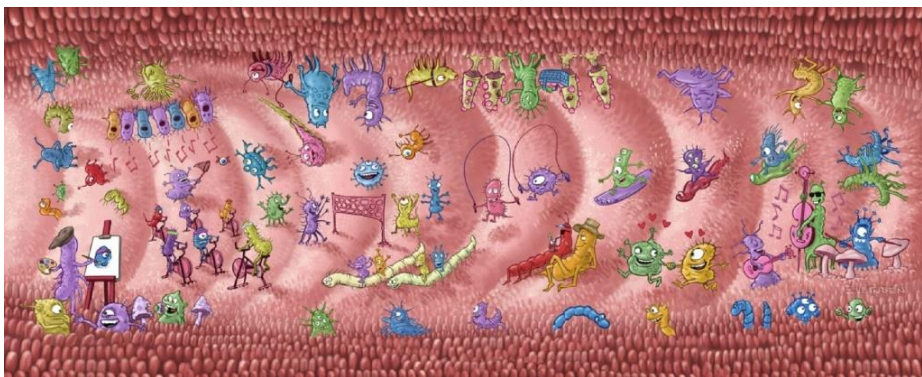


Every year, one to two million people in more than 90 countries are infected by a tiny parasite carried by sand flies. Infection by the microscopic-sized *Leishmania* parasite causes the chronic disease Leishmaniasis. Its effects range from disfiguring skin ulcers to enlarged spleen and liver and – in some 20,000 to 50,000 people a year – death.

Experimental vaccines aimed at preventing the infection haven't been effective. Scientists realized

the parasite was somehow manipulating immune cells called neutrophils produced by the body's natural immune response, but this process hasn't been well understood. Now a University of Calgary research team at the Snyder Institute has published a study in the *Journal of Immunology* led by [Dr. Nathan Peters, PhD](#) and first author [Adam Ranson, MSc](#), explaining the discovery of the mechanism by which the *Leishmania* parasite gets inside the neutrophils and is able to evade the immune response, using the neutrophil as a "Trojan Horse." [Read more.](#)

The Microbiome Era



A fascination with gut health has hit the mainstream with 'microbiome-friendly everything', from skin care to snacks. Scientists, however, have long explored the community of bacteria that lives

inside our bodies. Their research over the past two decades has driven change in how diseases are treated and prevented.

Snyder Institute members [Drs. Kathy McCoy, PhD](#), [Valerie Taylor, MD, PhD](#), [Maitreyi Kothandaraman, MD](#), and [Marie-Claire Arrieta, PhD](#) are at the global forefront of transformative microbiome discovery. These experts are asking and answering profound questions to change the future of health. [Read more](#).

European Medical Journal (EMJ) Podcast: Dr. Laura Sycuro speaks to interviewer Dr. Jonathan Sackier about the microbiome and how it affects mother and child



In the journey of understanding the microbiome, scientists have travelled far. Yet there is still much more to discover. How does microbial transmission from a mother to a child impact lifelong health of the child? When does a newborn baby begin to be colonized by bacteria? And, still one of the greatest debates in the field: when does a baby's microbiome start to form?

In this podcast, Snyder Institute member [Dr. Laura Sycuro, PhD](#) provides insights into the microbiome, what it means and how it affects mother and child. The pair discuss the interaction between human microbiota and disease, microbial imbalances and how to correct them, and how microbial transmission from mothers impacts the lifelong health of their children. They further dive into the vaginal microbiome and chorioamniotic infection in pre-term labour. [Listen to the podcast](#).

As cases of IBD in Canada increase rapidly, Snyder member Dr. Gilaad Kaplan says health care must become more multidisciplinary



A new report released on June 1 by Crohn's and Colitis Canada shows that some people in Canada who are impacted by conditions like Crohn's disease and ulcerative colitis are being left behind in terms of health care and quality of life. The report's findings include:

The number of people in Canada with IBD is increasing rapidly:

- 322,600 people in 2023 (0.8% of the population) to 470,000 in 2035 (1.1% of the population)
- 11,000 people will be diagnosed in 2023 (1 every 48 minutes) and 14,000 in 2035 (1 every 38 minutes)

- The number of new diagnoses is rising most rapidly in children under the age of six years old.
- Seniors are the most rapidly growing group since people with IBD are living longer due to better therapies

- Those with low socioeconomic status, who live in rural, remote and Northern communities and Indigenous peoples face additional barriers to care.

[Dr. Gilaad Kaplan, MD, MPH](#), says multidisciplinary care should include access to specialist physicians and nurses, mental health professionals, dietitians and others to improve quality of life. [Read more](#).

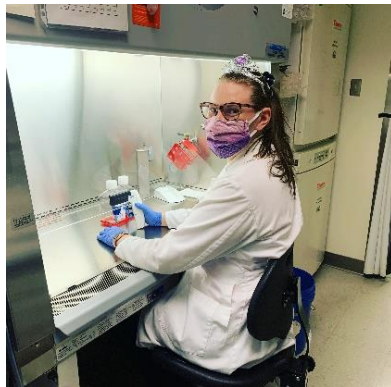
Are you still smelling smoke from wildfires? Experts advise to stay inside or wear a mask



As air quality due to wildfire smoke comes and goes, often remaining poor in parts of Western Canada, health experts are advising people to stay inside as much as possible. Children, elderly people and adults with existing lung conditions such as asthma or chronic obstructive pulmonary disease (COPD), should "stay inside until they stop smelling smoke, essentially, in the air," says Snyder Institute member and UCalgary respirologist [Dr. Alex Chee, MD](#). Even healthy people should try to stay indoors while smoke particles affect air quality, Chee says, adding that although surgical masks won't provide the same degree of protection, they're also worth wearing. "Something is better than nothing. So a mask that basically can filter some of the air that you're inhaling should help."

The reason smoke is visible while viruses aren't is due to the sheer volume of smoke particles. In addition to keeping doors and windows closed, air purifiers can help. The most effective units are HEPA — or high efficiency particulate air filters — and filters with a MERV — or minimum efficiency reporting value — rating of 13 or higher. [Read more](#).

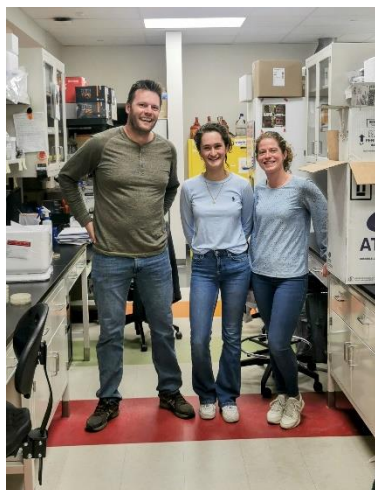
New study provides insights into potential therapies to fortify and maintain a healthy gut barrier and promote wound healing in IBD



This research highlights the complex interactions between MUC2 mucin, FCGBP protein, and other components of the mucus layer in epithelial barrier function. Understanding these interactions may provide insights into potential therapies. The mucus protective layer in the colon serves as the first line of innate host defense against potential pathogens and also provides a niche and nutrient source for indigenous microbiota.

In a recent study by a Snyder Institute research team (led by [Dr. Kris Chadee, PhD](#); first author [Hayley Gorman, PhD student](#)) published in *Frontiers in Immunology*, researchers aimed to understand how

Welcome



Wietske Boeve and **Lisa Korving**, both talented and driven MSc students from the Netherlands, have arrived at UCalgary as interns in the [Surewaard laboratory](#) under the supervision of [Dr. Bas Surewaard, PhD](#), offering them invaluable hands-on experience and a chance to work on existing host-pathogen themed projects.

Wietske and Lisa are supported by the [EPPO Fund](#), established by Dutch honorary consul, Irene Bakker (who is also a member of the Snyder Institute's Strategic Advisory Board) as a tribute to her late father. The fund supports promising Dutch students by providing them with opportunities to gain practical knowledge and skills through internships abroad in One Health-oriented projects. This initiative reflects the dedication and passion of the Bakker family to nurture young talent and contribute to the advancement of scientific research and innovation. We extend our heartfelt gratitude to Irene Bakker and the EPPO Fund for fostering international education and research collaborations.

Welcome and we look forward to working with you!

Education news



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) is organizing 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 will take place monthly. If you are interested in joining this and further opportunities, please provide your contact information [here](#).

Multi-Institute Summer Workshop Series, online, May – August 2023

This summer, the CSM Institutes are pleased to offer a compelling Summer Student Program for our summer students. The program offered an orientation on May 10, and through the summer offers a series of workshops, a mentorship program, a journal club, and other opportunities. Regardless of the source of funding, all students are welcome to participate in any or all aspects of the program, which are being offered in an online format from May to August 2023.

[Summer Student Workshop Series](#) – various dates:

- Intro to coding in R
- Intro to coding in Python
- How to write a scientific abstract
- Effective Visual Academic Communication
- Effective Verbal Academic Communication

[Learn more.](#)

Summer Undergraduate Research Day August 15

This year, SITC will host the [2023 Summer Undergraduate Research Day](#) in person on Tuesday, August 15, 9 am – 5 pm, in the Clara Christie Theatre and the Hippocrates Mall. The event will feature an entire day of science, social and networking activities and prizes for attendees and presenters. All Snyder Institute members are encouraged to support our 2022 Snyder undergraduate researchers by participating or attending!

The abstract deadline is Tuesday, August 1. Presenters selected for oral and poster presentation will be notified by Tuesday, August 8. If you are interested in volunteering as a judge for the oral or poster presentations, please email sitc@ucalgary.ca.

[Journal Club Series](#)

[More upcoming SITC events](#)

Other news



The Lymphatic Forum 2023 was held in Banff June 13 to 17. Sponsored in part by the Snyder Institute and with

Dr. Shan Liao, PhD, and Dr. Pierre-Yves von der Weid, PhD, on the organizing committee, the Forum welcomed about 180 participants from across the world (Australia, Belgium, Canada, England, France, Greece, Hungary, the Netherlands, New Zealand, Poland, the USA, Switzerland).

Participants enjoyed all that Banff has to offer, as well as great science revolving around the lymphatic system in health and diseases with a focus on functions and dysfunctions of the lymphatics in specific organs or tissues (Skin, Lung & Airway, Heart & Vasculature, Liver & Kidney, GI Tract, Brain). The forum was a huge success in a collegial and relaxed atmosphere.



UCalgary participants at the Lymphatic Forum 2023

Gutsy Walk



The Snyder Institute Gutsy Walk team, "Gutsy Friends", participated in the Crohn's and Colitis Foundation sponsored walk on Sunday, June 4, raising \$12,670. Team Members L to R: Eva Shenoda, Sruthi Rajeev (team captain), Derek McKay, Arthur Wang, Annaliese Boim, Lucas Kraemer, (Blanca Callejas – not in photo).

Gutsy Walk is Canada's largest community event for Crohn's and Colitis. Since 1996, Canadians from coast to coast have stepped out – rain or shine – in support of the cause. Gutsy Walk has raised over \$50 million for research and programs, all thanks to participants, donors, and sponsors who are driven to make a difference.

Grant Call: Precision Medicine and the Microbiome – Proof-of-Principle 2023: The Microbiome and Precision Nutrition

The Weston Family Foundation is pleased to announce the [Proof-of-Principle 2023](#) program, supporting high-impact translational or interventional research that seeks to understand and leverage the influence of the microbiome on health. This specific call for applications focuses on the role of the microbiome in precision nutrition. Funding Available: Up to \$300K per project over up to 30 months.

Pre-Announcement: CIHR Team Grants in Lung Health funding opportunity

The Canadian Institutes of Health Research are collaborating with the Canadian Cancer Society, the Canadian Lung Association, and the Heart and Stroke Foundation of Canada on the upcoming [Team Grants: Lung Health](#). This funding opportunity is also supported by in-kind contributions from Cystic Fibrosis Canada and Children's Healthcare Canada.

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](#)

EDIA: Snyder Institute Equity, Diversity, Inclusion and Anti-Racism Action Group

[Dr. Laura Sycuro, PhD](#), is the Portfolio Lead of the Snyder EDIA 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 are being formed and will be managed by Action Leaders: one faculty member and one staff or trainee member for each group. [Learn more and get involved.](#)

Alberta Health Services has posted its [2021/2022 AHS Annual Report on Research & Innovation](#), highlighting examples of how AHS and its partners are working to improve healthcare in every corner of the province. The thriving research and innovation ecosystem here is only possible thanks to the many staff, patients, partners, educational institutions, and foundations that contribute funds, inspiration and ideas to make real, concrete advances to Alberta's healthcare system.

Upcoming events



Snyder/MIID Coffee Meet-ups for Faculty: Next meet-ups July 20 August 24

Snyder Faculty members, come and get to know your Snyder/MIID colleagues! [Please join us for coffee and treats](#) in an informal setting on **July 20, 2 – 3 pm**, and **August 24, 10 – 11 am**. *We'll provide the coffee and treats; please bring your own mug or cup if possible.

Snyder Institute EDIA Action Group meeting July 31

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

Opportunities to join as a member-at-large or sub-committee leader

Monday July 31, 2023, 1-2 pm, In person or zoom:

Health Sciences Centre G382

Join Zoom Meeting

<https://ucalgary.zoom.us/j/98567626360>

Meeting ID: 985 6762 6360

Register now: Joint Symposium on the Molecular Mechanisms of Infectious Disease, September 21

This in-person symposium will be hosted by the Infection Biology Research Group and Snyder Institute for Chronic Diseases, and will be held in HSC Theatre 3 and HRIC Atrium.

Participation in this symposium is limited to individuals who are currently affiliated with the University of Calgary as either employees or students, possessing a valid UCID and ucalgary.ca email address. [Register by September 1](#).

Register now: Neuroimmunophysiology of the Gastrointestinal Tract 2023 conference, September 28 – 30, 2023



Held in Banff, Alberta, the **Neuroimmunophysiology of the GI Tract 2023 conference** will focus attention on the complex interrelationships that exist among and between the regulatory systems that contribute to normal intestinal homeostasis.

The meeting will also explore the ways in which deviations from this norm can lead to gastrointestinal disease states. The breadth and diversity of the program will challenge and inspire you. The concepts that will be developed over the two days of the meeting will broaden your thinking and can provide a new impetus to your research.

The meeting will be a success if lasting friendships are formed, and new collaborations emerge. We hope that you will enjoy some great science surrounded by the awe-inspiring Rocky Mountains. For more information, including the program, registration, and abstract submission, please visit <https://snyder.ucalgary.ca/neuroimmunophysiology-conference>.

Save the date, register now: CASL Single Topic Conference – HBV – 2023: Sept. 29 – Oct. 1, 2023, Calgary



The Canadian Hepatitis B Network (CanHepB) and the Canadian Association for the Study of the Liver (CASL) are pleased to present the Inaugural *Progress toward Hepatitis B Elimination Meeting* in Canada, September 29-October 1, 2023 at Sheraton Suites Eau Claire, Calgary. [Learn more and register](#).



Save the date, register now: Snyder Institute Research Day October 11

After several years of cancelled and virtual events, we are pleased to hold the Snyder Institute's 2023 **in-person** Research Day on Wednesday, October 11. **Our Research Day 2023 will highlight the high impact research being conducted by some of our most recently recruited members. Here is snapshot of some of the talks and presentations:**

- Johnathan Canton: Apolipoprotein control of antigen cross presentation by conventional dendritic cells
- Antoine Dufour: Playing the game of Pac-Man: Be careful when running with molecular scissors
- Nargis Khan: Maladaptive innate immune training links to chronic inflammation in colitis
- Katharina Lahl: Immune responses to rotavirus infection at the maternal-neonatal interface
- Andrew Leidal: Secretory autophagy in inflammatory lung conditions
- Braedon McDonald: Immunotherapy through microbiota editing: harnessing microbiota-immune interactions to combat infections in the ICU
- Bas Surewaard: Looking at the wild side of infectious disease research
- Christina Thornton: The role of the lung microbiome in suppurative disease

This not-to-be-missed day of insights and revelations about the science and medicine we study and practice will be an excellent opportunity for Snyder members to connect with colleagues, trainees and staff. Attendees are invited to join us for a reception in the HRIC Atrium at the close of the talks. **Registration is required. Lunch and reception will be provided to all registered attendees. Please register soon, and no later than Wednesday, October 4, 2023.** [RSVP and register](#).

Do you want 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 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). 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 Holly Kerr,
holly.kerr@ucalgary.ca

snyder.ucalgary.ca/

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