science | YORK

Dean's Round-up: July 2023

FACULTY HIGHLIGHTS

The **Committee on Teaching and Learning** (CoTL) is now offering a new category of awards: the **Excellence in Educational Leadership Awards**. These awards recognize excellence beyond the classroom: accomplishments in undergraduate education that are not necessarily direct instruction, but have major, positive impacts for student, faculty, and/or programs. The awards are open to instructors and graduate students. CoTL also continues to offer the **Excellence in Teaching Award** for instructors and the **Richard Jarrell Excellence in Teaching at the Graduate Level Award** for classroom teaching. More information about the awards.

CONGRATULATIONS

The Accreditation Committee of the Statistical Society of Canada (SSC) approved the renewal application for the undergraduate Statistics program in the **Department of Mathematics & Statistics**. SSC has accredited certain courses as partially satisfying the requirements for the Associate Statistician (A.Stat.) designation. More information can be found at ssc.ca

Mary-Helen Armour (NATS) was selected as an Astronomer in Residence as part of a program run by the Allan I. Carswell Observatory and Killarney Provincial Park. The program sees qualified astronomers travel to the observatory at Killarney and host shows

and programs. Read the resident blogs.

IMAGE CAPTION: Members of the Audette Lab with Nobel Laureate Venki Ramakrishnan at the 2023 ACA meeting in Baltimore, USA.

PhD student **Nicholas Bragagnolo** (Chemistry, Audette lab) was awarded a 2023 Etter Student Award from the American Crystallographic Association (ACA): The Structural Science Society. This award celebrates the work of early career scientists in the structural sciences. Bragagnolo presented "Solution Characterization of the dynamic conjugative entry exclusion protein TraG" as an invited lecture at the ACA meeting in Baltimore, MD, USA. Nick was also the recipient travel grants/awards from the ACA and Larry Calvert fund of the CNCC to attend the meeting, and was an honorable mention in the three-minute thesis competition. Graduate students **Christina Rodriguez** and **Arnold Apostol** also attended the meeting and were awarded ACA travel grants.

Ozzy Mermut (Physics & Astronomy) and co-investigators William Pietro (Chemistry), Sylvie Morin (Chemistry), Christopher Barrett (Physics & Astronomy) were awarded a grant to develop their new photon counting technology to study Algal Blooms in Indigenous lakes of Tkaronto and Six Nations, to be conducted by a local graduate student from the Indigenous lands being studied. The research is funded by the Catalyzing Interdisciplinary Research Cluster for Detection and Remediation of Water Contaminants, and Mermut's York Research Chair in Vision Biophotonics (VISTA-CFREF).

Chun Peng (Biology) received a CIHR Project Grant for more than $780,000 for the project "NLRC5 isoforms in placental development and pathogenesis of preeclampsia."

Sapna Sharma (Biology) was appointed as York Research Chair in Global Change Biology.

Wendy Taylor (Physics & Astronomy) was elected President of the Canadian Institute of Particle Physics (IPP) Board of Trustees. IPP promotes Canadian excellence in particle physics research and advanced education, and includes about 235 individual IPP members from academic institutions and laboratories across Canada.

MORE NEWS

YFile profiled a 5-day course on Pharmaceutical Chemistry for high school students that was developed by **Kyle Belozerov**, **Derek Jackson** (Chemistry), and graduate student **Maryam Jabbarpoor** (Chemistry) for the Faculty of Science Spark Lab Summer Program.

Graduate student **Kelvin Chan** (Mathematics & Statistics) presented a poster titled “Quaisymmetric harmonics of the exterior algebra” at Formal Power Series and Algebraic Combinatorics 2023. This presentation was about joint work with **Nantel Bergeron**, graduate student **Farid Soltani** and **Mike Zabrocki** (Mathematics & Statistics).

Tanya Da Sylva and **Tamara Kelly** (Biology) presented “Embracing the authentic complexity of phenotypes to enhance belonging” at the 2023 Western Conference on Science Education.

Chair **Patrick Hall** (Physics & Astronomy) and his research group attended the conference "Active Galactic Nuclei Winds on the Chesapeake," organized by the Catholic University of America. **Hall** gave a talk on "Broad Absorption Line quasar surveys and science with the Sloan Digital Sky Survey." MSc student **Erik Weiss** and PhD student **Lucas Seaton** presented posters on “Modelling Quasar Outflow Bubbles and Searching for Deceleration” and “The SDSS Black Hole Mapper BAL Quasar Catalog.”

Derek Jackson and **Kyle Belozerov** (Chemistry) delivered a workshop on the use of virtual reality in the chemistry and biochemistry classroom at the ChemEd 2023 conference held at the University of Guelph.

Kevin McGregor (Mathematics & Statistics) presented an invited talk entitled “Bayesian dimension reduction in microbiome platforms” at the 2023 IMPACTT Symposium in Canmore, Alberta.

Iain Moyles (Mathematics & Statistics) presented “Drumlins: The Movie” at the International Symposium on the Edges of Glaciology at the University of Limerick (Ireland).

Undergraduate student **Sarah Powell** and **Randy Lewis** (Physics & Astronomy) were instructors at the Quantum Computing Boot Camp held at Jefferson Lab, Virginia. They worked in partnership with Natalie Klco (Duke University) to produce a set of exercises for the Boot Camp participants, who were graduate students and postdoctoral researchers from several countries. The final project was based on a paper published in collaboration with York students **Sarmed A Rahman** and **Emanuele Mendicelli**.

Tom Salisbury (Mathematics & Statistics) began his term as President of the Probability Section of the Statistical Society of Canada.

Sapna Sharma (Biology) moderated a virtual panel entitled “Humanitarian responses to

emerging water crises as a result of extreme climatic events" at the UN High-Level Political Forum on Sustainable Development.

Walter Tholen and **Paul Szeptycki** (Mathematics & Statistics) separately organized special sessions at the Summer Topology Conference at Youngstown State University in Ohio. Additionally, PhD student **Khulod Almontashery** (Mathematics & Statistics) presented a talk at the Set-Theoretic Topology Special Session.

Cora Young and **Trevor VandenBoer** (Chemistry) officially launched the research project THE CIX (Toronto Halogens, Emissions, Contaminants, and Inorganics eXperiment), which is testing the city's air pollution from their rooftop Air Quality Research Station for six weeks. THE CIX project is part of an international field campaign – Atmospheric Emissions and Reactions Observed from Megacities to Marine Areas (AEROMMA) – organized by NASA and the National Oceanic and Atmospheric Administration (NOAA). READ THE PRESS RELEASE FROM YORK UNIVERSITY.

Mike Zabrocki (Mathematics & Statistics) and Rosa Orellana (Dartmouth College) presented a lecture series titled "Symmetric group characters as symmetric functions" at the Important Papers in Algebraic Combinatorics Seminar.

RESEARCH HIGHLIGHTS

Amenda N Chow (Mathematics & Statistics), Peter D Harrington, and Fok-Shuen Leung published A three-pronged lesson in differential equations in a calculus course: analytical, numerical and experimental in *Teaching Mathematics and its Applications: An International Journal of the IMA*.

Former undergraduate **Jacob L Fine** and Professor Emeritus **Ronald E Pearlman** (Biology) published On the origin of life: an RNA-focused synthesis and narrative in *RNA*.

Rahul Kannan (Physics & Astronomy) and an international team of astrophysicists have made an ambitious attempt to simulate the formation of galaxies and cosmic large-scale structure throughout staggeringly large swaths of space. First results of their "MillenniumTNG" project are published in a series of 10 articles in the journal *Monthly Notices of the Royal Astronomical Society*. **READ THE PRESS RELEASE FROM YORK UNIVERSITY.**

Anita Rágyanszki, Béla Fiser, Professor Emeritus **Edward Lee-Ruff** (Chemistry), and Joel F. Liebman published Strained Small Nitrogen Heterocycles-Azabicyclobutanes and Azirines in *ChemistrySelect (Chemistry Europe)*. **Lee-Ruff** was also an invited speaker in presenting part of this study at the Journal of Thermal Analysis and Calorimetry Conference.

Graduate student **Jie Lin**, undergraduate student **Dasol Wi**, graduate student **Melissa Ly**,

Md Asraful Jahan, graduate student **Sarah Pullano**, undergraduate student **Izabella Martirosyan**, and **Nik Kovinich** (Biology) published Soybean Hairy Root Transformation for the Analysis of Gene Function in *Bioengineering*.

Former PhD student **David Miller**, former PhD student **Kyra Kerkhofs**, Farnoosh Abbas-Aghababazadeh, Sahib Singh Madahar, Mark D. Minden, Josée Hébert, Benjamin Haibe-Kains, **Mark A. Bayfield** and **Samuel Benchimol** (Biology) published Heterogeneity in leukemia cells that escape drug-induced senescence-like state in *Cell Death & Disease*.

David Asperó and **Miguel Angel Mota** (Mathematics & Statistics) published Few new reals in the *Journal of Mathematical Logic*.

Former MSc student **Dmitri Perlov**, Euan D Reavie, and **Roberto Quinlan** (Biology) published Anthropogenic stressor impacts on hypolimnetic dissolved oxygen in Lake Erie: A chironomid-based paleolimnological assessment in the *Journal of Great Lakes Research*. **READ THE PRESS RELEASE FROM YORK UNIVERSITY**.

Former PhD student **Jennifer Porat**, Viktor A Slat, Stephen D Rader, and **Mark A Bayfield** (Biology) published The fission yeast methyl phosphate capping enzyme Bmc1 guides 2′-O-methylation of the U6 snRNA in *Nucleic Acids Research*.

PhD Student **Leyla Salehpoor** and **Trevor VandenBoer** (Chemistry) published Suppressor and calibration standard limitations in cation chromatography of ammonium and 10 alkyl amines in atmospheric samples in *Analytical Methods*

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

MEDIA

Professor Emeritus **Paul Delaney** (Physics & Astronomy) spoke to *AM900 CHML* about solar radiation mitigation, *NewsTalk 1010* about satellite "noise" causing problems for radio astronomy and the top 3 "to know" astronomy questions from the public, *Sirius XM* about the James Webb Space Telescope anniversary, and CTV Your Morning about UAP/UFO commentary on congressional hearings.

Matthew Johnson (Physics & Astronomy) was a panelist on *The Agenda*'s (TVO) The Cosmos Week (five episodes) to discuss the wonders of our universe.

Roberto Quinlan (Biology) spoke to *CTV News*, *CBC Radio*'s Fresh Air program, and *AM 800 CKLW* about his research that suggests more algal blooms are likely in Lake Erie as deep-water oxygen levels continue to drop.

Jesse Rogerson (Science, Technology & Society) spoke to *CBC Radio* about the one-year anniversary of the James Webb Space Telescope and what it has taught us.

EVENTS

Aug 15: eClass Workshop (part 1): Overview of the updated eClass, dashboard eClass interface comparisons, and gradebook, led by Kalpita Wagh. 11am-12:30pm, Lumbers 306 and via Zoom. Please register.

Aug 16: Summer Research Conference. 8am-4pm, Life Sciences Building Lobby.

Aug 24: eClass Workshop (part 2): Introduction to eClass groups, activity restrictions and completion, and external tools Panopto, Zoom, by Kalpita Wagh. 1-2:30 pm, Lumbers 306 and via Zoom. Please register.

Sept 11: Empowering Educators: Strategies for Enhancing Mathematical Literacy among Students, led by Andrew Skelton (Mathematics & Statistics). 2:30-3:30pm, via ZOOM. Please register.

Sept 13: Start of Semester Communication Tips for TAs, led by Lisa Robertson (Biology). 1:30-2:30pm, hybrid event (room TBA). Please register.