Biomedical Informatics Grand Rounds

Wednesday, April 16, 2025
3:00 pm – 4:00 pm

Advancing Geospatial Data Science in a Health Care System

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In-person Access: MART 7M-0602
Remote Access:
Join Zoom Meeting https://stonybrook.zoom.us/j/95617197636?pwd=KytzZ2pVRG9SZGpKZUtpNXJISjNjZz09
Meeting ID: 956 1719 7636 Passcode: 924293

Bio: Jonathan M. Tan, MD MPH MBI FASA, is a pediatric anesthesiologist, clinical informaticist, and public health policy leader at Children's Hospital Los Angeles (CHLA), the Keck School of Medicine, and the Spatial Sciences Institute at the University of Southern California (USC). Serving as the Vice Chair of Analytics and Clinical Effectiveness in the Department of Anesthesiology Critical Care Medicine at CHLA, Dr. Tan spearheads initiatives that advance patient safety, quality improvement, and data driven decision making. His work is dedicated to designing and implementing systems that enable clinicians to effectively deliver safe, equitable, and compassionate care to all children. Dr. Tan leads a multidisciplinary spatial data science team whose work focuses on building solutions aimed at enhancing pediatric health system resilience and health security. The team's efforts enable health systems to understand risks to pediatric patient populations in real-time, strengthen operational readiness during disasters, and model outcomes for children during public health emergencies. This transformative work has been recognized and featured by national and international organizations, including the World Bank, the Asthma and Allergy Foundation of America, AccuWeather, and other leading environmental health organizations. Beyond his clinical and technological innovations, Dr. Tan is a dedicated leader in anesthesiology and perioperative medicine. He serves on the Board of Directors for the Society for Pediatric Anesthesia and co-chairs the Anesthesia Patient Safety Foundation's Safety Advisory Group on Clinical Deterioration. Additionally, he is an editor for *Perioperative Medicine*, contributing to advancements in the field. Dr. Tan is a recognized thought leader in pediatric anesthesiology and perioperative medicine and consults on the development of pediatric medical devices and technologies with companies such as GE HealthCare, Edwards Lifesciences, and Medtronic. Dr. Tan's passion for leveraging technology, analytics, and public health policy to improve pediatric care continues to drive impactful solutions for today's most pressing healthcare challenges.

Abstract: Understanding where patients live is increasingly critical to delivering equitable, effective, and resilient health care. We will explore how geospatial data science—leveraging patient location data and environmental context—can illuminate the complex interplay between social, economic, and environmental determinants of health. By mapping these factors, health systems can identify at-risk populations, improve care delivery, and address disparities at the neighborhood level. Dr. Tan will highlight the work of his multidisciplinary spatial data science team focused on enhancing pediatric health system resilience and health security. The team's pioneering efforts enable real-time risk assessment, operational readiness during disasters, and predictive modeling for children's outcomes in public health emergencies. Their innovations have garnered national and international recognition, with features by organizations such as the World Bank Development Group, the Asthma and Allergy Foundation of America, and AccuWeather. Using real world examples from the Children's Hospital Los Angeles, attendees will gain insight into how health systems can utilize spatial data science to become more adaptive, equitable, and proactive in health care delivery.

Educational Objectives:

1. Examine how social and environmental determinants of health impact pediatric health and healthcare delivery.
2. Explain how we can leverage innovations in spatial science to better understand social and environmental determinants in health systems.
3. Demonstrate real world examples of social and environmental determinants of health analytics applications in a children's hospital.

Disclosure Statement: The faculty and planners have no relevant financial relationship with ineligible companies, whose primary business is producing, marketing, selling, reselling, or distributing health care products used by or on patients.

Continuing Medical Education Credits: The School of Medicine, State University of New York at Stony Brook, is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The School of Medicine, State University of New York at Stony Brook designates this live activity for a maximum of **1** ***AMA PRA Category 1 Credits™.*** Physicians should only claim credit commensurate with the extent of their participation in the activity.