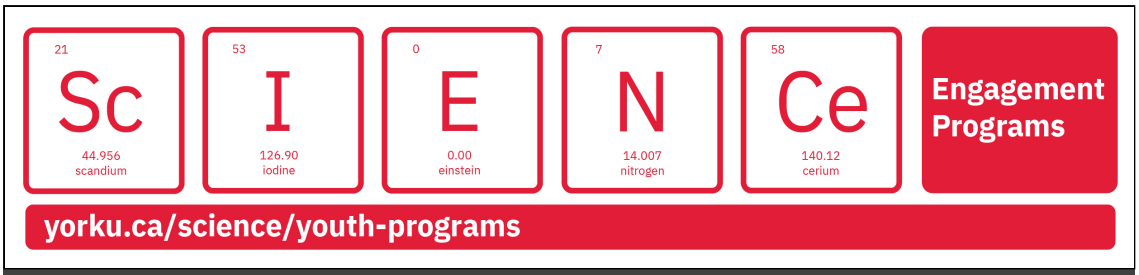
science | YORK

Dean's Round-up: April 2023

FACULTY HIGHLIGHTS



Our Science Engagement Programs (SEP) team hosted on-campus and off-campus events and workshops for over 600 students, including a workshop at Richvale Library where elementary school students learned about biology and created their own terrarium necklaces and a workshop at the Leacock Foundation where at-risk students in grades 1-6 participated in hands-on STEM activities, including building bridges and learning about digital literacy using Ozobots. The SEP team also hosted in-person booths at Northern Secondary School and Earl Haig for more than 350 high school students and a virtual booth at the PuMP+ Ottawa event to share enrichment and volunteer opportunities for high school students.

CONGRATULATIONS

Alumni **Batool Barodi** (BSc ’19), **Clarelle Gonsalves** (BSc ’18) and **Shalini Iyer** (BSc ’20) were named among York University’s 2023 Top 30 Alumni Under 30. Launched in 2021, the Top 30 Alumni Under 30 program seeks to highlight the success and diversity of the University’s young alumni community, while inspiring the next generation of young alumni leaders to make a positive difference locally and globally.

Elizabeth Clare (Biology) received an NSERC Alliance Collaborate 2 Commercialize grant, supported by NatureMetrics, to develop protocols for sampling eDNA from the air so that we can conduct species at risk monitoring of roosting bats.

Peter Gibson (Mathematics & Statistics) began a Simons Fellowship at the Isaac Newton Institute (Cambridge University, UK), lasting through June. Based on his work in inverse problems, he is one of the international experts in the mathematical theory of multiple wave scattering invited to exchange ideas and pursue research at the Isaac Newton Institute, with the goal of exploring new possibilities in acoustic cloaking, structural design, and metamaterials.

Jude Kong (Mathematics & Statistics) received the York University President's Emerging Research Leadership Award in STEM. The award recognizes faculty members within 10 years of their first academic appointment who have had a notable impact on their field and made significant contributions to advancing the University's international reputation for research excellence and the community's intellectual life.

Distinguished Research Professor **Sergey Krylov** (Chemistry) received an NSERC Collaborative Research and Training Experience grant worth $1.65 million over six years to lead a team of researchers and industrial leaders in training the next generation of technologically advanced graduates for the pharmaceutical industry.

A new program proposed by **Hélène Mialet** (Department of Science, Technology & Society), entitled Future Flourishing, was one of three winners of the international "Future of Being Human" competition held by the Canadian Institute for Advanced Research (CIFAR). Mialet (principal investigator) will serve as co-director of the new program at CIFAR.

Sapna Sharma (Biology) was appointed a Senior Fellow at Massey College.

MORE NEWS

Science Academic Services launched the York Science Experiential Education Advisory Committee, organized by Experiential Education Coordinator **Ivy Li**. Committee members include AD Students **Michael Scheid**; Interim Assistant Dean & Director of International Collaborations & Partnerships **Hugo Chen**; and Profs **Robert Tsushima** (Biology), **Matthew George** (Physics & Astronomy), **Cindy Fu** (Mathematics & Statistics), **Stephen Watson** (Mathematics & Statistics), **Andrew Skelton** (Mathematics & Statistics), and **Derek Jackson** (Chemistry).

Jairo Diaz-Rodriguez (Mathematics & Statistics) presented "Disease risk estimation based on GPS tracking of animal movements" at the Emerging Pathogens Institute at the University of Florida.

The Risk and Insurance Studies Centre, directed by **Ed Furman** (Mathematics & Statistics), co-sponsored the International Conference on Perspectives of Actuarial Risks in Talks of Young Researchers, with this year's topic being "How can actuarial and risk management tools help in developing the United Nations Sustainable Development Goals

(UN SDGs)?" The other co-sponsors included the Institute and the Faculty of Actuaries (IFoA) Foundation (UK) and the University of Lausanne (Switzerland). The UN's ILO and UNITAR leaders and more than 50 researchers from all over the world attended and presented at the conference.

Professor Emeritus **Walter Tholen** (Mathematics & Statistics) presented "What does 'smallness' mean in categories of topological spaces?" at the New York City Category Theory Seminar.

RESEARCH HIGHLIGHTS

Jingyi Cao (Mathematics & Statistics), Dongchen Li, Virginia R. Young, and Bin Zou published Reinsurance games with two reinsurers: Tree versus chain in the *European Journal of Operational Research*.

Ada Chan and former York Science Fellow **Hanmeng Zhan** (Mathematics & Statistics) published Pretty good state transfer in discrete-time quantum walks in the *Journal of Physics A: Mathematical and Theoretical*.

MSc student **Nina Garrett**, Jonathan Watkins, Charles M. Francis, Nancy B. Simmons, Natalia Ivanova, Amanda Naaum, Andrew Briscoe, Rosie Drinkwater, and **Elizabeth L. Clare** (Biology) published Out of thin air: surveying tropical bat roosts through air sampling of eDNA in *PeerJ*.

Pranendu Darbar and **Allysa Lumley** (Mathematics & Statistics) published Selberg's central limit theorem for quadratic dirichlet L-functions over function fields in *Monatshefte für Mathematikhttps*.

Former PhD student **Amira Moustafa**, former PhD student **Sara Hashemi**, Gurnoor Brar, Jörg Grigull, Siemon H S Ng, Declan Williams, Gerold Schmitt-Ulms, and **John C McDermott** (Biology) published The MEF2A transcription factor interactome in cardiomyocytes in *Cell Death & Disease*.

Iain R. Moyles, postdoctoral fellow **Chapin S. Korosec** and **Jane M. Heffernan** (Mathematics & Statistics) published Determination of significant immunological timescales from mRNA-LNP-based vaccines in humans in the *Journal of Mathematical Biology*.

Sapna Sharma, research assistant **Lianna S. Lopez**, PhD student **Aman Basu**, postdoctoral fellow **Kevin Blagrave**, **Dawn Bazely** (Biology), Gerald Bove, and Kenton Stewart published An introduction to the Community Lake Ice Collaboration – A long-term lake ice phenology citizen science project spanning 1000 lakes and over 30 years in the *Limnology and Oceanography Bulletin*.

Mengyao Chen, **Yuehua Wu** (Mathematics & Statistics), and Baisuo Jin published

Evaluation of the Canadian government policies on controlling the COVID-19 outbreaks in *Statistical Theory and Related Fields*.

For a full list of publications from the Faculty of Science, see our website.

MEDIA

Professor Emeritus **Paul Delaney** (Physics & Astronomy) spoke to *CTV News*, *CP24*, *Global News*, *AM640*, *AM900*, *NewsTalk 1010* and *Sirius XM* on topics including the Artemis II announcement of astronauts, the Hakuto-R Moon lander, Starship launch failure and more.

Observatory Director **Elaina Hyde** (Physics & Astronomy) spoke to CBC Radio's *Quirks & Quarks* about how things would be different if the Earth's collision with a small planet that formed the moon had not occurred, as well as to *AM900* about space travel.

Sandra Rehan (Biology) was interviewed by *Breakfast Television* about wild bees and what we can do to better conserve them, such as delaying spring cleanup dates and planting native wildflowers.

Jesse Rogerson (Science, Technology & Society) was interviewed by *CP24* and *AM900* about the Artemis II mission crew with one Canadian on board.

A story in the *Toronto Star* featured research by **Nikolaus Troje** (Biology) on how video platforms like Zoom can disrupt normal visual communication cues.

Cora Young (Chemistry) was quoted by *The Washington Post* in a story about new research showing a method to filter toxic "forever chemicals" (PFAS) from water.

EVENTS

May 17: Fundraiser for the Maria Stea Memorial Award, 6:30-9:30pm, Angus Glen Golf Club. Purchase tickets

May 27-29: **The Canadian Society for History and Philosophy of Science Annual Conference** (program chaired by **James Elwick**, Science, Technology & Society) as part of the Congress of the Humanities and Social Sciences. Victor Phillip Dahdaleh Building. Full details: https://cshps.ca/annual-conference/ . Featured guests and sessions that may be of interest to FSc colleagues include:

- Frédéric Bouchard (Université de Montréal), who will speak about science and research policy in Canada;

- Hasok Chang (Cambridge University), who will speak on what the history of battery discoveries can teach us about science;
- Zeynep Pamuk (London School of Economics), who will speak on the possibility of "science courts;" and
- other panels, including discussions about different models of AI/LLM; the use of experiential education to teach about science and society; the viability of using "lotteries" in science funding, and more.

June 12: Conversations on Science Education Symposium, featuring Keynote Speaker Michelle Hogue (University of Lethbridge). 9am-4pm, Bethune College 320. Please RSVP.

For a full list of events, visit our Community 2022 website.

INTERNATIONAL PARTNER INSTITUTION PROFILE

The Faculty of Science has established multiple partnerships with various international institutions. In order to better inform the York Science community of these international partner institutions, we will provide a brief profile of each of them in our Dean's Round-up.

Université Claude Bernard Lyon 1

Université Claude Bernard Lyon 1 is one of the top public universities in Villeurbanne, France. Founded in 1971, Claude Bernard Lyon 1 provides teaching for 47,000 students a year in the fields of science and technology, health and sport. It is named after the 19th century physiologist who developed the notion of blind testing in scientific experiments.

Claude Bernard Lyon 1 is part of Université de Lyon. With 62 laboratories and more than 5,600 publications per year, Lyon 1 contributes to scientific progress in numerous fields: health, mathematics, IT, physics, chemistry, earth and space sciences, life sciences, and more.

A number of degree programs at Claude Bernard are taught in English. This includes an undergraduate course in Geosciences, and master's degrees in Chemistry and Nanoscale Engineering.