

science



Dean's Round-up: June 2019

Faculty Highlights



The Faculty of Science will welcome a new dean on Jan. 1, 2020.

Professor **Rui Wang** (Biology), deputy provost Markham, and interim vice-president research and innovation at York, was chosen following an extensive national and international search.

Read the [announcement](#) from President and Vice-Chancellor Rhonda Lenton and Vice-President Academic and Provost Lisa Philipps.



Jennifer Doudna, who co-discovered CRISPR-Cas9 genetic engineering technology, was the recipient of an honorary degree at the Faculty of Science's spring Convocation 2019 ceremony on June 20. Doudna is the Li Ka Shing Chancellor's Chair, a professor in the departments of Chemistry and Molecular & Cell Biology at the University of California, Berkeley, and an investigator of the Howard Hughes Medical Institute. Read more in [yFile](#).



The federal government announced two new Canada Research Chairs in the Faculty of Science on June 14. **Nikolaus Troje** (Biology) received a Tier 1 CRC in Reality Research and **Joel Zylbergerg** (Physics & Astronomy) received a Tier 2 CRC in Computational Neuroscience. Read about it in [yFile](#).



Undergraduate student **Nicholas Chrobok** (Biology) received the Governor General's Silver Medal at the Faculty of Science's spring 2019 convocation ceremony for his academic achievements. Read more in [yFile](#).



Above, **Carol Bucking** (Biology) receives the Boutilier New Investigator Award from the Canadian Society of Zoologists at the conference. Photo courtesy of Carol's graduate student, Nahid Vagharfard.



MSc candidate **Bande Morrison** (third from left in photo), supervised by **Amro Zayed** (Biology), won best MSc poster prize at the recent Great Lakes Evolutionary Genomics Symposium.

Congratulations

Jianhong Wu (Math & Stats) won the 2019 CAIMS-Fields Industrial Mathematics Prize in recognition of his many contributions to dynamical systems in mathematical epidemiology and in particular, his collaborative research with public health professionals in government and industry and applying his expert knowledge to infectious disease mitigation strategies and

preparedness. Wu delivered the prize lecture at the CAIMS annual meeting in June, titled **Mathematical Trails of Infectious Disease Modelling for Public Health**. Read more [here](#).

Neal Madras (Math & Stats) is one of 11 members chosen to be part of the second inaugural class of Canadian Mathematical Society Fellows. These Fellows have made significant contributions to the profession and will be honoured at the winter banquet on Dec. 8.

<https://cms.math.ca/MediaReleases/2019/Fellows>

Congratulations to graduating student **Kevin Joseph** (Math & Stats) received the Faculty's Gold in recognition of his high degree of scholarship and outstanding undergraduate career. The Silver Medal went to graduating student **Neil McCall** (Biophysics) for his combined outstanding academic achievement and great contribution to undergraduate student life.

Sampa Bhadra's (Physics & Astronomy) recent graduate student **Elder Pinzon Guerra** (PhD '18) won the 2019 PPD Thesis Prize presented by the [Particle Physics Division of the Canadian Association of Physicists \(CAP\)](#).

Read more in [yFile](#).

Faculty of Science Post-doctoral Fellow **Gabriel Santucci** won a prestigious fellowship through the [KEK-TRIUMF Exchange Program for Early Career Researchers](#) (EPECR). Santucci is in [Sampa Bhadra's](#) (Physics & Astronomy) particle physics research group and is one of four awardees for the highly competitive program, now in its second year. Read about it in [yFile](#).

Nikolaus Troje's graduate student **Saeed Ghorbani** (Biology) won Best Full Paper award at the International Conference on Computer Graphics, a major conference in Calgary, June 17 to 20.

Eleni Fegaras, a PhD student in **Art Forer's** (Biology) lab, won a travel award to attend an international conference, the Wilhelm Bernhard workshop on the cell nucleus in Dijon, France. Fegaras was also asked to give a talk on her research during the awards session.

Nour Wasfy of **Arturo Orellana's** (Chemistry) group received a graduate student oral presentation award at the 102nd Canadian Chemistry Conference and Exhibition recently held in Quebec City. The title of her presentation was, **Mild and selective palladium-catalyzed lateral and oxidation of**

pyridines.

Isabelle Hunter, also from Orellana's group, presented the group's work on heterocycles for medicinal chemistry at the Technology, Innovation and Science Conference held at F. Hoffmann - La Roche headquarters in Basel, Switzerland. This is an invitation only student conference that highlights collaborative research between Roche and academic research groups around the world.

Congratulations to Schulich Leaders scholarship winner **Rebecca Werner** of Bnei Akiva Schools Ulpanat Orot who will be joining the Faculty of Science in September.

Other News

Neal Madras (Math & Statistics) was one of two invited plenary speakers at the 17th International Conference on Permutation Patterns at University of Zurich, Switzerland, June 17 to 21. In addition, York postdoc **Justin Troyka** was selected to give a contributed talk at the conference.

Professor Emeritus **Allan Carswell** and **Marshall McCall** (Physics & Astronomy) opened the **General Assembly of the Royal Astronomical Society of Canada**, a nationwide society of amateur astronomers in Canada, on Friday, June 14 in the Second Student Centre. McCall welcomed everyone and presented an introduction to York astronomy, while Allan spoke about "Philanthropic Approaches to Community Outreach." Learn more here: <https://rascga2019.ca>

On June 12, Bryden award-winner and alumnus Samer Bishay, president and CEO of Iristel & Ice Wireless, gave Interim Science Dean **EJ Janse van Rensburg** and **Maksym Stolyarevskyy**, senior development officer, leadership giving, a tour of Iristel and its facilities.

Wendy Taylor (Physics & Astronomy) gave an invited talk, called "The Mysterious Magnetic Monopole," at the Women in Physics Canada 2019 conference, geared primarily for physics graduate students, at McGill University.

Ed Furman (Math & Stats) will deliver a plenary talk at the upcoming 54th

Actuarial Research Conference in Indianapolis, Aug. 14 to 17. In his talk, Furman will discuss the knowledge mobilization issues in the financial services with the emphasis on insurance risk, in general, and sharing the state of things in Canada, in particular. The Actuarial Research Conference has traditionally been the central meeting for North American academics and researchers interested in all aspects of actuarial science. It is open to all areas of actuarial practice and promotes education, research and interaction with industry.

Christopher Lortie (Biology) was invited to speak at the Second Annual International Cognitive Performance Summit, which is primarily about positive psychology, neurobiology, cognition, and the brain. He [presented](#) as an ecologist highlighting research that shows getting outside and experiencing nature also has incredible benefits to performance.

Lortie also [presented](#) at the Society for Ecological Restoration Annual meeting on the value of scientific synthesis as a tool to inform decision making for environmental scientists. Lortie and the conference organizers also published a Star Wars, Yoda comment, "[Do or do not. There is no try in restoration ecology.](#)" on the value of scientific meetings in the journal *Restoration Ecology*.

Allysa Lumley, Xin Gao, Elena Aruffo, Amenda Chow, Ada Chan, Niousha Daghighi and **Elissa Ross** (Math & Stats) collaborated with Professor Sarah Mayes-Tang of the University of Toronto, who organized a [Graduate Women Math Workshop](#), June 18 to 19.

York biophysics undergraduate student **Tarnem Afify** was chosen to participate in the prestigious [Lindau Nobel Laureate meeting](#) in Lindau, Germany this month. **Sean Tulin** (Physics & Astronomy) nominated Afify, who may be the first attendee at this meeting ever from York.

Research Highlights

Dasantila Golemi-Kotra (Biology) published two research papers. The first paper, "[Repurposing an Ancient Protein Core Structure: Structural Studies on FmtA, a Novel Esterase of Staphylococcus aureus.](#)" published in the *Journal of Molecular Biology*, looks at nature's power to repurpose an ancient protein core structure to perform a new function. This study was a collaborative work with a crystallographic group at the Indian Institute of Technology, Roorkee. The second paper, "[The Dimerization Interface in VraR is Essential for Induction of](#)

[the Cell Wall Stress Response in Staphylococcus aureus: A Potential Druggable Target](#),” published in *BMC Microbiology*, explores the strategy of inhibiting signal-transduction pathways involved in antibiotic resistance in bacteria.

Wendy Taylor (Physics & Astronomy) and her team’s research on magnetic monopole particles at the CERN Large Hadron Collider, using the ATLAS detector, garnered a [CERN news article](#) profiling their result. The paper itself is publicly available [here](#) and [here](#). Taylor, her PhD student **Ana Maria Rodriguez Vera** and University of Geneva colleagues **Philippe Mermod** and PhD student **Anthony Lioni** conducted the research.

Joel Shore (Biology), two previous PhD students, **Paul D J Chafe**, **Jonathan D J Labonne**, and his current MSc student, [Hasan J Hamam](#), along with co-authors from Washington State University, published their paper, “[The long and short of the S-locus in Turnera \(Passifloraceae\)](#),” in *New Phytologist*. The paper received recommendation from [F1000Prime](#). From the abstract: “Distyly is an intriguing floral adaptation that increases pollen transfer precision and restricts inbreeding. It has been a model system in evolutionary biology since Darwin. While the S-locus determines the long- and short-styled morphs, the genes were unknown in *Turnera*. We have now identified these genes.”

Trevor VandenBoer and **Cora Young** (both Chemistry) have two recent papers published. The first is, “[Selective decontamination of the reactive air pollutant nitrous acid via node-linker cooperativity in a metal-organic framework](#),” in *Chemical Science* with colleagues from Memorial University of Newfoundland. The second is, “[Role of location, season, occupant activity, and chemistry in indoor ozone and nitrogen oxide mixing ratios](#),” in *Environmental Science: Processes & Impacts* with colleagues from Syracuse University and the University of Saskatchewan.

Conor Douglas (STS) and colleagues recently published “[Evaluating Canadians’ Values for Drug Coverage Decision Making](#)” in the journal *Value in Health*. From the abstract: “Decision makers are facing growing challenges in prioritizing drugs for reimbursement because of soaring drug costs and increasing pressures on financial resources. In addition to cost and effectiveness, payers are using other values to dictate which drugs are prioritized for funding, yet there are limited data on the Canadian public’s priorities.”

Chris Lortie (Biology) and colleagues collected and analyzed leaves for an invasive plant from its home and the novel ranges that it has invaded to explore the importance of allelochemicals as a competitive trait for some species to succeed. It was published in [Biological Invasions](#).

Media

Paul Delaney spoke with CTVNews about [two new exoplanets](#) and David Sainte Jacques' return to Earth, and to AM640's Kelly Cutrara about the Jupiter conjunction, AM640's Jeff McCarthy about David Sainte Jacques' ISS return, and CJBQ's Mary Thomas on space tourism.

Sapna Sharma's (Biology) former grad student **Miranda Chen** was on the Fan 590's Outdoor Journal Radio Show talking about recent research on rising mercury levels in Ontario's lakes with host Angelo Viola on June 15.

Upcoming Events

July 10: Dasantila Golemi-Kotra will give a talk at the 8th Congress of European Microbiologists - FEMS2019 - in Glasgow, Scotland. It's organized by the Federation of European Microbiological Societies and will bring together leading scientists spanning different fields of microbiology.

July 17 to 19: The Allan I. Carswell Observatory team will celebrate the 50th anniversary of the Apollo 11 Moon landing with nightly screenings of the movie at 8pm (Room 317 Petrie Science & Engineering Bldg) and hourly presentations on Lunar Exploration, starting at 9pm on top of the Arboretum. Multiple telescopes will be set up for viewing.

Aug. 20 – The annual Summer Undergraduate Research Conference will take place at the Second Student Centre.

Aug. 29 – Mingle with old friends and get to know new colleagues at the upcoming **Faculty Summer BBQ**.

Oct. 17 to 19 – The Mathematics of Vision Workshop at The Fields Institute (Room 230) will look at the many ways “vision science” can serve as a fruitful

proxy for research in neuroscience and artificial intelligence. The organizing committee includes **Christopher Bergevin** (Physics & Astronomy) and **Joel Zylberberg** (Physics & Astronomy). To register and for more information visit the website: <http://www.fields.utoronto.ca/activities/19-20/vision>
