

## Dean's Round-up: December 2020

### FACULTY HIGHLIGHTS



FACULTY OF SCIENCE  
**BEST OF  
2020**

2020 was a year of challenges – but it was also a year of many outstanding achievements. To highlight the milestones we're most proud of, the Faculty of Science featured ten of its top 2020 achievements as part of the university's #BestofYU campaign. To see the tweets, [click here](#).



The Faculty of Science held its holiday party on December 17, 2020 via Zoom. More than 90 Science Faculty and Staff members attended this annual celebration, which featured a fun virtual quiz game and York U bookstore prizes. Thank you to all who attended and made this such a special event.

### CONGRATULATIONS

**Joel Zylberberg** (Physics & Astronomy) [has been named](#) a Faculty Affiliate at Toronto's Vector Institute for Artificial Intelligence. There were 5 new affiliates from York this year.

**Ilijas Farah's** (Mathematics & Statistics) term as an Associate Editor of the CJM/CMB Editorial Board has been extended for another five years, until December 2025; this is Professor Farah's third term on the editorial board.

**Xin Gao** (Mathematics & Statistics) joined the Canadian Journal of Statistics Award Selection committee 2020-2021.

### OTHER NEWS

**The Allan I. Carswell Observatory** hosted a live [broadcast](#) of the Planetary Conjunction on December 21. The livestream of this event has received more than 15,000 views. The university also issued a media advisory about [this event](#).

Graduate students from the **Department of Mathematics and Statistics** have developed an Artificial Intelligence (AI) platform with a surprising real-world application: online wig shopping. Their research was featured in a [YFile story](#).

**Jude Kong** and **Jane Heffernan** (Mathematics & Statistics) hosted a Café Mathématique virtual event, "[Modelling COVID-19: Resurgence, vaccines, and disease severity](#)," on December 9. It was sponsored by CDM and the Fields Institute, along with PIMS, CRM, and AARMS.

**Iain Moyles** and **Amenda Chow** (Mathematics & Statistics) gave a talk at the virtual winter meeting for the Canadian Mathematical Society entitled "Choose your own adventure in a multi-variable calculus course for engineering students," where they shared their experiences teaching MATH 2015 at York during the pandemic. The talk was well attended by math people across the country.

**Iain Moyles** (Mathematics & Statistics) gave a talk at the [Canadian Mathematical Society meeting](#) entitled "A model of phosphorus recycling at the plant scale" based on his research work in nutrient transport in soil. Slides are available upon request.

**Xin Gao** (Mathematics & Statistics) gave a talk on "Multivariate mixed response model with pairwise composite likelihood method" at the 2020 CFM statistics conference, King's College, London, December 2020.

**Jane Heffernan** (Mathematics & Statistics) presented work on COVID-19 Vaccination Program modelling to the Gates Foundation and the US CDC in December.

## RESEARCH HIGHLIGHTS

**Zachary McCarthy** (Mathematics & Statistics), Yanyu Xiao, **Francesca Scarabel**, **Biao Tang**, **Nicola Luigi Bragazzi**, **Kyeongah Nah**, **Jane M. Heffernan** (Mathematics & Statistics), Ali Asgary, V. Kumar Murty, Nicholas H. Ogden, and **Jianhong Wu** (Mathematics & Statistics) published, "[Quantifying the shift in social contact patterns in response to non-pharmaceutical interventions](#)," in *Journal of Mathematics in Industry*. The university issued a [media release](#) about this research.

**Spyros Koumarianos**, **Neal Madras** (Mathematics & Statistics), **Ozzy Mermut**, **Rohith Kaiyum** (Physics & Astronomy) and their visiting Chemistry Professor Christopher Barrett collaborated to jointly publish “[Adsorption of Polyelectrolytes: The Long and the Short of it](#),” in the Royal Society of Chemistry journal, *Physical Chemistry Chemical Physics*.

**Sajjad Ahmed** and **Nikola Kovinich** (Biology) published “[Nanoparticle-based genetic transformation of Cannabis sativa](#)” in *Journal of Biotechnology*.

**Paul Skoufranis** (Mathematics & Statistics) with co-author Ian Charlesworth (UC Berkeley) published “[Analogues of Entropy in Bi-Free Probability Theory: Non-Microstates](#)” in *Advances in Mathematics*.

Shan Zhou, Zhenlei Liu, Zixu Wang, **Cora J. Young**, **Trevor C. VandenBoer** (Chemistry), B. Beverly Guo, Jianshun Zhang, Nicola Carslaw, and Tara F. Kahan, published “[Hydrogen Peroxide Emission and Fate Indoors during Non-bleach Cleaning: A Chamber and Modeling Study](#)” in *Environmental Science & Technology*. The research was featured on [CBC News](#) and [Global News](#).

D.G. Cocks, **Robert P. McEachran** (Mathematics & Statistics), G. J. Boyle, E. Cheng and R. D. White published, “[Positron Scattering and Transport in Liquid Helium](#)” in *Journal of Physics B: Atomic, Molecular and Optical Physics*.

YSSA student **Jacqueline Duhon’s** (Biology) project, “[The impact of non-pharmaceutical interventions, demographic, social, and climatic factors on the initial growth rate of COVID-19: A cross-country study](#)” was published in *Science of The Total Environment*.

## MEDIA

**Jane Heffernan** (Mathematics & Statistics) was featured in the Globe and Mail discussing Canada’s narrowing window to deploy vaccines [against COVID-19](#) and how mathematical modelling makes a case for [immunizing the oldest first](#). Professor Heffernan was also featured on CTV News ([part 1 of clip](#)) ([part 2 of clip](#)).

**Paul Delaney** (Physics & Astronomy) commented widely on astronomical events, with numerous hits in local and national outlets. You can watch Professor Delaney talk about space junk on CTV news [here](#), and a local meteor sighting [here](#). For a full list of Professor Delaney’s media hits for December, [click here](#). Professor Delaney’s total media hits for 2020 reached nearly 150

interviews.

**Sapna Sharma** (Biology) was featured on [CBCNews.ca](#), CBC World at Six, [CBC The National](#), [CBC What on Earth](#), The Weather Channel, and in [Excalibur](#) discussing her research on lake ice and climate change.

**Jude Kong** (Mathematics & Statistics) was featured in *Nature Journal* in an article about how researchers around the world [plan to approach 2021](#).

**Elaina Hyde** (Physics & Astronomy) gave interviews on the Jupiter-Saturn conjunction on [680 News](#), Fresh Air Radio, [CTV News](#), [News radio 95.7](#), and [News radio 1310](#).

**Dasantila Golemi-Kotra** (Biology) was featured in [AFPFactCheck](#) discussing misleading claims that the new COVID-19 mRNA vaccine would cause female sterilization.

**Seyed Moghadas** (Mathematics & Statistics) was featured on CBC News discussing the dangers of [silent transmission of COVID-19](#).

