5TH ILLINOIS HEALTH DATA ANALYTICS

SUMMIT

4.4.2022 | AI FOR MEDICINE IN THE AGE OF MANY SMALL DATA SETS

jump | ARCHES

AN OSF HEALTHCARE,
UNIVERSITY OF ILLINOIS URBANA – CHAMPAIGN
AND UNIVERSITY OF ILLINOIS COLLEGE OF
MEDICINE PEORIA COLLABORATION

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8:45 - 9:00 a.m. **Welcome and Opening Remarks**
Susan Martinis - Vice Chancellor for Research and Innovation, University of Illinois Urbana-Champaign
Rashid Bashir - Dean, Grainger College of Engineering, University of Illinois Urbana-Champaign
Elizabeth Hsiao-Wecksler – Interim Director, Healthcare Engineering Systems Center, University of Illinois Urbana-Champaign
Jimeng Sun - Chair of the 5th Illinois Health Data Analytics Summit, University of Illinois Urbana-Champaign

9:00 - 9:45 a.m. **Keynote I | The Challenges of an N=1 Genetic Disease Paradigm in a Big Data World**
Eric W. Klee, Ph.D. - Associate Professor and Director of Bioinformatics, Mayo Clinic Center for Individualized Medicine
Chair: Jimeng Sun, Ph.D. - Professor of Computer Science, University of Illinois Urbana-Champaign

9:30 - 10:30 a.m. **Keynote II | The Measurement and Modeling of Social Behavior in Infancy**
James M. Rehg, Ph.D. - Professor School of Interactive Computing at the Georgia Tech, Co-Director Center for Health Analytics and Informatics
Chair: Sheeba Arnold, Ph.D. - Assistant Professor at Carle Illinois Advanced Imaging Center

10:30 - 10:40 a.m. **Break**

10:40 - 11:40 a.m. **Session: AI & Data Science**
Chair: Yuxiong Wang, Ph.D. - Assistant Professor of Computer Science, University of Illinois Urbana-Champaign

1. The Wellness Store and Communiversity Science™: Citizen Scientists Transforming the Use of Big Data to Heal Racial Trauma
Ruby Mendenhall, Ph.D. - Professor of Sociology, University of Illinois Urbana-Champaign

2. Integration of Electronic Medical Records with Molecular Interaction Networks and Domain Knowledge for Survival Analysis
ChengXiang Zhai, Ph.D. - Professor of Computer Science, University of Illinois Urbana-Champaign

3. Fusing Medical Knowledge and Machine Learning Models for Pediatric COVID-19 Hospitalization and Severity Prediction
Jimeng Sun, Ph.D. - Professor of Computer Science, University of Illinois Urbana-Champaign

4. Learning to Learn More with Less
Yuxiong Wang, Ph.D. - Assistant Professor of Computer Science, University of Illinois Urbana-Champaign

5. Machine Learning on Multi-Modal Healthcare Data
Yuan Luo, Ph.D. - Associate Professor of Preventative Medicine, Northwestern University

6. Knowledge Graph Construction from Biomedical Literature
Heng Ji, Ph.D. - Professor of Computer Science, University of Illinois Urbana-Champaign

11:40 - 12:00 p.m. **Q&A Panel: Session AI & Data Science**
Moderator: Yuxiong Wang, Ph.D. - Assistant Professor of Computer Science, University of Illinois Urbana-Champaign

12:00 - 12:30 p.m. **Break**

12:30 - 1:00 p.m. **Industry Talk - Predicting Knowledge: Finding the Unknown Knowns**
Brian Martin, M.S., - Head of AI in R&D Information Research, Research Fellow at AbbVie Chair: Brendan McGinty, Director of Industry for NCSA, University of Illinois Urbana-Champaign

1:00 - 2:10 p.m. **Session: Data Science and Small Data Sets**
Chair: Jonathan Handler, M.D. - Senior Fellow for Innovation at OSF HealthCare

1. Illinois Test-to-stay (TTS) Program: Tailoring Effective Testing Policies
Sridhar Seshadri, Ph.D. - Professor of Information Systems, Gies Business School, University of Illinois Urbana-Champaign

2. Learning from One and Only One Shot
Lav Varshney, Ph.D. - Associate Professor of Electrical a. Computer Engineering, University of Illinois Urbana-Champaign

3. Using Small Datasets for Medical Education in Data Science
David Liebovitz, M.D. - Associate Professor of Medicine and Preventive Medicine, Northwestern University

4. Thinking Outside the Box
Crystal Reinhart, Ph.D. - Senior Scientist at School of Social Work, University of Illinois Urbana-Champaign

5. Trustworthy Machine Learning: Robustness, Privacy, Generalization, and their Interconnections
Bo Li, Ph.D. – Assistant Professor of Computer Science, University of Illinois Urbana-Champaign

6. Mining clinical data for trends in Ehlers-Danlos Syndrome symptoms and progression
Christina Laukaitis, Ph.D., M.D. - Associate Professor at Carle Health, University of Illinois Urbana-Champaign

7. Digitizing the Neurological Screening Examination – Initial Steps
Christopher Zallek, M.D. - Neurologist at OSF HealthCare

2:10 - 2:20 p.m. **Q&A Panel: Session Data Science and Small Data Sets**
Moderator: Jonathan Handler, M.D. - Senior Fellow for Innovation at OSF HealthCare

2:20 - 2:30 p.m. **Break**

2:30 - 2:40pm **Guidance Breakout Session**
Chairs: Rebecca Smith, Ph.D. - Associate Professor of Epidemiology, University of Illinois Urbana-Champaign
George Heintz, MSEE, MSPH - Director of Health Data Analytics Initiative, University of Illinois Urbana-Champaign

2:40 - 3:30 p.m. **Breakout Sessions**

1. Data Efficient Algorithms in Healthcare
Moderators: Yuxiong Wang, Ph.D. - Assistant Professor of Computer Science, University of Illinois Urbana-Champaign
David Liebovitz, M.D. - Associate Professor of Medicine and Preventative Medicine, Northwestern University
Synopsis: Recent advances in AI learning with data efficient algorithms have allowed successful demonstrations with various small data sets, but there haven't been as many striking stories with health data in healthcare settings. This session will investigate potential application areas of data efficient algorithms in healthcare and discuss the barriers to rapid implementation of those algorithms in healthcare.

2. Ensuring Security & Privacy in the Context of Small Data Sets
Moderators: John Evancho, MTS, J.D - Senior Vice President, Chief Compliance Officer - OSF HealthCare
Bo Li, Ph.D. - Assistant Professor of Computer Science, University of Illinois Urbana-Champaign
Synopsis: Small datasets form a significant portion of releasable data in the highly sensitive domain
healthcare. Providing differential privacy, secure data sharing and aggregation mechanisms for small datasets for AI utilization is a hard task. This session will investigate recent advances and limitations in differential privacy, federated learning, and blockchain.

3. Rare Diseases and Individualized Medicine & Deep Phenotyping and Data Science
Moderators: Eric Klee, Ph.D. - Associate Professor in Biomedical Informatics, Mayo Clinic
Jimeng Sun, Ph.D. - Professor of Computer Science, University of Illinois Urbana-Champaign
Synopsis: Deep phenotyping is a gateway to precision medicine and developing rare disease treatments. It is defined as the precise analysis and description of phenotypic abnormalities to characterize rather than identify a disease. The classification of patients into subpopulations that differ with respect to disease susceptibility, phenotypic or molecular subclass, and or to the likelihood of positive / adverse response to a given treatment calls for state of the art Deep Learning, and Natural Language Processing. This breakout session discusses computational solutions for deep phenotyping challenges, including data efficient algorithms, natural language processing and semantic and technical requirements for phenotype and disease data e.g.digital imaging for facial phenotype analysis.

3:30 - 3:45 p.m. **Breakout Session Reports & White Paper Summary**
Moderators: Rebecca Smith, Ph.D. - Associate Professor of Epidemiology, University of Illinois Urbana-Champaign
George Heintz, MSEE, MSPH - Assistant Director Health Data Analytics Initiative, University of Illinois Urbana-Champaign

3:45 p.m. **Closing Remarks**
Jimeng Sun, Chair of the 5th Illinois Health Data Analytics Summit, University of Illinois Urbana-Champaign

ABOUT OUR KEYNOTE SPEAKERS

Eric W. Klee, Ph.D.

The Challenges of an N=1 Genetic Disease Paradigm in a Big Data World

The research interests of Eric W. Klee, Ph.D., are divided primarily between two major areas. First, with the Center for Individualized Medicine and the Department of Laboratory Medicine and Pathology, he leads the bioinformatics initiative centered on discovering how clinicians can apply information gathered from molecular-level data to diagnose and treat individual medical conditions. Second, Dr. Klee is a member of the Mayo Addiction Research Center, where he leads a laboratory team using zebrafish as models to identify novel therapeutic strategies for treating alcohol abuse and tobacco dependence.

James M. Rehg, Ph.D.

The Measurement and Modeling of Social Behavior in Infancy

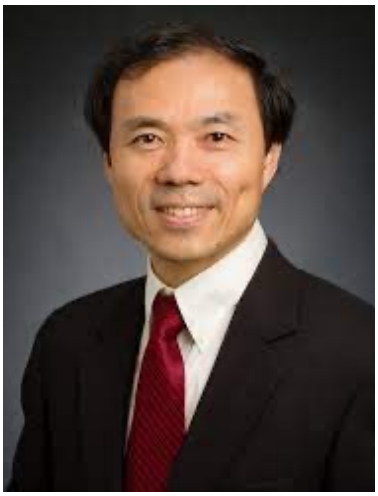
James M. Rehg (pronounced “ray”) is a Professor in the School of Interactive Computing at the Georgia Institute of Technology, where he co-directs Center for Health Analytics and Informatics (CHAI). He received his Ph.D. from CMU in 1995 and worked at the Cambridge Research Lab of DEC (and then Compaq) from 1995-2001, where he managed the computer vision research group. He received an NSF CAREER award in 2001 and a Raytheon Faculty Fellowship from Georgia Tech in 2005. He and his students have received best paper awards at ICML 2005, BMVC 2010, and Face and Gesture 2015, and a Method of the Year Award from Nature Methods and 2018 Distinguished Paper Award from ACM IMWUT. Dr. Rehg served as the Program co-Chair for ACCV 2012 and CVPR 2017 and General co-Chair for CVPR 2009. He has authored more than 200 peer-reviewed scientific papers and holds 30 issued US patents. His research interests include computer vision, machine learning, and mobile and computational health. Dr. Rehg was the lead PI on an NSF Expedition to develop the science and technology of Behavioral Imaging, the measurement and analysis of social and communicative behavior using multi-modal sensing, with applications to developmental conditions such as autism. He is currently the Deputy Director and TR&D1 Lead for the mHealth Center for Discovery, Optimization, and Translation of Temporally-Precise Interventions (mDOT), one of two NIH NIBIB BTRCs in mobile health, which is developing novel on-body sensing and predictive analytics for improving health outcomes. See https://chai.gatech.edu and https://mdot.md2k.org for details.

AI & DATA SCIENCE: SPEAKERS

Ruby Mendenhall, Ph.D.

The Wellness Store and Communiversity Science™: Citizen Scientists Transforming the Use of Big Data to Heal Racial Trauma

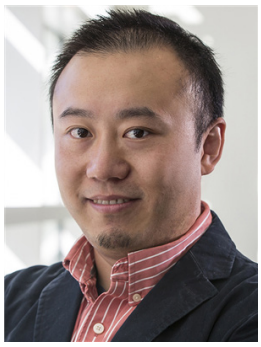
Ruby Mendenhall is the Kathryn Lee Baynes Dallenbauch LAS Professor in Sociology and African American Studies. She is an Associate Dean for Diversity and Democratization of Health Innovation at the Carle Illinois College of Medicine at the University of Illinois at Urbana-Champaign. She also has appointments in Urban and Regional Planning, Gender and Women's Studies, and Social Work. She is affiliated with the Carle Woese Institute for Genomic Biology and the Institute of Government and Public Affairs. She examines how living in racially segregated neighborhoods with high levels of violence affects Black mothers' mental and physical health using surveys, interviews, crime statistics, police records, data from 911 calls, art, wearable sensors and genomic analysis. One of her studies involved working with citizen/community scientists to collect, analyze, and publicly disseminate the findings. The mothers wore health sensors for 30 days and used GPS on their phones to spatially track their exposure to gun violence. The participants and researchers jointly created a public research exhibit that displayed the findings using photographs, art, virtual reality, light installations, etc. Recently, Mendenhall received $500,000 from the MacArthur Foundation to train 50 high school and young adults (up to age 21) Community Health Workers and Citizen Scientists in Chicago.



ChengXiang Zhai, Ph.D.

Integration of Electronic Medical Records with Molecular Interaction Networks and Domain Knowledge for Survival Analysis

ChengXiang Zhai is a Donald Biggar Willett Professor in Engineering of Department of Computer Science at the University of Illinois at Urbana-Champaign, where he also holds a joint appointment at the Carl R. Woese Institute for Genomic Biology, Department of Statistics, and the School of Information Sciences. He received a Ph.D. in Computer Science from Nanjing University in 1990, and a Ph.D. in Language and Information Technologies from Carnegie Mellon University in 2002. He worked at Clairvoyance Corp. as a Research Scientist and a Senior Research Scientist from 1997 to 2000. His research interests are in the general area of intelligent information systems, including specifically information retrieval, data mining, natural language processing, machine learning, and their applications in domains such as biomedical informatics, and intelligent education systems. He has published over 300 papers in these areas with a Google Scholar h-index of 73 and holds 5 patents. He offers two Massive Open Online Courses (MOOCs) on Coursera covering Text Retrieval and Search Engines and Text Mining and Analytics, respectively, and is a key contributor of the Lemur text retrieval and mining toolkit. He is America Editor of the Springer Information Retrieval Book Series and a Senior Associate Editor of ACM Transactions on Intelligent Systems and Technology. Previously, he served as an Associate Editor of journals in multiple areas including, ACM Transactions on Information Systems, Information Processing and Management, BMC Medical Informatics and Decision Making, and ACM Transactions on Knowledge Discovery from Data, and on the editorial board of Information Retrieval Journal. He is a program co-chair of ACM CIKM 2004, NAACL HLT 2007, ACM SIGIR 2009, ECIR 2014, WWW 2015, and ICTIR 2015. He is a general conference co-chair of CIKM 2016, WSDM 2018, and IEEE BigData 2020. He is an ACM Fellow and a member of the ACM SIGIR Academy, and received a number of awards, including ACM SIGIR Gerard Salton Award, multiple best paper awards such as the ACM SIGIR 2004 Best Paper Award, and the ACM SIGIR Test of Time Award (three times), the 2004 Presidential Early Career Award for Scientists and Engineers (PECASE), an Alfred P. Sloan Research Fellowship, multiple research awards from industry (IBM Faculty Award, HP Innovation Research Award, Microsoft Beyond Search Research Award , and Yahoo Faculty Research Engagement Program Award), University of Illinois Urbana-Champaign Rose Award for Teaching Excellence, and University of Illinois Urbana-Champaign Campus Award for Excellence in Graduate Student Mentoring. He has graduated 36 PhD students and over 50 MS students.



Jimeng Sun, Ph.D.

Fusing Medical Knowledge and Machine Learning Models for Pediatric COVID-19 Hospitalization and Severity Prediction

Dr. Sun is a Health Innovation Professor at the Computer Science Department and Carle's Illinois College of Medicine at University of Illinois Urbana Champaign. Before University of Illinois Urbana-Champaign, he was an associate professor in College of Computing at Georgia Tech (GT) and the co-director of the Center for Health Analytics and Informatics (CHAI) at GT. His research focuses on artificial intelligence (AI) for healthcare, including deep learning for drug discovery, clinical trial optimization, computational phenotyping, clinical predictive modeling, treatment recommendation, and health monitoring. He was recognized as one of the Top 100 AI Leaders in Drug Discovery and Advanced Healthcare by Deep Knowledge Analytics. He has published over 300 papers and has 20,361 citations, h-index 73, and i10-index 196. Dr. Sun has a diverse funding portfolio with $6.25m in sponsored research funds since 2014. He also has several NSF/NIH-funded projects with leading hospitals such as MGH, Sutter Health, Vanderbilt, Northwestern, Geisinger, and Emory. Dr. Sun collaborates with the biomedical industry including IQVIA, the largest health data science company, and multiple pharmaceutical companies on health data science. He completed his B.S. and M.Phil. in computer science at Hong Kong University of Science and Technology in 2002 and 2003, respectively, and his Ph.D. in computer science at Carnegie Mellon University in 2007.

Yuxiong Wang, Ph.D.

Learning to Learn More with Less

Yuxiong Wang is an Assistant Professor in the Department of Computer Science at the University of Illinois Urbana-Champaign. Before joining Illinois CS, he was a postdoctoral fellow in the Robotics Institute at Carnegie Mellon University. He received a Ph.D. in robotics from Carnegie Mellon University under the supervision of Martial Hebert. His research interests lie in computer vision, machine learning, and robotics, with a particular focus on few-shot learning, meta-learning, and streaming perception. He was a visitor in the Center for Data Science at New York University. He has also spent time at Facebook AI Research (FAIR). He received the Best Paper Honorable Mention Award in ECCV 2020.

Yuan Luo, Ph.D.

Machine Learning on Multi-Modal Healthcare Data

Yuan Luo is currently Associate Professor at Department of Preventive Medicine, at Feinberg School of Medicine in Northwestern University. He is Chief AI Officer at Clinical and Translational Sciences Institute (NUCATS) and Institute for Augmented Intelligence in Medicine. Dr. Luo earned his PhD degree from MIT EECS with a math minor. He won the American Medical Informatics Association (AMIA) New Investigator Award in 2020. He served on AMIA Membership and Outreach Committee. His publications appear in leading journals including Nature Medicine, JAMA, AJRCCM, JAMIA, JBI etc. He has published in and/or served as PC members for top AI and informatics conferences including AAAI, KDD, CVPR, ACL, AMIA etc.

Heng Ji, Ph.D.

Knowledge Graph Construction from Biomedical Literature

Heng Ji is a professor at Computer Science Department, and an affiliated faculty member at Electrical and Computer Engineering Department of University of Illinois at Urbana-Champaign. She is an Amazon Scholar. She received her B.A. and M. A. in Computational Linguistics from Tsinghua University, and her M.S and Ph.D. in Computer Science from New York University. Her research interests focus on Natural Language Processing, especially on Multimedia Multilingual Information Extraction, Knowledge Base Population and Knowledge-driven Generation. She was selected as “Young Scientist” and a member of the Global Future Council on the Future of Computing by the World Economic Forum in 2016 and 2017. The awards she received include “AI’s 10 to Watch” Award by IEEE Intelligent Systems in 2013, NSF CAREER award in 2009, Google Research Award in 2009 and 2014, IBM Watson Faculty Award in 2012 and 2014, Bosch Research Award in 2014-2018, Best-of-ICDM2013 Paper, Best-of-SDM2013 Paper, ACL2020 Best Demo Paper Award, and NAACL2021 Best Demo Paper Award. She is elected as the North American Chapter of the Association for Computational Linguistics (NAACL) secretary 2020-2021. She has served as the Program Committee Co-Chair of many conferences including NAACL-HLT2018 and AACL2022, and she has been the coordinator for the NIST TAC Knowledge Base Population track since 2010.

INDUSTRY TALK

Brian Martin, M.S

Predicting Knowledge: Finding The Unknown Knowns

Brian Martin joined AbbVie in October of 2018 as the head of the newly formed RAIDERS team within Research & Development's Information Research division, focused on accelerating, scaling, and amplifying the work of AbbVie's R&D community using AI technologies like machine learning, deep learning, and cognitive computing. Brian came to AbbVie after spending five years in technology consulting across many industries, and over a decade of additional experience before that working in trading and financial markets technology. While his primary focus is AI technologies, his interests are much broader, and he has presented at multiple conferences on topics including optical networking, quantum computing, blockchain, cognitive architecture, and other emerging technology concepts that are all part of digital transformation. Brian holds a B.S. degree in Computer and Cognitive Science from Alma College and an M.S in Computer Science from the University of Chicago.

DATA SCIENCE AND SMALL DATA SETS

Sridhar Seshadri, Ph.D.

Illinois Test-to-Stay (TTS) Program: Tailoring Effective Testing Policies

Sridhar Seshadri obtained his PhD at the University of California, Berkeley after graduating from the Indian Institute of Technology, Madras, India and the Indian Institute of Management, Ahmedabad, India. He is currently the Alan J and Joyce D Baltz Professor in the Geis College of Business and a Health Innovation Professor at Carle Illinois College of Medicine. He is the Area Chair for the Information, Operations Management, Supply Chain and Analytics area in the Business Administration Department. His current research projects focus on applications of analytics to different policy questions. These include Healthcare as part of the Heartgroup, the Development of Micro, Small and Medium Manufacturing Enterprises in India, and Sourcing and Risk Management in Global Supply Networks. His professional service includes serving as the Associate Editor, Naval Research Logistics; Associate Editor, Management Science, and Department Editor (Operations and Finance Interface), Production and Operations Management Journal.

Lav Varshney, Ph.D.

Learning from One and Only One Shot

Lav R. Varshney is an associate professor of electrical and computer engineering at the University of Illinois Urbana-Champaign with further appointments in computer science, neuroscience, industrial engineering, digital agriculture, and personalized nutrition. He is also affiliated with the Discovery Partners Institute (University of Illinois System) in Chicago. His research interests include information theory, artificial intelligence, network science, and their applications.

David Liebovitz, M.D.

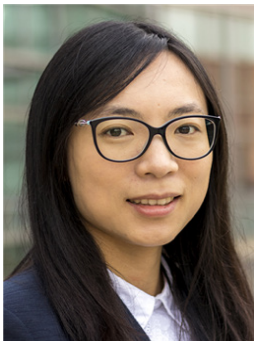
Using Small Datasets for Medical Education in Data Science

David Liebovitz is a practicing internal medicine physician also board certified in clinical informatics with engineering training. He has led numerous information technology projects for use in clinical practice and research. Operational leadership experience includes former roles as Chief Medical Informatics Officer at Northwestern Medical Faculty Foundation and Chief Medical Information Officer at University of Chicago Medicine. His research area of interest is in the field of clinical informatics, and specifically, around aspects of patient safety. His clinical care focus is in general internal medicine, optimizing health quality through specific achievable lifestyle goals augmented by medication or other interventions when necessary.

Crystal Reinhart, Ph.D.

Thinking Outside the Box

Crystal Reinhart, is a Research Scientist at the University of Illinois at Urbana-Champaign. She has been involved in several national and state-level program evaluation and epidemiological studies, focusing on a range of topics including cancer survivorship, substance use, and prevention research. Dr. Reinhart's research includes a nationwide survey of acute myeloid leukemia (AML) survivors that examined treatment decision making and a study on the needs and gaps in services of blood cancer survivors at NCI-Designated Cancer Centers across the United States. Dr. Reinhart is a 10-year Acute Myeloid Leukemia survivor and volunteers her time on the University of Illinois Cancer Research Advocacy Group and the Leukemia & Lymphoma Society.



Bo Li, Ph.D.

Trustworthy Machine Learning: Robustness, Privacy, Generalization, and their Interconnections

Dr. Bo Li is an assistant professor in the Department of Computer Science at the University of Illinois at Urbana–Champaign. She is the recipient of the MIT Technology Review TR-35 Award, Alfred P. Sloan Research Fellowship, NSF CAREER Award, Dean's Award for Excellence in Research, Intel Rising Star award, Symantec Research Labs Fellowship, Rising Star Award, Research Awards from Tech companies such as Amazon, Facebook, Intel, and IBM, and best paper awards at several top machine learning and security conferences. Her research focuses on both theoretical and practical aspects of trustworthy machine learning, security, machine learning, privacy, and game theory. She has designed several scalable frameworks for robust machine learning and privacy-preserving data publishing systems. Her work has been featured by major publications and media outlets such as Nature, Wired, Fortune, and New York Times. Her website is http://boli.cs.illinois.edu/

Christina Laukaitis, Ph.D., M.D.

Mining clinical data for trends in Ehlers-Danlos Syndrome symptoms and progression

Christina Laukaitis is a clinical associate professor in medical genetics. After earning her MD and PhD from the University of Illinois, she completed a residency in Internal Medicine at St. Vincent Hospital in Indianapolis, IN and a Medical Genetics fellowship at the University of Washington. She is board certified in Internal Medicine and Medical Genetics. She joined the faculty at the University of Arizona College of Medicine in 2008 and moved to Carle Health and the University of Illinois in 2021.

Her clinical practice and research focus on diagnosing and managing patients with genetic syndromes. She has published on her work caring for people with hereditary cancer syndromes, lysosomal storage diseases, and connective tissue disorders. Her current focus is on the Ehlers-Danlos syndromes (EDS). She has organized the hEDS GENE and hEDS 'Omics studies to identify genes and pathways perturbed in hypermobile EDS.

Christopher Zallek, M.D.

Digitizing the Neurological Screening Examination – Initial Steps

For 22 years at OSF HealthCare, Chris Zallek has specialized in the practice of Neuromuscular Medicine and NCS/EMG testing. His experience also includes supervising neurology residents in their outpatient continuity clinics, attending physician duties for inpatient neurology teaching and hospital consultation services, and evaluation of general neurology patients. Within Jump Simulation Center at OSF for the past four years, his interests focus on neurological exam training simulators and the digitization of the neurological exam and its means of application to provide new neurology health care delivery models.

CHAIRS / MODERATORS

Rebecca Lee Smith, Ph.D.

Dr. Smith is an associate professor of epidemiology at the University of Illinois College of Veterinary Medicine, a Health Innovations Professor at the Carle-Illinois College of Medicine, and a member of the Infection Genomics for One Health theme at the Carl R. Woese Institute for Genomic Biology. Her research focuses on using mathematical and statistical modeling with complex data sets to improve disease control programs, with a special interest in One Health and infectious diseases. She has also served on the Scientific leadership team for SHIELD, the COVID-19 control program at the University of Illinois Urbana-Champaign.

John Evancho, MTS, J.D.

John R. Evancho serves as the Chief Compliance Officer for OSF HealthCare. He has held various operational and compliance leadership roles for health care providers and payers. John earned bachelor's degrees from Duquesne University in Pittsburgh, where he was born and raised, and from the Catholic University of Louvain in Belgium, as well as a master's degree from Harvard Divinity School and a law degree from Harvard Law School. He and Laura, his wife, have three college-age daughters.

George Heintz, MSEE, MSPH

George Heintz serves as the Assistant Director of the Health Care Engineering Systems Center, Director of the Health Data Analytics Initiative of the Grainger College of Engineering and serves as the Co-Chair of the OSF HealthCare Data Subcommittee. George develops and delivers data science projects to advance medical research and healthcare delivery. He provides biological modeling, algorithm design, and software development delivered in an iterative process involving clinical stakeholders and a team consisting of engineering faculty and students.

Sheeba Arnold, Ph.D.

Sheeba is a clinical investigator at the Carle Illinois Advanced Imaging Center and Neuroimaging data scientist at the Alan and Lorraine Bressler Clinical and Research Program for Autism Spectrum Disorders at Massachusetts General Hospital. Sheeba received her doctoral degree from Stony Brook University, in Biomedical Engineering. She is passionate about translational neuroimaging and her goal is to apply optimized functional MRI acquisition methods and novel data analysis pipelines for the development of biomarkers.

Jonathon Handler M.D.

Dr. Handler trained as an emergency medicine physician in Washington, D.C. As part of a four-year residency program, where he was able to sub-specialize in clinical informatics. Dr. Handler is the first Senior Fellow to join OSF HealthCare. In this role, he supports each of the OSF Innovation Labs, and act as a strategic adviser to OSF Innovation leadership. He advances efforts to develop breakthrough innovation, transforming care for those the organization serves.

Brenden McGinty

Brendan McGinty is Director of Industry for NCSA, Executive Director for the Center for Digital Agriculture, and Director of Industry for the Center for AI Innovation at University of Illinois Urbana-Champaign, where he connects corporate grand challenges with advanced computing solutions. He is a proud alumnus of University of Illinois Urbana-Champaign.

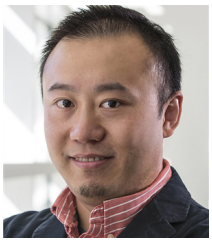
PLEASE SEE IN SPEAKER SECTION:

Yuxiong Wang, Ph.D.

David Liebovitz, M.D.

Bo Lee, Ph.D.

Eric Klee, Ph.D.



Jimeng Sun, Ph.D.

THANK YOU TO OUR 5TH ILLINOIS HEALTH DATA ANALYTICS SUMMIT PLANNING COMMITTEE!

Rebecca Lee Smith	University of Illinois Urbana Champaign
Lav Varshney	University of Illinois Urbana Champaign
Awais Vaid	Champaign Urbana Public Health District
David Liebovitz	Northwestern University
Jared Rogers	OSF HealthCare
Jimeng Sun	University of Illinois Urbana Champaign
John Vozenilek	OSF HealthCare
Jonathan Handler	OSF HealthCare
May Wang	Georgia Tech
Paul Arnold	Carle Hospital
Ravi Iyer	University of Illinois Urbana Champaign
Roy Campbell	University of Illinois Urbana Champaign
Irfan Ahmad	University of Illinois Urbana Champaign
Jodi Schneider	University of Illinois Urbana Champaign
Sridhar Seshadri	University of Illinois Urbana Champaign
Colleen Bushell	University of Illinois Urbana Champaign
Adam Cross	OSF HealthCare
Yuxiong Wang	University of Illinois Urbana Champaign
Maria Jaromin	University of Illinois Urbana Champaign
Elizabeth T Hsiao-Wecksler	University of Illinois Urbana Champaign
Michelle Osborne	University of Illinois Urbana Champaign
Antonios Michalos	University of Illinois Urbana Champaign
George Heintz	University of Illinois Urbana Champaign

ABOUT HCESC

The Health Care Engineering Systems Center (HCESC) at the University of Illinois at Urbana-Champaign was established in 2014 as a research center housed under the Coordinated Science Laboratory in The Grainger College of Engineering. HCESC provides clinical immersion and fosters collaboration between engineers and phy- sicians with expertise in the broad areas of simulation technologies, smart health systems, health data analytics, and medical robotics. The Health Care Engineering Systems Center has grown throughout the past six years as a place where engineer- ing meets medicine in inno- vative ways, designing and developing collaborative solutions that improve health care outcomes.

HCESC manages the Jump Applied Research for Community Health through Engineer- ing and Simulation endowment (ARCHES) with Jump Trading Simulation and Education Center in Peoria, Illinois to provide funding for researchers working at the intersection of health care and engineering. They also manage the Jump Simulation Center located on the University of Illinois campus and the Health Data Analytics Initiative.

THE HEALTH DATA ANALYTICS INITIATIVE

The Health Data Analytics Initiative is a central hub connecting clinical investigators with AI and data scientists at Illinois, committed to enabling and driving fundamen- tal medi- cal research and improving health care delivery by designing tailored AI and data retrieval solutions for our partners. The initiative has received grants from C3.ai Digital Transforma- tion Institute, NSF, and Discovery Partners Institute.

Health Care Engineering Systems Center

@ILHealthEng

Health Care Engineering Systems Center

Connect with us and stay tuned for future events, research opportunities, and more! Subscribe to our monthly newsletter: https://healtheng.illinois.edu/monthly-newsletter/

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AN OSF HEALTHCARE,
UNIVERSITY OF ILLINOIS URBANA – CHAMPAIGN
AND UNIVERSITY OF ILLINOIS COLLEGE OF
MEDICINE PEORIA COLLABORATION