Midwest Healthcare Management Conference

August 12, 2022

Gies College of Business | Carle Illinois College of Medicine

Friday, August 12

7:45 am | Bus from Hyatt to I Hotel & Conference Center

8–8:30 am | Registration & Breakfast

8:30–9 am | Inauguration & Welcome

Professor Stephen A. Boppart, Professor and Grainger Distinguished Chair in Engineering, Executive Associate Dean and Chief Diversity Officer, Carle Illinois College of Medicine, UIUC

Professor Mark Peecher, Deloitte Professor of Accountancy and Executive Associate Dean of Faculty and Research, Gies College of Business, UIUC

Dean Mark S. Cohen, M.D. Dean, Carle Illinois College of Medicine, UIUC and Senior Vice President and Chief Academic Officer of Carle Health

Moderator: Professor Sridhar Seshadri, Alan J. and Joyce D. Baltz Endowed Professor and Area Chair, Information Systems/Operations Management/Supply Chain/Analytics, Gies College of Business, UIUC

9–10 am | Transformation in Healthcare

Statewide Testing Platform: Centralized Statewide Network for Testing Response
Ron Watkins, Gies College of Business, UIUC, SHIELD Illinois

The Foundational Elements Necessary to Implement the Next Generation Suite of Augmented/ Artificial Intelligence Products and Services in Healthcare
Phillip Rowell, MJ, Carle Health

Moderator: Ujjal Kumar Mukherjee, Gies College of Business, UIUC, Carle Illinois College of Medicine, UIUC

10–10:15 am | Break

10:15–11:15 am | Analytics in Healthcare

Impacting the Underserved: Simple Technology Powered by Data/Analytics Engine
Ms. Roopa Foulger, OSF Healthcare

The Economic Value Proposition for Artificial Intelligence and Machine Learning in Software as a Medical Device
Mitch Higashi, PhD, Sema4
Gustavo Stolovitzky, PhD, Sema4

Moderator: Mehmet Eren Ahsen, Gies College of Business, UIUC, Carle Illinois College of Medicine, UIUC

11:15 am–12:30 pm | Lunch & Student Poster Presentations

12:30–1:30 pm | Redesign Healthcare for the Future

Remote Patient Monitoring
Collin Roloff, Christie Clinic
Erika Halsey, CareSignal

Nursing Shortages and Care Re-Design: Building to the Future
Elizabeth Angelo, Carle Health & Carle Foundation Hospital

Moderator: Girish Krishnan, Grainger College of Engineering, UIUC

1:30–1:45 pm | Break

1:45–2:45 pm | Healthcare Delivery to Undeserved Communities

Centering Youth's Health and Wellness: Designing a Third Reconstruction and Chicago Renaissance
Ruby Mendenhall, Liberal Arts and Sciences, UIUC, Carle Illinois College of Medicine, Carl R. Woese Institute for Genomic Biology, Institute of Government and Public Affairs, and Cline Center for Democracy
Ms. Bridgett White

Who Uses a Free Clinic and Why?
Michelle Mao, Medical Student at Carle Illinois College of Medicine, Avicenna Community Healthcare Center
Richard Li, Medical Student at Carle Illinois College of Medicine, Avicenna Community Healthcare Center

2:45–3 pm | Break

3–4 pm | Social Entrepreneurship for Healthcare

Impact at Scale: Serving Rural, Remote Communities
Ted London, Ross School of Business, University of Michigan

Opportunities and Challenges of Large Healthcare Systems in Understanding Risks Within the Populations They Are Treating
Lee Kuhn, Claro Healthcare

Moderator: Ujjal Kumar Mukherjee, Gies College of Business, UIUC, Carle Illinois College of Medicine, UIUC

4–4:15 pm | Break

4:15–5:30 pm | Panel Discussion: Summarizing Challenges & Opportunities for Social Healthcare

Panelists:

Professor Diwakar Gupta
Professor of Information, Risk and Operations Management, McCombs School of Business, The University of Texas at Austin, Austin, TX

Professor J. George Shanthikumar
Richard E. Dauch Chair of Manufacturing and Operations Management and Distinguished Professor of Management, Krannert School of Management, Purdue University, West Lafayette, IN

Professor John R. Birge
Hobart W. Williams Distinguished Service Professor of Operations Management, Booth School of Business, University of Chicago, Chicago, IL

Professor Kingshuk K. Sinha
Professor, Department Chair and Elmer L. Andersen Chair in Sustainable Supply Chain, Supply Chain and Operations, Carson School of Management, University of Minnesota, Minneapolis, MN

Professor Nolan Miller
Daniel and Cynthia Mah Helle Professor of Finance, Gies College of Business, UIUC

Professor Stephen Boppart
Professor and Grainger Distinguished Chair in Engineering, Executive Associate Dean and Chief Diversity Officer, Carle Illinois College of Medicine, UIUC

Moderator: Professor Sridhar Seshadri
Alan J. and Joyce D. Baltz Endowed Professor and Area Chair, Information Systems/Operations Management/Supply Chain/Analytics, Gies College of Business, UIUC

5:30–5:45 pm | Closing Remarks

Professor Amy Wagoner Johnson, Head, Department of Biomedical and Translational Sciences, Carle Illinois College of Medicine; Professor, Department of Mechanical Science and Engineering, UIUC

Professor Carlos Torelli, Department Head and Professor of Business Administration and Zimmerman Faculty Fellow, Gies College of Business, UIUC

5:45–7 pm | Reception & Networking

Session 1: Transformation in Healthcare
Statewide Testing Platform: Centralized Statewide Network for Testing Response

The COVID SHIELD test was developed by researchers at the University of Illinois Urbana-Champaign to enable the U of I System's three campuses to safely reopen in the summer of 2020 amid the coronavirus pandemic. Researchers were tasked with developing a test that was more accurate and less expensive than the invasive nasal swab – and with obtaining results much faster than the 2-3 days it was taking from a using a swab.

They succeeded by creating the innovative saliva-based COVID SHIELD test that quickly detects three genes of the SARS-CoV-2 virus. The saliva-based test is cheaper and easier-to-use than nasal swab-based tests, and results are obtained much faster, too: typically, in under 24 hours.

SHIELD Illinois is the organization that mobilized this testing platform across the state of Illinois. The statewide logistics model ensures swift turnaround time for test results. Over its two years of existence, SHIELD Illinois rapidly adapted and transformed itself to meet the challenges—viral, human, and logistical—that arose from the COVID-19 pandemic. SHIELD Illinois has completed almost 6.5M PcR tests across over 1800 statewide locations. SHIELD Illinois will continue to help stop the spread of COVID-19 in communities across Illinois, and we're well-positioned and ready for the next challenges posed by future pandemics.

Presenter: Ron Watkins
Associate Vice President, University of Illinois System
Director of SHIELD Illinois

Ron Watkins is the Managing Director for SHIELD Illinois, where he launched the COVID SHIELD testing unit to serve the State of Illinois. Ron is also an Associate Vice President for the University of Illinois System. He holds a Clinical Professor appointment in Gies College of Business.

Prior to joining SHIELD Illinois, Ron was the Associate Dean for Strategic Innovation at Gies College of Business, in industry for ten years, and served on active duty as a captain in the US Army. He continues works as an independent consultant through RSWatkins Consulting, specializing in strategic planning and marketing strategy.

During the pandemic, Ron has been asked to speak a several national conferences and invited to Washington DC to advise on how successful testing programs. He has worked with IDPH, CDPH, the Midwest Coordination Center, CDC and Homeland Security on understanding COVID mitigations through testing platforms.

Session 1: Transformation in Healthcare

The Foundational Elements Necessary to Implement the Next Generation Suite of Augmented/Artificial Intelligence Products and Services in Healthcare

Data-driven, informed decision making is more crucial than ever, as healthcare leaders face an unprecedented list of increasingly unique business, clinical, financial, and operational challenges; the ongoing implications of the global pandemic; the new government-mandated Price Transparency Rule and other regulations; overcoming inequity, and an industry-wide shift in care delivery models. This challenging operating environment has necessitated that health systems reevaluate their data science capabilities. Many are rapidly trying to scale their augmented/artificial intelligence adoption in order to achieve accelerated clinical and financial improvements. The majority of today's business intelligence tools (BI) do not include AI capabilities, and those that do are based on predictive modeling, a version of AI that was hyped and quickly adopted in the healthcare setting. While the proliferation was initially positive, healthcare organizations soon realized that self-service predictive models often require tailoring and expert guidance to achieve accurate predictions and results. Further, predictive models are limiting; they are difficult to integrate within workflows, broadly deploy, and sustain, and do not address the many other potential use cases for AI in healthcare. A novel approach to analyzing data, applying innovative methods, and customizing algorithms to specific healthcare dynamics. A comprehensive approach to drive usage and adoption of AI throughout the healthcare system is needed in order to build trust and confidence with clinical and operational stakeholders.

Presenter: Phillip M. Rowell II
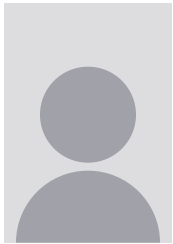MJ Vice President, Clinical and Business Intelligence, Carle Health

Phillip currently serves as the vice president of clinical and business intelligence. Based in Urbana, IL, Carle Health is a vertically integrated system with more than 11,500 employees in its five hospitals, multi-specialty physician groups, health plans and associated healthcare businesses including the Carle Illinois College of Medicine, the world's first engineering-based medical school. As a senior health adminstration executive, he is responsible for the procurement and analysis of data to support the health system. His team enables advanced data analytics, facilitate clinical quality initiatives, support financial analysis, advance clinical research studies, and provide data for key business and market decisions. Prior to joining the leadership team at Carle, he worked as a director in PriceWaterhouseCoopers' global healthcare practice, where he worked with and advised health plans, providers, and government associations. Phil has also held leadership roles at Cerner Corporation and brings a depth of business analytics, solution architecture, and IT project management experience. Phil has led and supported over 40 projects, across 11 countries, on four continents to support clinical transformation and patient care. A Champaign native and graduate of University Laboratory High School, Rowell received his Master of Jurisprudence in Health Law and Bachelor of Business Administration from Loyola University. Mr. Rowell is also an adjunct professor of legal issues in healthcare information technology, and healthcare policy and ethics in the graduate school of Health Professions at Sacred Heart University. He also holds a teaching appointment in the Master of Healthcare Administration program at Loyola University Chicago.

Session 2: Analytics in Healthcare
Impacting the Underserved: Simple Technology Powered by Data/Analytics Engine

Most vulnerable patients (frail and elderly, financially and socially insecure) have social determinants that make it challenging for them to navigate and access a complicated health environment. The mission of clinicians is to serve, but they have so much to deal with on a daily basis. Healthcare is finally evolving and maturing in intelligent digital systems that can support patients and providers.

Presenting digital health technologies that have been implemented at OSF, which identify, monitor, and close gaps for social and clinical risks; and the continuous development of adjacent and breakthrough technologies powered through data and digital front door solutions.

Presenter: Ms. Roopa Foulger
Vice President, Data Delivery, OSF Healthcare

Roopa Foulger has 25 years' experience in Enterprise Information Management, Analytics and Product Development. She is currently the Vice President – Digital & Innovation Development at OSF HealthCare System and has been with the organization for 11 years. At OSF she is responsible for technology strategy for digital transformation and is director of Jump ARCHES Data and Advanced Informatics Lab building Adjacent and Breakthrough solutions.

Prior to joining OSF she was leading enterprise data warehouse/analytics projects for Caterpillar and GlaxoSmithKline.

Some of the areas that she has worked include clinical, financial, customer/market focused analytics, Product forecasting, and Performance Scorecards. Beyond healthcare and life sciences market she has created solutions for telecommunications, banking and insurance sectors.
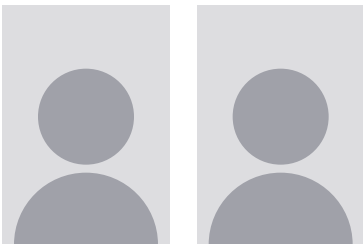
Roopa has a bachelor of science degree in electrical engineering from Bharathiar University, India.

She is board member of HealthCare Data and Analytics (HDAA), an organization with 400 leading healthcare providers.

Session 2: Analytics in Healthcare

The Economic Value Proposition for Artificial Intelligence and Machine Learning in Software as a Medical Device

In September 2021, FDA issued the "Artificial Intelligence/Machine Learning (AI/ML)-Based Software as a Medical Device (SaMD) Action Plan" from the Center for Devices and Radiological Health's Digital Health Center of Excellence. This session will explore the genesis of FDA's interest in this area, how the field is evolving in response to potential regulatory guidance, and areas of unmet need where industry is incentivized to advance the field. Using specific examples, we will present a framework to assess the clinical and economic value of AI/ML solutions and discuss levels of evidence needed to support regulatory standards.

Presenters:

Mitch Higashi, PhD
Senior Vice President, Health Economics, and Outcomes Research at Sema4

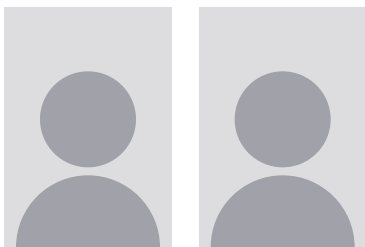**Gustavo Stolovitzky, PhD**
Chief Science Officer at Sema4

Session 3: Redesign Healthcare for the Future
Remote Patient Monitoring

This session will explore how a remote patient monitoring program can help clinicians achieve their population health goals. Attendees will learn how Christie Clinic implemented an RPM program and hear some early results and success stories. We will explore the key considerations when implementing an RPM program, how to gain both patient and provider buy-in, the technology necessary to be successful, and thoughts about how to assess the program's overall success.

Learning Objectives:

• Learn how a remote patient monitoring (RPM) program can help improve patient outcomes and help you achieve your population health goals

• Outline the steps for a successful implementation

• Explore the data used to identify patients for an RPM program as well as the patient-reported data that is captured and tracked

• Discuss what success looks like for an RPM program

Presenters:

Collin Roloff, MBA
Director, Data Analytics & Value-Based Care, Christie Clinic

Erika Halsey, MPH
Director of Account Success, CareSignal (Websites: **Self-Guided Demo** | **CareSignal.health**)

Session 3: Redesign Healthcare for the Future
Nursing Shortages and Care Re-Design: Building to the Future

The past two years have been the most challenging ever experienced in the U.S. healthcare system, and the pandemic has drastically exacerbated nursing shortages which were already plaguing many U.S. hospitals. This talk will present an overview of current challenges, impact to patient care, and opportunities to creatively consider how care can be shaped going forward in collaboration with other industries.

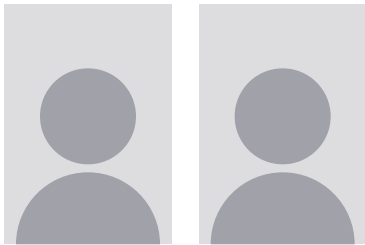**Presenter: Elizabeth Angelo, DNP, RN, CPHQ, NEA-BC**

Elizabeth Angelo is Chief Nurse Executive for Carle Health and President of Carle Foundation Hospital. Elizabeth's career includes experience in cardiology, oncology, nursing education, quality, clinical outcomes, and nursing leadership positions, and Elizabeth previously served as Vice President of Quality for the health system.

Elizabeth earned a BSN from the University of Illinois at Chicago, an MSN from Indiana Wesleyan University, and a Doctorate of Nursing Practice from the University of Missouri. Elizabeth holds national certifications in Healthcare Quality and Nurse Executive – Advanced. She speaks nationally on topics including patient safety, nursing practice, and professionalism and wellbeing, and is passionate about supporting healthcare workers to make their careers sustainable, rewarding, and patient-focused.

Session 4: Healthcare Delivery to Underserved Communities
Centering Youth's Health and Wellness: Designing a Third Reconstruction and Chicago Renaissance

This talk will discuss a new project launched in Chicago, Centering Youth's Health and Wellness: Designing a Third Reconstruction and Chicago Renaissance. Discussion will include the creation of a culture of innovation that centers the health and wellness of Black and Latinx high school students and young adults (up to age 21) living in Chicago. The culture of innovation will include working with 50 youth to co-create a community health workers (CHWs) training that assists young people to address and heal from racial trauma such as police killings, gun violence, and higher rates of COVID-19 deaths due to health disparities. The Siebel Center for Design will take the lead in co-creating the Wellness Store which will have high- and low-tech tools identified by the youth and supported by science. The youth will also be trained as citizen (community) scientists who work with social, behavioral, and life scientists to produce new knowledge about health, disease, and resiliency that is human-centered, community-based, and interdisciplinary. We hope this culture of innovation will be so embedded within the 50 organizations in Chicago that it permeates all areas of the youth's health and well-being and drives community wellness.

Presenters:

Ms. Bridgett White

Ruby Mendenhall
Professor, Kathryn Lee Baynes Dallenbauch Professorship in Liberal Arts and Sciences (Sociology, African American Studies, Urban and Regional Planning, and Social Work); Associate Dean: Carle Illinois College of Medicine; Faculty (Affiliate): Carl R. Woese Institute for Genomic Biology; Institute of Government and Public Affairs and Cline Center for Democracy

Ruby Mendenhall holds the Kathryn Lee Baynes Dallenbauch Professorship in Liberal Arts and Sciences (Sociology, African American Studies, Urban and Regional Planning, and Social Work). She is also the Associate Dean of Carle Illinois College of Medicine for for Diversity and Democratization of Health Innovation. She is a faculty affiliate of Carl R. Woese Institute for Genomic Biology; Institute of Government and Public Affairs and Cline Center for Democracy.

Website: **www.sociology.illinois.edu/people/rubymen**
Projects: Designing Resiliency and Well-being (DRAW) Health Maker Lab Network, STEM IL Nobel Project, and Designing a Third Reconstruction and Chicago Renaissance
TEDxUIUC Talk: "DREAMing and Designing Spaces of Hope"
NSF Lightning Talk: "Communiversity Science™"

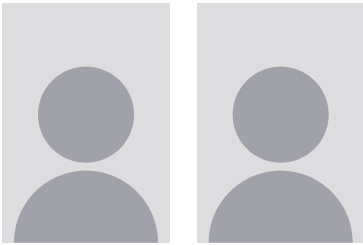# Session 4: Healthcare Delivery to Underserved Communities

Who Uses a Free Clinic and Why?

Introduction: Avicenna Community Health Center (ACHC) is a free clinic located in Champaign, Illinois, that provides primary care to adults. ACHC is run by volunteer physicians, medical students, and undergraduate students. It is open on Sunday afternoons. Here, we report on our patient population, conditions treated, and future directions.

Methods: Our electronic medical record system was queried to collect demographic information and ICD-10 codes from all patient visits.

Results: Since ACHC's inception in 2010, over 500 patients (55% female) have been served. Twelve percent speak a language other than English. Without ACHC, nearly 10% of patients would have utilized the emergency room for non-emergent conditions, and over 20% would have not sought care. The patient population is largely uninsured (73%) due to cost (47%), knowledge deficit (16%), and ineligibility (15%). ACHC largely treats type 2 diabetes mellitus, pulmonary disease, renal disease, and hypertension. Patients treated at ACHC also have several concomitant disorders with an average of 7.8 ICD-10 codes per visit.

Conclusions: ACHC provides chronic disease management for uninsured patients who may have otherwise not sought care or utilized the emergency room for non-emergent cases. Patients using a free clinic have several comorbidities. Future directions for ACHC include the provision of sexual healthcare and a mobile clinic at area homeless shelters.

Presenters:

Michelle Mao
Medical Student at Carle Illinois College of Medicine, Avicenna Community Healthcare Center

Richard Li
Medical Student at Carle Illinois College of Medicine, Avicenna Community Healthcare Center

Session 5: Social Entrepreneurship for Healthcare
Impact at Scale: Serving Rural, Remote Communities

Building innovative enterprises that generate positive social impacts is passion for many. Yet achieving sustainability and scale when targeting rural, remote communities presents many challenges. This session focuses on two key considerations that play an important role in the success, or lack thereof, of these impact-oriented businesses.
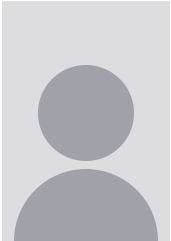

Presenter: Ted London
Ford Motor Company Clinical Professor & Area Chair, Business Administration
Ross School of Business, University of Michigan

Ted London is the Ford Motor Company Clinical Professor and Area Chair of Business Administration at the University of Michigan's Ross School of Business and a senior research fellow at the William Davidson Institute. An internationally recognized expert on the intersection of business strategy and poverty alleviation, his research focuses on building enterprises that achieve impact at scale in low-income markets. London was honored to receive the Aspen Institute's Faculty Pioneer Award and the Ross School's Victor Bernard Teaching Leadership Award, recognizing his enduring impact on the development of inclusive business and how it is taught in the classroom.

Session 5: Social Entrepreneurship for Healthcare

Opportunities and Challenges of Large Healthcare Systems in Understanding Risks Within the Populations They Are Treating

The talk covers the challenges our large health system clients have in understanding the risks within the populations that they are treating, and how we use data to help improve risk profiles.

Presenter: Lee Kuhn
Managing Director, Claro Healthcare

Mr. Kuhn is a Managing Director with Claro Healthcare and is based in Chicago. He specializes in healthcare performance improvement consulting. He has over 25 years' experience consulting with healthcare providers to accurately reflect quality of care and capture appropriate reimbursement. His experience has been focused on providing clinical documentation improvement (CDI) services to clients, including the inpatient, outpatient facility, and professional settings of care. Lee has worked with over 100 healthcare providers ranging from small rural facilities to large urban academic medical centers to multi-hospital health systems. Lee has responsibility for managing the firm's professional encounter CDI practice.

Lee has managed/directed many large CDI engagements for the majority of the last 25 years. Recently, he has been focused on the implementation and oversight of a broad clinical documentation improvement engagement for a multi-hospital health system in the Southeast. That project has extended across the care continuum (inpatient, outpatient facility, and professional fee). The project started initially with an assessment which then led the executive team to rethinking how they had been approaching CDI.

Prior to his role at Claro Healthcare, Lee was a Vice President at Premier, Inc. where he worked with health systems throughout the upper Midwest on a variety of quality improvement, population health, and cost improvement initiatives.

Lee holds a BS in accountancy from the University of Illinois Urbana-Champaign and has professional affiliations with Healthcare Financial Management Association, AICPA, and the Illinois CPA Society.