

## Dean's Round-up: April 2022



The image shows the cover of the Faculty of Science Annual Review 2021 report. The cover features a red background on the left with the text 'FACULTY OF SCIENCE ANNUAL REVIEW' and 'Transforming for the Future'. Below this, the year '2021' is written in large blue numbers. On the right side, there is a grid of 15 small portrait photos of faculty members. The York University logo is visible in the bottom right corner of the cover.

We are excited to share our Annual Review 2021, *Transforming for the Future*. The report can be read [online](#); printed copies will be distributed to Departments by the Dean's Office.

**Hugo Chen**, Director of International Collaborations and Partnerships, has launched a new site on Sharepoint, [Market Intelligence for International Student Recruitment & Partnerships](#). It is a curation of the latest international education news, reports and updates from Canada and around the world, for the York Science community.

## CONGRATULATIONS

**Seyed Moghadas** (Mathematics & Statistics) received the [President's Research Impact Award](#), announced at the York University Research Awards Celebration.

**Peter Backx** (Biology) received nearly \$750,000 from the [CIHR Project Grant](#)

Program for his project “Understanding the Causes of Atrial Fibrillation.”

**Jane Heffernan** (Mathematics & Statistics) was elected as the next [president](#) of the Society for Mathematical Biology.

**Gerald Audette** (Chemistry) was reappointed as Associate Dean, Faculty, for a three-year term, effective July 1, 2022.

Postdoc **Jummy David** (Mathematics & Statistics) received an [award](#) for her Capstone project “A Comparison of Different ML Models for Predicting Heart Attacks” at the Vector Institute’s inaugural Introduction to Machine Learning for Black and Indigenous students course.

Former PhD student **Andrea Durant** (supervised by **Andrew Donini**, Biology) was awarded the Faculty of Graduate Studies Dissertation Prize for her thesis “The Physiology of Ammonia Transport in the Disease Vector Mosquito *Aedes aegypti*: Ammonia Transporter Localization, Function and Characterization.” FGS is also nominating her thesis for the Canadian Association for Graduate Studies’ Proquest Distinguished Dissertation Award.

Undergraduate alumni **Tarnem Afify**, **Yaakov Green**, and **Sarah Laframboise** were among York University’s [Top 30 Alumni Under 30](#) for 2022.

**Sapna Sharma** (Biology) received grants from ArcticNet for the project “Future Arctic Mobilities: Informing transportation adaptation through climate observations and model projections of changing snow and ice,” and the Ontario Ministry of Environment, Conservation, and Parks for the project “Assessment of the limnological conditions of the nearshore of Lake Superior.”

**Jihyeon Jessie Yang** (Mathematics & Statistics) is a contributor for the project “SDGs-in-the-Classroom Curricular Innovation Hub,” which received an Academic Innovation Fund Category I grant.

**Jane Heffernan** and **Hannah Jankowski** (Mathematics & Statistics), along with Quazi Rahman (Lakehead University) submitted a successful application for a CANSSI Distinguished Postdoctoral Fellowship; the recipient is Nam-Hwui Kim, for the project “Real-Time Multi-Scale Estimation and Uncertainty Quantification in Infectious Disease Models.”

**Kevin McGregor** (Mathematics & Statistics), along with Maxime Turgeon and

Saman Muthukumarana (University of Manitoba) submitted a successful application for a CANSSI Distinguished Postdoctoral Fellowship; the recipient is Ismaila Ba, for the project “Zero-Inflation in Multinomial Principal Component Analysis for Microbiome Data.”

---

## MORE NEWS

Research by **Seyed Moghadas** (Mathematics & Statistics) and his team was referenced in the United States [2022 Economic Report of the President](#). In particular, the team’s report [Deaths and Hospitalizations Averted by Rapid U.S. Vaccination Rollout](#), published by The Commonwealth Fund, was cited.

The Fields Institute hosted the [International Conference in Probability and Statistics](#) in commemoration of the late **Hélène Massam** (Mathematics & Statistics). The conference featured presentations by several members of the Department of Mathematics & Statistics, including **Xin Gao, Alexey Kuznetsov, Neal Madras, Nawaf Mohammed, Tom Salisbury** and **Yuan Zhong**.

[YFile](#) published a feature on virtual reality internships created by the Risk and Insurance Studies Centre, directed by **Edward Furman** (Mathematics & Statistics).

[Research2Reality](#) featured research by **Amro Zayed** (Biology) and his team on how the urban environment of Toronto impacts the health and abundance of bumblebees.

**Ozzy Mermut** (Physics & Astronomy) presented [Biophotonics: Shedding Light on Biosensory Disorders and Age-Related Degenerative Diseases](#) as part of the Canadian Association of Physicists Undergraduate Lectures. Her research was also featured in [YFile](#).

The work of **Robert Reynolds** and **Allan Stauffer** (Mathematics & Statistics) was referenced in the [Digital Library of Mathematical Functions](#) and in Errata for the book of Gradshteyn and Ryzhik's [Table of Integrals, Series, and Products](#).

**Andrew Skelton** (Mathematics & Statistics) presented "Will Faculty Buy In and Will Students Care? Embedding First-Year Experience Content into the

Academic Curriculum" at the 2022 European First-Year Experience Conference (Austria).

**Alex Mills** (Biology) was a featured guest in the Talk is Free Theatre's [Illuminating Conversations](#) series in Barrie, ON.

**Christine Le** (Chemistry) contributed the piece [A hot take on glucose](#) to *Nature Chemistry's* In Your Element series; the article discusses the history and applications of an important fluorinated molecule in PET imaging.

**Jude Kong** (Mathematics & Statistics) was a keynote speaker at the Blacks in Mathematics International Conference, where he presented on "Careers and Scholarships in Mathematics;" he was also a panelist at the conference. He also continued his weekly "Ask A Mathematician" visits to middle and high schools across Canada.

**Deborah Harris** (Physics & Astronomy) presented "MINERvA: I can't believe we built the whole thing," as part three in the "How to Do Big Science" series hosted by Fermilab.

---

## RESEARCH HIGHLIGHTS

**Robert Reynolds** and **Allan Stauffer** (Mathematics & Statistics) published [A Quadruple Integral Involving the Product of Generalized Parabolic Cylinder Functions  \$D\nu\(\beta x\)Du\(\alpha z\)\$ : Derivation and Evaluation](#) in *Proceedings of the American Mathematical Society*.

Postdoc **Pei Yuan**, postdoc **Juan Li**, postdoc **Elena Aruffo**, Evgenia Gatov, Qi Li, Tingting Zheng, Nicholas H. Ogden, Beate Sander, **Jane Heffernan**, Sarah Collier, PhD student **Yi Tan**, Jun Li, Julien Arino, Jacques Bélair, James Watmough, **Jude Dzevela Kong**, **Iain Moyles** and **Huaiping Zhu** (Mathematics & Statistics) published [Efficacy of a "stay-at-home" policy on SARS-CoV-2 transmission in Toronto, Canada: a mathematical modelling study](#) in *CMAJ Open*.

Former PhD student **Sergio A. Garcia-Balan** and **Paul J. Szeptycki** (Mathematics & Statistics) published [Weak Normality in Psi-spaces](#) in *Fundamenta Mathematicae*.

Gian Alix, Elizabeth Lymer, Guanlin Zhang, Michael Daly and **Xin Gao** (Mathematics & Statistics) published [A comparative performance of machine learning algorithms on laser-induced breakdown spectroscopy data of minerals](#) in the *Journal of Chemometrics*.

Niklas Becker, Laura Sagunski, Lukas Prinz, and **Saeed Rastgoo** (Physics & Astronomy) published [Circularization versus eccentricification in intermediate mass ratio inspirals inside dark matter spikes](#) in *Physical Review D*.

**Saeed Rastgoo** (Physics & Astronomy) co-authored [Quantum gravity phenomenology at the dawn of the multi-messenger era—A review](#) in *Progress in Particle and Nuclear Physics*.

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

---

## **MEDIA**

**Huaiping Zhu** (Mathematics & Statistics) spoke to the [Toronto Star](#) about his recent mathematical modelling showing a spring resurgence of COVID-19; the story appeared in many other TorStar newspapers.

**Paul Delaney** (Physics & Astronomy) spoke to *Global TV*, *CTV News* and *AM640* about mirror universes, planetary alignment, JWST cooling, SpinLaunch, 2 Plane Swap and Ax-1 splashdown.

**Dasantila Golemi-Kotra** (Biology) published “Living with COVID-19’ must be more than an empty phrase: Individuals need tools to manage BA.2 and future waves” in [The Conversation](#); the article was republished by [National Post](#), [Yahoo! News](#), and other news outlets. She also spoke to [Global News](#) about expiring vaccine doses and *630 CHED* on living with COVID-19.

**Amro Zayed** (Biology) spoke to [CTV News](#) about the impact and potential reasons for millions of bees being found dead after winter in Ontario.

[The Boston Globe](#) covered research by **Seyed Moghadas** (Mathematics & Statistics) and his team, which found that COVID-19 vaccines prevented more than 2.2 million US deaths.

---

## EVENTS

**May 13:** *Non-Fungible Tokens for the United Nations' 17 Sustainable Development Goals*, presented by FSc IT Director Violeta Gotcheva. 12:30pm-1:30pm on [Zoom](#)

---

## 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.



### University of L'Aquila

Established in 1952, the University of L'Aquila is located in L'Aquila, Italy—100 km northeast of Rome. University of L'Aquila is a public teaching and research institution; with seven departments, it offers about 20,000 students a full range of first and second cycle degrees, and a vast array of PhDs and third cycle courses in the fields of mathematics, physics, chemistry, information and communication technology, biology, medicine and life sciences, social sciences and humanities. Many members of its faculty of about 600 professors and researchers have received international recognition and are considered leaders in their fields of research.

Find out more about UnivAQ on [YouTube](#).