

Health Systems: The Next Generation



Tuesday, November 12, 2019

12:30pm – 5:30pm

Kendeda Building for Innovative Sustainable Design
422 Ferst Dr. NW
Atlanta GA 30313

Hosted and Sponsored by



Dear Participants,

The **Georgia Tech Center for Health and Humanitarian Systems** (CHHS) would like to welcome you to the 2019 forum on **Health Systems: The Next Generation**. This event will center on improving health systems, with a sharper focus on promoting wellness, treating disease, and how data and technology might enable and support a transformation. Through panel discussion, we will explore the theme of "Moving from Sick-Care to Healthcare" and further dive into the topic of "Interdisciplinary Collaboration between Medical and STEM Fields." Rapid fire presentations and the poster sessions will showcase ideas for the future, allowing for dialogue and networking between presenters and participants.

We thank the staff of CHHS and Milton Stewart School of Industrial and Systems Engineering (ISYE) at Georgia Tech, and the student volunteers who have helped to make the event possible. If you or your organization is interested in collaborating with CHHS or sponsoring future events, please contact Joscelyn Cooper at CHHS at Georgia Tech (J.Cooper@ISYE.GaTech.edu).

If you need any assistance during the program, please see any event managers with a ribbon. We hope you enjoy the event!

Sincerely,

- **Pinar Keskinocak**, Director, Center for Health & Humanitarian Systems
- **Dima Nazzal**, Research Director of Healthcare Operations, Center for Health & Humanitarian Systems

Health Systems- The Next Generation Forum 2019
Agenda

Time	Description
12:30pm – 1:00pm	Registration (Network over refreshments) <i>(Atrium)</i>
1:00pm – 1:15pm	Welcome – Dima Nazzal, PhD , Research Director of Healthcare Operations, Center for Health and Humanitarian Systems & Director of Professional Practice, Milton Stewart School of Industrial and Systems Engineering, <i>(Auditorium)</i>
1:15pm – 2:15pm	<p>Rapid Fire Research Presentations (Auditorium)</p> <ul style="list-style-type: none"> • Nisha Botchwey, PhD, MCRP, MPH Associate Professor of City and Regional Planning; Director of the Healthy Places Lab, College of Design, Georgia Institute of Technology; Center for Advanced Communications Policy • Yao Xie, PhD, Associate Professor, Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology • Yajun Mei, PhD, Associate Professor, Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology • Leanne West, MS, Chief Engineer Pediatric Technologies, Georgia Institute of Technology; President, International Children's Advisory Network
2:15pm – 2:45pm	Poster Session Break (Atrium) <i>*light refreshments will be available</i>
2:45pm – 4:00pm	<p>Panel – “Data-driven quantitative methods for improving efficiency, quality, and outcomes in healthcare delivery systems” (Auditorium)</p> <ul style="list-style-type: none"> • Joyce T. Siegele, FACHE, FIIE, DSHS Director, Productivity Management, Northside Hospital • Victoria Jordan, PhD, MS, MBA Vice President, Quality and Patient Safety, Emory Healthcare

	<ul style="list-style-type: none"> • Gregory J. Esper, MD, MBA Associate Chief Medical Officer, Emory Healthcare • Tarun Mohan Lal, Vice President, Chief Analytics and Solutions Officer, Navicent Health • Pinar Keskinocak, PhD, Director, Center for Health & Humanitarian Systems; William W. George Chair and professor, School of Industrial and Systems Engineering; ADVANCE Professor, College of Engineering, Georgia Institute of Technology <i>(MODERATOR)</i>
4:00pm – 4:15pm	<p>Closing Remarks (Auditorium)</p> <ul style="list-style-type: none"> • Pinar Keskinocak, PhD Director, Center for Health & Humanitarian Systems; William W. George Chair and Professor, School of Industrial and Systems Engineering; ADVANCE Professor, College of Engineering, Georgia Institute of Technology
4:15pm – 5:30pm	Concluding Poster Session and Networking

Organizer Bios



Dima Nazzal, PhD

Georgia Institute of Technology
Director of Professional Practice, School of Industrial
and Systems Engineering;
Research Director of Healthcare Operations,
Center for Health & Humanitarian Systems (CHHS);

Dr. Nazzal is responsible for project-based learning in the Industrial Engineering undergraduate curriculum, including the capstone senior design course, and the development and delivery of early design course for sophomores. Dr. Nazzal received her Ph.D. in Industrial Engineering from Georgia Tech in 2006. Her research focuses on the development and application of analytical models to guide decision making in discrete event logistics systems, including semiconductor wafer fabrication facilities, pharmaceutical order fulfillment and distribution centers, energy infrastructure systems, and fresh supply chains. Current research projects include electricity infrastructure development in Sub Saharan Africa, resource allocation and control policy decision-making in semiconductor manufacturing, and control and design of pharmaceutical order fulfillment systems. Relevant recent work has addressed production planning and inventory decisions in fresh supply chain systems aiming to reduce costs and greenhouse gas emissions.



Pinar Keskinocak, PhD

Georgia Institute of Technology
William W. George Chair and Professor, School of Industrial and
Systems Engineering; Director, Center for Health & Humanitarian
Systems (CHHS); ADVANCE Professor, College of Engineering,
Georgia Tech

Dr. Keskinocak has over 20 years of experience in logistics and supply management. Her work focuses on the applications of operations research and management science with societal impact, particularly health and humanitarian applications. She co-founded and Directs the GT Center for Health and Humanitarian Systems, which was recently named an Interdisciplinary Research Center at Georgia Tech. Her recent work has addressed infectious disease modeling (e.g., cholera, pandemic flu), evaluating intervention strategies, and resource allocation; catch-up scheduling for vaccinations; medical decision-making (e.g., disease screening); hospital operations management; disaster preparedness and response (e.g., prepositioning inventory, debris management). She has worked on a variety of projects with companies, governmental and non-governmental organizations, and healthcare providers, including American Red Cross, CARE, CDC, Children's Healthcare of Atlanta, Emory University Hospital, Grady Memorial Hospital, Pan-American Health Organization, and the Task Force for Global

Speaker Profiles

Rapid Fire Presenters



Nisha Botchwey, PhD, MCRP, MPH

Associate Professor of City and Regional Planning
Director of the Healthy Places Lab
College of Design, Georgia Institute of Technology
Center for Advanced Communications Policy

Botchwey is an Associate Professor of City and Regional Planning at the Georgia Institute of Technology and an adjunct professor in Emory University's School of Public Health. An expert in health and the built environment as well as community engagement, she holds graduate degrees in both urban planning and public health. Dr. Botchwey co-directs the National Physical Activity Research Center, PARC, both the Atlanta Neighborhood Quality of Life and Health Dashboard and the data dashboard for Health, Environment and Livability for Fulton County, and directs the Built Environment and Public Health Clearinghouse.



Leanne West

Chief Engineer Pediatric Technologies, Georgia Institute of Technology
President, International Children's Advisory Network

Leanne West, MS, is a Principal Research Scientist and the Chief Engineer of Pediatric Technologies for Georgia Tech. As Chief Engineer, she coordinates research activities related to pediatrics across campus and serves as the technical liaison for the partnership with Children's Healthcare of Atlanta. She is also the President of the non-profit, the International Children's Advisory Network, which focuses on patient voice in healthcare. Her research focuses on mobile and wireless health system and sensor development, user interfaces, system integration, and diagnostic devices. Ms. West has seen her invention of a wireless personal captioning system installed at commercial venues through her start-up Intelligent Access, LLC. She has another wearable system for identifying specific dog behaviors that has also reached the commercial market. She has received the following awards: Woman of the Year by Women in Technology in 2014, Georgia Tech's Outstanding Achievement in Research Enterprise Enhancement Award in 2014, GTRI Innovative Research Award team member in 2014, and the Optical Society's 2012 Paul Forman Engineering Excellence Award team member.



Yajun Mei, PhD

Associate Professor
Milton Stewart School of Industrial and Systems Engineering
Georgia Institute of Technology

Dr. Yajun Mei is a co-director of Biostatistics, Epidemiology, research Design (BERD) at Georgia Tech for Georgia Clinical & Translational Science

Alliance (Georgia CTSA) since 2018, the president of Georgia Chapter of American Statistical Association in 2018-2019, and the director of Master of Science in Statistics for the School of Industrial and Systems Engineering since 2018.

Dr. Mei's research interests include change-point problems and sequential analysis in Mathematical Statistics; sensor networks and information theory in Engineering; as well as longitudinal data analysis, random effects models, and clinical trials in Biostatistics.

Dr. Mei received a B.S. in Mathematics from Peking University in P.R. China, and a Ph.D. in Mathematics with a minor in Electrical Engineering from the California Institute of Technology. He has also worked as a postdoc in Biostatistics for two years in the Fred Hutchinson Cancer Research Center in Seattle, WA.



Yao Xie, PhD

Associate Professor
Milton Stewart School of Industrial and Systems Engineering
Georgia Institute of Technology

Yao Xie is an Associate Professor at Georgia Institute of Technology in the H. Milton Stewart School of Industrial and Systems Engineering since 2013. She received her Ph.D. in Electrical Engineering (minor in Mathematics) from Stanford University in 2011, M.Sc. in Electrical and Computer Engineering from the University of Florida in 2006, and B.Sc. in Electrical Engineering and Computer Science from University of Science and Technology of China (USTC) in 2004. She was a Research Scientist at Duke University from 2012 to 2013. Her research interests are statistics, machine learning, and signal processing, in providing the theoretical foundation as well as developing computationally efficient and statistically powerful algorithms. She received the National Science Foundation (NSF) CAREER Award in 2017, and multiple best paper awards at ICASSP, Asilomar, and INFORMS conferences.

Panelists



Joyce T. Siegele, FACHE, FIIE, DSHS

Director, Productivity Management
Northside Hospital

Joyce T. Siegele is the Director, Productivity Management at Northside Hospital in Atlanta, Georgia. She has a Bachelor of Science in Industrial and Systems Engineering and a Master of Science in Industrial and Systems Engineering with a Specialization in Engineering Management from the University of Florida. Joyce is a Fellow with ACHE (American College of Healthcare Executives) and with IIE (Institute of Industrial and Systems Engineers). She is a Past President of SHS (Society of Health Systems) and is a Diplomate in SHS. Joyce is also an Instructor for IIE's Healthcare Labor Management.



Victoria Jordan, PhD, MS, MBA

Emory Healthcare
Vice President, Quality and Patient Safety

Dr. Victoria Jordan leads the development, coordination, and implementation of quality improvement efforts across Emory Healthcare. This includes strategic oversight of quality initiatives across Emory's eleven hospitals and over 300 primary care and specialty clinics. The Office of Quality includes patient safety and infection prevention, process improvement, regulatory compliance, quality education, and clinical quality analytics. Dr. Jordan also serves as the Director of Performance Improvement and Analytics for the Kennedy Initiative for Transforming Care where she leads the effort to define and operationalize the vision of expanding EHC performance improvement, quality education, and analytics capabilities using Lean and other approaches to achieve high reliability. In her previous role as Executive Director of Strategic Management and Systems Engineering at M.D. Anderson Cancer Center (2008-2017), she led Quality/Systems Engineering, Strategic Planning and Management, and Clinical Informatics within the Office of Performance Improvement. In addition, Dr. Jordan served as the University of Texas Chancellor's Health Fellow for Systems Engineering, coordinating and promoting the use of Systems Engineering in health care institutions in collaboration with the Engineering and Business Schools within the University of Texas System. She is the co-author of a McGraw-Hill textbook, *Design of Experiments in Quality Engineering*, author of several peer reviewed articles, and has served in several academic faculty positions in Industrial Engineering, Business, and Statistics.



Gregory J. Esper, MD, MBA

Emory Healthcare
Associate Chief Medical Officer

Gregory J. Esper, MD, MBA, is currently Professor & Vice Chairman of Clinical Affairs for the Department of Neurology. He is the Vice President of Lean Promotion and the Associate Chief Medical Officer of Emory Healthcare, and leads Emory's systemwide telehealth initiatives. He earned his medical degree at Vanderbilt University, completed neurology residency at Washington University St. Louis, and finished clinical neurophysiology fellowship and a clinical research fellowship in Electrical Impedance Myography at Harvard University's Beth Israel Deaconess Medical Center. He earned his MBA from Emory's Goizueta Business School in 2009 and is Affiliate Professor of Business at Goizueta. Clinically, Dr. Esper sees patients with general neurology conditions, including but not limited to headache, neuromuscular diseases, neuroinflammatory diseases, and the like. Dr. Esper serves the American Academy of Neurology as the Chair of the Health Services Research subcommittee, and he chaired the AAN's Navigating Health Reform Task Force for the AAN in 2012. He publishes and lectures nationally on such topics as electronic health record implementation, medical economics, and health care reform, and internationally on health care leadership and talent management.



Tarun Mohan Lal

Navicent Health

Vice President, Chief Analytics and Solutions Officer

Tarun Mohan Lal is an experienced healthcare leader with 10+ years of experience in hospital administration and engineering. Currently, Tarun serves as the Chief Analytics and Solutions Officer and Enterprise Vice President at Navicent Health where he provides oversight to the business intelligence, advanced analytics, performance improvement and Enterprise project management functions across the system of care. Prior to this role, Tarun spent 8 years at Mayo Clinic in varying leadership roles including analytics, strategic planning and service line operations and was involved in building the Cardiovascular Center for Artificial Intelligence.

Originally from India, Tarun has his Bachelor of Science in Industrial Engineering from the Manipal University, India, Master of Science in Industrial engineering from Texas A&M University, College Station and will be graduating with a Doctorate in System Science and Industrial Engineering with focus on Healthcare from State University of New York.

Tarun is author of several publications on the topic of analytics, a seasoned industry speaker and has served on several advisory boards. He was appointed as the Assistant Professor of Healthcare Systems Engineering and Assistant Professor of Healthcare Administration by Mayo Clinic College of Medicine for his academic and research contribution.