2016 CERV

CONFERENCE ON ELECTRIC ROADS & VEHICLES

ONSITE PROGRAM

DRIVING IDEAS
ENERGIZING PARTNERSHIPS

MAY 16-17, 2016

UNIVERSITY INN & CONFERENCE CENTER
LOGAN, UTAH, USA

WWW.CERVCONFERENCE.ORG

CERV 2016

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WELCOME

Welcome to our fourth Conference on Electric Roads & Vehicles. We hope you find the discussions and presentations informative and insightful.

We encourage you to take advantage of this time to discuss ideas and challenges, make new contacts, and foster existing and new relationships.

Thank you for joining us.

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We gratefully acknowledge the following sponsors for their contributions to the Conference on Electric Roads & Vehicles. This program is possible due to the support and generosity of these organizations. Please take a moment during the Conference to personally thank our sponsors.

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The Center for Sustainable Electrified Transportation ("SELECT") is a multi-campus university research center dedicated to breaking down barriers to EV adoption. This is accomplished by championing a holistic approach covering the electric drivetrain, charging systems, roadway infrastructure, vehicle autonomy and security, and socio-techno-economic system analysis for sustainability as shown below. SELECT is guided by a broad industry board bringing in critical perspectives from automotive OEMs and suppliers, electric utilities, fleet operators, major infrastructure developers and operators, and state and federal government partners. SELECT is oriented towards integrative research and development leading to vehicle and roadway scale systems demonstrations and university-industry-government partnered pilot scale demonstration projects.

GOLD

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Toyota is pleased to be a sponsor of the CERV conference. Ever since the introduction of the Prius in Japan in 1997 and in the US in 1999, Toyota has been a leader in the field of Hybrids, Plug-Ins, and other alternative fuel vehicles, as exemplified in the new Mirai Fuel Cell Vehicle. Toyota remains committed to producing an economical and environmentally friendly offering of vehicles poised to minimize greenhouse gases and CO2. As we look toward the future, the emergence of advanced charging systems such as wireless charging is viewed as critical in our goal to provide products that meet the needs of our customers in an engaging and eco-friendly manner. Toyota welcomes attendees to the CERV Conference and encourages a free and cooperative exchange of ideas to meet the challenges facing the automotive industry.

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WiTricity Corporation provides technology to enable wireless power transfer over distance using magnetic resonance. Through deep domain expertise, semiconductor offerings, a strong IP portfolio and an extensive reference design library, WiTricity works with innovative companies to incorporate WiTricity technology in their products and solutions. With a growing list of global customers in the consumer electronics, automotive, medical devices and defense industries, the company has emerged as the leader in wireless power transfer over distance.

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- Inductive Charging Coils, Ferrites, and Capacitors for wireless power transmission
- Low & High Voltage DC EMC Filters for EV powertrain and on board charger applications
- LF Antennas and Transponder Coils for Passive Entry Passive Start, Tire Pressure Monitoring and immobilizers

TDK focuses on demanding markets in the areas of automotive, information and communication technology, consumer and industrial electronics. The company has design and manufacturing locations in Asia, Europe, and in North and South America.

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http://evtc.fsec.ucf.edu/index.htm

THE ELECTRIC VEHICLE TRANSPORTATION CENTER (EVTC)

EVTC is a UTC with the mission of providing leadership and guidance that: accelerates the adoption of many modes of electric transportation, advances infrastructure technology and capacity, engages the transportation planning community, preserves the environment, improves health, and explores opportunities in workforce development, STEM and community involvement.

CONFERENCE

SCHEDULE AT-A-GLANCE*

Location: All conference sessions will be held in the Eccles Conference Center (ECC) at Utah State University.

See event maps on pages 42–43.

MONDAY

MAY 16

7:00 – 10:00am	Conference Registration Open
7:00 – 7:30am	Continental Breakfast
7:30 – 7:45am	Welcome & Introduction *Regan Zane, Conference Co-Chair*
7:45 – 8:25am	**SESSION 1** *(PANEL)* *Perspectives from Vehicle OEMs* Daniel Mikat, *Toyota Motor Engineering and Manufacturing, North America, Inc* Jesse Schneider (BMW), *Chair, SAE J2954 Wireless Power Transfer Taskforce* Julien Richer, *Volvo Group Truck* **Moderator:** Jeff Muhs, *Conference Co-Chair, Wasatch Collaboratory*
8:25 – 9:45am	**SESSION 2** *(PRESENTATIONS)* *Industry Updates on Wireless Charging Systems from Technology Providers* Afshin Partovi, *Mojo Mobility* Ky Sealy, *WiTricity* John Boodhansingh, *Qualcomm* Mike Masquelier, *WAVE* **Session Chair:** Jeff Muhs, *Conference Co-Chair, Wasatch Collaboratory*
9:45 – 10:15am	BREAK
10:15 – 11:15am	**SESSION 3** *(PRESENTATIONS)* *System-Level Studies and Models Exploring the Energy, Environmental and Economic Benefits of Electrified Roadways* Jason Quinn, *Utah State University*

	Lijuan Wang, *National Renewable Energy Laboratory*
	Doros Nicolaides, *University of Cambridge*
	Session Chair: Tallis Blalack, *Tech-To-Market-Advisor*
11:15 – Noon	**SESSION 4** *(PANEL)* *System-Level Studies and Models Exploring the Energy, Environmental and Economic Benefits of Electrified Roadways*
	James W. May, *James May Consulting*
	John Miles, *Emmanuel College (University of Cambridge) and ARUP*
	Moderator: Tallis Blalack, *Tech-To-Market-Advisor*
Noon – 12:45pm	LUNCH
12:45 – 1:45pm	**SESSION 5** *(PRESENTATIONS)* *Recent Advances on Inductive Charging of Stationary and Moving Vehicles*
	Barney Carlson, *Idaho National Laboratory*
	Zeljko Pantic, *Utah State University*
	Madhu Sudhan Chinthavali, *Oak Ridge National Laboratory*
	Session Chair: Rich Raustad, *EVTC/FSEC*
1:45 – 2:35pm	**SESSION 6** *(PANEL)* *Recent Advances on Inductive Charging of Stationary and Moving Vehicles*
	Udaya Madawala, *University of Auckland*
	Conny Borjesson, *Viktoria Swedish ICT*
	Madhu Sudhan Chinthavali, *Oak Ridge National Laboratory*
	Moderator: Joachim Taiber, *International Transportation Innovation Center (ITIC)*
2:35 – 2:45pm	BREAK

2:45 – 3:45pm	**SESSION 7** *(PRESENTATIONS)* *Recent Advances on Non-Inductive Charging of Stationary and Moving Vehicles* Jean-Luc Hourtane, *Alstom* Dan Zethraeus, *Lund University and Elonroad Company* Khurram Afridi, *University of Colorado Boulder* **Session Chair:** Srdjan Lukic, *North Carolina State University*
3:45 – 5:00pm	**SESSION 8** *(PANEL)* *In-Motion Charging and Automated/ Connected Vehicles – Synergetic Potential* Ryan Gerdes, *Utah State University* Blaine Leonard, *UDOT* Jeff Ferrin, *Autonomous Solutions Inc.* **Moderator:** Kevin Heaslip, *Virginia Tech*
5:00 – 5:15pm	Transit from Conference Center to USU Dynamic Charging Facility
5:15 – 6:15pm	Tour of USU Dynamic Charging Facility
6:15 – 6:30pm	Transit from USU Dynamic Charging Facility to Reception
6:30 – 8:00pm	Reception

TUESDAY

MAY 17

7:30 – 8:20am	Continental Breakfast & Conference Registration
8:20 – 8:25am	Welcome & Agenda *Jeff Muhs, Conference Co-Chair, Wasatch Collaboratory*
8:25 – 8:30am	Introduction of Keynote Speaker *Keith Wilson, SAE International*
8:30 – 9:00am	**KEYNOTE PRESENTATION** *Wireless Power Transfer: The path to commercialization through standards* Jesse Schneider (BMW), *Chair, SAE J2954 Wireless Power Transfer Taskforce*

9:00 – 9:40am	**SESSION 9** *(PANEL)* *Electrical Infrastructure: EVSE, V2G, Energy Management, and Grid Impact of Stationary and Dynamic Charging* Dan Bowermaster, *Electric Power Research Institute* Rohit Nair, *Rocky Mountain Power* **Moderator:** Tony Markel, *National Renewable Energy Laboratory*
9:40 – 10:20am	**SESSION 10** *(PRESENTATIONS)* *Electrical Infrastructure: EVSE, V2G, Energy Management, and Grid Impact of Stationary and Dynamic Charging* Duleepa Thrimawithana, *University of Auckland* Brett Hauser, *Greenlots* **Session Chair:** Tony Markel, *National Renewable Energy Laboratory*
10:20 – 10:30am	BREAK
10:30 – 11:20am	**SESSION 11** *(PANEL)* *Roadway Infrastructure: Design Concepts and Challenges for Pavement Integration of Stationary and Dynamic Charging* Andrew Liu, *AECOM New Ventures* John Haddock, *Purdue University* Marvin Halling, *Utah State University* **Moderator:** John Miles, *Emmanuel College (University of Cambridge) and ARUP*
11:20 – Noon	**SESSION 12** *(PANEL)* *Considerations for New Initiatives and Government Programs in Electrified Roadways* Tim Schmidt, *DOT, Turner-Fairbank Highway Research Center, FHWA* Paul Albertus, *DOE Advanced Research Projects Agency-Energy (ARPA-E)* **Moderator:** Regan Zane, *Utah State University*
Noon – 12:10pm	Closing Remarks

EXHIBIT

INFORMATION

EXHIBIT HOURS

SUNDAY, MAY 15, 2016
1:00 PM – 4:00 PM
Check-in/Set-up

MONDAY, MAY 16, 2016
7:30 AM – 5:15 PM
Show Open

TUESDAY, MAY 17, 2016
7:30 AM – 12:30 PM
Show Open

12:30 PM – 2:00 PM
Take Down

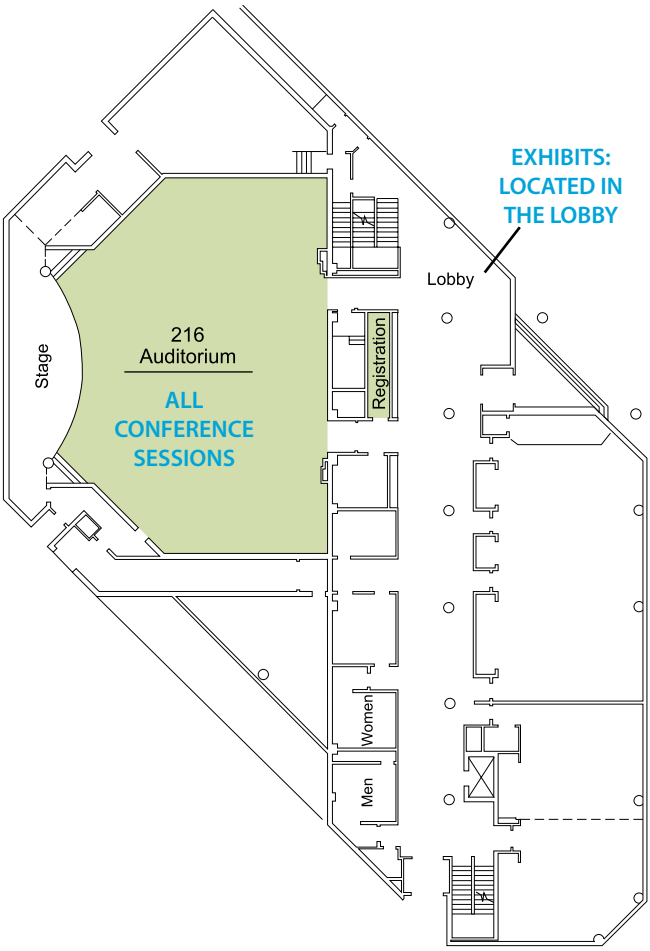

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Exhibit Manager: Regan Zane
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Electric Vehicle Transportation Center

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ELECTRIC VEHICLE TRANSPORTATION CENTER (EVTC)

EVTC is a UTC with the mission of providing leadership and guidance that: accelerates the adoption of many modes of electric transportation, advances infrastructure technology and capacity, engages the transportation planning community, preserves the environment, improves health, and explores opportunities in workforce development, STEM and community involvement.

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CONFERENCE
AGENDA

MAY 16
MONDAY

7:00 – 10:00am
REGISTRATION OPEN

7:00 – 7:30am
CONTINENTAL BREAKFAST

7:30 – 7:45am
WELCOME & INTRODUCTION
Regan Zane, *Professor of Electrical and Computer Engineering, Founder and Director of the Center for Sustainable Electrified Transportation (SELECT) and Power Electronics Lab, CERV Conference Co-Chair*
Utah State University

Dr. Regan Zane leads a wide range of research programs in power electronics for electric vehicle drivetrains and charging infrastructure, battery management systems, and dc and ac micro-grids including grid integration of renewable energy sources and energy storage. His programs maintain a strong emphasis on working with government and industry to develop and transition technologies into the marketplace.

Dr. Zane has co-authored over 120 peer-reviewed publications and the textbook Digital Control of High-Frequency Switched-Mode Power Converters. He received the NSF Career Award in 2004, the 2005 IEEE Microwave Best Paper Prize, the 2007 and 2009 IEEE Power Electronics Society Transactions Prize Letter Awards and the 2008 IEEE Power Electronics Society Richard M. Bass Outstanding Young Power Electronics Engineer Award. He received the 2006 Inventor of the Year, 2006 Provost Faculty Achievement, 2008 John and Mercedes Peebles Innovation in Teaching, and the 2011 Holland Teaching Awards from the University of Colorado.

He received the Ph.D. degree in Electrical Engineering from the University of Colorado Boulder in 1999. Prior to joining USU, he was a faculty member at the University of Colorado-Boulder, Colorado Power Electronics Center, CoPEC, 2001 to 2012, and research engineer at GE Global Research Center, Niskayuna, NY, 1999 - 2001.

7:45 – 8:25am

SESSION 1 *(PANEL)*

Perspectives from Vehicle OEMs

PANELIST

Daniel Mikat, Senior Principal Engineer
Toyota Motor Engineering and Manufacturing, North America, Inc.

Dr. Mikat has been an electrical engineer for Toyota since 1999 and has managed electrical design and evaluation groups in numerous capacities during this time. He is currently the lead development engineer for alternative fuel vehicle applications, which includes EV and PHEV systems. His role in Toyota also includes standards development for EV charging systems, including wireless charging; and smart-charging protocols and architectures. He is also the technical liaison for EDR systems at Toyota and is expanding his role to include automated vehicles' architecture.

PANELIST

Jesse Schneider, Chair,
SAE J2954 Wireless Power Transfer Taskforce
Manager, Fuel Cell Electric Vehicle Development
BMW North America

For over 20 years, Jesse Schneider worked in both the US and Germany in automotive management ranging from conventional series development to electric and fuel cell electric vehicles.

Mr. Schneider has led a number of firsts to further electric and fuel cell vehicles such as establishing interface couplings, fueling protocols in hydrogen and emergency response guides for FC/EV both internally at OEMs and externally at standards organizations ISO and SAE.

Mr. Schneider established the SAE Wireless Power Transfer Standardization for PHEVs Team in 2010 and continues to chair the Taskforce. SAE J2954 leads the worldwide effort to commercialize wireless power transfer in PHEV/EVs and has representatives and subteam from global automakers, suppliers and government representatives.

Mr. Schneider relocated from the Munich office of BMW, where he was the first program manager for the hydrogen storage system of the clean energy storage systems department and was responsible for requirements management. At BMW North America, he is the Manager of Fuel Cell, Electric Vehicle Development.

Julien Richer, R&T Engineer
Volvo Group Truck

Julien Richer develops charging technology for advanced engineering PHEV/EV projects for Volvo Group Truck in Lyon, France. Prior to 2012 he was previously employed for Airbus and Dassault.

MODERATOR
Jeff Muhs, President & CEO
Wasatch Collaboratory, CERV Conference Co-Chair

Jeff Muhs has 30 years of combined experience as an R&D consultant, business development director at WiTricity Corporation, Vice President of the USU Research Foundation, principal investigator and group leader at Oak Ridge National Laboratory and as a policy advisor in the United States Senate. Mr. Muhs has secured and managed over $100M in R&D contracts, holds over a dozen U.S. patents and successfully took two of his inventions from concept-to-commercialization. Jeff won a prestigious R&D 100 Award in 2006, was named ORNL's 1997 Engineer/Scientist of the Year and Science Communicator of the year in 2004.

8:25 – 9:45am

SESSION 2 *(PRESENTATIONS)*

Industry Updates on Wireless Charging Systems from Technology Providers

PRESENTER
Afshin Partovi, CEO
Mojo Mobility

Afshin Partovi founded Mojo Mobility in 2005 sensing a market need for wireless power for mobile and automotive applications. Before founding Mojo Mobility, Afshin was the CEO of Excel Technologies advising companies and governments on Technology management including management of a €150 million portfolio of Technology projects for the government of Republic of Ireland. Prior to that, Afshin led all Product Management and Product Dev at Digilens, a Networking Startup in Silicon Valley. Afshin previously managed Strategy and Business Development for Lucent's Broadband Networks Business Unit. Earlier in his career, he has had management and development roles at Bell Laboratories, AT&T, Hughes Corp, and NASA's Jet Propulsion Laboratories. Afshin holds Masters and Ph.D. degrees in Electrical Engineering from University of Southern California and an MBA from Columbia University. He has authored over 70 reviewed publications and is an inventor on 50 patents.

PRESENTER
Ky Sealy, Principal Engineer
WiTricity

Ky Sealy currently works for WiTricity Corporation as a Principal Engineer. Ky began working in the field of resonant wireless power transfer in 2010 as an electrical engineer and technical lead for an efficient 5 kilowatt resonant wireless power system. Since 2010 he has been directly involved in designing resonant wireless power systems ranging in power from a few hundred milliwatts to 25 kilowatts.

Ky has served as the sub-team chair for alignment on SAE's J2954 automotive wireless charging standards committee since shortly after its inception in 2011. Since March, 2014 Ky has been the chair for the resonator administration committee in the AirFuel Alliance (formerly A4WP) responsible for all technical aspects of resonant magnetic interoperability.

As an electrical engineer, he has a broad background in electronic and software systems. He holds a Master's degree in electrical engineering from Utah State University where he previously taught Microelectronics I & II as an invited lecturer. Since beginning his career in engineering, he has worked in a wide variety of fields including advanced LIDAR systems, UAV RF communications, and end-to-end system design for several start-up companies. During his career he started an engineering design and consulting business where he served an even wider range of industries ranging from medical and aerial to robotics and power design. Ky Sealy has a number of issued patents and patents pending as well as publications in the areas of LIDAR and resonant wireless power transfer.

PRESENTER
John Boodhansingh, Senior Director, Product Management
Qualcomm Halo Wireless Charging

John Boodhansingh, senior director of product management for Qualcomm Incorporated (QCOM), is responsible for leading the product management efforts for Qualcomm Halo™ Technology. Boodhansingh, who has more than twenty years of experience in technology marketing and product management, joined Qualcomm in 2009 as a member of the wireless charging team. Prior to joining Qualcomm, he held various marketing and product management roles in multiple high technology companies. Earlier in his career

he held design and manufacturing engineering positions for companies making products ranging from submarines to military vehicles to industrial vehicles.

PRESENTER
Michael Masquelier, *CEO / CTO*
WAVE

Michael is a serial entrepreneur, self-described technology junkie, and new product evangelist with over 25 years of industry experience as a business development executive and technologist. He has expertise in: new product development, talking customers into crazy new ideas, engineering, and the necessary evils of manufacturing and operations. Mr. Masquelier's technical experience includes power electronics, microelectronics, wireless power transfer, sensing, and wireless communications. He behaved like an intrapreneur at Motorola before branching out into the startup company world. Mr. Masquelier has somewhere near 15 issued and pending patents and more than 25 technical publications. He holds a B.S.E.E. from the University of Illinois at Urbana-Champaign and a M.S.E.E. from Arizona State University. Twitter handle = TechnologieChef.

SESSION CHAIR
Jeff Muhs, President & CEO
Wasatch Collaboratory

See Bio in Session 1

9:45 – 10:15am
BREAK

10:15 – 11:15am
SESSION 3 *(PRESENTATIONS)*
System-Level Studies and Models Exploring the Energy, Environmental and Economic Benefits of Electrified Roadways

PRESENTER
Jason Quinn, Assistant Professor
Utah State University

Jason Quinn is an assistant professor in the Mechanical and Aerospace Engineering Department at Utah State University. His education and research have always been centered on energy, with current work

focused on system evaluation of electric transportation, spider silk, microalgae biofuels, and fission power systems. Research efforts are dedicated to the development of engineering system models validated through experimentation and leveraged for techno-economic feasibility, life cycle assessment, and resource demand of emerging technologies. Results from modeling work are used to focus research and development efforts to high impact areas. Jason completed a master's degree at the University of Wisconsin-Madison in nuclear engineering and engineering physics, and a PhD at Colorado State University.

PRESENTER
Lijuan Wang, Vehicle System Engineer
National Renewable Energy Laboratory (NREL)

Lijuan "Joann" Wang joined NREL's Transportation and Hydrogen Systems Center vehicle systems analysis team in July 2011. She performs modeling, simulation, testing, and analysis of various plug-in electric vehicle configurations with a focus on applicability, performance, and cost. She also investigates the impact of ambient conditions and vehicle configurations and uses on simulated fuel consumption. Previously, Wang served as a research assistant at the Center for Alternative Fuels, Engines, and Emissions at West Virginia University (WVU), where she modeled and validated hybrid and conventional heavy-duty vehicles. Wang earned her Ph.D. in mechanical engineering from WVU.

PRESENTER
Doros Nicolaides, PhD Candidate
University of Cambridge

Doros Nicolaides is a PhD student in the Department of Engineering at the University of Cambridge and he is currently researching the possibility of building a national power infrastructure suitable for the charge-on-the-move transport application. Previously he was an MPhil student in the Department of Engineering at the University of Cambridge attending the course "Engineering for Sustainable Development" and his undergraduate studies were completed in the Department of Electrical and Computer Engineering at the University of Cyprus.

SESSION CHAIR
Tallis Blalack, Tech-To-Market Advisor
Blalack Consulting

Dr. Tallis Blalack is a highly accomplished technology executive with a unique combination of experience in technology development and business management in Fortune 500 companies as well as start-ups. He currently works as a Tech-to-Market Advisor, leveraging almost 20 years of experience to help others turn ideas into profitable products.

Tallis' career started when his Electrical Engineering Ph.D. work at Stanford led to his first startup. He played a critical role in all aspects including obtaining funding, closing sales, defining and growing products, and ultimately selling it. Through two acquisitions and an IPO, Tallis broadened his skill set with roles in sales and marketing. His desire to mentor others led him back into engineering management at Cadence, a NASDAQ 100 company, where he built a successful global team that implemented the CEO's strategic initiative. After leaving Cadence, Tallis co-founded SolarX, a solar startup focused on commercial Power Purchase Agreements. Later, Tallis joined National Semiconductor to build a new business creating products for Electric Vehicles.

Tallis loves learning about new technologies and is energized by the challenge of turning a technology into a business. He is also energized by rock climbing, canyoneering, being outdoors, and playing competitive games. In addition to his Stanford Ph.D. in Electrical Engineering, Tallis holds an M.E. in Electrical Engineering from the University of Virginia and B.S. in Electrical Engineering from the University of Idaho.

11:15am – Noon

SESSION 4 *(PANEL)*

System-Level Studies and Models Exploring the Energy, Environmental and Economic Benefits of Electrified Roadways

PANELIST
James May, Principal
James May Consulting

James W. May is a trained economist with 15 years of consulting and business development experience. He spent seven years as an economics consultant for Charles River Associates, has public policy

experience with the United Nations Environment Programme and Rocky Mountain Institute, and entrepreneurial experience co-founding and building WAVE, an energy infrastructure company that innovates and builds wireless charging infrastructure for electric vehicles. With over five years of experience building costing and range models in the public transit vehicle space, Mr. May is an expert in alternative transportation for the public transit industry. He also has experience and expertise in the alternative energy and utility industries. Mr. May has earned a BA in Economics from Middlebury College as well as Master's Degrees in Public Policy and Environmental Management from Duke University. He lives in Park City, UT.

PANELIST
John Miles, Professor of Transitional Energy Strategies
Emmanuel College (University of Cambridge) and ARUP

John Miles is a Fellow of Emmanuel College, Cambridge, and is the Arup/Royal Academy of Engineering Professor of Transitional Energy Strategies at the Department of Engineering. His special interests include the technology and economics of future transport systems, with a particular emphasis on energy efficiency and environmental impact. Recent research and consulting appointments have included substantial work in the areas of electric vehicles and their charging infrastructure, the development of wireless electric charging systems for small and large vehicles, the design and operation of electric buses, and the exploration and demonstration of autonomous systems for personal and public transport.

MODERATOR
Tallis Blalack, Tech-To-Market Advisor
Blalack Consulting

See Bio in Session 3

Noon – 12:45pm
LUNCH
ECC 205/207

12:45 – 1:45pm

SESSION 5 *(PRESENTATIONS)*

Recent Advances on Inductive Charging of Stationary and Moving Vehicles

PRESENTER

Barney Carlson, Research Engineer - Advanced Vehicles Group Energy Storage and Transportation Systems
Idaho National Laboratory

Barney Carlson has been at INL for seven years and is the principal researcher at INL's Electric Vehicle Infrastructure Lab.

PRESENTER

Zeljko Pantic, Assistant Professor, and Associate Director of the Electrified Vehicles and Roadways (EVR), and subthrust leader of the Dynamic Wireless Charging group at SELECT Research Center
Utah State University

Zeljko Pantic received his B.Sc. and M.Sc. degrees from the School of Electrical Engineering, Belgrade University, Serbia, in 1998 and 2007, respectively. In 2009, he joined the NSF-funded Future Renewable Electric Energy Delivery and Management (FREEDM) Research Center at North Carolina State University (NCSU, Raleigh, NC) as a research assistant. After graduation in 2013, he joined the Electrical and Computer Engineering Department at Utah State University as an Assistant Professor. He also serves as an Associate Director of the Electrified Vehicles and Roadways (EVR) research facility at USU, and a subthrust leader of the Dynamic Wireless Charging group at SELECT Research Center (USU). Dr. Pantic served as an Associate Editor for the IEEE Transactions on Transportation Electrification (TTE) Special Issue on Dynamic Charging Systems and Program Chair for Conference on Electric Roads and Vehicles (CERV) in 2015 and 2016. His primary areas of interest are systems for wireless inductive power transfer, control of power electronic converters and electromagnetic energy conversion with specific applications to transportation electrification, etc.

PRESENTER

Madhu Sudhan Chinthavali, Team Lead, Power Electronics & Electric Machinery Group
Electrical & Electronics Systems Research Division
Oak Ridge National Laboratory (ORNL)

Dr. Chinthavali has 14 plus years' experience in wide bandgap semiconductor (WBG) devices and its application in vehicle traction systems and power systems. His research areas include: device- and system- level models, WBG-based converters and inverters, and wireless power transfer with vehicle systems and renewable energy systems. Recently, his research focuses on additive manufacturing in power electronics systems and devices and wireless charging.

SESSION CHAIR:

Rich Raustad, Program Director
Electric Vehicle Transportation Center
University of Central Florida / Florida Solar Energy Center

Mr. Richard Raustad is the technical lead of the EV Transportation Center, and oversees researchers on multiple programs including V2G, commercial building demand limiting and wireless charger performance. His research area uses electric vehicles for providing energy storage for utility grid transmission systems or to act as backup power sources for both commercial and residential applications (V2G/V2B applications). He is also conducting research on measurement of electric and magnetic fields emanating from wireless vehicle charging. These experiments are being conducted in FSEC's EV laboratory which Mr. Raustad has designed and configured. Mr. Raustad is also experimenting with smart charging stations and bi-directional chargers to measure and mitigate the impact of slow and fast chargers on a buildings electricity usage and output power quality to the utilities power grid. Mr. Raustad has been a core development team member of DOE's EnergyPlus building energy simulation software for over 15 years and is a principal researcher in the Florida Solar Energy Center's buildings research division.

1:45 – 2:35pm

SESSION 6 *(PANEL)*

Recent Advances on Inductive Charging of Stationary and Moving Vehicles

PANELIST

Udaya Madawala, Professor
University of Auckland

Udaya K. Madawala (Senior Member IEEE) graduated with B. Sc. (Electrical Engineering) (Hons) from The University of Moratuwa, Sri Lanka in 1987 and received his PhD (Power Electronics) from The University of Auckland, New Zealand in 1993 as a Commonwealth Scholar. At the completion of his PhD, he was employed by Fisher & Paykel Ltd, New Zealand, as a Research and Development Engineer to develop new technologies for motor drives in washing machines. In 1997, he joined the Department of Electrical and Computer Engineering at The University of Auckland as a Research Fellow, and currently works as a Full Professor, focusing on a number of energy related power electronics projects. Professor Madawala has over 27 years of both industry and research experience in the fields of power electronics and magnetics. At present, he serves as an Associate Editor for IEEE Transactions on Industrial Electronics and IEEE Transactions on Power Electronics, and is a member of the Power Electronics Technical Committee and Renewable Energy Committee of IEEE Industrial Electronic Society and Power Electronics Society, respectively. He has over 200 international journal and conference publications, and holds a number of patents on Inductive Power Transfer and power converters with several pending. His research interests are in the fields of renewable energy, power electronics and inductive power transfer, for which he renders his service as a consultant to industry.

PANELIST

Conny Borjesson, Senior Researcher Electromobility
Viktoria Swedish ICT

Senior Researcher Electromobility. 30 years experience from the automotive industry.

MODERATOR

Joachim Taiber, Chief Technology Officer
International Transportation Innovation Center (ITIC)

After graduating at the Swiss Federal Institute of Technology Zurich, Dr. Taiber started his professional career at a Swiss software start-up company in 1995. He joined BMW Group in 1997 as in-house consultant in the vehicle development division. In 2003 Dr. Taiber was engaged in the initial planning team to implement the masterplan of a 250 acre automotive research campus in South Carolina closely located to the BMW US manufacturing site as a public private partnership model and to help shape the strategic collaboration with Clemson University. The first facility created on the Clemson University International Center for Automotive Research (CU-ICAR) campus in 2005 was the BMW Information Technology Research Center (ITRC). Dr. Taiber was leading the innovation activities at ITRC as director of the Information Technology Research Office for multiple years and collaborated during this time closely with the BMW Tech Office in Silicon Valley. In 2010 Dr. Taiber joined Clemson University as research professor and member of the Automotive Engineering faculty and created in 2011 the Sustainable Mobility Institute which he headed as director until the end of 2015. Since January 2016 Dr. Taiber is serving as CTO of the International Transportation Innovation Center (ITIC) and leading the effort to develop and implement in close proximity to CU-ICAR a 650 acre transportation innovation testbed and automotive technology experience center in a public private partnership model. He also has been appointed as adjunct professor to continue to serve CU-ICAR.

2:35 – 2:45pm

BREAK

2:45 – 3:45pm

SESSION 7 *(PRESENTATIONS)*

Recent Advances on Non-Inductive Charging of Stationary and Moving Vehicles

PRESENTER

Jean-Luc Hourtane, APS & SRS Product Engineering Manager
Alstom

After ten years as a team leader in the High Frequency R & D division of Alcatel Cable, where he developed electric pulse generators using high voltage, high current

and high frequency for the certification of lightning for Airbus aircrafts, Jean-Luc Hourtane joined Alstom Transport in 1991; within the group, he first worked for three years in the design of substations power supply for railway, then worked 13 years in signaling solutions for high-speed train (TGV), which six years in Seoul for signaling system engineering management for South Korea high-speed train (KTX). In 2007, he joined the division developing a catenaryless solution for tramway as APS product engineering director. Since then, he proposed diversifications of the APS solution to: APS for roads : Electric roads application, currently installed as a demonstrator in Sweden in partnership with Volvo; SRS for tramways : A Stationary Recharge Solution to recharge supercapacitors while the tramway is stopped at a station; SRS for buses : A solution to recharge onboard batteries.

PRESENTER
Dan Zethraeus, Project Manager
Lund University and Elonroad Company

2015 Project manager at Lund University, LU Open. 2014 Managing director of Elonroad Company 2012 Inventor and IP owner. 2001-2012 Project manager at Swedish Television 2000 Project manager Framfab, Internet productions 1994-2000 TV- Director and Scriptwriter 1987 Technical student.

PRESENTER
Khurram Afridi, Assistant Professor
University of Colorado Boulder

Khurram Afridi is an Assistant Professor of Electrical, Computer and Energy Engineering at the University of Colorado (CU) Boulder. He received the BS degree in electrical engineering from Caltech, and SM and PhD degrees in electrical engineering and computer science from MIT. His research interests are in power electronics and energy systems incorporating power electronic controls. Prior to joining CU Boulder he was a visiting faculty at MIT's EECS Department and the Chief Operating Officer and Chief Technology Officer of Techlogix. He has also worked for JPL, Lutron, Philips, and Schlumberger. From 2004 to 2008 he led the development of LUMS School of Science and Engineering, and was the Technical Program Committee chair for the IEEE Wireless Power Transfer Conference in 2015. He has received Caltech's Carnation Merit Award, the BMW Scientific Award, and the NSF CAREER Award.

SESSION CHAIR

Srdjan Lukic, Associate Professor, and IEEE Vehicular Technology Society Distinguished Lecturer
North Carolina State University

Srdjan M. Lukic received the Ph.D. degree in electrical engineering from the Illinois Institute of Technology, Chicago, IL, USA, in 2008. He is currently an Associate Professor with the Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA. He serves as the Distributed Energy Storage Devices Subthrust Leader of the National Science Foundation Future Renewable Electric Energy Delivery and Management (FREEDM) Systems Engineering Research Center, North Carolina State University. His current research interests include design, and control of power electronic converters and electromagnetic energy conversion with application to wireless power transfer, energy storage systems, and electric automotive systems. Dr. Lukic serves as an Associate Editor of the IEEE TRANSACTIONS ON TRANSPORTATION ELECTRIFICATION. He has served as a Guest Editor of the Special Section of the IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS on Energy Storage Systems—Interface, Power Electronics and Control. He is a Distinguished Lecturer with the IEEE Vehicular Technology Society since 2011.

3:45 – 5:00pm

SESSION 8 *(PANEL)*

In-Motion Charging and Automated/Connected Vehicles – Synergetic Potential

PANELIST

Ryan Gerdes, *Assistant Professor, Electrical and Computer Engineering*
Utah State University

Ryan M. Gerdes works in the area of computer, network, and device security. Before joining USU in August 2011, Prof. Gerdes received his PhD in electrical engineering from Iowa State University for his work on device fingerprinting. His research interests include physical layer identification (identifying devices based on their electrical signatures), automated transportation security (spoofing sensors, devising/countering attacks against vehicle control systems, p2p physical-layer key generation, and secure localization), and integrated circuit security (designing, detecting, and remotely triggering malicious logic).

PANELIST
Blaine Leonard, Intelligent Transportation Systems (ITS) Program Manager
Utah Department of Transportation

Blaine Leonard is the Program Manager for Intelligent Transportation Systems (ITS) at the Utah Department of Transportation (UDOT) in Salt Lake City. In this role, he is responsible for planning and building ITS elements around the state, including traffic cameras and sensors, variable message signs, and fiber communication systems. He also leads the planning for connected and automated vehicles, including anticipating the impacts of those technologies on the Department. He chairs the American Association of State Highway and Transportation Officials (AASHTO) Connected and Automated Vehicle Working Group and is a member of the Executive Committee of the Vehicle to Infrastructure Deployment Coalition (V2I DC). Prior to joining the Department, Blaine spent 20 years in the consulting engineering business. He is a licensed civil engineer in six western states and the former President of the American Society of Civil Engineers.

PANELIST
Jeff Ferrin, Head of Research
Autonomous Solutions Inc.

Jeff Ferrin received his M.S. degree in Mechanical Engineering with an emphasis in Dynamics and Control from Utah State University in 2007. He worked at Autonomous Solutions, Inc. (ASI) as a control systems engineer and developed control systems for a wide variety of vehicles. These vehicles range in size from a small human portable robot up to a large 5-ton military truck. He worked on the development of the Guideline system which was developed for robotic convoys without GPS. In 2010 he returned to school at Brigham Young University (BYU) to pursue a Ph.D in Mechanical Engineering. In 2012 while still continuing his studies at BYU he returned to ASI as a control systems engineer and is working on a research project at ASI for his Ph.D work in the area of vision-based navigation and control of ground robots in GPS-denied environments. Jeff is currently the Head of Research at ASI where he leads a team of engineers developing advanced control systems and perception algorithms for autonomous ground vehicles.

MODERATOR

Kevin Heaslip, Associate Professor of Civil Engineering and Research Leader for Resilience
Virginia Tech

Kevin Heaslip, Ph.D., PE is an Associate Professor in the Charles Edward Via Jr. Department of Civil & Environmental Engineering at Virginia Tech and a Research Team Leader for Resilience in the Virginia Tech National Capital Region Office of the Vice President. He was previously an Assistant/Associate Professor in the Department of Civil & Environmental Engineering at Utah State University and the Associate Director of the Utah Transportation Center and the Mountain Plains Consortium (Region 8 University Transportation Center).

He received his Ph.D. from the University of Massachusetts Amherst in 2007 and graduated from Virginia Tech with a BSCE and MSCE in 2002 and 2003 respectively. In addition, USU recognized his research by naming him the Department of Civil & Environmental Engineering Researcher of the Year and Undergraduate Research Mentor of the year twice. He was also awarded the College of Engineering Undergraduate Research Mentor of the Year in 2011.

He has published 32 refereed journal publications, 38 refereed conference proceedings, and received research grants as Principal Investigator or co-Principal Investigator in the value of over $16 million dollars. In addition, he has mentored 28 undergraduate researchers and served as the major professor of 21 graduate students.

Dr. Heaslip has completed research for several major organizations including: The U.S. Department of Transportation, the U.S. Department of Defense, the National Cooperative Highway Research Program, and is currently working a US Department of Energy funded project on Automated Electric Transportation. He is also a member of three committees at the Transportation Research Board.

TOUR OF USU'S DYNAMIC CHARGING FACILITY

SEE FACILITY INFORMATION ON PG 31

5:00pm: Transit from Conference Center to Facility

5:15 – 6:15pm: Tour of Facility

6:15pm: Return transit to Reception

6:30 – 8:00pm

RECEPTION

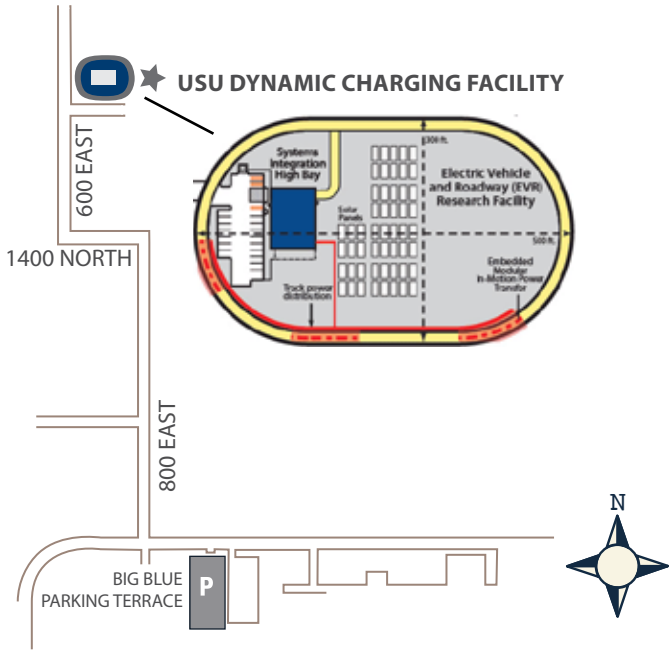
ELECTRIC VEHICLE & ROADWAY

Research Facility & Test Track

RESEARCH FACILITY AND TEST TRACK

The electric vehicle and roadway research facility and test track is a glimpse into the future of advanced, electric automotive transportation. Using wireless inductive power transfer pads embedded underneath the roadway, electric vehicles can seamlessly charge while they are in motion, drastically reducing the need for large battery packs and cumbersome charging stations.

The EVR is a state-of-the-art facility at the forefront of wirelessly charged electric vehicle and roadway technologies engineering research, development, and testing.



MAY 17

TUESDAY

7:30 – 8:20am

CONTINENTAL BREAKFAST & CONFERENCE REGISTRATION

8:20 – 8:25am

WELCOME & AGENDA

Jeff Muhs
Conference Co-Chair, Wasatch Collaboratory

8:25 – 8:30am

INTRODUCTION OF KEYNOTE SPEAKER

Keith Wilson, Project Manager
Technical Programs Global Ground Vehicle Standards
SAE INTERNATIONAL

Keith is a Project Manager for Technical Programs at SAE International. Keith coordinates projects and standards activities related to advanced vehicle technologies. He is involved in developing innovative business strategies surrounding various vehicle technologies such as advanced vehicle safety systems, connected vehicle technology, electro-mobility (including hydrogen fuel cell vehicles and lithium ion battery systems), chassis systems and materials/processes. Keith's role at SAE International also includes responsibility for new industry business initiatives including obtaining funding support for verification of new industry standards and the management of government and industry cooperative research programs.

Prior to joining SAE International, Keith has served in automotive engineering and technical leadership positions, including Engineering Group Manager, General Motors Automotive Safety Center. Keith managed engineering/technical groups responsible for supporting product litigation activities and product defect investigations. In addition, Keith served as Manager, Vehicle Crash Test Operations, for GM Safety and Restraints Center.

Keith earned a Master of Science in Business Administration from Central Michigan University, a Bachelor Degree in Business Management from Cleary University and a Degree in Applied Science from Oakland College.

8:30 – 9:00am

KEYNOTE PRESENTATION

Wireless Power Transfer: The path to commercialization through standards

SPEAKER
Jesse Schneider, *Chair,*
SAE J2954 Wireless Power Transfer Taskforce
BMW

See Bio in Session 1

9:00 – 9:40am

SESSION 9 *(PANEL)*

Electrical Infrastructure: EVSE, V2G, Energy Management, and Grid Impact of Stationary and Dynamic Charging

PANELIST
Dan Bowermaster, Program Manager, Electric Transportation
Electric Power Research Institute

Dan Bowermaster is the Program Manager for Electric Transportation at the Electric Power Research Institute (EPRI), an independent non-profit center for public interest energy and environmental research. EPRI's electric transportation program provides research critical to the development of technology, infrastructure, and analytics necessary to support the advancement of electric transportation.

His program's research focuses on the development, deployment, and analysis of plug-in electric vehicles and charging infrastructure and collaborates heavily with the automotive and technology industries. A sample of the team's research and demonstration projects includes electric vehicle infrastructure grid impact and integration, environmental impact of electric vehicles, plug-in truck demonstration, total cost of ownership, electric vehicle driver preference/behavior, electric forklift cost savings calculator, seaport electrification case studies, analysis of electric and natural gas options for fleet support, and plug-in electric vehicle readiness for utility customers.

Prior to joining EPRI in 2011, Bowermaster worked at Pacific Gas & Electric Company where he led PG&E's customer-facing Electric and Natural Gas Vehicles team. He joined PG&E in September 2008 as part of the MBA Leadership Program, working in PG&E's Engineering and Operations, Power Generation, and Corporate Strategy groups. Bowermaster completed the Wharton-Lauder dual

graduate degree program, earning a master's in business administration from the Wharton School of Business and a master's in international studies from the University of Pennsylvania. In addition, he holds bachelor's degrees in mechanical engineering and in international relations from the University of California, Davis.

PANELIST
Rohit Nair, Senior Engineer
Rocky Mountain Power

Rohit Nair is a senior engineer in the Engineering Standards & Technical Services group at Rocky Mountain Power. He was appointed to this position in April 2015. Nair is responsible for studies dealing with renewable resources, distributed generation including smart inverters for solar photovoltaic systems, energy storage and electric vehicles. Further, he contributes to various power quality, special projects and policy-making activities. He has responsibilities as part of the company's smart grid core team and is also the engineering lead of PacifiCorp's electric vehicle strategy team. Rohit earned his masters degree in electrical engineering from Oklahoma State University, holds a professional license from the state of Arizona and is currently pursuing Masters of Business Administration. He is a recipient of several national and international awards including the IEEE Region 6 outstanding engineer award.

MODERATOR
Tony Markel, Sr. Engineer, Electric Vehicle Grid Integration
National Renewable Energy Laboratory (NREL)

Tony Markel is a Senior Engineer and has worked on systems analysis of advanced vehicles for the past 19 years at the National Renewable Energy Laboratory in Golden, Colorado. Tony is currently focused on Electric Vehicle Grid Integration technology development. He earned a B.S. in Mechanical Engineering from Oakland University in 1995 and a M.S. in Mechanical Engineering from the University of Colorado. Tony's expertise spans advanced vehicle technologies including hybrid electric, fuel cell, plug-in hybrid, and electric vehicles and was instrumental in the development of the ADVISOR™ software tool for vehicle systems simulation. He leads a team researching grid integration challenges facing plug-in vehicles with a mission to highlight opportunities for electrified transportation to reduce our nation's petroleum consumption and enable a smart, renewable, future electricity grid.

9:40 – 10:20am

SESSION 10 *(PRESENTATIONS)*

Electrical Infrastructure: EVSE, V2G, Energy Management, and Grid Impact of Stationary and Dynamic Charging

PRESENTER
Duleepa Thrimawithana, Senior Lecturer
University of Auckland

Duleepa J. Thrimawithana, received his BE in Electrical Engineering (with First Class Honors) in 2005 and his Ph.D. in power electronics in 2009 from The University of Auckland, New Zealand. From 2005 to 2008, he worked in collaboration with Tru-Test Ltd. in Auckland as a Research Engineer in the areas of power converters and high-voltage pulse generator design. He joined the Department of Electrical and Computer Engineering at The University of Auckland in 2009 where he currently works as a Senior Lecturer. He also serves as the Chairman of the Joint Chapter of IEEE Industrial Electronics and Industrial Applications Society, New Zealand (North). He has co-authored over 90 international journal and conference publications, and holds 10 patents on wireless power transfer technologies with several pending. In recognition of his outstanding contributions to engineering as an early carrier researcher, Dr. Thrimawithana received the Jim and Hazel D. Lord Fellowship in 2014. His main research areas include wireless power transfer, power electronics and renewable energy.

PRESENTER
Brett Hauser, CEO
Greenlots

Brett Hauser, CEO of Greenlots, leads the company's global business with a particular focus on establishing company partnerships and ongoing expansion efforts. In coordination with the Board of Directors, Hauser is responsible for developing and implementing the company's strategic roadmap, introducing new solutions and services while leveraging the existing projects that Greenlots has successfully deployed around the world since 2008. Prior to joining Greenlots, Hauser served as Chief Operating Officer for EV Connect where he was responsible for the company's operational leadership. While at EV Connect Hauser was instrumental in securing key infrastructure grants, negotiating and managing relationships with auto manufacturers and electric vehicle supply equipment manufacturers Before EV Connect,

Hauser spent more than eighteen years in strategic and financial planning, product management and business development roles. Most recently, at Columbus Nova, a Manhattan based private equity investment firm, Hauser was responsible for restructuring various multi-million dollar corporations in telematics, mobile resource management, telecommunications and natural resources. He has also served on numerous boards for companies including Vericom Technologies, sentitO Networks, Virginia Diamond Fields and Clareos.

SESSION CHAIR
Tony Markel, Sr. Engineer, Electric Vehicle Grid Integration
National Renewable Energy Laboratory (NREL)

See Bio in Session 9

10:20 – 10:30am
BREAK

10:30 – 11:20am
SESSION 11 *(PANEL)*
Roadway Infrastructure: Design Concepts and Challenges for Pavement Integration of Stationary and Dynamic Charging

PANELIST
Andrew Liu, PE, GE, Vice President,
AECOM New Ventures

Andrew oversees AECOM New Ventures, a group focused on developing new and emerging market sectors and integrating technology and innovation into existing core business. Areas of focus include future transportation; water-energy nexus and creative project financing; and Internet of Things and Smart Cities.

As part of the future transportation effort, Andrew is leading AECOM's Hyperloop initiative which includes design-build of the world's first Hyperloop test track for SpaceX Technologies. He is also developing partnerships with other Hyperloop companies that are working to advance this proposed 5th mode of transit. Andrew is also involved with other transportation initiatives such as Smart Parking, autonomous vehicle infrastructure, and roadway electrification.

Andrew is a licensed civil and geotechnical engineer in the state of California with nearly 20 years of experience in transportation. Prior to his current role, Andrew worked in corporate strategy for the CEO of AECOM, managed

P&L responsibilities for the Los Angeles Transportation market, founded multiple investor-backed startups, and was a partner at a North American tunneling consultancy. Andrew holds a BS and MS in Civil Engineering and Geotechnical Engineering, respectively, from UCLA and a MBA from the Wharton School of business.

PANELIST

John Haddock, Professor of Civil Engineering and Director, Indiana Local Technical Assistance Program
Purdue University - School of Civil Engineering

Dr. John E. Haddock is a professional engineer in Indiana and a professor of Civil Engineering at Purdue University where he also serves at the director of the Indiana Local Technical Assistance Program.

Prior to joining the Purdue faculty, Dr. Haddock worked in private industry as a materials engineer, a senior research associate for the National Center for Asphalt Technology, a research engineer for the Indiana Department of Transportation, and a district engineer for the Asphalt Institute.

Dr. Haddock is a member of the American Society of Civil Engineers, ASTM International, the International Society for Asphalt Pavements, the Association of Asphalt Paving Technologists, and the American Road and Transportation Builders Association. He has also served on several committees for the Transportation Research Board and recently finished his six-year tenure as the chair of AFK30, Committee on the Characteristics of Non-asphalt Components of Asphalt Paving Mixtures. He also recently completed nine years of service as a member of the Federal Highway Administration's Asphalt Mixture Expert Task Group.

PANELIST

Marvin Halling, Professor of Structural Engineering Department of Civil and Environmental Engineering
Utah State University

Marvin W. Halling, PhD, PE, SE, F.ASCE is a Professor of Structural Engineering at Utah State University and Head of the structural engineering division since August of 2001. His professional career includes four years in structural engineering consulting in Los Angeles and twenty-two years as a university faculty member. He received a PhD from Cal Tech in 1995 and a master's degree from Stanford University in 1986. Halling has tested and instrumented several bridges as part of the Federal Highway Administration's (FHWA) Long

Term Bridge Performance Program (LTBP). These include bridges in Minnesota, California, and Utah. Additionally, Dr. Halling has tested and instrumented many bridges in Utah for studies funded by Utah Department of Transportation (UDOT) and the Utah Transportation Center. He and his students analyzed dynamic data collected from five bridge moves that were part of UDOT's Accelerated Bridge Construction (ABC) bridge program in 2008.

Dr. Halling has been involved with bridge research since the late 1990's. His expertise is in field instrumentation, testing, and dynamic analysis of bridges and other structures. In the last nine years, Utah State University has built a new structural laboratory which has resulted in a number of laboratory studies on bridge components from salvaged highway bridges as well as testing of constructed specimen. One research area has been the investigation of deck connections for precast deck segments for ABC construction.

MODERATOR
John Miles, Professor of Transitional Energy Strategies
Emmanuel College (University of Cambridge) and ARUP

See Bio in Session 4

11:20 – Noon

SESSION 12 *(PANEL)*

Considerations for New Initiatives and Government Programs in Electrified Roadways

PANELIST
Tim Schmidt, Senior Advisor
DOT, Turner-Fairbank Highway Research Center, FHWA

Tim Schmidt is the Senior Advisor at the Turner-Fairbank Highway Research Center in McLean, Virginia -- part of the Federal Highway Administration, U.S. Department of Transportation. In that role he serves as the Center's technology advocate, strategist and thought leader. Tim monitors, evaluates, socializes and communicates relevant new and evolving technological and process solutions to solve cross-discipline challenges and to fill gaps where necessary to support a highly innovative and efficient surface transportation research environment. He works in close coordination with senior Federal and State DOT leadership, relevant boards and councils, along with academia. Tim is responsible for assisting with the coordination and integration of technological best practices, data science, and related policies, guidelines, and procedures to ensure effective

and economical tactical and strategic research planning in support of National objectives. Mr. Schmidt initiates and evaluates research and technology information collection and monitoring to ensure the DOT surface transportation research community stays fully aware of current and evolving transformational technology and process breakthroughs. Prior to joining the Research Center, Tim held numerous senior executive positions both within and outside the Federal Government including the position of Deputy Chief Information Officer and Chief Technology Officer for the U.S. DOT along with senior positions at FAA, IRS and the White House. One of the hallmarks of his time at the White House Communications Agency was leading both Reagan-Gorbachev Summits hosted in Geneva and Reykjavik. He is a retired Army officer having served for over 20 years within the Department of Defense.

Paul Albertus, Program Director
DOE Advanced Research Projects Agency-Energy (ARPA-E)

Dr. Paul Albertus currently serves as a Program Director at the Advanced Research Projects Agency –Energy (ARPA-E). His focus at ARPA-E includes energy storage for transportation and stationary applications, energy conversion, and energy materials. He is responsible for a significant portion of ARPA-E's electrochemistry-related projects, including batteries, fuel cells, and light metal production.

Prior to joining ARPA-E, Dr. Albertus spent more than four years at the Bosch Research and Technology Center in Palo Alto, California, working on electrochemical energy storage systems. His work has included mathematical modeling of electrochemical processes, energy storage system and cost analysis, and electrochemical and thermal property measurements. While at Bosch Research he helped to set up the Bosch Energy Research Network, which provides energy-related research grants to universities and internships to students.

Dr. Albertus completed his B.S.E. at the University of Michigan and his Ph.D. at the University of California, Berkeley, both in Chemical Engineering.

MODERATOR
Regan Zane, CERV Conference Co-Chair
Professor of Electrical and Computer Engineering
Utah State University

See Bio in Monday Welcome & Agenda

Noon – 12:10pm
CLOSING REMARKS

CONFERENCE PROVIDED SERVICES

Visit the CERV Headquarters for Registration and Hospitality located at the Registration Booth if you have questions about the Conference and happenings in Logan. Among the information available is a list of area restaurants, shopping, and local attractions and entertainment. Stop by!

Registration and Hospitality Desk Hours

Monday, May 16	7:00am – 5:00pm
Tuesday, May 17	7:30am – 12:30pm

Speak Up

We want to hear from you! Be sure to complete a Conference evaluation form, which will be sent to your email following the conference. Your responses will help us to offer an even better Conference in the future.

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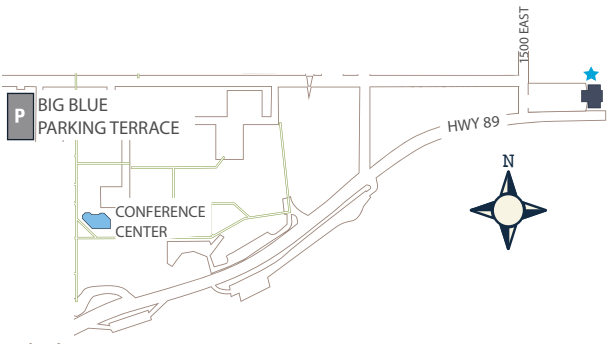


RECEPTION LOCATION:

LOGAN GOLF AND COUNTRY CLUB

MONDAY, MAY 16, 2016

6:30 PM – 8:00 PM

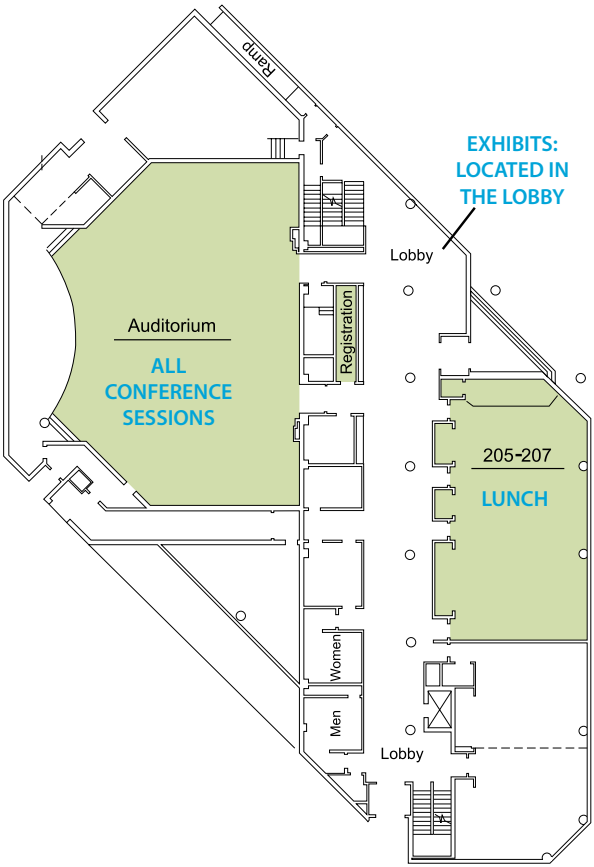
CATERING PROVIDED BY:

off›premise CATERING

CONFERENCE MAP

Eccles Conference Center

Eccles Conference Center: LEVEL 2



CONFERENCE MAP

Utah State University

CONFERENCE COMMITTEE

Zeljko Pantic, PhD
Conference Program Chair
Utah State University,
Electrical and Computer Engineering

Regan Zane, PhD
Conference Co-Chair
Utah State University, USTAR,
Electrical and Computer Engineering

Jeff Muhs
Conference Co-Chair
Wasatch Collaboratory,
President and CEO

Kylie Downs
Conference Administrator
Utah State University,
University Inn & Conference Center

THANK YOU

FOR JOINING US AT THE 4TH CONFERENCE ON ELECTRIC ROADS & VEHICLES

NOTES

NOTES