



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

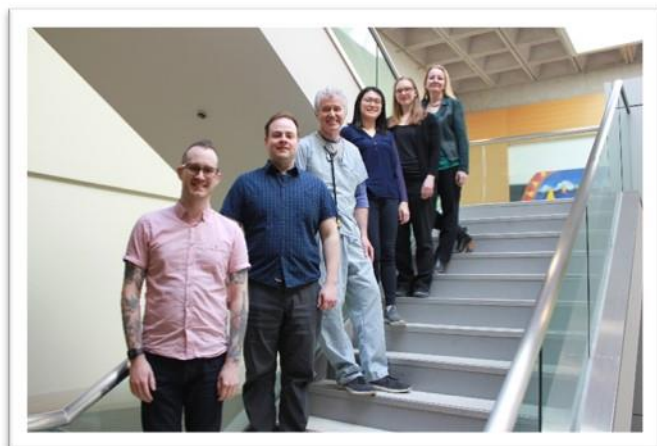
Calvin, Phoebe and Joan
Snyder Institute
for Chronic Diseases

UNIVERSITY OF CALGARY
CUMMING SCHOOL OF MEDICINE

March 2023

Research news

While interaction between the human gut and immune system increases infection risk in critically ill patients, a Snyder team has discovered potential therapies to prevent deadly infections



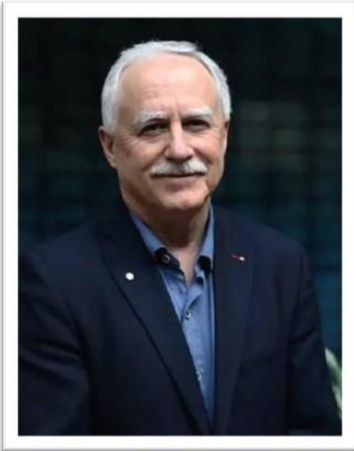
Twenty to 50 per cent of all critically ill patients contract potentially deadly infections during their stay in the intensive care unit (ICU) or in hospital after being in the ICU — markedly increasing the risk of death.

Despite the use of antibiotics, “hospital-acquired infections are a major clinical problem that persists to be a huge issue for which we don’t have good solutions,” says [Dr.](#)

[Braedon McDonald, MD, PhD](#), an ICU physician and assistant professor in the Department of Critical Care Medicine at the Cumming School of Medicine (CSM) and member of the Snyder Institute for Chronic Diseases at the University of Calgary.

Now, a two-year study led by McDonald in collaboration with UCalgary colleagues and first author [PhD candidate Jared Schlechte](#) has found that the high rates of infection in critically ill patients are linked with abnormalities of the microbiome, or human gut, in conjunction with an impaired immune system. Collectively, this microbiome-immune system dysfunction lowers the body’s ability to fight infections. [Read the full story.](#)

The journey to fighting drug-resistant infections from the palm of your hand: From local to global

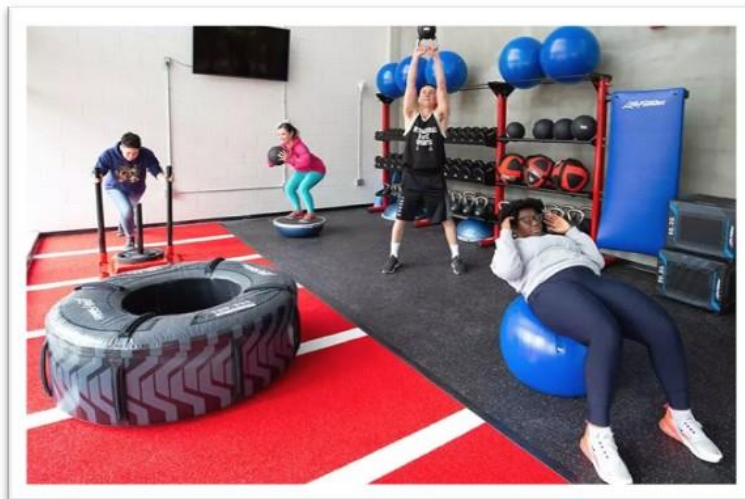


The road to fight one of humanity's greatest health challenges from the palm of your hand has been a long and winding one. The University of Calgary is the starting point of a free access mobile app to help countries around the world fight antimicrobial resistance.



It took almost a decade of research and collaboration with teams from across the country, including McMaster University and internationally involving the World Health Organization (WHO). Snyder Institute member [Dr. John Conly, MD](#), a professor and infectious disease specialist at the Cumming School of Medicine and Alberta Health Services (AHS), along with a team at UCalgary and AHS, has facilitated the development of an app to provide expert local knowledge so that physicians and veterinarians can make the best treatment decisions in an attempt to curb antibiotic resistance. Snyder member [Dr. Herman Barkema, DVM, PhD](#), scientific director of the Alberta-wide AMR – One Health Consortium at UCalgary says, “The app is instrumental for reaching both objectives: it tells the veterinarian not only when and when not to use antibiotics, but also what the antibiotic of first and second choice should be.” [Read the full story.](#)

How fit is your gut microbiome? New research shows duration and not intensity of exercise is most important



Exercise has many benefits — strengthening muscles and bones, preventing disease and extending lifespan. It is also known to change the composition and activity of the trillions of microbes in our guts known as the microbiome.

It is well known that the microbiomes of athletes are different from those who are sedentary.

This is not overly surprising according to PhD candidate [Shrushti Shah](#) ([Jane Shearer, PhD](#), Snyder Institute), author of a study on this topic, published in *The FASEB Journal*.

“Athletes are often lean and follow strict diet and training schedules — these factors alone can explain the different microbiomes of athletes,” says Shah, a kinesiology PhD student specializing in nutrition, metabolism and genetics. [Read the full story.](#)

Published papers

Dr. Antoine Dufour: [Romiplostim drug presence in pregnancy and lactation](#)

Labrecque AA, Roy S, Young D, Chen SA, Brechenmacher L, Le D, Cooper S, Gibson PS, Clarke AE, **Dufour A**, Skeith L. *Blood* :blood.2022019343. doi: 10.1182/blood.2022019343. Online ahead of print PMID: 36848631

Dr. Morley Hollenberg:

- [Protease allergens as initiators-regulators of allergic inflammation](#)
Soh WT, Zhang J, **Hollenberg MD**, Vliagoftis H, Rothenberg ME, Sokol CL, Robinson C, Jacquet A. *Allergy*. 2023 Feb 16. doi: 10.1111/all.15678. Online ahead of print. PMID: 36794967
- [Endothelial PAR2 activation evokes resistance artery relaxation](#)
Zhang X, Lee MD, Buckley C, **Hollenberg MD**, Wilson C, McCarron JG. *J Cell Physiol*. 2023 Feb 15. doi: 10.1002/jcp.30973. Online ahead of print. PMID: 36791026
- [The roles of proteases in prostate cancer](#)
Koistinen H, Kovanen RM, **Hollenberg MD**, Dufour A, Radisky ES, Stenman UH, Batra J, Clements J, Hooper JD, Diamandis E, Schilling O, Rannikko A, Mirtti T. *IUBMB Life*. 2023 Jan 4. doi: 10.1002/iub.2700. Online ahead of print. PMID: 36598826

Dr. Kathy McCoy (First-author Kirsty Brown): [Microbiota alters the metabolome in an age- and sex- dependent manner in mice](#) **Brown K**, Thomson CA, Wacker S, Drikic M, Groves R, Fan V, Lewis I A, **McCoy K**. *Nat Commun* 2023 Mar 11, Article number: 1348 (2023). <https://doi.org/10.1038/s41467-023-37055-1>

Dr. Dylan Pillai (First-Author Daniel Castañeda Mogollón): [Correlation of Clinical Severity with Stool Microbiome Changes in *Clostridioides difficile* Infection](#) **Castañeda Mogollón D**, Doolan C, Toppings N, Amarasekara R, Tran T, **Pillai, D**. <https://doi.org/10.5858/arpa.2021-0636-OA>

Congrats



- [Dr. Maitreyi Raman, MD](#), was awarded the Canadian Nutrition Society's 2023 [Khursheed Jeejeebhoy Award](#) for Best Application of Clinical Nutrition Research Findings to Clinical Practice.
- Snyder Strategic Advisory Board Chair [Matt Brister](#) was named [Fellow of the Year 2021/2022 by CDL Rockies](#) for his contributions as a mentor and supporter.
- [Daniel Castañeda Mogollón](#) was awarded an Eyes-High Postdoctoral Match-Funding Fellowship 2023, which will allow him to pursue his research program and support his application for external fellowships.
- [Paula Brandt](#) (Dr. Peter Stys, MD, Dr. Daniel Muruve, MD) and [Kelsie Volek](#) (Dr. Mark Gillrie, PhD, Dr. Bryan Yipp, MD) are the 2023 recipients of the inaugural [Paul Kubes Trainee Award of Excellence](#).
- [Dr. Shalina Ousman, PhD](#), and [Dr. Hedwich Kuipers, PhD](#), each received an [MS Canada Discovery Grant](#).

Congratulations and kudos to you all!

Education news

The following entries provide more information in the Snyder Institute Trainee Committee (SITC) [newsletter](#)

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](#).

Click into the SITC newsletter and scroll ...

[Journal Club Series](#)

[Snyder Trainee breakfast and lunch events](#)

- Free breakfast – April 21, May 5, June 9, in the HMRB atrium starting at 9 am
- Free pizza lunch – April 26, May 31, June 21, in the HMRB atrium starting at noon

[Trainee roundtable lunch with visiting speaker Dr. Francois Boudreau April 6](#)

[Calgary Youth Science Fair seeking volunteer judges for April 20-22](#)

[Symposium: The Success of Failure in the Health Sciences – April 21](#)

[2023 CSM Graduate Research Day April 26](#)

[Spring Python workshops: April 3-4, and May 25-26](#)

Other news

Help fight food insecurity among students



A survey of graduate students at Foothills campus showed 50 per cent of respondents struggle with food insecurity, and 80 per cent said they can't bring enough food to get through their day. With these results, ACHRI graduate student volunteers Taylor Scheidl and Jessica Wager contacted the Graduate Students' Association and were awarded a Quality Money grant to start the **GradSnacks program**. Operating out of the ZenDen in HSC G214, it is available to all Foothills campus graduate students. [View feedback.](#)

Although GradSnacks has received significant support from the community, demand for the program outweighs the current funding. GradSnacks is seeking support to sustain the program. [Donate to GradSnacks.](#)

[Read the UToday story.](#) Questions? Contact Taylor at taylor.scheidl@ucalgary.ca or Jessica at jessica.wager@ucalgary.ca

Foothills Campus Community Pantry



OPED has launched a grassroots initiative to support the food needs of our local campus community. To be located in the Health Sciences Centre atrium (also known as Hippocrates Mall), [the community pantry](#) will be stocked with non-perishable and hygiene essentials and available to all campus community members. This is a pilot project to support any of our community members who are in need. Campus groups and departments are invited to become involved by organizing donation collections. Please direct questions to oped@ucalgary.ca about how you can help, or provide [feedback anonymously here](#).

World TB Day



The Cumming School of Medicine along with the Snyder Institute, the Calgary Tuberculosis Clinic and UCalgary's Faculty of Nursing recognized World Tuberculosis Day on March 22 with a [Science in the Cinema](#) screening of *The Necessities of Life (Ce qu'il faut pour vivre)* at the Plaza Theatre in Calgary's Kensington district. It was a full house to hear Snyder member [Dr. Nargis Khan, PhD](#), and a panel of speakers hold an interactive discussion about the disease, treatment and emerging research.

Equity, Diversity and Inclusion at the Snyder Institute

As information for new Snyder members, we at the Snyder Institute would like to affirm that collectively, we value diversity of all kinds, including race, ethnicity, colour, sexual orientation, gender identity and expression, age, religion, and disability, and seek to promote the success and well-being of all our members. Thus, we are dedicated to creating a safe, secure, inclusive, positive, and supportive environment for all trainees, faculty, and staff. [Learn more.](#)

Paediatric oncology funding opportunities for multiple career levels

Alex's Lemonade Stand Foundation (ALSF) is pleased to announce the opening of three grant opportunities for 2023: the Reach Grant, the R Accelerated Grant and the 'A' Award Grant. [Learn more.](#)

Upcoming events

The Snyder Institute presents Mini-Medical School: *The Interplay of the Microbiome with Neurodiversity in Children*, April 3, 6:30 – 8 pm, in-person and online



Join us for the Snyder Institute's Mini-Medical School: *The Interplay of the Microbiome with Neurodiversity in Children*, presented in person and also online by [Dr. Laura Sycuro, PhD](#), and [Dr. Davide Martino, MD, PhD](#). Learn how the microbiome relates to conditions associated with neurodiversity in children: autism, ADHD, OCD and Tourette syndrome. **This interactive lecture will be presented in person at the Libin Theatre at UCalgary's Foothills campus, and also online via zoom.** Mini-Medical School lectures

are free, but you must register to attend. [Register here](#).

Cumming School of Medicine Strategic Planning Workshops, April 4 and April 20



The Cumming School of Medicine is embarking on a collaborative process to develop a new strategic plan. The hope is to build this together, and to grow it within a network of thinkers and doers like you who want to bring it to life. Please join us as we continue the process of defining our future together. You can support this process by [registering for an upcoming workshop](#).

The IMC presents Dr. Lisa Osborne: *Regulation of neuroinflammation and neurodegeneration by individual and environmental factors*, April 5, Noon – 1 pm, Clara Christie Theatre, HSC. [More info here](#).

The Canadian Association of Gastroenterology Visiting Research Professorship and the Snyder Institute present Dr. François Boudreau, Université de Sherbrooke: *The nuclear receptor HNF4A and its multifaceted regulatory functions in gut epithelial homeostasis*, April 6, 2 – 3 pm. [More info here](#).

- **Trainee Roundtable: Snyder Institute Trainees** are also invited to attend a roundtable lunch with Dr. Boudreau on April 6 from Noon - 1 pm. Please [register here](#).

Cracking the Cancer Code Speaker Series: Presented by the Arnie

Charbonneau Cancer Institute, April 11, 5:30 pm, Calgary Public Library Downtown: Snyder Institute member [Dr. Kathy McCoy, PhD](#), along with a panel of speakers will offer an immersive evening featuring TED talk-style discussions with the best and brightest in cancer research here in Calgary, as well as demonstrations from top trainees. The topic is *The Power of Microbes*. [Register here](#).



Host Dr. Kathy McCoy invites you to attend a guest seminar with Dr. Kelly McNagny (UBC) on the topic of *Innate Lymphoid Cell Origins, Fate and Function in Disease*, April 18, 3 – 4 pm, Clara Christie Theatre, HSC. [More info here](#).

Symposium: The Success of Failure in the Health Sciences, presented by the Snyder Institute Trainee Committee, Friday, April 21, Theatre 1, various sessions from 10 am – 3 pm. Join us for a novel symposium presented by the Snyder Institute Trainee Committee on the importance of failure and adversity as a step toward success in health science and medicine. Join us as we invite a number of talented speakers and panelists, including [Dr. Kamala Patel, PhD](#), and [Dr. Antoine Dufour, PhD](#), who will discuss their journeys to success and how unique challenges have contributed to their resilience and strength, in turn. [Register here](#).

Snyder/MIID Faculty Coffee Meet-up, April 21, 10 – 11 am HMRB atrium. Snyder Faculty members, come and get to know your Snyder/MIID colleagues! Please join us for coffee and treats in an informal setting. We request registration to help us provide enough coffee/treats, but drop-ins are also welcome. A regular schedule for future coffee meet-ups are in the planning process.

*You are encouraged to bring your own mug or cup. [Register here by April 17](#).

CSM Graduate Research Day: The Medical Science Student Association (MDSC-SA) is hosting the annual CSM Graduate Research Day on April 26, Foothills Campus

- **When:** 9am-1:30pm, April 26, 2023
- **Where:** Foothills Campus
- **Who:** CSM graduate students
- **What:** Oral and poster presentations, lunch (included with registration), and networking!
- [Register to attend](#). Questions: ucalgary.mdscsa@gmail.com

Banff Conference on Infectious Diseases, May 17-21, Banff Centre for Arts and Creativity



Since 1982 the Banff Conference on Infectious Diseases has been a unique forum for internationally recognized experts to present their research on pathogenesis and other aspects of infectious diseases and

host defenses. Spanning clinical and fundamental science, this year's conference focuses on Emerging Pathogens: SARS-CoV2, Host Pathogen Interactions, Genomics and Transcriptomics and Antimicrobial Strategies. For more information, including the conference program and registration links, go to [BCID-2023](#).

- Abstract submission deadline: April 24.
- Early Bird registration March 31; Final registration April 22.

One Health at UCalgary presents:

Principles of Biostatistics online course, May 8 – June 2 (Mon-Fri, 1-4 pm)



Understanding the basics of biostatistics is essential for every health researcher. This online course, offered by One Health at UCalgary in collaboration with the University of Calgary Biostatistics Centre, is comprised of two sections: I) *Fundamentals of Biostatistics*; and II) *Applied Statistical Modelling for Data Analysis in R*. Sections can be taken separately or together. Cost: \$300 per section.

[More information and registration here.](#)

One Health Summer Institute, June 10-17, in person at Barrier Like Field Station, Kananaskis, AB



The One Health Summer Institute is an in-person summer program for students to explore the concept of One Health as a multisectoral, systems-based and collaborative approach to complex problems. This one-week class and field-based program will be an engaged learning experience whereby students will 'learn by doing'. Using climate change in montane ecosystems as a case study, participants will learn how scientific inquiry from different disciplinary perspectives and engaging people on all sides of the challenge can lead to more constructive, sustainable, and

socially just solutions. Cost: \$500 (includes instruction, learning materials, accommodation, food, and transportation). [More information and registration here.](#)

Save the date, register now: Lymphatic Forum 2023 June 13 – 17 registration now open



The **Lymphatic Forum, June 13 – 17, 2023 in Banff, Alberta** is a biennial event that brings together researchers from around the world to present and discuss studies on

the lymphatic system in health and disease. Under the sponsorship of LE&RN and NAVBO and the Lymphatic Research and Education Program, the Snyder Institute for Chronic Diseases is organizing the **Lymphatic Forum 2023 (LF2023)**, the fifth iteration of this meeting. For more information, including the program, registration, and abstract submission, please visit <http://lymphaticforum.org>. We look forward to seeing you there.

Save the date, 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>.

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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Snyder Institute for Chronic Diseases
Cumming School of Medicine

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

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