INFORMS Health Applications Society
Spring 2019 Newsletter

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

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From the President

Dear HAS Community,

It is an honor and pleasure to serve the Health Applications Society as President during 2019. In this letter, I want to share with you several exciting developments that are happening in HAS. With all these developments, there are also many more ways to get more involved with the society, so please contact us if you want to get more involved in HAS service, or if you simply want to share your thoughts and suggestions on the direction the society is taking.

First, please join me in extending a huge thank you to our outgoing President, Lisa Maillart, whose leadership has left the society in excellent health. Lisa continues to a serve HAS in an advisory role, and her support has been crucial in moving forward. Many thanks to our returning board members, Jackie Griffin (Secretary) and Mariel Lavieri (Treasurer). We are also fortunate to welcome our new board members, Mark Van Oyen (Vice President) and Hui Zhao (Communications & Outreach Coordinator); and our new council members, Jagpreet Chhatwal, Anahita Khojandi, and Osman Ozaltin. New this year, we also have Fan E and Sidd Nambiar join us as Student Liaisons; they will play an important role for increasing student engagement with the society. This is Jackie’s and Mariel’s last year as officers, and a call for nominations for the secretary and treasurer positions will be coming this Fall. I hope you will consider serving on our board.

There have been some exciting developments that the board has been busy with. First, my heartfelt thanks go to Sanjay and Panna Mehrotra, for generously endowing a new award that will recognize research excellence for mid-career researchers, for significant contributions to the practice of health applications through OR/MS modeling and methodologies. This award is currently undergoing the approval process at INFORMS, and we expect it to be in place later this year. The society will be managing this award on an annual basis; this is in addition to the two HAS-level awards that we manage, including the Pierskalla Best Paper Award (endowed) and the HAS Student Paper Competition; and the INFORMS-level Bonder Scholarship for Applied OR in Health Services. Please be on the lookout this Spring for announcements for these awards.

Secondly, we are looking into various strategic opportunities to establish partnerships and collaborations with top journals for publishing high-quality work on health applications. Our goal is to bring even more visibility to the great and impactful work of our members. For this purpose, we have a new ad hoc committee (Strategic Initiatives with Academic Journals Committee), chaired by Tinglong Dai, and with Oguzhan Alagoz, Nicos Savva, and Sze-Chuan Suen serving as members. I want to thank this committee for their amazing work. With their help, we are starting a partnership with Naval Research Logistics to create a new healthcare department, and we are currently seeking nominations (including self-nominations) for the founding Department Editor for this new department. Please send your nominations to DE.nomination.2019@gmail.com
by April 10, 2019.

Mark and Hui are serving as co-chairs for the HAS Cluster at the 2019 Annual Meeting in Seattle, and they are doing some amazing work. We are continuing our HAS Distinguished Scholar Lecture series. Also, new this year, Mark and Hui are starting a Student Lightning Session to bring visibility to the students and postdocs looking for academic positions with a focus on health applications and theory. Anahita Khojandi and Hadi El-Amine are co-chairs of this session, and a call for speakers will be out soon. Please encourage your PhD students and postdocs to respond to this call if they will be in the job market next year.

Recent membership data show that our membership remains steady and healthy, but the proportion of student members is on the low side compared to some other societies. Our council members are looking into this, and our student liaisons, Fan and Sidd, have been actively promoting our society among student members, but we need your help! Please encourage your graduate students to become HAS members; they can contact Fan, Sidd, or myself with any questions.

We are continuing our “Research Spotlights” in this newsletter to showcase the work of our members. If you have recently completed an exciting, practice-centric research project, please contact Hui or Jackie, and we will be happy to showcase your work in our Fall newsletter.

I want to finish this letter by reiterating that the goal of the HAS board and council is to serve our members, and we would love to hear from you. Please drop us a line to let us know your comments and suggestions. Our information can be found on the last page of this newsletter.

Warmly,

Ebru Bish
Associate Professor
Grado Department of Industrial and Systems Engineering
Virginia Tech
As announced at the HAS business meeting, the 2018 Bonder Scholarship was awarded to Gian-Gabriel Garcia from the University of Michigan for his research on “Data-driven and Multi-agent Optimization Models for Concussion Management Decisions.” Gian-Gabriel’s research advisor is Mariel Lavieri.

Many thanks to this year’s award committee chair, Burhan Sandikci.

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.

Data-driven and Multi-agent Optimization Models for Concussion Management Decisions

Concussion, the most common type of traumatic brain injury, is an emerging public health issue. Concussion management plays a critical role in determining long and short-term health outcomes for those with concussion. The focus of this dissertation is to develop and study models which combine optimization, statistics, and game theory for the purpose of improving (1) concussion diagnosis and (2) return-to-play/work decisions.
2018 Pierskalla Award

As announced at the HAS business meeting, the 2018 Pierskalla Best Paper award goes to Pengyi Shi, Jonathan Helm, Jivan Romain Deglise-Hawkinson, and Julian Pan for their paper, “Timing it Right: Balancing Inpatient Congestion versus Readmission Risk at Discharge.”

The runner-ups and three finalists were:

- Stephen E. Chick, Noah Gans, Ozge Yapar, “Bayesian Sequential Learning for Clinical Trials of Multiple Correlated Medical Interventions” (runner-up)
- Rongqing Han, Vishal Gupta, Song-Hee Kim, and Hyung Paek, "Maximizing Intervention Effectiveness" (finalist)
- Hamsa Sridhar Bastani, Osbert Bastani, and Carolyn Kim, "Interpreting Predictive Models for Human-in-the-Loop Analytics “ (finalist)
- Taylor Corcoran, Elise Long, and Fernanda Brava, “Flexible FDA Approval Policies” (finalist)

Congratulations to the winners and all the finalists for this important achievement! Many thanks to co-chairs Sze-chuan Suen, Margaret L. Brandeau, and Jeremy D. Goldhaber-Fiebert for serving on the prize committee, and to all of 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.
Upcoming Conferences

“Transforming Health with Data, Mind and Hand”

July 27-29, 2019
Cambridge, MA
MIT Sloan School of Management
Massachusetts General Hospital

http://meetings2.informs.org/wordpress/healthcare2019/

CONFERENCE OF THE EUROPEAN WORKING GROUP ON OPERATIONS RESEARCH APPLIED TO HEALTHCARE SERVICES
ORGANISED BY THE KARLSRUHE SERVICE RESEARCH INSTITUTE (KSRI)

https://orahs2019.de/
Research Spotlight: Jackie Griffin

Jackie Griffin, Assistant Professor at Northeastern University, researches new simulation and optimization methods for addressing system-wide complexities in a variety of health and public applications. Specifically, her primary research areas include (i) simultaneous design of new healthcare facilities and flexible operational practices using simulation-optimization methods, (ii) analysis of system-wide patterns in drug shortages through data-analytics and supply chain models which incorporate sophisticated models of humans reasoning and behaviors, and (iii) emergency response services for elderly and mobility-challenged individuals in disasters and mass emergencies.

In the NSF-funded project pertaining to drug shortage mitigation, the research team has examined the effects of different types of supply chain disruptions (e.g., recalls, manufacturing suspension) and the related disruption profiles (e.g., frequency, duration, scale) on the dynamics of the evolution of the entire supply chain. They are quantifying the role of trust and realistic human decision-making models in the overall system behavior. Further they are utilizing an extensive historical data set of pharmaceutical shipments to examine patterns during shortages and disruptions in order to identify strategies for the future mitigation and prevention of these shortages.

In her work in emergency services deployment for addressing the needs of elderly and mobility-challenged adults, Jackie and her research team have developed new solution heuristics based on structural properties of the underlying problem and have identified computational bounds on the algorithm performance. Additionally, the research team is conducting interviews with elderly individuals effected by the evacuations in the Andover, MA gas explosions to explore opportunities for informing the future of this research.
Hui Zhao, Associate Professor of Supply Chain Management and Charles and Lilian Binder Faculty Fellow of Smeal College of Business at Penn State University, has worked on the healthcare/pharmaceutical supply chain for the past 10 years and much of her work has contributed to the area of health public policy. Her work on drug shortages was particularly recognized by FDA. In July 2014, she and her coauthor, Justin Jia (faculty at Krannert School of Management of Purdue University), were invited to present their research “Mitigating the US Drug Shortages through Pareto-Improving Drug Purchasing Contracts” to the Department of Health and Human Services (HHS) in Washington DC. Their work was immediately forwarded and presented on their behalf in the FDA drug shortage stakeholders meeting for wider discussion and they were linked by FDA to industry partners for further discussion. In September 2018, Hui was invited to serve on an FDA drug shortage expert panel (only 4 academic institutions were represented with Hui being the only OR/OM person). This work was a finalist for the Pierskalla Award in 2015 and a Runner-up for the 2018 Ralph Gomory Best Industry Studies Paper Award given by the interdisciplinary Industry Studies Association (ISA). FDA particularly appreciates the pharmaceutical supply chain perspective brought forth by this work.

In addition to the drug shortage work, Hui and her student Leon Xu and colleague Nick Petruuzzi also worked on inducing compliance in post market study for drugs under the accelerated approval pathway (which was also presented to FDA in 2018). She and her coauthors have also worked on analyzing the impact of outcome-based reimbursement in dealing with high drug prices, a prominent problem for the government and the pharmaceutical industry. Hui has worked with large pharmaceutical companies such as AmerisourceBergen, CVS, and IntegriChain.
Health Applications Society Officers

2019 Officers

Ebru Bish (President)
Mark Van Oyen (Vice President)
Lisa Maillart (Past President)
Mariel Lavieri (Treasurer)
Jacqueline Griffin (Secretary)
Hui Zhao (Communications & Outreach Coordinator)
Jagpreet Chhatwal (Council Member)
Anahita Khojandi (Council Member)
Osman Ozaltin (Council Member)
Fan E (Student Liaison)
Sidd Nambiar (Student Liaison)

2018 Officers

Lisa Maillart (President)
Ebru Bish (Vice President)
Vikram Tiwari (Past President)
Mariel Lavieri (Treasurer)
Jacqueline Griffin (Secretary)
Tinglong Dai (Communications & Outreach Coordinator)
Eva Enns (Council Member)
Mustafa Sir (Council Member)