

**ENGINEERING AT ILLINOIS**



**1st Health Care Engineering Systems Symposium**

**September 15, 2014**

**Chancellor Room**

**I Hotel, Champaign, IL**

**Health Care Engineering Systems Center**



**HCESC-JUMP/ARCHES SYMPOSIUM**

Monday, September 15, 2014

Chancellor Room, I Hotel

**AGENDA**

**8:30 AM - 9:00 AM** Arrival of the Participants

Breakfast and Registration

**9:00 AM - 10:00 AM** Rashid Bashir-Opening of Symposium

Ilesanmi Adesida- Provost, UIUC

Opening Remarks

Kevin Schoeplein - CEO, OSF Healthcare System

Remarks and Presentation of William Di Somma

William Di Somma- Managing Director, Jump Trading

Remarks

Andreas Cangellaris- Dean, COE

Remarks and Presentation of the HCESC Director

T 'Kesh' Kesavadas-Director, Health Care Engineering Systems Center

Remarks

John Vozenilek-Director, Jump Trading Simulation and Education Center

Remarks

Rashid Bashir-Opening of the presentations

**10:00 AM - 10:50 AM** *OSF’s Clinical Agenda*

John Vozenilek Stephen Hippler

Moderator

*Priorities of OSF’s Healthcare Analytics Team*

Mark Hohulin

*Clinical Challenges Facing Nursing Practice and the Complexities of a Highly Technology-driven Clinical Environment*

Lori Wiegand

*Current technologies used in Teleheath and the Potential Areas for Development of New Sensors, Imaging Technology, and Data Visualization*

Suzanne Hinderliter

*Current challenges in home monitoring. Impact of chronic health conditions on home health.*

Lois Bentler-Lampe

*“Black Box” for the Operating Suite*

Ann Willemsen-Dunlap

*Frontiers in Home Sleep Laboratory Monitoring*

Sarah Zallek

*Hydrodynamic Lab for Hydrocephalus Treatment Innovation*

Julian Lin

Break

**11:00 AM - 12:00 noon** *Understanding and Evaluating the Benefits of the Internet of Things for*

Klara Nahrstedt *Health Care*

Moderator Roy Campbell

*Security Concerns in Android mHealth Apps*

Carl Gunter

*Measurement-driven Accident Analysis and Safety-based Design*

Ravishankar K. Iyer

*Human Augmentation System for Insertion of Surgical Devices*

Thenkurussi (Kesh) Kesavadas

*Spherically Convergent Shear Waves during Blunt Head Trauma*

Martin Ostoja-Starzewski

*Biosensor Arrays for Multiplexed Disease Diagnostics*

Brian Cunningham

*Computer-Aided Characterization of Spinal Deformity*

Harry Dankowicz

*Modeling of Soft Tissue Cutting*

Ashraf Idkaidek

*3D, Interactive, Multi-player, Virtual Models for Education and Training of Health Care Personnel*

Rizwan Uddin

*MoboSens: Molecular Precision Wearable Biosensing Electronics Integrated on Ubiquitous Computing Platform*

Gang Logan Liu

**12:00 noon - 1:00 PM** Lunch

Quad Room and Lobby

**1:00 PM - 2:00 PM** *3D Bio-printing for Fabricating Tissue Constructs and Biological*

Rakesh Nagi *Machines*

Moderator Rashid Bashir

*Multiscale Mechanics of Bone*

Iwona Jasiuk

*Decoupled Control of Material Mechanics and Permeability for 3D Cell Culture and Therapies*

Hyunjoon Kong

*Multi-Excitation Magnetic Resonance Elastography for Improved Biological Material Characterization*

Aaron Anderson

*OxiplexTS200, a Non-invasive Absolute Tissue Oximeter for Measurements in the Muscle and the Brain*

Beniamino Barbieri

*Research to Improve Medication Adherence among At-Risk Populations*

Frank Naeymi-Rad

*Biomedical Technology Commercialization Opportunities through an NSF Industry University Cooperative Research Center*

Gregory Pluta

*Technologies for Certification of Medical Devices and Processes*

Sayan Mitra

*Development of Multimodal Multifunctional Probes for Image-guided Surgery*

Wawrzyniec Dobrucki

*Chemical Imaging and Printed Structures for Simulation in Pathology*

Rohit Bhargava

Break

**2:00 PM - 3:00 PM** *Development and Integration of Optical Imaging Devices in Medicine*

Rohit Bhargava*and Surgery*

Moderaror Stephen A. Boppart

*Using Simulation to Study, Evaluate, and Enhance Clinical Judgment*

Alex Kirlik

*Development of a MOtion-Detection Device (MODD) for the Assessment and Training of Cognitive Functioning and Motor Control*

Sean Mullen

*Three-Dimensional Textured Graphene Bioelectronics*

SungWoo Nam

*Graphene Membrane Transistor for DNA Sensing and Manipulation*

Jean-Pierre Leburton

*IOLab: An inexpensive Approach to Wireless ECG's*

Mats Selen

*Portable Powered Orthotic Devices and Movement Simulators*

Elizabeth T. Hsiao-Wecksler

*A system for remote monitoring of rehabilitative physical therapy*

Rama Ratnam

T 'Kesh' Kesavadas

Closing remarks

**Symposium Information**

**Internet Access**

The Wi-Fi is free! You may connect to UI Public for access.

**Organizing Committee**

Rashid Bashir

Rohit Bhargava

T 'Kesh' Kesavadas

Tony Michalos

Rakesh Nagi

Klara Nahrstedt

Paul Pribaz

John Vozenilek

**For more information about the ARCHES program visit:**

Health Care Engineering Systems Center: <http://engineering.illinois.edu/hcesc/>

Jump Simulation & Education Center: <http://www.jumpsimulation.org/>