

WIRELESS HEALTH 2012 CONFERENCE AGENDA

www.wirelesshealth2012.org

TUESDAY, OCTOBER 23 | CONFERENCE SESSIONS

7:00 AM **Registration & Continental Breakfast**

8:45 AM **Welcome & Opening Remarks**

Robert B. McCray – President & CEO, WLSA

9:00 AM **Keynote: From Mars to Main Street**

Jay Sanders, MD, - CEO of The Global Telemedicine Group; Professor of Medicine (Adjunct) at Johns Hopkins School of Medicine; Founding Board Member and President Emeritus, American Telemedicine Association

9:30 AM **Panel Discussion: Big Data**

Moderator: **Roozbeh Jafari, PhD** – Electrical Engineering, UT Dallas

Panelists: **Holly Jimison, PhD** – Medical Informatics & Clinical Epidemiology, OHSU

James McClain, PhD – Physical Activity Epidemiologist, Risk Factor Monitoring & Methods Branch, National Cancer Institute (NCI)

Lucila Ohno-Machado, MD, PhD – Associate Dean for Informatics & Technology, School of Medicine; Founding Chief, Division of Biomedical Informatics; Professor of Medicine, UC San Diego

BREAK

10:45 AM **Keynote: Everyday Health**

Elizabeth Mynatt, PhD – Director, GVU Center; Professor, School of Interactive Computing; Associate Dean for Strategic Planning and Initiatives at the College of Computing, Georgia Tech

11:15 AM **Technical Session #1: Geo-Spatial Assessment for Wireless Health**

Session Chair: Julien Penders, MSc : Program Manager, Body Area Networks, Holst Center/Imec

*** 1.1 - CitiSense: Improving Geospatial Environmental Assessment of Air Quality Using a Wireless Personal Exposure Monitoring System**

Nima Nikzad (University of California, San Diego, US), Nakul Verma (UCSD, US), Celal Ziftci (UCSD, US), Elizabeth Bales (UCSD, US), Nichole Quick (UCSD, US), Piero Zappi (UCSD, US), Kevin Patrick (UCSD, US), Sanjoy Dasgupta (UCSD, US), Ingolf Krueger (UCSD, US), Tajana Šimunić Rosing (UCSD, US), William Griswold (UCSD, US)

1.2 - Individual Mobility Patterns and Real-Time Geo-spatial Exposure to Point-of-Sale Tobacco Marketing

Thomas Kirchner (Legacy Foundation, US), Jennifer Cantrell (Legacy Foundation, US), Andrew Anesetti-Rothermel (Legacy Foundation, US), Jennifer Pearson (Legacy Foundation, US), Sarah Cha (Legacy Foundation, US), Jennifer Kreslake (Legacy Foundation, US), Ollie Ganz (Legacy Foundation, US), Michael Tacoslosky (Legacy Foundation, US), David Abrams (Legacy Foundation, US), Donna Vallone (Legacy Foundation, US)

1.3 - Challenges and Advances in Discovering and Modeling User Location-based Context from Smartphone Data

Edmund Seto (University of California, Berkeley, US), Victor Shia (University of California, Berkeley, US), Jenna Hua (University of California, Berkeley, US)

12:10 PM	LUNCH
1:15 PM	<u>Announcements</u>
1:30 PM	<u>Technical Session #2: Energy Expenditure</u> Session Chair: James McClain, PhD MPH - Program Director, Risk Factor Monitoring and Methods Branch Applied Research Program Division of Cancer Control and Population Sciences, National Cancer Institute * 2.1 - Energy Expenditure Estimation Using Wearable Sensors: A New Methodology for Activity-Specific Models <i>Marco Altini (Holst Centre - imec, NL), Julien Penders (Holst Centre - imec, NL), Oliver Amft (TU Eindhoven, NL)</i> 2.2 - Good Self-Report Measures of Physical Activity vs. Sensors: Let's not throw the baby out with the bathwater <i>Donna Spruijt-Metz (University of Southern California, US), Britni Belcher (National Cancer Institute, US), Ya-Wen Hsu (Chia Nan University of Pharmacy & Science, US)</i> 2.3 - Metrology in Metabolic Measurements <i>John Moon (MEI Research, US)</i>
2:20 PM	<u>Demo Presentation Session</u> Session Chair: John Lach, PhD – Professor and Chair, Electrical & Computer Engineering, University of Virginia 1.1 – Wireless, non-contact driver's ECG monitoring system <i>Shrijit Mukherjee (Plessey Semiconductors Ltd., UK), Robert Breakspear (Plessey Semiconductors Ltd, UK), Sean Connor (Plessey Semiconductors Ltd., UK)</i> 1.2 - Tracking Influence of Reflective Exercise for Persons with Epilepsy <i>Robert F. Dickerson (University of Virginia, US), Enamul Hoque (University of Virginia, US), John A. Stankovic (University of Virginia, US), David Gerdt (Empirical Technologies Corporation, US), Joel G. Anderson (University of Virginia, US), Ann G. Taylor (University of Virginia, US)</i> 1.3 - Demonstration Paper: Integrating Thermoelectric Technology into Clothing for Generating Usable Energy to Power Wireless Devices <i>Ingo Stark (Perpetua Power Source Technologies, Inc., US)</i> 1.4 - Demonstration Paper: Wearable Sensor for Continuously Vigilant Spatial and Depth-Resolved Perfusion Imaging <i>Bijan Mapar (University of California, Los Angeles, US), Yeung Lam (University of California, Los Angeles, US), Alireza Mehrnia (University of California, Los Angeles, US), Barbara Bates-Jensen (University of California, Los Angeles, US), Majid Sarrafzadeh (University of California, Los Angeles, USA), William Kaiser (University of California, Los Angeles, USA)</i> 1.5 - Model-Based Wireless Health System Design Tool <i>Sunit Verma (Arizona State University, US), Joseph Milazzo (Arizona State University, US), Yu Xie</i>

(Arizona State University, US), Priyanka Bagade (Arizona State University, US), Ayan Banerjee (Arizona State University, US), Sandeep K.S. Gupta (Arizona State University, US)

1.6 - Confined Intra-Arm Communication for Medical Applications

Trang Thai (Georgia Institute of Technology, US), Gerald DeJean (Microsoft Research, US), Ran Gilad-Bachrach (Microsoft Research, US)

1.7 - Fall Detection and Risk of Falling Assessment with Wearable Sensors

Bor-rong Chen (BioSensics LLC, US), Joseph Gwin (BioSensics LLC, US)

3:00 PM

BREAK

3:30 PM

Keynote: Delivering Improved Outcomes for Chronic Disease Patients

Lionel Tarassenko, CBE, FEng, DPhil – Chair in Electrical Engineering at Oxford University and Director of the Oxford Institute of Biomedical Engineering

4:00 PM

Panel Discussion: Evidence

Moderator: Donna Spruijt-Metz, PhD – Keck School of Medicine, Dept. of Preventive Medicine, USC

Panelists: Bill Riley, PhD – Chief, Science of Research and Technology Branch, NCI
Ida Sim, MD, PhD – UCSF School of Medicine
Jack Young – Director, Qualcomm Ventures
Noam Ziv - Chief Executive Officer & Founder, Kesembe Inc

4:45 PM

Technical Session #3: System Optimization for Wireless Health

Session Chair: Allen Yang – CTO, Atheer; Principal Investigator, UC Berkeley

3.1 - Power Constrained Sensor Sample Selection for Improved Form Factor and Lifetime in Localized BANs.

Vishwa Goudar (University of California, Los Angeles, US), Miodrag Potkonjak (University of California at Los Angeles, US)

3.2 - Impact of Sensor Misplacement on Dynamic Time Warping Based Human Activity Recognition Using Wearable Computers.

Nimish Kale (The University of Texas at Dallas, US), Jaeseong Lee (ESSP Lab, UT Dallas, US), Reza Lotfian (UT Dallas, US), Roozbeh Jafari (UT Dallas, US)

3.3 - A Methodology for Developing Quality of Information Metrics for Body Sensor Design.

Italo Armenti (University of Virginia, US), Philip Asare (University of Virginia, US), Juliana Su (University of Virginia, US), John Lach (University of Virginia, US)

5:30 PM

Reception, Demo & Poster Sessions

WEDNESDAY, OCTOBER 24 | CONFERENCE SESSIONS

7:00 AM **Registration & Continental Breakfast**

8:50 AM **Welcome & Opening Remarks**

9:00 AM **Keynote: Health Reform Re-Frames The Market: Wireless Solutions Meet New Market Needs**

Molly Coye, MD, MPH, Chief Innovation Officer of the UCLA Health System

9:30 AM **Panel Discussion: Healthcare Delivery & Readmission**

Moderator: Kathy Duckett – Director, Training & Development, Sutter Center for Integrated Care

Panelists: Navin Govind – CEO, Aventyn

Michael K. Ong, MD, PhD - Assistant Professor, Internal Medicine & Health Services Research, Department of Medicine, David Geffen School of Medicine, UC Los Angeles

Nicole Orr, MD – Cardiologist, St. Francis Hospital

10:15 AM **BREAK**

10:45 AM **Technical Session #4: End-to-end Research**

Session Chair: Fahd Albinali, PhD – CTO, EveryFit

4.1 - WANDA: An End-to-End Remote Health Monitoring and Analytics System for Heart Failure Patients.

Mars Lan (University of California, Los Angeles, US), Lauren Samy (UCLA, US), Nabil Alshurafa (UCLA, US), Myung-kyung Suh (UCLA, US), Hassan Ghasemzadeh (UCLA, US), Aurelia Macabasco-O'Connell (UCLA, US), Majid Sarrafzadeh (UCLA, US)

*** 4.2 - BeWell+: Multi-dimensional Wellbeing Monitoring with Community-guided User Feedback and Energy Optimization**

Mu Lin (Dartmouth College, US), Nicholas Lane (Microsoft Research Asia, CN), Mashfiqui Mohammad (Cornell University, US), Xiaochao Yang (Dartmouth College, US), Hong Lu (Dartmouth College, US), Giuseppe Cardone (University of Bologna, IT), Shahid Ali (Dartmouth College, US), Afsaneh Doryab (IT University of Copenhagen, DK), Ethan Berke (Dartmouth College, US), Andrew Campbell (Dartmouth College, US), Tanzeem Choudhury (Cornell University, US)

4.3 - Experiences with an End-To-End Wireless Clinical Monitoring System

Rahav Dor (Washington University in St. Louis, US), Gregory Hackmann (Washington University in St. Louis, US), Zicheng Yang (Washington University in St. Louis, US), Chenyang Lu (Washington University in St. Louis, US), Yixin Chen (Washington University in St. Louis, US), Marin Kollef (Washington University in St. Louis, US), Thomas Bailey (Washington University in St. Louis, US)

11:35 AM **Keynote: Transforming Health Care Through Wireless and Big Data**

John Mattison, MD – Chief Medical Information Officer, Kaiser Permanente

12:05 PM **LUNCH**

1:15PM **Overview of Health Data Safety & Security**

Greg Rose – Senior Vice President of Technology, Qualcomm

1:30 PM **Panel Discussion: Health Data Safety & Security**

Moderator: Greg Rose – Senior Vice President of Technology ,Qualcomm

Panelists: David Kotz, PhD – Department of Computer Science & Associate Dean of the
Faculty for the Sciences, Dartmouth
Kate Black, JD – Staff Council, Center for Democracy and Technology

2:15 PM **Technical Session #5: Aging, Elderly and Dealing with Longevity**

Session Chair: Adam Barth, PhD – Principal Engineer, BeClose

5.1 - Aiding Diagnosis of Normal Pressure Hydrocephalus with Enhanced Gait Feature Separability

Shanshan Chen (University of Virginia, US), Adam T. Barth (UVA, US), Jeffrey T. Barth (UVA, US), Bradford Bennett (UVA, US), Maité Brandt-Pearce (UVA, US), Donna Broshek (UVA, US), Jason Freeman (UVA, US), Hillary Samples (UVA, US), John Lach (UVA, US)

5.2 - Automatic Fall Detection and Risk of Falling Assessment with Wearable Sensors

Bor-rong Chen (BioSensics LLC, US), Joseph Gwin (BioSensics LLC, US), Bijan Najafi (University of Arizona, College of Medicine, US)

5.3 - Activity Monitoring and Outcome Measurements by Remotely Sensing Daily Mobility and Exercise in Disabled Persons

Bruce H. Dobkin (University of California, Los Angeles, US), Andrew Dorsch (University of California, Los Angeles, US), William Kaiser (University of California, Los Angeles, US)

3:05 PM **BREAK**

3:30 PM **Panel Discussion: Global Health**

Moderator:

Panelists: Chandil Gunasekharan, PhD, MBBS – COO, Narayana Hrudalaya Hospitals
Shyam Vasudev Rao, PhD – President & CTO, Forushealth

4:15 PM **Late Breaking Research Abstract Session:**

Session Chair: John Lach, PhD – Professor and Chair, Electrical & Computer Engineering, University of Virginia

1.1 - Remote Activity Monitoring Quantifies Changes in Gait During Acute Inpatient Rehabilitation

Andrew Dorsch (University of California, Los Angeles, US), Seth Thomas (University of California, Los Angeles, US), Celia Xu (University of California, Los Angeles, US), William Kaiser (University of California, Los Angeles, US), Bruce Dobkin (University of California, Los Angeles, US)

1.2 - Inertial Measurement-based Speed Skater Tracking

*Kanishka Jayawardene (McGill University, Canada), Jerome Carriot (McGill University, Canada)
Zeljko Zilic (McGill University, Canada), Kathleen Cullen (McGill University, Canada)*

1.3 - Wireless-Enabled Pedaling Exercise in Bed Lessens Neuromuscular Deconditioning in Critically Ill Patients

Andrew Dorsch (University of California, Los Angeles, US), Seth Thomas (University of California, Los Angeles, US), William Kaiser (University of California, Los Angeles, US), Bruce Dobkin (University of California, Los Angeles, US)

1.4 - Crowd-Sourced Micro-Processing of Mobile Photographs for Health-Related Field-Surveillance

Michael Tacelosky (Legacy Foundation, USA), Jennifer Pearson (Legacy Foundation, USA), Jennifer Cantrell (Legacy Foundation, USA), Ollie Ganz (Legacy Foundation, USA), Jennifer Kreslake (Legacy Foundation,

USA), David Abrams (Legacy Foundation, USA), Donna Vallone (Legacy Foundation, USA), Thomas Kirchner (Legacy Foundation, USA)

1.5 - Youth-participatory Approach to Inform the Development of SMS Messages to Promote Sun Safe Behaviors in Adolescents

Melanie Hingle (University of Arizona, USA), Eden Ellison (Mel & Enid Zuckerman College of Public Health, USA), Naja McKenzie (University of Arizona Cancer Center, USA), Cynthia Thomson (Mel & Enid Zuckerman College of Public Health, USA), Robert Logan (National Library of Medicine, USA), Robin Harris (Mel & Enid Zuckerman College of Public Health, USA)

4:45 PM

Technical Session #6: Intervention and Wireless Health

Session Chair: Andrew Rajj, Ph.D. - Assistant Professor, Department of Electrical Engineering
Courtesy, Assistant Professor, Department of Computer Science and Engineering, University of South Florida

6.1 - Decreasing Sedentary Behavior in Overweight Youth Using a Real-Time Mobile Intervention

Donna Spruijt-Metz (University of Southern California, US), Gillian O'Reilly (USC, US), Shrikanth Narayanan (USC, US), Murali Annavaram (USC, US), Ming Li (USC, US), Sangwon Lee (USC, US), Cheng Kun Wen (USC, US)

6.2 - Leveraging Mobile Technology in the Delivery of Behavioral Interventions Targeting Substance Use Disorders

Lisa A. Marsch (Center for Technology and Behavioral Health, Dartmouth College, US)

6.3 - Facilitating Medication Adherence and Eliminating Therapeutic Inertia Using Wireless Technology: Proof of Concept Findings with Uncontrolled Hypertensives and Kidney Transplant Recipient

John W McGillicuddy (Medical University of South Carolina, US), Mathew J Gregoski (Medical University of South Carolina, US), Brenda M Brunner-Jackson (Medical University of South Carolina, US), Ana K Weiland (Medical University of South Carolina, US), Sachin K Patel (Medical University of South Carolina, US), Rebecca A Rock (College of Charleston, US), Eveline M Treiber (College of Charleston, US), Lydia K Davidson (College of Charleston, US), Frank A Treiber (Medical University of South Carolina, US)

5:35 PM

Reception, Demo & Poster Sessions

THURSDAY, OCTOBER 25 | CONFERENCE SESSIONS

7:00 AM **Registration & Continental Breakfast**

8:50 AM **Welcome & Opening Remarks**

Rob McCray, WLSA

9:00 AM **Panel Discussion: Government Initiatives and Opportunities**

Moderator: Bill Riley, PhD – Chief, Science of Research and Technology Branch, NCI

Panelists: Misha Pavel, PhD – Program Director, NSF

Bakul Patel, MS – Policy Advisor, Office of the Center Director, CDRH, FDA

10:00 AM **BREAK**

10:30 AM **Technical Session #7: Emerging Technologies for Wireless Health**

Session Chair: Mike Chi, PhD – Founder & CEO, Cognionics

7.1 - Dual-Mode Tongue Drive System: Using Speech and Tongue Motion to Improve Computer Access for People with Disabilities

Xueliang Huo (Microsoft Interactive Entertainment Business), Hangu Park (GT-Bionics Lab, Georgia Institute of Technology), Maysam Ghovanloo (GT-Bionics Lab, Georgia Institute of Technology)

7.2 - Chip and system design for on-body wireless sensing

Brian Otis (Department of Electrical Engineering, University of Washington, US)

7.3 - Physiological Sensors for Wireless Health: Challenges and New Directions

Yu M. Chi (Cognionics, Inc., USA), Gert Cauwenberghs (University of California, San Diego, USA)

11:20 AM **Paper Awards Presentations**

11:30 AM **Closing Keynote: Engaging the Next Billion**

Nathan Eagle, PhD – CEO and Co-founder, Jana (formerly txteagle); Adjunct Assistant Professor, Harvard University; Visiting Assistant Professor, MIT Media Laboratories; Research Assistant Professor, Northeastern University

12:00 PM **Closing Remarks**

12:05 PM **Light Lunch served**

* Best Paper Award Nominees