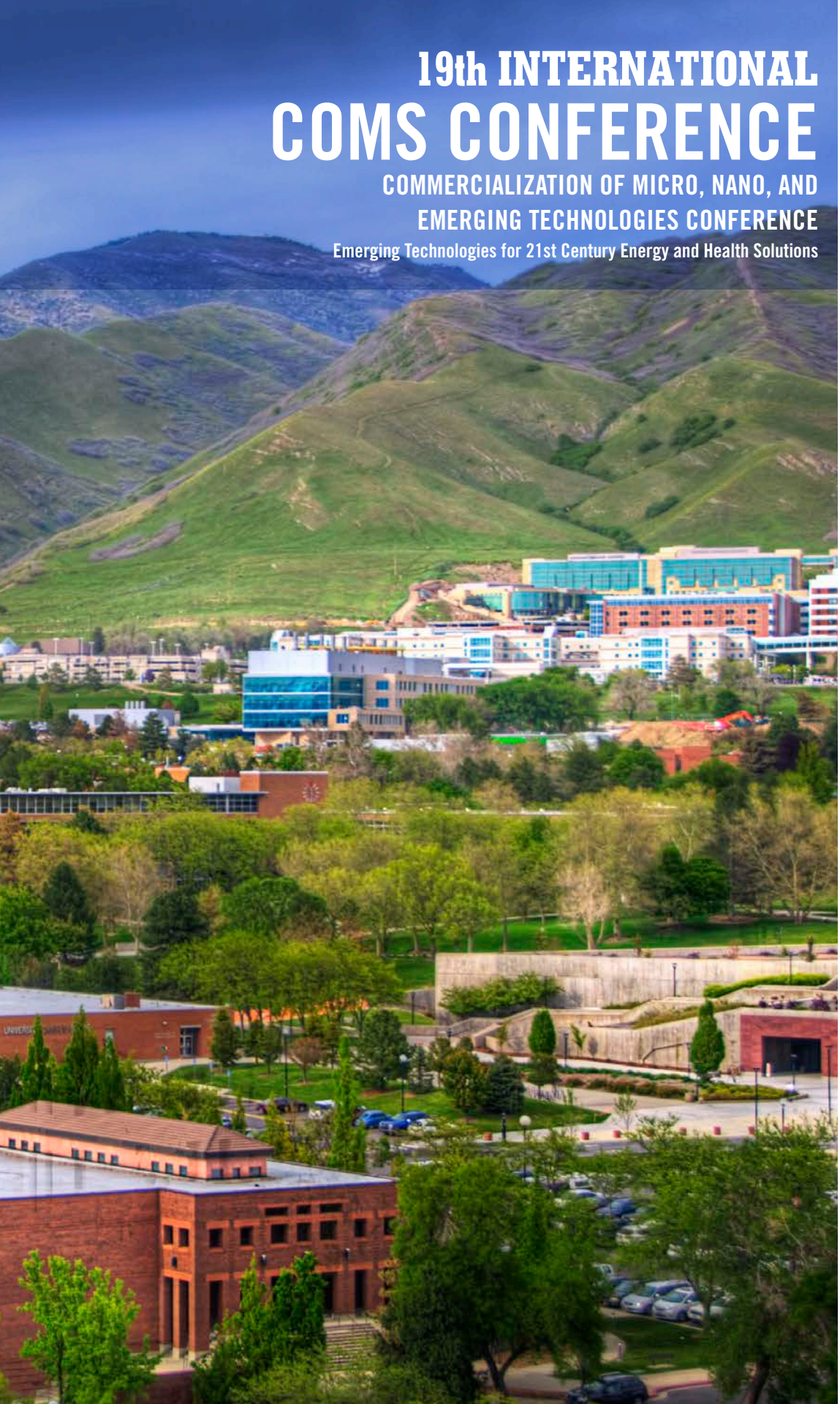
19th INTERNATIONAL COMS CONFERENCE

COMMERCIALIZATION OF MICRO, NANO, AND EMERGING TECHNOLOGIES CONFERENCE

Emerging Technologies for 21st Century Energy and Health Solutions



PROGRAM

nanoUtah 2014

COMS

CONFERENCE 2014 | SALT LAKE CITY, UTAH

CONFERENCE HOSTS:

Center For
ENGINEERING INNOVATION
COLLEGE OF ENGINEERING | THE UNIVERSITY OF UTAH

MANCEF

www.mancef.org

DEAR ATTENDEES OF COMS 2014

I welcome you at COMS 2014 in Salt Lake City, Utah, on behalf of MANCEF. MANCEF is the Micro, Nano, and Emerging Technologies Commercialization Education Foundation, a global membership association focused on the commercialization of small technologies. MANCEF's premier product is COMS, the Commercialization of Micro and Nano Systems conference, an annual event focused primarily on the process of commercialization, on entrepreneurship and marketable solutions. It is a hands-on, practical meeting to assist you in bringing your products to market, finding new customers, or the perfect development partner.

The strength of COMS is that it brings together leaders from all over the world and every sector of industry, from high tech companies, national labs, regional development and government agencies, investment and consulting groups, market researchers, educators and students. The common interest of this COMS community is in supporting and accelerating commercialization activities among established and emerging micro and nano businesses.

COMS travels around the world since 1994; it is carried by a global community of experts in nano and micro technologies and the respective businesses in small-tech. COMS provides its attendees with an unique opportunity to get to know each other personally and to expand their professional networks. Most COMS conferences in the past were organized by a local organizer together with MANCEF. For COMS 2014 the University of Utah Center for Engineering Innovation assumed the responsibility for hosting the conference. Traditionally, COMS addresses issues of actual global interest to our community; the current approach towards successful commercialization of novel micro and nano products led this year again to the overall conference theme connecting different worlds, realizing creative systems. Some topics to be discussed at COMS 2014 are entrepreneurship, applications and market opportunities for enabling micro- and nanotechnologies, the investor's and the company's point of view in commercialization, and new approaches in technology and innovation education.

Organizing an international COMS conference is a formidable challenge and task, which requires a highly dedicated team working hard through good times and bad times over at least one year. I am deeply grateful that we had a great partner with the University of Utah in making COMS 2014 happen.

A conference like COMS depends vitally on partners, sponsors and exhibitors. They are key components in our efforts to accelerate commercialization of nano and micro products and to develop business strategies. We are very glad and grateful for their interest and generous support. The final program, both in presentations and exhibitions, is exciting. I thank our speakers in advance for the quality they have brought into COMS 2014.

Finally, I thank you all for attending COMS 2014 and look forward to meeting you in Salt Lake City!

Volker Saile, President MANCEF

DEAR COMS COLLEAGUES

On behalf of the COMS 2014 organizing committee, we are pleased to welcome you to beautiful Salt Lake City, UT. COMS 2014 comes back to the United States after COMS 2013 was held in the Netherlands and COMS 2012 in Norway. We have an exceptional program of speakers which include including serial entrepreneurs, funding specialists, researchers, industry leaders, and government policy makers . The program includes 10 exceptional keynote speakers, 14 speaker sessions, 2 expert panels, a Young Technology Award competition, company tours, and many other networking & socializing opportunities.

This year we have combined the COMS conference with the nanoUtah conference, a local conference with participants from the University of Utah, Brigham Young University, and Utah State University that highlights breakthroughs in nanotechnology from the leading academic institutions in Utah. The poster sessions are sponsored and organized by the nanoUtah committee.

The conference this year is focused on commercialization of emerging technologies in the energy and biomedical healthcare industries. Emerging technologies like Micro- and nanotechnologies are providing the basis for great changes in the energy sector. They are the basis for advances in renewable biofuels, improved photovoltaics, energy storage, and other areas. The healthcare industry is also bvenfiting form emerging technolog based solutions. MEMS, Nanotechnology, Biology, Computational sciences and advanced chemistries are among the emergent technologies that are are combining to generate revolutionary advances in medicine and improved quality of care for patients.

We wish to express appreciation to our sponsors and exhibitors are supporting the conference. We encourage you to visit the exhibitor areas and learn about the exciting products and services being offered by our exhibitors. Networking and collaboration opportunities with experts from all stages from concept to funding to manufacturing and marketing are plentiful throughout the conference.

There are opportunities for learning and growth for individuals and companies at our conference and we hope that you will take advantage of the opportunity. There is exceptional expertise at the conference in the many diverse knowledge areas required to commercialize emergent technology based products. We have worked hard to create value for you at this years COMS and hope your experience this year will generate interest to interact at COMS conferences for years to come.
On behalf of the COMS Organizing Committee, the Co-Chairs of the conference welcome you to COMS 2014!

Steve Walsh
University of New Mexico

Florian Solzbacher
University of Utah

Derek Dosdall
University of Utah

COMS
CONFERENCE 2014 | SALT LAKE CITY, UTAH

DEAR nanoUtah PARTICIPANTS AND GUESTS,

On behalf of the organizing committee I would like to welcome you to nanoUtah 2014, which this year partnered with the internationally renowned COMS meeting (Commercialization of Micro and Nano Systems: www.mancef.org). With nanoUtah being a collaborative effort between academic institutions, local industry and government agencies interested in the discovery, development and commercialization of nanotechnologies in Utah, the economic growth in our state as well as the state's investment into USTAR (Utah Science Technology and Research Initiative) and local infrastructure lead COMS to identify Utah as a unique place to highlight to the international micro and nanotechnology business community.

Since 2003 nanoUtah has been held annually with participation and support of faculty and students from institutions of higher education in Utah, scientists from industry, local community leaders and businesses, and leading national and international experts. We are excited about this years' arrangement, which offers an exceptional opportunity for Utah's academic as well as business community to be exposed to a much broader and also international audience with impact on academia and business in Utah.

Since the Nano Institute of Utah was established in 2008, multiple synergistic interdisciplinary alliances were created successfully, continuing and building upon collaborative research, education, and commercialization in Utah. Key research areas in nanotechnology in the state include, but are not limited to, materials for plasmonics and organic spintronics, nanobiosensors, interfacial sciences, system integration, drug delivery, and nanotoxicology. Our colleagues in these disciplines have partnered with USTAR, the College of Engineering and the University VP's to additionally create hard physical assets, which we will be proudly showcasing during this meeting: First the MEB microfab and Surface Analysis and nano Imaging lab, then beautiful SMBB building, housing the new Micron Microscopy Suite, the new Utah Nanofab with its brand-new Microfluidics Prototyping Lab, and the Center for Engineering Innovation, kicked off last year. We are inviting COMS and all nanoUtah attendees to take advantage of the opportunity, let us be your host and tour these fine facilities.

The establishment of the Nanotechnology Training Program as well as the National Science Foundation-funded Integrative Graduate Education and Research Traineeship Program on Nanobiosensors, Nanomaterials, and Microfluidics were milestones in training the next generation of scientists in the state. Training in nanotechnology in Utah has not been limited to undergraduate and graduate settings at universities. Each year on "Nano Days", in partnership with the Natural History Museum of Utah, educational programs about nanoscale science and engineering and its potential impact on the future are held for students from 1st thru 12th grade. In addition, the Science Olympiad (grade 7-12) program launched in 2012 at the U of Utah from the Nanofab and College of Engineering, sponsors an annual materials science / nanotech event with scholarships and opportunities to work in the Nanofab as high school students or freshmen.

Together with the COMS and the MANCEF team, nanoUtah developed a comprehensive program encompassing topics in materials and characterization, devices, sensors, energy, catalysis, environment, and medicine. A panel of distinguished experts will address challenges in commercialization of nanotechnologies. I would like to take this opportunity to thank the keynote and invited speakers for sharing their latest results. This conference would not have been possible without the generous support of sponsors and unwavering enthusiasm brought to the table by both U of Utah faculty and COMS leadership. Finally my sincere thanks goes to the organizing committee for their hard work in putting this program together. We are extending a warm and heartfelt welcome to our guests from out of state and are proud for our students, faculty and local business community to be able to interact and showcase their unique talents. Hope you all will have a few enjoyable and productive meeting days in beautiful Salt Lake City this fall.

Margit M. Janát-Amsbury
University of Utah
nanoUtah Committee Chair

nanoUtah 2014

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Comercialization of Micro-Nano Systems CONFERENCE

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About Zions Bank

Founded in 1873, Zions Bank is Utah's oldest financial institution and operates 126 full-service financial centers across Utah and Idaho. Over the course of its 140 years in business, Zions has grown to $18 billion in assets.

In addition to a wide range of traditional banking services, Zions offers a comprehensive array of investment and mortgage services, and has a network of loan origination offices for small businesses nationwide.

Zions Bank is a subsidiary of Zions Bancorporation, one of the nation's premier financial services companies, consisting of a collection of great banks in select high-growth markets. Zions Bancorporation operates its banking businesses under local management teams and community identities through nearly 500 offices in 11 Western and Southwestern states. The company is included in the S&P 500 and NASDAQ Financial 100 indices.

Zions Bank has ranked as the top SBA lender in Utah for the past 20 consecutive years and in Idaho for the past 12 consecutive years. It has been recognized with the Greenwich Excellence Award for its service to small and mid-sized businesses and for its treasury products. For more information, visit www.zionsbank.com

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COMMERCIAL MICRO MANUFACTURING

PROGRAM

SUNDAY 12 OCTOBER

BOOTCAMP

Murano Room

Refreshments and Introductions **BOOTCAMP MENTORS:** **Steve Walsh,** Anderson School of Management, University of New Mexico **Jim Smith,** Commonwealth Sensor, LLC **Shay Curran,** Institute for NanoEnergy (INE), University of Houston, CEO/Chairman C-Voltaics **Janusz Bryzek,** T Sensors Summit **Job Elders,** Nanotech Ventures B.V. **Robert Mehalso,** MANCEF **Robert Haak,** Insight InterAsia **Opening Remarks** **Dr. Walsh** **Job Elder**	12:00
Pitch Training - Session One	13:00
BREAK - Grand Ballroom AD	15:00
Pitch Training - Session Two	15:30
EVENING/DINNER BREAK	17:00
Pitch Training - Session Three	17:45
Closing Remarks	19:00

POSTER ENERGY AND EMERGING TECHNOLOGIES

EET-P1 **ChangJin Choi,** Utah State University: Department of Mechanical and Aerospace Engineering
Impact of mass and lattice difference on thermal coundary conductance

EET-P2 **Cody Cushman,** Brigham Young University: Department of Chemistry and Biochemistry
Fast, Microfabricated, Normal Phase TLC Plates based on Carbon Nanotube Forest Scaffolds

EET-P3 **Robert K Ehrmann,** Nanotechnology Applications and Career Knowledge (NACK) Network at Penn State
The Nanotechnology Applications and Career Knowledge (NACK) Network

EET-P4 **Emily Fullwood,** University of Utah: Department of Chemistry
Reversible assembly of novel ultrafiltration membranes made of polymer-modified silica nanopartiles

EET-P5 **Erica Green,** University of Utah: Department of Chemistry
Lithium Ion Conductive Materials Assembled from Comb Polymer-Modified Nanoparticles

EET-P6 **Jeff Huber,** SolaPur LLC
Solar-driven Water Purification via Photocatalytic Oxidation of Chemical Pollutants and Escherichia coli with Titanium Dioxide Nanotube Arrays

EET-P7 **Josh Horton,** Utah State University: Biological Engineering and Biology Departments
Metal Oxide Nanoparticle Fate in Natural Soils

EET-P8 **Alexander S. Ivanov,** Utah State University: Department of Chemistry and Biochemistry
Inorganic Double-Helix Nanocoils for Future Microelectronic Devices

EET-P9 **Daniel Jacobs,** University of Utah: Materials Science and Engineering
Multifunctional Molecular Surface Treatments for Perovskite Solar Cells

EET-P10 **Nan Jiang,** Utah State University: Department of Chemistry and Biochemistry
Electrodeposited nickel-sulfide films as competent hydrogen evolution catalysts in neutral water

EET-P11 **Ivan A. Popov,** Utah State University: Department of Chemistry and Biochemistry
Complexes between Planar Boron Clusters and Transition Metals: A Photoelectron Spectroscopy and Ab Initio Study of CoB_{12}^- and RhB_{12}^-

EET-P12 **MD Mahbubur Rahman,** University of Utah: Departments of Electrical and Computer Engineering
Energy Harvesting System Based on Micofluidics

EET-P13 **Bhupinder Singh,** Brigham Young University: Department of Chemistry and Biochemistry
The Equivalent Width as a Figure of Merit for XPS Narrow Scans

EET-P14 **Benjamin C. White,** Utah State University: Department of Mechanical and Aerospace Engineering
Diameter Dependence of Carbon Nanotube Growth from Different Stoichiometric Ratio Nickel Silicide Films

EET-P15 **David Wood,** Utah State University: Department of Mechanical and Aerospace Engineering
Reduced Thermal Contact Resistance from Vertically Aligned Carbon Nanofiber-Polymer Composites

EET-P16 **Jiang Yu,** University of Utah: Department of Chemistry
Synthesis and characterization of surface-functionalized aluminum and boron nanoparticles in hypergolic ionic liquid propellants

POSTER TECHNOLOGY TRANSFER

TT-P1 **Alyssa John,** Utah State University: Department of Mechanical and Aerospace Engineering
Thermal Conductivity Enhancement of PCMs using Nanoparticles

TT-P2 **Duncan McClure,** University of New Mexico: Southwest Center for Microsystems Education
Mapping the Microsystems and Nanotechnology Industry and Educational Needs

TT-P3 **Tram Nguyen,** University of Utah: Department of Chemical Engineering and Electrical Engineering
Biosensor array based on smart hydrogels for continuous monitoring in single-use bioreactors

TT-P4 **Chen Wang,** University of Utah: Department of Materials Science and Engineering
In-situ Mixture of N-type and P-type Organic Nanowires for Durable, Selective and Sensitive Sensors for Saturated Hydrocarbons

TT-P5 **Na Wu,** University of Utah: Nano Institute of Utah, Department of Materials Science and Engineering
Ammonia Vapor Sensor Based on Surface Modified Reduced Graphene Oxide

TT-P6 **Jae Sung Yoon,** Korea Institute of Machinery and Materials (KIMM): Department of nano machining
A study on the arrangement of the nano particles onto the micro structures and its application

POSTER — EMERGING TECHNOLOGIES IN BIOMEDICAL HEALTHCARE

ETBH-P1	**Josh Adams,** Utah State University: Utah Water Research Laboratory and Department of Civil and Environmental Engineering *Are green-synthesized silver nanoparticles causing increased oxidative stress in bacteria?*
ETBH-P2	**Aliyah Almomen,** University of Utah: Departments Obstetrics and Gynecology, Pharmaceutics and Pharmaceutical Chemistry *Thermosensitive Progesterone Hydrogel: A Safe and Effective New Formulation for Vaginal Application*
ETBH-P3	**Sungpil Cho,** University of Utah: Departments Obstetrics and Gynecology, Pharmaceutics and Pharmaceutical Chemistry *A Mucoadhesive Hybrid Gel System For Intraperitoneal Platinum Delivery*
ETBH-P4	**Nick Frazier,** University of Utah: Departments of Bioengineering and Pharmaceutics and Pharmaceutical Chemistry, Utah Center for Nanomedicine, Nano Institute of Utah *Enhanced, Targeted Polymer Therapeutics: Heat Optimization and Potential Complement Activation*
ETBH-P5	**Abul Bashar Mohammad Giasuddin,** Utah State University: Department of Biological Engineering *Turbidimetric analysis of hydrophobic alkoxysilanes hydrolysis and condensation kinetics*
ETBH-P6	**Cynthia Hanson,** Utah State University *Use of SERS Magnetic Nanoparticles to Concentrate and Identify Mycobacteria*
ETBH-P7	**Dallin Hubbard,** University of Utah: Department of Bioengineering, Utah Center for Nanomedicine, Department of Pharmaceutics and Pharmaceutical Chemistry *Transepithelial transport of PAMAM dendrimers across isolated intestinal tissue*
ETBH-P8	**Kyle Isaacson,** Utah State University: Department of Biological Engineering *Advancements in time-dependent stability of PEG-silanized ZnO nanoparticles for nanomedicine applications*
ETBH-P9	**Nathan D. Israelsen,** Utah State University: Department of Biological Engineering *Surface-Enhanced Raman Scattering (SERS) Nanoprobes for Detecting Hematological Malignancies*
ETBH-P10	**Evelyn Kimbrough,** University of Utah: Department of Chemistry *Determination of critical micelle concentrations using a new solvatochromatic dye*
ETBH-P11	**Patrick Kolbay,** University of Utah: Department of Chemistry *Synthesis and Study of Biodegradable Periodic Mesoporous Organosilica Nanoparticles*
ETBH-P12	**Elise Lebiga,** Southern Methodist University, Dallas, TX *Smart Phone Integrated Lab-On-Paper Device for Nanomolar Levels of H202 Detection*
ETBH-P13	**Mary L. Nelson,** Salt Lake Community College: InnovaBio and STUDENTfacturED *Bacterial Production and Purification of Insect Recombinant Odorant Binding Proteins*
ETBH-P14	**Amberlyn Peterson,** University of Utah: Department of Chemistry, Cell Center *DNA Micelles as Programmable Materials for Biosensing and Responsive Drug Delivery*
ETBH-P15	**Azadeh Poursaid,** University of Utah: Department of Bioengineering, Nano Institute of Utah, MD-PhD Program Utah School of Medicine *Development of Silk-Elastinlike Protein Polymers as Liquid-To-Solid Embolic Agents*
ETBH-P16	**D. Christopher Radford,** University of Utah: Department of Bioengineering *Quantification of Polymer Backbone Degradation using Fluorescence Resonance Energy Transfer*
ETBH-P17	**Darren Stirland,** University of Utah: Department of Bioengineering *In Vivo Spatio-Temporal Analysis of Multiple Doses in Xenograft Tumors*
ETBH-P18	**Zhesen Tan,** University of Utah: Department of Chemistry and the Center for Cell and Genome Science *DNA-Based Micelles as Nano-Sized Carriers for Responsive Drug Delivery*
ETBH-P19	**Chieh-Hsiang Yang,** University of Utah: Department of Obstetrics and Gynecology and Bioengineering *Hormone Induced Atypical Endometrial Hyperplasia Mouse Model Recapitulating Human Disease Progression, Histology, and Genetic Aberration*

Posters are displayed in the Imperial Ballroom Reception area

POSTER SESSION SPONSORED BY:

nanoUtah 2014

Poster Awards will be given on Monday evening's reception

PROGRAM

MONDAY

13

OCTOBER

PROGRAM

MONDAY, OCTOBER 13

8:00 BREAKFAST - Grand Ballroom AD

9:00

Welcome and Opening Remarks - Imperial Ballroom B
Dr. Florian Solzbacher, University of Utah, Conference Co-Chair
Dr. Ivy Estabrooke, Executive Director, Utah Science Technology & Research Initiative
Dr. Thomas N. Parks, VP for Research, U of U
MANCEF Leadership

9:30

Plenary Session- Imperial Ballroom B
Keynote I
Dr. K.D. Lang, Faunhofer IZM
Advanced Electronic Systems – From Idea to Product

10:00

Keynote II
Dr. Janusz Bryzek, TSensors Summit
Trillion Sensors: Foundation for a Better World

10:40 POSTER VIEWING - Imperial Ballroom Reception
BREAK WITH EXHIBITORS - Grand Ballroom AD

10:50

TRACK A1 — Emerging Tech Energy Expert Panel Discussion — Imperial Ballroom D

Chair:
Ray Quintana
Cottonwood Technology Funds

Co-Chair:
David Tolfree
MANCEF

Robert B. Sachs
TEAM Technologies Inc.
Keith Cole
Water Lens, LLC
Shay Curran, PhD
Institute for NanoEnergy (INE)
Kenneth Jensen
U.S. Synthetic

TRACK B1 — Healthcare, Biomedical & Emerging Technology — Imperial Ballroom B

Chair:
Margit Janát-Amsbury, PhD
Department of Obstetrics and Gynecology, University of Utah

Daniel Bijl
SmartTip Probe Solutions
Innovative Solutions for Living Cell Pick & Place
Dhiman Bhattacharyya, PhD
Department of Metallurgical Engineering and Department of Chemical Engineering, University of Utah
Fundamentals of Methyl Nicotinate Biomarker Detection Using Cobalt Functionalized Titania Nanotubular Array: Experimental and Mechanistic Approach
Renny Fernandez
Department of Mechanical Engineering, Southern Methodist University
A Transparent Microfuidic Dielectric Spectroscopy System
Joseph Nichols
Pharmaceutical Chemistry, University of Utah
Tumor Vascular Bursts and Nanoparticle Extravasation: Implications for Cancer Nanocarrier Delivery
Shawn Owen, PhD
Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah
Therapeutic Antibody and Antibody-Drug Conjugate Cellular Trafficking is Dependent on Epitope Binding and Cargo

TRACK C1 — T Sensors — Imperial Ballroom C

Chair:
Janusz Bryzek, PhD
T Sensors Summit

Robert Giasolli
MANCEF
A Glimpse into the Future of Minimally Invasive Health Care and How Innovation Will Ultimately Need to Overcome Safety and Security Concerns
Robert Haak
Insight InterAsia
TSensors Systems - Three Intertwined Market-Driven Technology Roadmaps
Mary Ann Maher
softMEMS
Challenges in Designing a Trillion Sensors
Yorgos Marinakis, PhD
Anderson School of Management, University of New Mexico
Current Status of the TSensor Systems Roadmap
Inder Thukral, PhD
Boston Analytics
Understanding and Selecting Business Models for Commercializing m2m Applications

12:30 POSTER VIEWING - Imperial Ballroom Reception
LUNCH WITH EXHIBITORS - Grand Ballroom AD

TRACK A2 — Emerging Energy Tech & Global Energy
Imperial Ballroom D

Chair:

Milind Deo, PhD
Department of Chemical Engineering, University of Utah

Michael Bartl, PhD
Department of Chemistry, University of Utah
Functional Energy Material by Structural Design

Ramiro Jordan, PhD
Electrical and Computer Engineering, University of New Mexico
From Technology Anywhere to Markets Everywhere

Clifford Merz, PhD
Dialytics Inc.
Salinity Gradient Power Energy Generation and the Struggles of Innovation: An Update Since my COMS 2006 Student Poster Presentation

Bryony Richards-McClung, PhD
Energy & GeoScience Institute, University of Utah
The Porosity Puzzle: Which Pores Really Contribute to Unconventional Petroleum Systems?

TRACK B2 — Healthcare & Biomedical
Imperial Ballroom B

Chair:

Agnes Ostafin, PhD
Nano Institute, University of Utah

Charles Call, PhD
CleanSpot, Inc.
Acoustic Focusing Sample Prep Module for MALDI MS

Yue Cui, PhD
Biological Engineering Department, Utah State University
Bio-Inspired Nanosensing

Irina Polejaeva
USTAR Associate Professor, Utah State University
Large Animal Models for Translational Biomedical Research

Nassir Marrouche, PhD
CARMA Center, University of Utah
How Engineering Changes Medicine: A Physician Perspective

Glenn D. Prestwich, PhD
Department of Medicinal Chemistry, University of Utah
Clinical Biomaterials for Regenerative Medicine: From Bench to Business to Bedside

Velayudhan Sahadevan, PhD
Dag Hammarskjold Cancer Treatment Center
Low Cost MEMS- Medical Micro-Accelerator's for Parallel Microbeam Radiosurgery and to Conquer Global Cancer Treatment Disparities

TRACK C2 — Investors & Venture Capitalists Expert Panel Discussion
Imperial Ballroom C

Chair:

David Blivin
Cottonwood Technology Funds

Marcus Gerhardt
BBI Investing & Consulting

Chris Calder
Epic Ventures

James Smith
Commonwealth Sensor a Technology LLC

Todd Stevens
Renewable Tech Ventures

13:30

POSTER VIEWING - Imperial Ballroom Reception
BREAK WITH EXHIBITORS - Grand Ballroom AD
15:30

16:00

Plenary Session - Imperial Ballroom B
Keynote III
Fred Lampropoulos, Merit Medical Systems
Successful Commercialization of Medical Technology in Utah

16:30

Keynote IV
Dr. Neal D. Shin, DOE Center for Integrated Nanotechnology
Opportunities for Industrial Research at DOE Nanoscience User Facilities

BREAK - Grand Ballroom AD
17:00

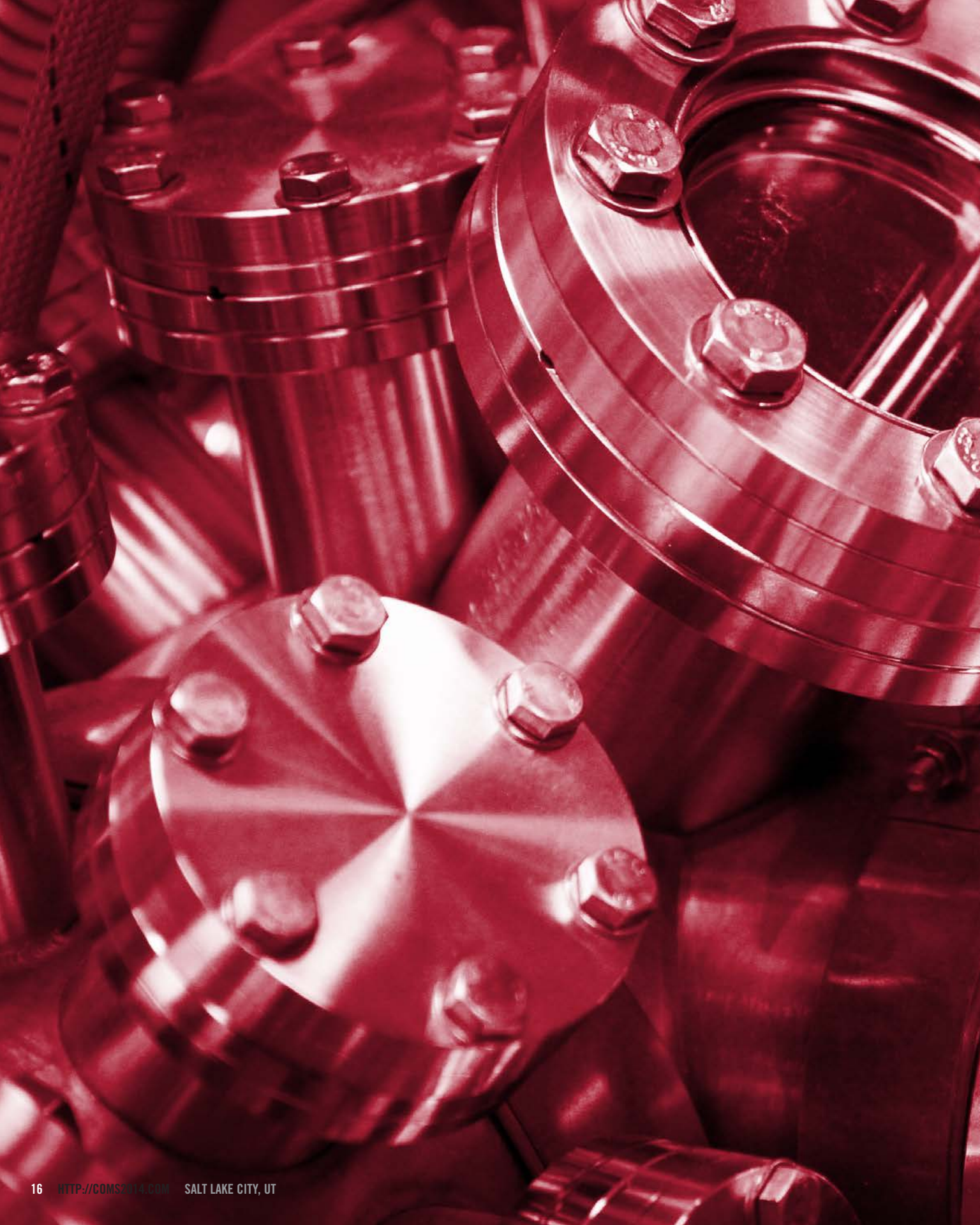
17:15

Meet Shuttles at 600 South Port Cochere to Travel to
University of Utah Campus
Utah Science Technology and Research (USTAR) Initiative
Sorenson Molecular Biotechnology Building (SMBB)

17:30

Tours Utah Nanofab
Poster Session Award Presentation
Reception and networking opportunities provided by the Utah Center for Engineering Innovation.
University of Utah, Sorenson Molecular Biotechnology Building (USTAR)

RETURN TO GRAND AMERICA HOTEL
22:00



PROGRAM

TUESDAY

14

OCTOBER

PROGRAM

TUESDAY, OCTOBER 14

8:00 BREAKFAST - Grand Ballroom AD

9:00 Opening Remarks- Imperial Ballroom B

Spencer J. Cox, State of Utah Lt. Governor

Rob Brough, Zion's Bank Executive Vice President of Marketing and Communications

9:20 Plenary Session

Keynote V

Dr. George Grüner, UCLA

The New Age of Materials: Why Translation Matters

9:40 Keynote VI

Richard Adams, National Renewable Energy Laboratory (NREL)

Working with National Labs

10:20 BREAK - Grand Ballroom AD

10:30

TRACK A3 — University Partners in Commercialization and Innovation

Imperial Ballroom D

Chair:

Bryan Ritchie
Technology & Venture Commercialization, University of Utah

Brian Baker
NanoFab, University of Utah
Product Innovation on the Microscale: Using Tiny Devices to Teach Creative Solutions to Big Problems

Troy D'Ambrosio
Lassonde Entrepreneur Institute, University of Utah

Robert Ehrmann
Nanotechnology Applications and Career Knowledge (NACK) Network at Penn State
Developing International Skill Standards for the Micro-Nano Workforce

Kees Eijkel, PhD
University of Twente
Inspired People: The Fuel of your Ecosystem

Duncan McClure
University of New Mexico
The Micro and Nanotechnology Industry in New Mexico and its Supporting Educational Infrastructure

Sue Neuen
Science@OC
Light the SPARK of INNOVATION

TRACK B3 — Biomedical Success Stories from Utah

Imperial Ballroom B

Chair:

Dinesh Patel, PhD
vSpring Capital

Vicki Farrar
Catheter Connections
Catheter Connections -- A Utah Success Due to Out Unique Entrepreneurial Climate

Andrew Gotshalk
Blackrock Microsystems
Key Barriers to Translation of Technologies into Products; Unique Advantages and Disadvantages of Utah

Stan Kanarowski
Vutura

Scott Marland, PhD
BioInnovations Gateway
BioInnovation Gateway: An Unlikely Incubator Model

Stacy Bamberg
BioInnovations Gateway
BioInnovation Gateway: Navallum

Kevin Jessing
BioInnovations Gateway
BioInnovation Gateway: Veristride

Scott Morham
BioInnovations Gateway
BioInnovation Gateway: Mesagen

TRACK C3 — Approaches to Nanotechnology Commercialization

Imperial Ballroom C

Chair:

Rens Vandeberg, PhD
NanoLabNL

Janneke Hoedemakers, PhD
NanoLabNL
MESA+ and Regional Support on Nano-technologies for Societal Challenges

Johan Holstein, PhD
NanoLabNL
Collaboration between academia and industry in the Nanolab NL cleanrooms: Success stories at the University of Groningen

Volker Saile, PhD
NanoLabNL
Success Factors of the cluster MicroTEC Südwest: Lessons learned and Future Perspectives

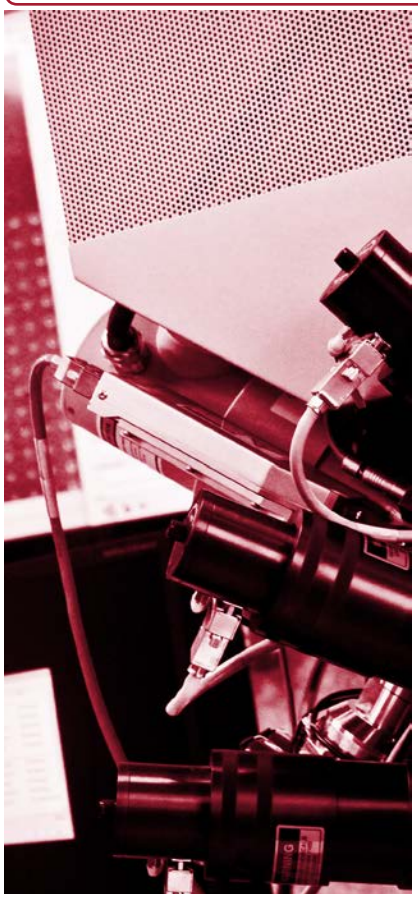
Thomas Swahn, PhD
NanoLabNL
A Scandinavian perspective on Open Access Nanotechnology Research Infrastructures

12:30 LUNCH WITH EXHIBITORS - Grand Ballroom AD

Plenary Session - Imperial Ballroom B — 13:30

Keynote VII

Paul Ahlstrom, Alta Ventures



TRACK B4 — Innovations in Health Care

Imperial Ballroom B

Chair:

Derek Dosdall, PhD
Center for Engineering Innovation, University of Utah

David Anderson
Novati Technologies Inc.
The Growing Role of More-than-Moore Technologies in Medical Devices

Aditya Das, PhD
University of Texas Arlington Research Institute (UTARI)
A Novel Manufacturing Solution for Heterogeneous Microsystems in Health and Environmental Monitoring Applications

Phillip Davis, PhD
Innoception Technologies
Principles for Physiological Measurement and the Adoption of Disruptive Technologies into Medical and Health Settings

Gian P. Zini
Intermountain West
CE Marking: Commercializing High-Tech & Healthcare Products in Europe

TRACK C4 — The New Age of Materials: Why Translation Matters

Imperial Ballroom C

Chair:

James Tyrrell, PhD
IOP Publishing

Deborah Jackson, PhD
National Science Foundation
Sizing Up Your Innovation Ecosystem

Fiona Jamieson, PhD
IOP
Graphene Commercialization: A UK and EU Perspective

Deborah Newberry
Dakota County Technical College/ Nano-Link Center
It Takes More Than Just Technical Know How

Xiao Feng Zhang
Hitachi High Technologies America
Hitachi In Situ Heating Gas Environmental TEM System for Real-time Observation of Materials in a Gas Environment and at Elevated Temperatures

14:20

BREAK - Grand Ballroom AD — 15:30

15:40 **Meet Shuttles at 600 South Port Cochere to Travel to Companies**

16:00 **Company visits**

18:30 **Conference banquet at the Grand America - Imperial Ballroom A**

Young Technology Award Presentation
MC for the competition:
Scott Peterson, Managing Director of the BYU Rollins Center for Entrepreneurship and Technology
The judging panel will consist of:
Steve Walsh, Matt Dent, Job Elders
Florian Solzbacher & Janusz Bryzek

Lifetime Achievement Award Presentation
Presented to **Ron Lawes**

22:00 **Banquet ends**


Water
Rinse
Water
Rinse

PROGRAM

WEDNESDAY

15

OCTOBER

PROGRAM

WEDNESDAY, OCTOBER 15

8:00 BREAKFAST - Grand Ballroom AD

9:00

Plenary Session - Imperial Ballroom B

Keynote VIII

Dr. John T. McDevitt, Rice University

Programmable Bio-Nano-Chip Sensors: A Commercial Platform to Digitize Biology

Keynote IX

John E. Richards, Google Fiber

You Know Nano, But Do You Know Lean?

10:00 BREAK - Grand Ballroom AD

10:30

TRACK A5

Renewable Energy, Harvesting & Solar Technologies

Imperial Ballroom D

Chair:

Hanseup Kim, PhD
Department of Electrical and Computer Engineering, University of Utah

Co-Chair:

Rajesh Menon
Department of Electrical and Computer Engineering, University of Utah

Benjamin Bunes
Department of Materials Science & Engineering, University of Utah
Enhanced Visible Light Absorption and Charge Separation in Carbon Nanotubes Functionalized with a Wide Band Gap Oligomer for Improved Photovoltaic Cells

Gregory Nielson, PhD
Sandia National Laboratories
Leveraging Scale Effects in Photovoltaic Cells, Modules, and Systems for Multiple Power Markets

Shad Roundy, PhD
Department of Mechanical Engineering, University of Utah
Energy Harvesting as an Enabler for a the Internet of Things

S.V. Sreenivasan, PhD
Department of Mechanical Engineering, University of Texas
Precision Enabled Scalable Nanomanufacturing with Applications in Mobile Electronics, Biomedicine and Energy

TRACK C5

Innovations & Eco Systems

Imperial Ballroom C

Chair:

Robert Mehalso
MANCEF

Victor Chavez
Sandia National Laboratories
The Technologically Able Social Entrepreneur, Sandia National Laboratories, National Innovation Policy and Social Good

Gregory Dillan
Penn State Erie, The Behrend College
New Initiatives in Materials for Additive Manufacturing

Ralph Ford, PhD
Penn State at Erie, The Behrend College
Intern Mashup: A Novel Approach to Addressing Manufacturing and R&D Challenges

Suleiman Kassicieh, PhD
Anderson School of Management, University of New Mexico
Investments in Micro- and Nanotechnologies: Changes in the Eco System

12:30 LUNCH WITH EXHIBITORS - Grand Ballroom AD

Plenary Session - Imperial Ballroom B — 13:30

Keynote X

Keyvan Esfarjani

Defying the Odds to Become the NAND Industry Leader

TRACK A6 — Emerging Energy Tech & Global Energy — Imperial Ballroom D

Chair:

Eric Eddings, PhD
College of Engineering, University of Utah

Paul Savage
Arrayware
Smart Grid-Enabling: Beyond the Microprocessor

Mikhail Skliar, PhD
Department of Chemical Engineering, University of Utah
Noninvasive Ultrasound Measurements of Temperature Distribution in Solids

Trevor Smith
Brigham Young University
Natural Product Self-Healing Solar Cell for Efficient Electron or Hydrogen Conversion

TRACK B6 — Healthcare & Biomedical — Imperial Ballroom B

Chair:

Volker Saile, PhD
Karlsruhe Institute of Technology

Amy Bridger, PhD
Penn State at Erie, The Behrend College
The Advanced Manufacturing and Innovation Center at Knowledge Park at Penn State Erie: An integrated Facility for Academic and Industry Collaboration

Tim Dallas, PhD
Department of Electrical and Computer Engineering, Texas Tech University
The MEMS University Alliance: Education and Research Collaboration in Microsystems

Ian Harvey, PhD
NanoFab, University of Utah
USTAR / U of U / COE Partnerships to Spur R&D in Micro/Nano Materials & Systems

Matthias Pleil, PhD
Southwest Center for Microsystems Education
Bringing New Hires and Students Up the Micro-Nano Fabrication Learning Curve

Loren Rieth, PhD
Center for Engineering Innovation, University of Utah
Center for Engineering Innovation: A Development, Prototyping, Commercialization Resource

TRACK C6 — Investors & Venture Capitalists — Imperial Ballroom C

Chair:

Regan Stinnett, PhD
Sandia National Laboratories

AJ Groen, PhD
University of Twente
The Creative Enterprise: Using Networks to Create Emergent Material Enabled Solutions to 21st Century Problems

Rainer Harms, PhD
University of Twente
Lean Startup in Research and Development – Limits and Modifications to a Hyped Tool

Milind Pimprikar, PhD
CANEUS
CANCEF and MANCEF Innovation Acceleration Approach For Advancing Emerging Micro-Nano-Technology Development in India

Benjamin Rollins
Vaporsens
Bombs, Drugs, and Advanced Sensors: Translating University Research to Commercial Products

Robert Tierney, PhD
University of Twente
Nanotechnology and the Role of Drivers in the Pharmaceutical and Biotechnology Industry

14:00

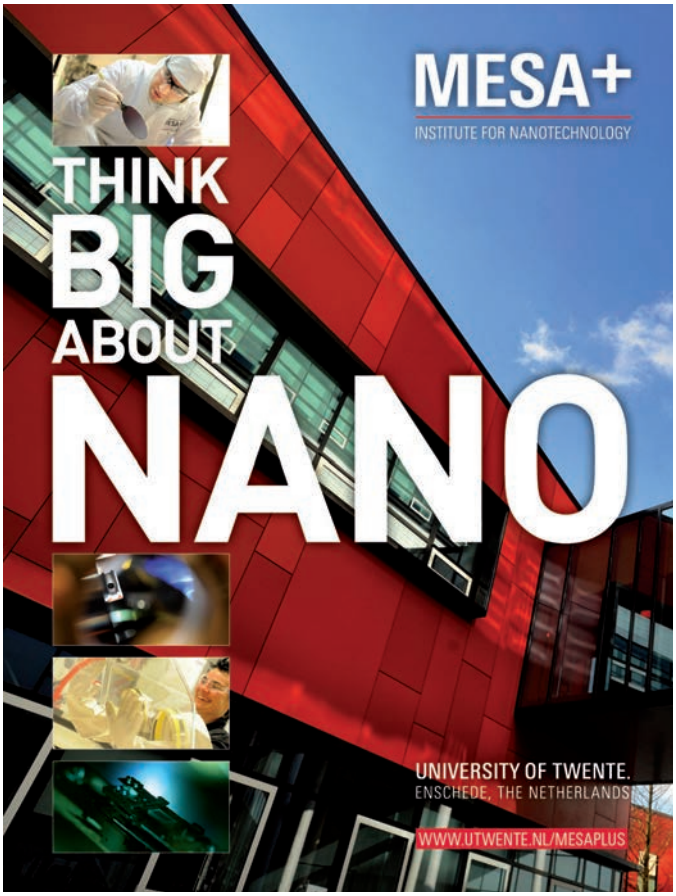
BREAK - Grand Ballroom AD — 15:45

Closing Remarks — 16:00

Summary of Conference Highlights

Conference Closes — 17:00

NOTES



EXHIBITORS

Company	Sponsorship	Website
Zions Bank	Platinum	www.zionsbank.com
Mesa+ Institute of Nanotechnology	Gold	www.utwente.nl/mesaplus
Sandia National Laboratories	Gold	www.sandia.gov
Blackrock Microsystems	Silver	www.blackrockmicro.com
NanoLab NL	Silver	www.nanolabnl.nl
University of Utah VP for Research	Silver	www.research.utah.edu
Utah Science Technology and Research (USTAR)	Silver	www.innovationutah.com
Brigham Young University Rollins Center for Entrepreneurship and Technology	Bronze	www.marriottschool.byu.edu/cet
IM Flash	Bronze	www.imflash.com
Crocker Ventures	Bronze	www.crockerventures.com
Merit Medical	Bronze	www.merit.com
University of Utah Lassonde Entrepreneur Institute	Bronze	www.lassonde.utah.edu
Actavis	Exhibitor	www.actavis.com
ASME	Exhibitor	www.asme.org
CMM	Exhibitor	www.cmmmagazine.com
Digit Metal Funds	Exhibitor	www.hoganas.com/digitalmetal
Edwards	Exhibitor	www.edwardsvacuum.com
Hitachi	Exhibitor	www.hitachi.com
Innovative Micro Technology (IMT)	Exhibitor	www.imtmems.com
JEOL USA, INC	Exhibitor	www.jeol.com
MANCEF	Exhibitor	www.mancef.org
Moxtek, Inc	Exhibitor	www.moxtek.com
Ri.Mos/Enki Group	Exhibitor	www.rimos.com , www.enkisrl.com
SCME	Exhibitor	www.scme-nm.org
Silicon Sense	Exhibitor	www.siliconsense.com
University of New Mexico	Exhibitor	www.unm.edu
University of Utah Technology & Venture Commercialization	Exhibitor	www.tvc.utah.edu
University of Utah Nanofab	Exhibitor	www.nanofab.utah.edu
Ballard Spahr, LLP	Supporter	www.ballardspahr.com
Science Works DC	Supporter	www.scienceworksdc.com

CONFERENCE MAP

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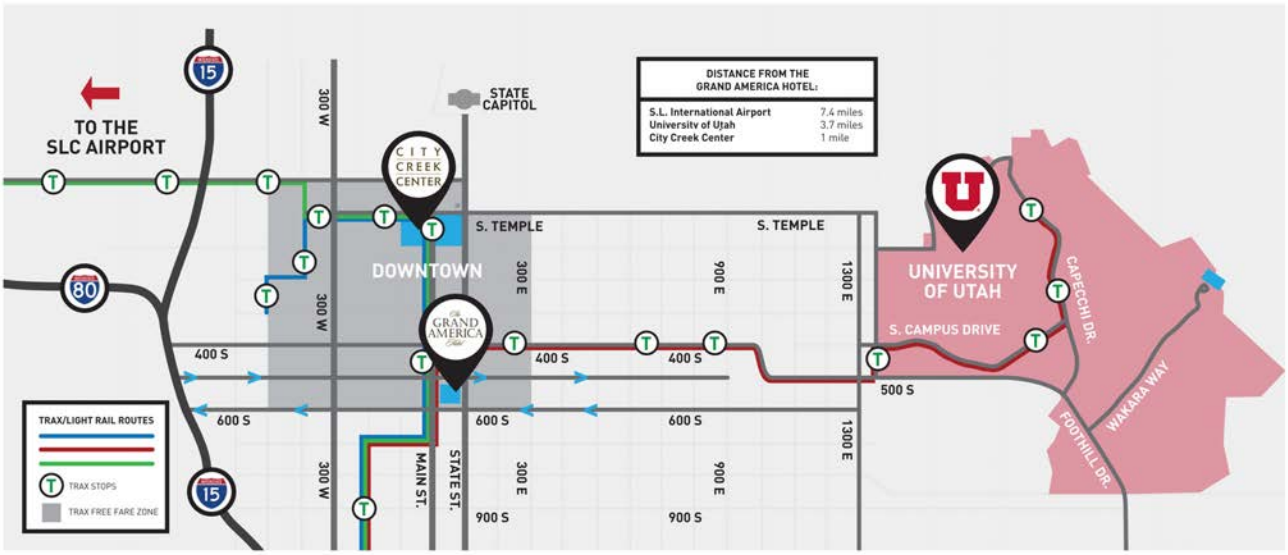

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