

## Dean's Round-up: March 2023

COFFEE  
— with —  
PROFS



During academic year 2022-23, **Bethune College** launched a successful new speaker series called [Coffee with Profs](#), which wrapped up in March. Bethune thanks all of the professors and instructors from Science and Lassonde who shared their insights and experiences on a range of academic and professional topics with students. The initiative will continue for the 2023-24 academic year. If you'd like to take part in a talk or have an idea for a session topic, please contact **Paula Wilson** ([bchead@yorku.ca](mailto:bchead@yorku.ca)) or **Kathryn Allyn** ([travis10@yorku.ca](mailto:travis10@yorku.ca)).



The Faculty of Science welcomed nearly 260 guests for the annual **Spring Open House** held in the Life Sciences Building on March 25. Each department from Science participated. The event was a great way for incoming students to connect with department chairs, professors and alumni to further learn about the Faculty's

programs and services. Our Science Student Ambassadors also led tours through the science labs and buildings. Thank you to Science Recruiting Coordinator **Felicia Mercier**, the recruitment team and the Student Ambassadors for their hard work in ensuring the success of the event.

As well, the Faculty hosted March Break activities (online and in-person) for prospective students. More than 20 Science Student Ambassadors assisted in the delivery of presentations and tours.



Our **Science Engagement Programs (SEP)** welcomed more than 40 campers on campus for March Break Science Camp. Campers in grades 3-8 were conducted 15-20 experiments throughout the week, with particular favorites like dissecting a pig's heart to investigate the circulatory system, engineering circuits to design and construct an amusement park ride, concocting a lava recipe to maximize their volcano's explosive power, and more. Campers created Showcase Presentations ([view the video](#)) for their friends and family to demonstrate all they had learned throughout the week, followed by a Gallery Walk to discuss their projects in more detail.

SEP is excited to reignite Spark Lab: Research Stream courses, which focus on introducing high school students to the incredible work and research being done at York University. Featured courses for the upcoming summer include Pharmaceutical Chemistry taught by **Kyle Belozarov** and **Derek Jackson** (Chemistry), Blood-Borne Diseases taught by PhD student **Farwa Sadji** (Biology), and Introduction to Genetics taught by MSc student **Marishia Agard** (Biology).

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## CONGRATULATIONS

Undergraduate Chemistry students **Alex Akhundov** (Le group), **Samantha Henneberry** (Caputo group), **Gabriela Imbriaco** (Pietro/Mermut group), **Chalisa James** (Vandenboer group) and **Mahya Rezaeifarimani** (Chen group) presented at the 51<sup>st</sup> Southern Ontario

Undergraduate Student Chemistry Conference at Trent University, with **Akhundov** winning first place in the Organic and Medicinal Chemistry division and **Imbriaco** winning first place in the Physical, Theoretical, Computational division.

**Thomas Baumgartner** (Chemistry) was selected as a 2023 [Fellow of the Chemical Institute of Canada](#) (CIC). CIC Fellowship is a senior class of membership that recognizes the merits of members who have made outstanding contributions in chemistry.

**Elizabeth Clare's** (Biology) research on using airborne environmental DNA to monitor biodiversity was one of the winners of the 2023 [Gizmodo Science Fair](#).

**Ed Furman** (PI; Mathematics & Statistics) and a team of scholars at York's Risk and Insurance Studies Centre have received an NSERC Alliance-Mitacs Accelerate grant. Together with partner and industry contributions, the funding totals more than \$11.5 million (cash and in-kind). The co-applicants include Sheldon Lin and Silvana Pesenti (University of Toronto); Harry Joe (University of British Columbia); Fan Yang (University of Waterloo); Ricardas Zitikis (Western University); and York Professors **Jingyi Cao** (Mathematics & Statistics), Ida Ferrara (LAPS), Dirk Matten (Schulich), and Shayna Rosenbaum (Health). The funding will support a new research program entitled "New order of risk management (NORM): Theory and applications in the era of systemic risk," which will develop a comprehensive theory of systemic risk and test the theory in applications with the help of NORM partners, which include Aviva Canada, Canada Life, CANNEX Financial Exchanges Ltd., Sun Life, and Wawanesa Insurance.

**Nik Kovinich** (Biology) received an Agriculture and Food Research Initiative grant (United States Department of Agriculture, National Institute of Food and Agriculture) (PI: Bastiaan Bargmann, co-PIs: Nik Kovinich, David Haak, Scott Lowman) for the project "Investigation of the Transcriptional Regulation of Cannabinoid Synthesis in Industrial Hemp."

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## MORE NEWS

The Science Engagement Programs team, consisting of managers **Kimberly Tran** and **Cora Reist** and instructor **Nisha Sivaharan**, hosted a booth at the PuMP+ STEM event at the Ontario Science Centre for more than 150 high school students.

The **Department of Mathematics & Statistics** and STEM Fellowship co-organized a five-day Research Exploration Opportunity event for high school students to visit five research laboratories involved in modelling and computation related to infectious diseases, public health, and climate change. Over 30 high school students from several school boards in the GTA participated in this event from March 13-17 to learn about the world-class research and training activities conducted by professors **Jane Heffernan**, **Jude Kong**, **Huaiping Zhu**, **Assefa Woldegerima**, **Jianhong Wu**, and **Seyed Moghadas**. The organizers expect this collaborative effort will enhance the mathematical biology program by recruiting highly talented students.

**Conor Douglas** (Science, Technology & Society) and his colleagues from Brazil, France and the Netherlands hosted the first ever [Social Pharmaceutical Innovation conference](#) in Utrecht, Netherlands, which brought together international stakeholders from across the pharmaceutical innovation life-cycle to explore alternative ways of bringing treatments to rare disease patients that are not necessarily market oriented. He was also the guest keynote speaker at the annual meeting of the Health Technology Assessment International Policy Forum. His talk, entitled "How social pharmaceutical innovation can help health technology assessment (HTA) demonstrate value" was attended by HTA representatives from national public healthcare systems from around the world, as well as representatives from large to medium size pharmaceutical, biotech, and medical devices companies.

Postdoc **Lucas Gagnon** (Mathematics & Statistics) presented "Quasisymmetric varieties, excedances, and bases for the Temperley–Lieb algebra" at the Seminaire du LaCIM and at the Algebraic Combinatorics Seminar at University of Waterloo.

**Xin Gao** (Mathematics & Statistics) was invited to give a seminar to the Department of Mathematics and Statistics, McMaster University; the title of the seminar was "High dimensional multi-task learning."

Experiential Education Coordinator **Ivy Li** spoke at the Experiential Education Mini Retreat, presenting the strategic plan covering objectives, strategies, and current offerings and activities. Additionally, the Experiential Education team has officially started their monthly resource offerings to our students. These workshops include mandatory information sessions, resume and cover letter building, job searching, interview skill development, and much more incoming.

Director of International Collaborations & Partnerships and Interim Assistant Dean **Hugo Chen** and Science International Recruiting Coordinator **Mingming Li** served on the 2023-2024 Global Affairs Canada Scholarships Selection Committee, which will evaluate applications for the Emerging Leaders of the Americas Program, Study in Canada, ASEAN Scholarships and Educational Exchanges for Development. All successful candidates will study at York University this upcoming Fall. Li also volunteered to review the York University International Entrance Scholarship applications. As well, Chen and Li represented the Faculty of Science at the Asia-Pacific Association for International Education 2023 in Bangkok, Thailand. Over 2,700 colleagues from 65 countries/regions attend the conference and exhibition.

**Jude Kong** (Mathematics & Statistics) co-organized the Canadian Black Scientists Network [BE-STEMM 2023 Conference](#) and presented "The era of the mathematician is here: What we need to do as a community for our children to be competitive in the future job market" at the event. He also gave a guest lecture at the University of Toronto Faculty of Applied Science and Engineering on "Leveraging responsible, explainable, and local data science methods for population health & health systems;" was a panelist for "A Black students' guide to career" organized by Black students at York University; co-organized a workshop in Nairobi, Kenya, on "Gender action learning in digital one health research;"

launched the Global South AI4PEP Network [bi-weekly lecture series](#) (theme: AI for global challenges and lessons learned); presented (along with Taiye Estwick, president of Blacks in Math, York University) about the “Gateway to resilience in math: the creation of micro tutoring communities for our kids” at a Black history month celebration at the Apostolic Pentecostal Church, Pickering; gave a [Black History Month presentation at Michael Garron Hospital](#) on “Canadian Black scientists and the key to leveraging responsible data science methods for population health & health systems;” presented an invited talk about how we can leverage AI, to assist the Governor of Kajiado, Kenya (during his visit to York University) in supporting the Maasai people of Kenya (vulnerable community); presented a talk on “Mpox dynamic model: incorporating adaptive behavioural changes, different control strategies in the MSM community and under-reporting” at the American Mathematical Society Southeastern Sectional Meeting at Georgia Institute of Technology, Atlanta, Georgia; presented a talk on “Leveraging responsible AI for population health and health systems in Nigeria” at the Nigeria Computer Society [Artificial Intelligence & Robotics Conference](#); presented a talk at the Biology Department, McGill University on “A model for forecasting the distribution of range-shifting species and the Approximate Bayesian Computation to jointly estimate thermal envelopes, population growth rates, and dispersal parameters;” and presented a guest talk on “Leveraging Responsible AI for Population Health & Health Systems” at Queen's University.

Science Academic Advisor (International & Distance) **Miranda Ramnaraine** hosted an Academic Culture Workshop called “Thinking Outside the Box” for undergraduate students; the workshop included a guest speaker from York International and covered topics including connecting with instructors and peers, support services (Bethune College, Learning Skill Services, Science Academic Services, Career Services), academic honesty, and more.

**Kevin McGregor** (Mathematics & Statistics) presented “Community modelling techniques in microbiome data” at the Centre for Global Child Health at SickKids Hospital.

**Sapna Sharma** (Biology) led a [York delegation to the UN 2023 Water Conference](#) (New York City) and chaired a side event focused on how marginalized communities are affected by water insecurity and solutions to solve the crisis. She also starred in “On Thin Ice: Lakes are Feeling the Heat” as part of York’s new [Microlecture Series in Sustainable Living](#). As well, York hosted a [screening of “Omiwatari,”](#) a documentary on Sharma’s study of ice coverage of Japanese lakes throughout history to reveal pre- and post-industrial climate trends; a Q & A followed the screening with Sharma and the filmmaker, Zeesy Powers.

**Paul Szeptycki** (Mathematics & Statistics), along with Dana Bartosova (University of Florida) and Hector Barriga-Acosta (UNC Charlotte), co-organized the special session “Set Theoretic Topology” at the [56th Spring Topology and Dynamical Systems Conference](#). The event featured speakers connected to York University, including former postdocs **Wieslaw Kubis** as plenary speaker and **Oswaldo Guzman** as semi-plenary speaker, former undergraduate student **Keegan Dasilva Barbosa**, postdocs **Cesar Corral Rojas** and **Vinicius Rodrigues**, former faculty member **Alan Dow**, former PhD student **Vera Fischer**, and visiting PhD student **Matheus Duzi**.



Postdoc **Nancy Wallace** (Mathematics & Statistics) presented “Partitioning the Set of Parking Functions” at the AMS Spring Southeastern Sectional meeting in Atlanta, Georgia.

**Mike Zabrocki** (Mathematics & Statistics) presented a talk for the Ask a Mathematician program to a grade 6-7 class about the mathematics of cryptocurrencies.

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## RESEARCH HIGHLIGHTS

**Nantel Bergeron**, graduate students **Kelvin Chan** and **Farhad Soltani**, and **Mike Zabrocki** (Mathematics & Statistics) published [Quasisymmetric harmonics of the exterior algebra](#) in the *Canadian Mathematical Bulletin*.

Former PhD student **Cherie A Brown-Panton**, MSc student **Shiva Sabour**, PhD student **Georg S O Zoidl**, Christiane Zoidl, Nima Tabatabaei, and Georg R Zoid published [Gap junction Delta-2b \(.gjd2b/Cx35.1\) depletion causes hyperopia and visual-motor deficiencies in the zebrafish](#) in *Frontiers in Cell and Developmental Biology*.

**Amenda Chow** (Mathematics & Statistics) published [Hysteresis as an authentic mathematics application](#) in *For the Learning of Mathematics*.

Syed Nabeel-Shah, Research Associate **Jyoti Garg**, former MSc student **Kanwal Ashraf**, Renu Jeyapala, Hyunmin Lee, Alexandra Petrova, James D. Burns, Shuye Pu, Zhaolei Zhang, Jack F. Greenblatt, **Ronald E. Pearlman** (Biology), Jean-Philippe Lambert and former PhD student **Jeffrey Fillingham** published [Multilevel interrogation of H3.3 reveals a primordial role in transcription regulation](#) in *Epigenetics & Chromatin*.

Undergraduate student **Mahakpriti Kaur**, postdoc **Nicola Luigi Bragazzi**, **Jane Heffernan**, Peter Tsisis, **Jianhong Wu** and **Jude Dzevela Kong** (Mathematics & Statistics) published [COVID-19 in Ontario Long-term Care Facilities Project, a manually curated and validated database](#) in *Frontiers in Public Health*.

Distinguished Research Professor Emeritus **Clifford Leznoff** (Chemistry) published [I am a Factualist](#) in *Humanist Perspectives*.

PhD student **Yufeng Lin**, **Xiaogang Wang** and **Yuehua Wu** (Mathematics & Statistics) published [An Adaptive Multiple-Asset Portfolio Strategy with User-Specified Risk Tolerance](#) in *Mathematics*.

Jianhua Hu, Jian Huang, postdoctoral visitor **Xiaoqian Liu** (Mathematics & Statistics) and Xu Liu published [Response best-subset selector for multivariate regression with high-dimensional response variables](#) in *Biometrika*.

Diogo Boito, Maarten Golterman, **Kim Maltman** (Mathematics & Statistics) and Santiago

Peris published [Spectral-weight sum rules for the hadronic vacuum polarization](#), and [Data-based determination of the isospin-limit light-quark-connected contribution to the anomalous magnetic moment of the muon](#) in *Physical Review D*.

**Kelly Ramsay** (Mathematics & Statistics) and Shoja'eddin Chenouri published [Robust nonparametric hypothesis tests for differences in the covariance structure of functional data](#) in *The Canadian Journal of Statistics*.

**Robert Reynolds** and **Allan Stauffer** (Mathematics & Statistics) published [Chebyshev series: Derivation and evaluation](#) in *PLoS One*.

**Nikolaus F. Troje** (Biology) published [Zoom disrupts eye contact behaviour: problems and solutions](#) in *Trends in Cognitive Sciences*.

Shanshan Qin, Ge Zhou and **Yuehua Wu** (Mathematics & Statistics) published [Change-Point Detection for Multi-Way Tensor-Based Frameworks](#) in *Entropy*.

Wenquan Cui, Jianjun Xu and **Yuehua Wu** (Mathematics & Statistics) published [A new reproducing kernel-based nonlinear dimension reduction method for survival data](#) in *Scandinavian Journal of Statistics*.

**\*For a full list of publications from the Faculty of Science, see our [website](#).\***

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## **MEDIA**

**Dawn Bazely** (Biology) spoke to [City News](#) about untested sediment dumped near Hanlan's Point Beach without public consultation.

Postdoc **Tejin Cai** and **Deborah Harris** (Physics & Astronomy) spoke to [Scientific American](#) about their discovery of a new way to investigate the structure of protons using neutrinos.

Professor Emeritus **Paul Delaney** (Physics & Astronomy) spoke to media about a number of astronomy topics, including sunspots cycle, aurora, Venus and Jupiter conjunction, time zones on the moon, an asteroid heading close to Earth and more. Outlets included *CTV News*, *Global TV*, *NewsTalk 1010*, *Corus Radio*, *630CHED Edmonton* and *CJBQ Belleville*.

**Dasantila Golemi-Kotra** (Biology) spoke to *CTV News* and *Newstalk 1010* about the growing concern within the health community about a drug-resistant infection caused by fungus.

Observatory Director **Elaina Hyde** (Physics & Astronomy) spoke to *AM900* about Mercury, Jupiter, Venus, Uranus, and Mars aligning in an arc across the night sky.

**Patricia Lakin-Thomas** (Biology) spoke to the media about the negative impacts of Daylight Saving Time. She was interviewed by *CBC Radio*, *900CHML*, *City News*, *CP24*, *TMU On The Record*, and *Zoomer Radio*.

**Jesse Rogerson** (Science, Technology & Society) spoke to *CBC Radio* about new space suits for astronauts going to the moon.

**Sarah Rugheimer** (Physics & Astronomy) spoke to *Newstalk 1290 CJBK* about an asteroid heading close to Earth on Valentine's day 2046.

Research by **Sapna Sharma** (Biology) on the impact of climate change on lake ice safety for recreational and transportation purposes was covered by [Fairchild TV](#) and [Talentvision TV](#). She was also interviewed on [Breakfast Television](#) about York's new Microlecture Series in Sustainable Living.

**Huaiping Zhu** (Mathematics & Statistics) spoke to the [Toronto Star](#) about the potential impact of climate change on mosquito-borne diseases.

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## EVENTS

**June 12: SAVE THE DATE.** Faculty of Science: Conversations on Science Education Symposium. More details to follow. Featuring Keynote Speaker Dr. Michelle Hogue, associate professor and coordinator of the Indigenous Student Success Cohort program at the University of Lethbridge. Her locally, nationally, and internationally recognized teaching and research focus on building bridges between Indigenous and Western ways of knowing and learning.

**April 17:** Science Graduate Student Conversations in Teaching, 2pm on [Zoom](#).

**April 25:** Science EDI Book club- Reading Chapter 6 & 7 of "Inclusive Teaching Strategies for Promoting Equity in the College Classroom," 10am on [Zoom](#).

**\*For a full list of events, visit our [Community 2022 website](#).\***

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## 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.





THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學

### **The Hong Kong Polytechnic University**

Ranking among the world's top 100 institutions, [PolyU](#) has over 30 academic units across six faculties and three schools, opening doors to a broad range of academic disciplines. Offering over 160 postgraduate and undergraduate programs, PolyU emphasizes experiential learning and holistic education; it has 448,000 alumni all over the world and more than 27,000 students.

The [Faculty of Science of PolyU](#) is comprised of four constituent departments including the Department of Applied Biology and Chemical Technology, the Department of Applied Mathematics and, the Department of Applied Physics (AP), and the Department of Food Science and Nutrition. It has over 190 academic staff and offers a comprehensive range of academic programs covering undergraduate and postgraduate degrees.