

Y-EMERGE Spotlight # 1

In This Issue



<https://www.yorku.ca/research/yemerge/>

Welcome to the Inaugural Edition of the Y-EMERGE Spotlight

With great excitement, we introduce the first edition of Y-EMERGE Spotlight, a monthly newsletter sharing the cutting-edge initiatives, innovations, and achievements of the York Emergency Mitigation, Engagement, Response, and Governance Institute (Y-EMERGE). This publication is designed as a testament to our collective effort and dedication and as a way of sharing our collective efforts within and beyond our academic community.

Y-EMERGE On Media

Professor Yvonne Su Shares Insightful Perspectives on Climate Migration at the University of Oxford

On **February 24, 2024**, **Professor Yvonne Su** delivered a compelling presentation at the University of Oxford, offering thought-provoking insights into the complex dynamics of climate-induced migration. [Read More](#)

Celebrating Academic Excellence: Professor Iain Moyles Honored with Mentorship Award

On **February 20, 2024**, **Professor Iain Moyles**, was bestowed with the prestigious Excellence in Graduate Mentorship Award. This recognition underscores Moyles' exceptional dedication to guiding and inspiring graduate students within the academic community. [Read More](#)

Ontario pushes ahead with Pickering nuclear rebuild, won't quote project cost.

On **February 4, 2024**, **Professor Mark Winfield** was quoted in the Energy Mix. [Read More](#)

Dangerous shoals: rescuing sinking Pacific islands

January 27, 2024: **Dr. Yvonne Su** talked about the Perils of Sinking Pacific Islands in Her New Article: Dangerous Shoals and Rescue Efforts. [Read More](#)

The Doomsday Clock is now at 90 seconds to midnight — the closest we have ever been to global catastrophe.

January 24, 2023: Professor Jack Rozdilsky, an associate professor of disaster and emergency management, wrote in The Conversation about what the Doomsday Clock's new setting means.

[Read More](#)

The Australia-Tuvalu deal shows why we need a global framework for climate relocations.

January 24, 2024: An op-ed by York University Professor Yvonne Su, a Y-EMERGE member, was published in the Conversation. [Read More](#)

The Road Years

January 23, 2024: Professor Yvonne Su's youth voting activism was highlighted in a chapter of The Road Years, the latest memoir by Canadian television personality Rick Mercer. [Read More](#)

How Canadians can prepare in case of a winter blackout amid extreme cold, snowstorms

January 19, 2024: The National Post, Ehsanullah Amiri, talked with Professor Jack Rozdilsky on Preparing for Winter Blackouts in Canada Amid Extreme Cold Snowstorms. [Read More](#)

FIFA World Cup ends with a win for Argentina and COVID-19, new research finds

January 18, 2024: The study by Dr. Martin Grunnill, a postdoctoral fellow of R-EMERGE @ LIAM and a York-Sanofi team on mass gathering event-FIFA Worlds Cup-infection control was featured at Yfile. [Read More](#)

York University's Global Campuses foster Future Changemakers

January 8, 2024: Associate Director Dr. Eric Kennedy Discusses York University's Global Campuses and Future Changemakers. [Read More](#)

Future Events:

Intersecting injustices and competing narratives for climate change

DISTINGUISHED LECTURE IN EMERGING & SYSTEMIC RISKS

Intersecting injustices and competing narratives for climate change

The climate crisis is at the intersection of two sets of injustice. The first is the obvious one, concerning the businesses and governments (historically in the West) that have caused the majority of carbon emissions. These affect the majority of people in the world who have played little or no part in causing it yet experience the worst of its impacts – the first injustice. The second injustice is strangely less obvious and hardly discussed. Most of those same people who are badly affected by climate change are already poor and vulnerable. Climate change has not caused that poverty, so why is this ignored?

Terry Cannon
Emeritus Research Fellow
Institute of Development Studies at University of Sussex, UK
Honorary Professor at University College London

Special Session of York University
Climate Change Research Month

HYBRID SESSION 14 | MARCH 21, 2024, THURSDAY
12 PM - 1 PM EDT
ADERSIM EOC, NB04 Schulich Building, York University
ZOOM REGISTRATION:
www.yorku.ca/research/yemerge/lectures

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Join us for our next Distinguished Lecture in Emerging & Systemic Risks on **March 21, 2024**, from 12 PM-1 PM. We are thrilled to host, Emeritus Research Fellow at the Institute of Development Studies, University of Sussex, UK, and Honorary Professor at University College London, as our esteemed speaker. Terry will explore "Intersecting injustices and competing narratives for climate change."

This session is part of Y-EMERGE's contribution to the **York Climate Change Research Month**.

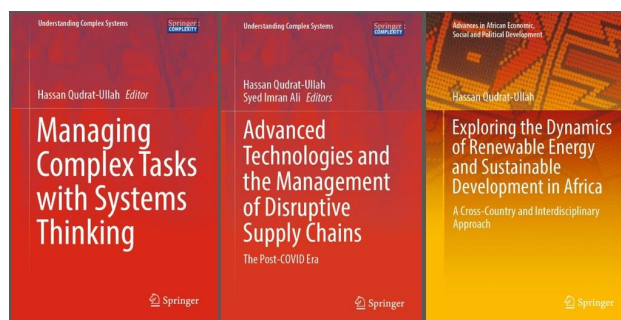
Y-EMERGE Publications

Modelling disease mitigation at mass gatherings: A case study of COVID-19 at the 2022 FIFA World Cup



January 18, 2024: Y-EMERGE @ LIAM postdoctoral fellow Martin Grunnill and a York-Sanofi academic-industrial collaborative team, including Y-EMERGE director **Dr. Jianhong Wu**, published a paper on modelling disease mitigation at mass gatherings: A case study of COVID-19 at the 2022 FIFA World Cup in PLOS Computational Biology. [Read More](#)

Professor Hassan Qudrat-Ullah marks a successful 2023 with the publication of three new books.



January 12, 2024: Professor Hassan Qudrat-Ullah achieves a remarkable publishing feat: Spanning Systems Thinking, Supply Chain Mastery, and Sustainable Development. [Read More](#)

Distinguished Lecture in Emerging & Systemic Risks

Harnessing the Power of OpenAI in Emergency, Crisis, and Risk Assessment through Geospatial Data Analytics Copilot



In a captivating virtual session on **February 15, 2024**, **Professor Mojgan A. Jadidi** shared her innovative insights on "Harnessing the Power of OpenAI in Emergency, Crisis, and Risk Assessment through Geospatial Data Analytics Copilot." Through an engaging Zoom webinar, attendees witnessed the innovative potential of artificial intelligence in crisis response.

Our Approach to Space Situational Awareness (SSA): Image Analyses & Compression



On January 18, 2024, our Distinguished Lecture on Emerging & Systemic Risks focused on the emerging risks in space, particularly risks posed by space debris. The distinguished speaker was **Professor Regina Lee** from the Space Engineering Department of Lassonde School of Engineering, York University.

Lecture Series on Critical Skills in Interdisciplinary Collaborations

Systematic Reviews and Meta-Analysis in Research and Mathematical Modeling: A Practical Approach Using R and Open-Source Tools Workshop

YORK UNIVERSITY **U-Y-EMERGE** **LABORATORY of Industrial & Applied MATHEMATICS**

Lecture Series on Critical Skills in Interdisciplinary Collaborations

Speaker: Dr. Nicola Luigi Bragazzi

Systematic Reviews and Meta-Analysis in Research and Mathematical Modeling: A Practical Approach Using R and Open-Source Tools

February 13, 2024, 2:30 PM-5:30 PM

HYBRID SESSION
Kinsmen Building: Room 277, York University,
Keele campus

Zoom Link
4167365757
Contact: Jianhong Wu, wujh@yorku.ca

Dr. Nicola Luigi Bragazzi got his MD in general medicine and surgery from Genoa University (Genoa, Italy) in 2011, his PhD in biophysics from Marburg University (Marburg, Germany) in 2014 and his specialization in Public Health from Genoa University (Genoa, Italy) in 2017. He is a member of the Cochrane Association (Cochrane Reviewer) for the Cochrane Epilepsy Group. He has been awarded Young Knight of the Italian Republic by President Carlo Azeglio Ciampi in 2005. Recently, in 2019, he has been nominated as one of the top five biomedical researchers worldwide aged less than 40 years in terms of number of publications, articles in Q1 biomedical journals, total impact factor and h-index. He has worked on infectious disease and vaccination modeling and big data mining in biomedicine at York University. Currently, he is working at the University of Parma, Parma, Italy, on the applications of biostatistics, bioinformatics, and Artificial Intelligence in the field of human nutrition. He is included in the ISI/Clarivate 2023 list of Highly Cited Researchers, as one of the 1% of the world's top influential researchers and scientists.

SANOFI NSERC CRISG Mincis

On **February 13, 2024**, **Dr. Nicola Luigi Bragazzi** captivated attendees with an enlightening discussion on the fundamental principles of Systematic Reviews and Meta-Analysis. Participants delved into the complexities of literature review, systematic review, and meta-analysis, immersing themselves in hands-on experiences with practical examples utilizing R or other open-source software. Throughout the session, attendees gained valuable insights into the significant role of literature reviews in academia, particularly within mathematical modelling. Participants developed enhanced research skills by mastering core principles, from formulating precise research questions to conducting exhaustive searches. Moreover, they deepened their comprehension of meta-analysis, navigating through selecting statistical models and interpreting results.

Tutorial on coupling of transmission dynamics and deep learning

YORK UNIVERSITY **U-Y-EMERGE** **LABORATORY of Industrial & Applied MATHEMATICS**

Lecture Series on Critical Skills in Interdisciplinary Collaborations

Speaker: Pengfei Song

Tutorial on coupling of transmission dynamics and deep learning

February 06, 2024, 2:00 PM-5:30 PM

Refreshments will be served before the session.

Hybrid Session
Ross Building: Room # N638 York University

Zoom Link
4167365757
Contact: Jianhong Wu, wujh@yorku.ca

Pengfei Song is an associate professor at Xi'an Jiaotong University, China. He received his Ph.D. in Mathematics from Xi'an Jiaotong University, China, in 2020 (supervised by Prof. Yanni Xiao). During his Ph.D., he visited Ohio State University as a visiting scholar student for two years since September 2017 (supervised by Prof. Yuan Lou). He worked as a Postdoctoral Fellow at York University (cooperated with Prof. Jianhong Wu) from 2021 to 2023. Pengfei has published 15 papers, including the Journal of Differential Equations, Slam on Applied Mathematics, Journal of Mathematical Biology, Bulletin of Mathematical Biology, and so on. His research interests include couple of deep learning and differential equations (AI4Science, SciML); spatial, temporal, host and network heterogeneities on the spread of infectious disease.

SANOFI NSERC CRISG Mincis

On the **February 6th** presentation, **Dr. Pengfei Song** from Xi'an Jiaotong University, China, delved into the innovative realm of coupling transmission dynamics with deep learning. Divided

into two insightful segments, the talk began with a concise overview of this innovative coupling technique, highlighting a state-of-the-art universal differential equation method integrating neural networks. Professor Song then elucidated three impactful applications: utilizing deep learning to estimate effective reproduction numbers, uncover latent human behaviour changes in transmission dynamics, and address optimal control challenges. Transitioning seamlessly into the second part of the presentation, Professor Song provided comprehensive tutorials on Julia's implementation of neural networks and universal differential equations. These tutorials gave attendees practical insights into effectively leveraging Julia to implement such advanced methodologies.

Python and PyGOM Workshop

YORK UNIVERSITY **Y-EMERGE** **LABORATORY For Industrial & Applied MATHEMATICS**

Lecture Series on Critical Skills in Interdisciplinary Collaborations

Speaker: Dr Martin D. Grunnill

Dr. Grunnill conducted his postdoctoral fellowship at USGS & Uni of Wisc. (Madison) in 2017-18, where he developed agent based modelling of plague in prairie dogs. He was a Senior Mathematical Modeller at Public Health England (later UK Health Security Agency) during 2019-2021 where he first used ODE modelling for evaluation of ODE modelling of AMR, and then involved in developing research software (gradient descent fitting, dynamic networks, agent based modelling) and simulations of COVID. In 2021, he joined LIAM as a postdoctoral fellow, playing a key role in the collaborative project with Sanofi to model COVID-19 mitigation at mass gathering event (FIFA 2022). With a secondment to Public Health Ontario, funded by the Mathematics for Public Health network, he partaked in the project on phylogenetics & phylodynamics of respiratory pathogens (EV-D68).

Python and PyGOM tutorial

Python is a widely used coding language known for its extensive packages in Data Science, Mathematics, and Machine Learning. It's favored for its readable syntax and considered easy to learn. Python is also open-source, making it ideal for sharing research code. This class covers Jupyter Notebook, Python basics, Numpy for handling arrays, Pandas for Dataframes and Series, and PyGOM for modelling ODEs, with a focus on epidemiological modelling and tools for R0 estimation.

Tuesday, 2:30-5:30, January 9th
Refreshments provided before the lecture
HYBRID SESSION
Kinsmen Building: Room 277, York University, Keele campus
Zoom link:
<https://yorku.zoom.us/j/93413853273?pwd=VFpN-29E6s3RkZlVnRjYlYmRyYmR0b0Zkdz09>

SANOFI **NSERC CRSG** **Mitacs**

Dr. Martin Grunnill conducted Python and PyGOM Tutorials on **January 9 and 16, 2024**. Dr. Martin Grunnill led insightful tutorials on Python and PyGOM across two sessions earlier this year. The first session, held on January 9, covered the installation process and basic principles of Python, providing a solid foundation for beginners. The subsequent session on January 16 delved into Python's practical applications, focusing on key packages for applied mathematics and the capabilities of PyGOM.

Funding & Research opportunities

Postdoctoral Research Fellowship: AL/ML in Modelling and Prediction of Mpox and other (Re) emerging Zoonotic Threats

We are excited to offer a one-year Postdoctoral Research Fellowship, with a potential second-year extension based on funding and research performance. Led by Professor Woldegerbriel Assefa Woldegerima, this position is sponsored by the Canadian Institute of Health Research (CIHR). It is an excellent opportunity for researchers looking to advance their careers under esteemed guidance. [Read More](#)

Y-EMERGE Executive Board's Meeting on January



On March 4, 2024, Y-EMERGE held an Executive Meeting to discuss several key topics. The meeting emphasized the importance of involving students in leadership positions within the Trainee Network. The team also reviewed the status of the YEMERGE newsletters for January and February. Further discussions explored the introduction of micro-credentials, including the development of related opportunities and credit courses. The idea of conducting an environmental scan with a research assistant's help was also discussed. The team members considered convening a meeting to form a Task Force dedicated to mentoring and reviewing educational and training programs. Finally, the team discussed preparing for a June board meeting and completing the annual report draft by the end of April.

On January 29, 2024, Y-EMERGE convened its Executive Meeting, uniting members for productive discussions on a diverse agenda. The session commenced with a report from the Y-EMERGE director, Dr. Jianhong Wu. Subsequent deliberations revolved around "Training Activities" and "Funding Opportunities," addressing training initiatives and potential sources of support. Thematic leaders provided updates, including an informative report on CJEM (Canadian Journal of Emergency Medicine). The meeting also included discussions on "Next Generation Network" planning and "Y-EMERGE Membership and Trainee Engagement" strategies. This gathering established a promising tone for 2024, underscoring the team's unwavering commitment to ongoing success and growth.

Announcement: The appointment of the Y-EMERGE Coordinator.



<https://sway.cloud.microsoft/>

Director of Y-EMERGE, Dr. Wu Announcement: The Appointment of Dr. Leila Daddoust as Y-EMERGE Coordinator.

We are delighted to announce the appointment of Dr. Leila Daddoust as the Coordinator of the York Emergency Mitigation, Engagement, Response, and Governance Institute (Y-EMERGE). Dr. Daddoust will officially assume her crucial role on January 3, 2024.

Dr. Daddoust boasts an impressive academic background, including bachelor's and master's degrees in nursing (earned in 1999 and 2008, respectively), a master's degree in Disaster and Emergency Management from York University (2020), and a Ph.D. in Health in Disasters and Emergencies from the University of Social Welfare & Rehabilitation (2018). She has contributed significantly to the field with publications in respected journals such as the International Journal of Disaster Risk Reduction, Health in Emergencies and Disasters, and Journal of Health Promotion Management. With over 13 years of experience as a registered nurse, research assistant, and research coordinator, Dr. Daddoust brings a wealth of knowledge to her new role. Before joining Y-EMERGE, she was a research analyst at the Centre for Addiction and Mental Health.

Dr. Daddoust is committed to fostering collaboration and stated, "I'm a dedicated researcher with a strong background in nursing and disaster and emergency management. I'm thrilled to be

part of Y-EMERGE as an Institute Coordinator and look forward to collaborating on our shared objectives."

You can contact her at [**dadoust@yorku.ca**](mailto:dadoust@yorku.ca).