

INFORMS Health Applications Society

Spring 2023 Newsletter



<http://www.informs.org/Community/HAS>

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Message from the President

Dear INFORMS HAS community,

I'm honoured (Canadian, eh?) to serve as the President of the Health Applications Society this year. I've been a member of INFORMS for 20+ years and it has been inspiring to see our community flourish over this time. Whether you are a long-time member or just getting started, thank you for your contributions to HAS.

I consider myself very fortunate to work with an amazing Executive team comprising Mariel Lavieri, Stephen Chick, Shan Liu, Pooyan Kazemian, Justin Boutilier, Qiushi Chen, Jennifer Lobo, Lauren Steimle, and Karen Hicklin. They and other HAS members go above and beyond to deliver innovative programming for our community. Thanks also to Mark van Oyen, who is the HAS representative on the INFORMS Subdivision Council. A heartfelt thank you to the Executive members who finished their term last year, Maria Mayorga, Sait Tunc, and Pengyi Shi, after having given tirelessly for many years.

I would like to highlight a few initiatives that our team is currently working on:

- Karen Hicklin and Jenn Lobo are spearheading a new mentorship initiative for students and faculty throughout the career span. A pilot is being planned for INFORMS Healthcare in July, involving PhD student meetups for job advice, junior faculty mentoring, and mid-career conversations. Stay tuned for more information via INFORMS Connect!
- Qiushi Chen, Lauren Steimle, and Sanjay Mehrotra continue to organize an excellent online seminar series, with three speakers so far this year (Hrayr Aprahamian, Jagpreet Chhatwal and Pinar Keskinocak) and many more to come.
- Mariel Lavieri and Jonas Jonasson are chairing the HAS cluster for the 2023 INFORMS Annual Meeting. They have put together a robust program of 70+ sessions, including a great selection of panels such as "Transforming Healthcare using AI", "Racial and Gender Bias in Healthcare Research", and "Conversation with the Editors", and flash sessions such as "Health and Public Policy", "HAS Job Market Lightning session", and "HAS Junior Faculty Lightning session", where the spotlight will be on junior faculty to share their most recent work.
- Our student liaisons, Rebecca Alcock, Yu-Hsin Chen, Jacob Jameson, Che-Yi Liao, and Yuming Sun, are helping to organize the job market lightning session at the Fall meeting, advertising initiatives and providing content for the newsletter. If you are a student looking for an opportunity to get involved, please consider becoming a student liaison next year!

We also continue with our comprehensive lineup of competitions this year. Thanks to Lauren

Cipriano for chairing the Bonder award committee, Hayer Aprahamian for chairing the Pierskalla award committee, Andrew Schaefer for chairing the Mehrotra award committee, and Vishal Ahuja and Nan Liu for chairing the student paper competition committee. More details can be found later in the newsletter.

I trust everybody has a big red circle around July 26-28, 2023 in their calendars for the INFORMS Healthcare Conference in Toronto. A big shout out to Dionne Aleman and Michael Carter as general chairs, and Greg Zaric as program chair. I hope to see you there!

Healthcare plays a central role in society and our members continue to make a big impact through our research, teaching, and partnerships with practitioners. I am humbled whenever I think about all the great work that we collectively produce. Best wishes for a healthy, happy, and productive year!

Timothy Chan
2023 INFORMS HAS President
Associate Vice-President and Vice-Provost, Strategic Initiatives
University of Toronto

2022 Bonder Scholarship for Applied Operations Research in Health Services

As announced at the HAS business meeting, the 2022 Bonder Scholarship was awarded to **Katherine Adams** from the University of Wisconsin - Madison for her research on planning community health worker visits for personalized diabetes screening and management in urban areas. Adams' research advisors are Justin Boutilier and Yonatan Mintz.



Congratulations to Katherine and many thanks to this year's award committee chair, Hadi El-Amine, and to the evaluation committee involved.

About the Bonder Scholarship: The purpose of the Bonder Scholarship for Applied Operations Research in Health Services is to promote the development and application of operations research analyses to health care design, delivery, and operations. The scholarship provides funding of \$5,000 to support the development of promising new researchers in healthcare operations research.

2022 Pierskalla Award

As announced at the HAS business meeting, the 2022 Pierskalla Best Paper award goes to **Hrayr Aprahamian, George Golovko, Jiayi Lin** for their paper, “An Optimization Framework for Customized Targeted Mass Screening of Non-uniform Populations under the Availability of Multiple Schemes and Tests.”

The finalists were:

- Justin J. Boutilier, Timothy C.Y. Chan for their paper “Drone network design for cardiac arrest response.”
- Joan Brown, Song-Hee Kim, Fanyin Zheng for their paper “Identifying the Bottleneck Unit: Impact of Congestion Spillover in Hospital Inpatient Unit Network.”
- Wallace J. Hopp, Jun Li, Guihua Wang for their paper “An Instrumental Variable Forest Approach for Detecting Heterogeneous Treatment Effects in Observational Studies.”

Congratulations to the winners and all the finalists for this achievement! Many thanks to co-chairs Andrew Li and Kyra Gan and to all the judges involved.

About the Pierskalla Best Paper Award: The Pierskalla Award recognizes research excellence in the field of health care management science. The award includes a \$1,000 honorarium for the best paper presented in a Health Applications Section sponsored session at the annual INFORMS conference. The award is named after Dr. William Pierskalla to recognize his contribution and dedication to improving health services delivery through operations research.

Dr. Pierskalla is a Distinguished Professor Emeritus at the Anderson School at UCLA and the Ronald A. Rosenfeld Professor Emeritus, The Wharton School, University of Pennsylvania, and serves as an editor on numerous operations research journals.

2022 Sanjay and Panna Mehrotra Research Excellence Award



As announced at the HAS business meeting, the 2022 Sanjay and Panna Mehrotra Research Excellence Award went to Mariel Lavieri from the University of Michigan for significant contributions to the practice of health applications through operations research (OR) and management science (MS) modeling and methodologies. Her research is on healthcare operations research from both a patient's and a system's perspective. As for the former, she has developed a comprehensive methodology to guide monitoring and treatment decisions of chronic disease patients. As for the latter, she has created disease screening and capacity planning models to ensure that resources are available to meet the needs of the patients and the population.

The finalists were:

- Jagpreet Chhatwal from Harvard Medical School for his work with the White House and World Health Organization on the feasibility and cost of hepatitis C elimination.
- Nan Liu from Boston College/Carroll School of Management for his work on optimizing patient flow and resource utilization in both the outpatient and hospital settings.

Congratulations to the winner and both finalists! Many thanks to chair Paul Griffin and committee members Edwin Romeijn and Feng (Susan) Lu.

About the Sanjay and Panna Mehrotra Research Excellence Award: The Sanjay and Panna Mehrotra Research Excellence Award recognizes a mid-career researcher for significant contributions to the practice of health applications through operations research (OR) and management science (MS) modeling and methodologies. The award is named after Professor Sanjay Mehrotra and his wife, in recognition of Professor Mehrotra's contributions and dedication to translating OR/MS modeling and methodology research to practice so as to improve the quality and efficiency of healthcare systems, and will be presented at the Health Applications Society Business Meeting at the INFORMS annual meeting. Dr. Mehrotra is a professor in the Department of Industrial Engineering and Management Sciences at Northwestern University, and served on the Editorial Board of numerous operations research journals. The award includes an honorarium of \$1,000.

Upcoming Conference: INFORMS Healthcare 2023 Conference



INFORMS Healthcare Conference 2023

July 26-28, 2023

This year's HAS activity will feature mini mentoring coffee meetups with three areas of focus:

1. PhD student meet-up/job market chat/advice from junior faculty
2. Junior faculty mentoring
3. Mid-career conversations

For details and updates about this conference, please visit
<https://meetings.informs.org/wordpress/healthcare2023/>

2023 INFORMS HAS Awards and Deadlines

2023 Bonder Scholarship in Applied Operations Research in Health Services

Committee chair: Lauren Cipriano

Submission deadline: June 30, 2023

Applicants will be notified with the results of the competition before September 2023.

2023 Pierskalla Award

Committee chair: Hrayr Aprahamian

Submission deadline: June 16, 2023

The winning paper will be announced at the HAS business meeting at the 2023 INFORMS Annual Meeting.

2023 Sanjay and Panna Mehrotra Research Excellence Award

Committee chair: Andrew Schaefer

Submission deadline: July 21, 2023

Up to three finalists will be selected and invited to present their work at the 2023 INFORMS Annual Meeting in a session sponsored by the Health Applications Society and devoted to the competition.

2023 INFORMS Job Market Session

We are excited to announce that the INFORMS Health Applications Society (HAS) is organizing a Job Talk Lightning Session (Job Market Session) at the upcoming INFORMS Annual Meeting in Phoenix, AZ. The session aims to provide visibility to students and postdocs seeking academic positions in the field of health applications and/or theory. Its purpose is to facilitate interaction and connections between potential candidates and hiring committees.

The HAS Job Market Session will feature a strong lineup of applicants who will be on the job market in the 2023-2024 academic year. Each participant will deliver a two-minute flash talk on their work at the session. It is important to note that these flash talks will not count towards the 1-talk per person rule.

The session will be divided into two parts. The first part, lasting approximately 50-60 minutes, will consist of live 2-minute presentations by each candidate. The second part, lasting 30 minutes, will provide an opportunity for networking and one-on-one interactions among the audience and participants.

Details regarding each participating candidate will be shared with the search committee chairs of hiring schools, which will facilitate effective communication and outreach. Please be on the lookout for additional information regarding the HAS Job Market Session, which will be posted on INFORMS HAS Forum over the summer. To present in the session as a candidate, individuals must be HAS members.

HAS Virtual Seminar Series

The INFORMS Health Applications Society (HAS) is continuing its exciting online seminar series for better engaging our community by bringing together researchers working on healthcare operations, medical decision making, health systems and policy, and healthcare analytics.

The advisory board for the year 2023 includes Mariel Lavieri (University of Michigan), Stephen Chick (INSEAD), and Maria Mayorga (North Carolina State University).

The seminar is held on the fourth Friday of each month from January to September. Since its inaugural event in June 2021, the seminar series has hosted presentations given by Nobel Laureates, INFORMS Fellows, leading researchers in healthcare, as well as prestigious award winners in the broad healthcare research field.

Several extraordinary speakers have already committed to upcoming seminars during summer months:

- May 26, *Professor Maria Mayorga*, North Carolina State University
- September 22, *Professor Diwakar Gupta*, The University of Texas at Austin

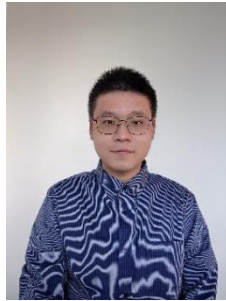
Visit our home page for the seminar series at <https://connect.informs.org/healthapplications/home> and stay tuned!

Please also join our Google Group (<https://groups.google.com/g/hasseminarseries>) or subscribe to our Mailing List (<https://forms.gle/49iDWihs5pU5RVwq6>) to receive the latest announcement on the upcoming seminars! If you have any questions, please feel free to contact us at hasseminarseries@gmail.com, and Twitter [@informshas](https://twitter.com/informshas).

Thank you for your interest from the organizing committee: Sanjay Mehrotra (Northwestern), Qiushi Chen (Penn State), and Lauren Steimle (Georgia Tech).

2023 HAS Student Liaisons

Shout out to our five awesome liaisons:



Top row: Che-Yi Liao (Georgia Institute of Technology), Yuming Sun (Georgia Institute of Technology).
Bottom row: Rebecca Alcock (University of Wisconsin – Madison), Jacob Jameson (Harvard University), Yu-Hsin Chen (Pennsylvania State University)

Twitter: @HASstudent; LinkedIn: INFORMS Health Applications Society – Students

IMSI Spotlight: The Institute for Mathematical and Statistical Innovation at the University of Chicago recently hosted a series of workshops titled “Mathematics, Statistics, and Innovation in Medical and Health Care.” Many HAS members participated in the workshops as organizers, speakers, and attendees, including this year’s HAS President Tim Chan! On the IMSI website (linked below), recordings of talks will be made available in the coming weeks. Additionally, IMSI accepts proposals twice per year for future workshops and activities. The next deadline is September 15th. Beyond workshops, IMSI offers communications bootcamps for early career professionals to develop their skills. For details on the healthcare program and to keep up to date on future events, visit the IMSI site, (<https://www.imsi.institute/activities/mathematics-statistics-and-innovation-medical-and-health-care/>), follow them on social media, and listen to their podcast Carry the Two.

Interview with Dr. Chan: The HAS student liaisons met with this year’s HAS President Dr. Chan to learn more about his professional background, what advice he has for graduate school and early career, his plans for HAS, and what he likes to do for fun. The interview can be found at the HAS website: <https://connect.informs.org/healthapplications/has-resources/newsletters>

Research Spotlight: Nan Liu



Nan Liu is an Associate Professor of Business Analytics and the William S. McKiernan Family Faculty Fellow at Carroll School of Management, Boston College. His research focuses on healthcare operations management, which centers around addressing the key operational challenge faced by every healthcare organization—how to use resources (e.g., providers, infrastructure, and technologies) to meet patient demand in a way that leads to timely access, low cost, and high quality. Trained as both an operations researcher and a data scientist, he draws methodological tools from stochastic modeling, optimization, and statistics. Specifically, he develops mathematical models, theories, and insights to optimize patient flow and resource utilization in both the outpatient and hospital settings. By translating the academic research and working with various healthcare organizations and tech firms, he seeks to enhance the efficiency and effectiveness in healthcare delivery.

His work has been recognized by a variety of research awards, including the Third Prize in INFORMS Junior Faculty Interest Group Paper Competition, the First Prize in CSAMSE Best Paper Competition, and the Wickham-Skinner Best Paper Award by POMS. His students have also received a number of honors, such as the IBM Best Student Paper Award for INFORMS Service Science, the First Place in POMS-HK International Conference Best Student Paper Competition, and the Third Place in INFORMS HAS Best Student Paper Competition. He currently serves as an Associate Editor for *Health Care Management Science*, *Manufacturing & Service Operations Management*, *Naval Research Logistics*, and *Operations Research*, as well as a Senior Editor for *Production and Operations Management*.

In his future research, he aims to further develop new models, theories, and insights grounded in healthcare practice. His goal is to expand the toolkit available for solving important societal problems. One of his recent projects focuses on crisis management, with a specific emphasis on Mass Casualty Incidents (MCIs). These events generate more patients at one time than locally available resources can manage using routine procedures. Informed by a unique timestamps dataset of surgeries operated in a field hospital set up in response to a large-scale earthquake, he seeks to develop decision-making models to aid treatment planning for MCIs. Additionally, he has been exploring E-health, including the design of online portals for outpatients to access care, the use of tele-visits to replace in-person visits, and the collaboration among different hospitals via telemedicine.

Research Spotlight: Pooyan Kazemian



Pooyan Kazemian is an Assistant Professor of Operations at Weatherhead School of Management, Case Western Reserve University. He earned a Ph.D. in Industrial and Operations Engineering from the University of Michigan in 2016 and worked at Mayo Clinic's Health Sciences Research before joining Massachusetts General Hospital as a fellow. Pooyan was on the faculty at Harvard Medical School prior to joining Case in 2020. Pooyan's research lies at the intersection of machine learning/artificial intelligence and mathematical modeling. His research addresses pressing problems in healthcare management. Pooyan's current research seeks to improve

healthcare operations, medical decision-making, and health policy with the overarching goal of improving the quality of care, access to care, and health outcomes at a lower cost.

Pooyan's research is primarily practice-driven and motivated by real-world problems in healthcare and medicine. He works closely with many clinicians, healthcare providers, and public health policy makers to understand current challenges and knowledge gaps in delivering effective and efficient care to patients in need and leverages mathematical modeling and machine learning techniques to help solve those challenges and shed light on the best strategies to deliver the right care, to the right patient, and at the right time. Pooyan's prior research has been featured on National Public Radio (NPR), TV, and major news outlets (e.g., The NY Times), has been used by health policy makers in different countries, and has been referenced in the U.S. diabetes care guidelines. His research has also been recognized by several awards, including the Bonder Scholarship for Applied Operations Research in Health Services, the POMS College of Healthcare Operations Management Best Paper Award (1st place), and the INFORMS George B. Dantzig Dissertation Award (2nd place).

More recently, Pooyan has been interested in blockchain technology and how this emerging technology, combined with other cutting-edge technology such as AI, can mitigate existing issues in the healthcare and pharmaceutical industry supply chains. Pooyan's future research will continue to engage clinical collaborators and share the common theme of developing novel mathematical methods to address pressing healthcare management problems. In addition, given the interdisciplinary nature of his research, he will continue disseminating his research findings through publications in both mainstream ORMS journals and high-impact medical journals.

Health Applications Society Officers

2023 Officers

Timothy Chan (President)
Mariel Lavieri (Vice President/President-Elect)
Stephen Chick (Past President)
Pooyan Kazemian (Treasurer, 2nd year of term)
Shan Liu (Secretary, 2nd year of term)
Justin J. Boutilier (Communications & Outreach Coordinator, 1st year of term)
Jennifer Mason Lobo (Council Member)
Qiushi Chen (Council Member)
Lauren Steimle (Council Member)
Karen Hicklin (Council Member)

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Pengyi Shi (Communications & Outreach Coordinator, 2nd year of term)
Jennifer Mason Lobo (Council Member)
Qiushi Chen (Council Member)
Sait Tunc (Council Member)