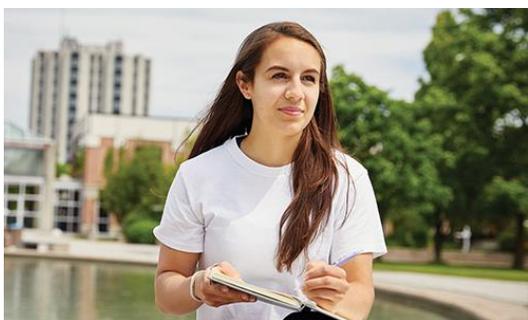


Dean's Round-up: July 2020

Faculty Highlights



Last month, the Faculty launched its Science Summer Transition Program for High School students. **Almost 200 students** entering Science at York this Fall enrolled in modules covering foundational Math, Biology, Chemistry, Physics, and the University Experience. [Read more](#)



The York Observatory Wednesday night public viewings on YouTube have been gaining in popularity during COVID-19, with a substantial increase in viewership. The increase in online viewers means the program now reaches a wider audience than ever before. [Read more](#)

Congratulations

Amro Zayed (Biology) received a 2020 [NSERC Discovery Accelerator supplement](#).

Jane Heffernan (Mathematics & Statistics) and **Derek J. Wilson** (Chemistry) have been awarded prestigious [Research Fellowships](#) at the University of Bordeaux. Jane's work will focus on mathematical models of in-host dynamics to quantify the development of immune system memory after vaccination. Derek's work will focus on new methods to analyze interactions between RNA and proteins.

Andrew Skelton (Mathematics & Statistics) was awarded an [Academic Innovation Fund \(AIF\)](#) Category I grant to explore embedding university transition experiences into a first-year mathematics course, and an AIF Category II grant to explore an Experiential Education program for students in the Mathematics for Education program.

Hongmei Zhu and co-investigator **Michael Chen** (Mathematics & Statistics) received funding from the Innovation York IRAP Artificial Intelligence Partnership Fund for "Predicting Wave Impacts On High-Speed Marine Vehicles," with industry partner Allsalt Maritime Corp. They also received IRAP funding for an AI-powered virtual shopping marketplace platform for the hair integrations industry, with **Chen** as the principal investigator. The industry partner for the latter research is Essence Luxe Couture.

Sandra Rehan (Biology) received CGen [CanSeq150](#) funding for *Anthophora terminalis*, orange-tipped wood-digger bee genome.

Other News

A special virtual [Canadian Mathematical Society Meeting](#) about COVID Research and Education was held from July 13-16. **Jane Heffernan** (Mathematics & Statistics) was part of the organizing committee and lent her scientific expertise on mathematical modelling of COVID. She also co-organized with **Iain Moyles** and **Amenda Chow** (Mathematics & Statistics) a timely panel discussion about the impact of COVID on higher learning and academic policies.

Undergraduate students of **Ronald Pearlman** (Biology) presented talks at the virtual 2020 [Young Investigator Ciliate Molecular Biology Conference](#), July 20-23. The students carried

out virtual bioinformatic research projects working from home with regular Zoom meetings. They represented the largest group of undergraduates from a single institution and laboratory attending and presenting at this international conference. The students were: **Dayana Davoudi**, NSERC USRA; **Jarred Laganas**, YSSA; **Jacob Fine**, YSSA 2019 cohort, and **Aleeza Qayyum**, YSSA.

Ed Furman (Mathematics & Statistics) serves on the scientific committee of the [Actuarial Research Conference](#) (ARC) 2020, taking place August 10-12, along with LA&PS colleague Ida Ferrara (Economics). ARC is a major annual international conference promoting actuarial research dissemination and knowledge mobilization; it is hosted online by the University of Nebraska-Lincoln.

Research Highlights

Sapna Sharma (Biology) published "[Global lake responses to climate change](#)" in *Nature Reviews Earth & Environment*.

Jianhong Wu (Mathematics & Statistics), **Nicola Bragazzi**, and visiting PhD student **Haijiang Dai** published "[The global burden of disease attributable to high body mass index in 195 countries and territories, 1990–2017: An analysis of the Global Burden of Disease Study](#)," in *PLOS Medicine*. Read the [media release](#) and the [YFile story](#).

Amro Zayed (Biology) and former York PhD student **Brock Harpur** published "[Defense response in Brazilian honey bees \(*Apis mellifera scutellata* x *spp.*\) is underpinned by complex patterns of admixture](#)" in *Genome Biology and Evolution*. Read the [media release](#) and [YFile story](#).

Chun Peng (Biology) and former PhD student **Jelena Brkić** published "[Differential Role of Smad2 and Smad3 in the Acquisition of an Endovascular Trophoblast-Like Phenotype and Preeclampsia](#)" in *Frontiers in Endocrinology*.

Sandra Rehan (Biology) published "[Wild bee declines linked to plant-pollinator network](#)"

[changes and plant species introductions](#),” in *Insect Conservation and Diversity*. This paper received broad media coverage (see media section, below). **Rehan** and former visiting student **Rebecca Dew** also published “[Diverse diets with consistent core microbiome in wild bee pollen provisions](#),” in *Insects*.

Nassim Bozorgnia (Physics & Astronomy) published “[The dark matter component of the Gaia radially anisotropic substructure](#)” in *Journal of Cosmology and Astroparticle Physics*.

Michael Chen, Jianhong Wu, and Jane Heffernan (Mathematics & Statistics), and postdoctoral fellows **Kyeongah Nah, Biao Tang, and Nicola Bragazzi** published “[Scenario Tree and Adaptive Decision Making on Optimal Type and Timing for Intervention and Social-economic Activity Changes to Manage the COVID-19 Pandemic](#),” in *European Journal of Pure and Applied Mathematics*.

Peter Mercurio and **Yuehua Wu** (Mathematics & Statistics) published “[Option portfolio selection with generalized entropic portfolio](#)” and “[Portfolio optimization for binary options based on relative entropy](#),” in *Entropy*.

Anna Kotova and **Ksenia Timonina**, graduate students of **Georg Zoidl** (Biology), published “[Endocytosis of Connexin 36 is Mediated by Interaction with Caveolin-1](#).” The original research is reported in a Special Issue on Connexin and Pannexin Signaling in Health and Disease, *International Journal of Molecular Sciences*.

Chris Lortie (Biology) and postdoc **Alessandro Filazzola** published “[Establishment of a desert foundation species is limited by exotic plants and light but not herbivory or water](#),” in *Applied Vegetation Science*.

Media

Dasantila Golemi-Kotra (Biology) appeared on [Global News](#), commenting on whether 'hygiene theatre' is distracting from effective prevention of COVID-19 (clip at 26:12). Golemi-Kotra also spoke with [AM640](#) about the risks of contracting COVID-19 in bars or

restaurants; with [CTV News](#) about the best material for face masks; and with [YorkRegion.com](#) about making masks mandatory.

Research by **Sandra Rehan** (Biology) on wild bee declines linked to plant-pollinator network changes and plant species introductions received broad media attention, notably with a live interview on [CTV News](#), a story in American Association for the Advancement of Science (AAAS) [Eureka Science News](#), and a mention in [Newsweek](#). To date, the paper has been featured in 10 news outlets, 2 blogs, and has received much [social media attention](#). Read the [media release](#) and [YFile story](#).

Paul Delaney (Physics & Astronomy) commented frequently on space science stories in July, with more than a dozen media hits, including [Global TV](#), [AM640](#), [AM1010](#), CTV Your Morning, and Sirius XM radio.

Alyssa Murdoch, PhD student, and **Sapna Sharma** (Biology), co-authored [an article](#) in The Conversation about the impact of climate change on northern stream fishes.

Jesse Rogerson (Science & Technology Studies) was quoted in the [Toronto Star](#) discussing the comet NEOWISE.

Roberto Quinlan (Biology) was interviewed by the [Toronto Star](#) about whether it's safe to swim in Lake Ontario after a storm.

Spencer K. Monckton, a PhD student in **Laurence Packer's** lab, appeared on [CTV Your Morning](#), discussing the sighting of Asian Giant Hornets in BC (clip at 1:11:30).