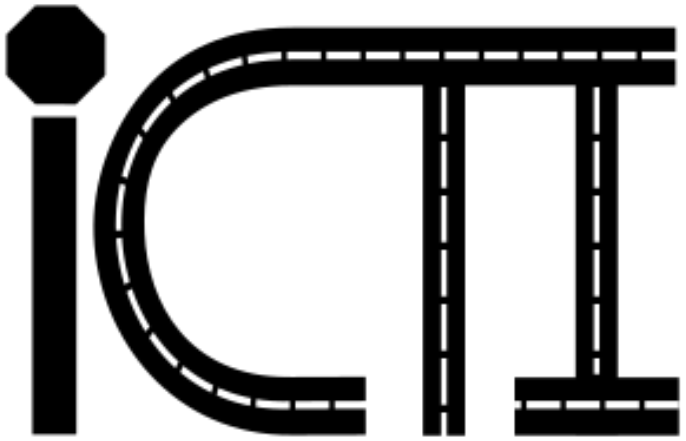


International Conference on
Transportation Innovation

September 6 & 7, 2018

Donadeo Innovation Center for Engineering 8th Floor
University of Alberta
Edmonton, Alberta, Canada

Schedule of Conference Day 1

8:00 a.m.	Registration & breakfast
9:00 a.m.	Opening Ceremony Tony Qiu, Director, Centre for Smart Transportation and Associate Professor, Department of Civil & Environmental Engineering, University of Alberta Dr. Simaan AbouRizk, Chair of the Dept. of Civil and Environmental of Engineering, University of Alberta
9:20 a.m.	Keynote - Patrick D. Daniel/Enbridge Lecture Theatre Ibrahim Gedeon, Chief Technology Officer, TELUS “Going Beyond the Connected Car”
9:50 a.m.	Barry Pekilis, National Research Council “The Next Generation of Intelligent Transportation Systems are Coming to Canada: Are We Ready?”
10:30 a.m.	Break - Fred Pheasey Engineering Commons
11:00 a.m.	Session - Patrick D. Daniel/Enbridge Lecture Theatre Chair: Dr. Karim El-Basyouny, Associate Professor, Dept of Civil & Environmental Engineering, University of Alberta Dave Grafton, Managing Principal, Tantus Solutions Group “The Value of Connected Environments” Jonathan Cliffen, Telecom Product Development Lab, 3M Canada “Infrastructure Materials Designed for Automotive Sensing Systems” Rod Schebesch, Vice President and Smart Mobility Lead, Stantec “SMART MOBILITY: The Future of Our Cities and their Infrastructure Needs”
12:30 p.m.	Lunch - Fred Pheasey Engineering Commons
12:30 p.m. **1:30 p.m.** **2:30 p.m.**	Demo Tours At ICTI 2018, attendees have the opportunity to see and experience • A tour of the Canada first CV and AV testing facility at the University of Alberta's South Campus. It includes a demonstration of Canada's first manufactured Connected Vehicle brake alerts using three vehicles. • A tour of the CST group laboratory facility, including different test equipment and a state-of-the-art safety monitoring system linked to South Campus
	The Poster exhibit will be open during this time in the Fred Pheasey Commons
3:30 p.m.	Session - Patrick D. Daniel/Enbridge Lecture Theatre Chair: Tony Qiu, Director, Centre for Smart Transportation and Associate Professor, Department of Civil & Environmental Engineering, University of Alberta Dave McNamara, Brandmotion “Challenges of Integrating Connected Vehicle Technology for Large Scale Deployments”

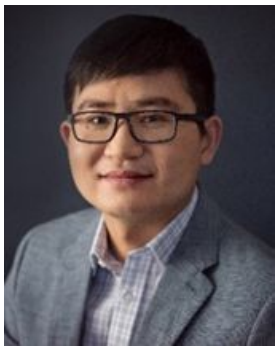
	Dr. Karim El-Basyouny, Associate Professor, Dept of Civil & Environmental Engineering, University of Alberta “Infrastructure Management: Using LiDAR Data to Detect, Map, & Analyze Road assets”
4:30 p.m.	Closing Keynote - Patrick D. Daniel/Enbridge Lecture Theatre Jim Misener, Senior Director, Technical Standards, Qualcomm “Cellular V2X: From Here to 5G”
5:15 p.m.	End-of-Day Remarks Tony Qiu, Director, Centre for Smart Transportation and Associate Professor, Department of Civil & Environmental Engineering, University of Alberta
5:15 p.m. - 7:00 p.m.	Welcome Reception Co-hosted by the Northern Alberta ITE Section Join us for an opportunity to mingle with conference attendees!

Schedule of Conference Day 2

8:00 a.m.	Registration & breakfast
9:00 a.m.	Opening Remarks - Patrick D. Daniel/Enbridge Lecture Theatre Speaker tbc
9:15 a.m.	Keynote - Patrick D. Daniel/Enbridge Lecture Theatre Dragos Margineantu, AI Chief Technologist and Technical Fellow of Boeing Research & Technology “A Vision for Advancing Applied AI Research & Engineering”
10:15 a.m.	Break
10:30 a.m.	Session Chair: Dr. Amy Kim, Associate Professor, Dept of Civil & Environmental Engineering, University of Alberta Dongpu Cao, CogDrive Lab, Associate Professor, Dept of Engineering, University of Waterloo “Parallel Cognitive Autonomous Mining” Liping Fu, Innovative Transportation System Solutions (iTSS) Lab, University of Waterloo “Advancing Transportation Safety and Sustainability Using Big Data and Machine Learning” Yu Zhang, Associate Professor, Department of Civil and Environmental Engineering, University of South Florida “A statistical analysis of consumers’ perceptions towards automated vehicles and their intended adoption” Celeste Chavis, Assistant Professor, Dept. of Transportation and Urban Infrastructure, Morgan State University "Baltimore Bike Share Infrastructure Planning through the Lens of Equity"
12:15 p.m.	Lunch - Fred Pheasey Engineering Commons The Poster exhibit will be open during this time in the Fred Pheasey Commons
1:00	Demo TrustPoint Innovation Technologies will be running a demonstration in the Lab for conference delegates ESCRYPT will demonstrate how V2X applications are secured, with a particular focus on the V2X Security Credential Management System (SCMS). ESCRYPT will show a short video animation of V2X security that goes through an explanation of what is happening in the background from a security standpoint for various V2X uses case. Following the video animation, ESCRYPT will provide a physical demonstration of ESCRYPT’s SCMS simulator that will show more details as to what is going on behind the scenes. Throughout the demonstration, ESCRYPT will point out what will be deployed to support Project Aurora. ESCRYPT will also discuss various “scaled” SCMS architectures that are suitable for Proof of Concept type of deployments like Project Aurora.

2:00 p.m.	Session Chair: Tony Qiu, Director, Centre for Smart Transportation and Associate Professor, Department of Civil & Environmental Engineering, University of Alberta Shane Zumpf, Software Development, WYDOT Connected Vehicle Project, Trihydro “A Connected Winter: Deploying CV technology for communication in time critical situations” Victor Leung, University of British Columbia "Enabling Smart Transportation Applications in Edge Networks: a Coordination-based Approach" Kevin Henry, Senior Cyber Security Consultant, ESCRYPT (Canada) “A Scaled V2X Security Credential Management System for Project Aurora”
3:30 p.m.	Conference Closing Remarks Tony Qiu, Director, Centre for Smart Transportation and Associate Professor, Department of Civil & Environmental Engineering, University of Alberta

Speakers



Dr, Dongu Cao, Associate Professor, Dept. of Mechanical and Mechatronics Engineering, University of Waterloo

Dr. Cao is an Associate Professor in the Department of Mechanical and Mechatronics Engineering and Director of Waterloo Cognitive Autonomous Driving (CogDrive) Laboratory at the University of Waterloo. He is also the Executive Director for the Waterloo Joint Research Center for Artificial Intelligence and Connected Autonomous Driving (AI-CAR). Dr. Cao's research focuses on vehicle dynamics/control, driver cognition, automated driving and parallel driving. To this research field, he has contributed over 180 papers, 2 books, and 10 patents. Dr. Cao received the SAE Arch T. Colwell Merit Award in 2012, and 3 best paper awards from ASME AVTT'2010 and IEEE IV 2018. His research has been funded by UK EPSRC, EU Horizon2020, Innovate UK, Canada NSERC, Ontario Research Fund, and Automotive Partnership Canada and various industrial partners in the automotive sector. Dr. Cao serves as an Associate Editor for IEEE Transactions on Vehicular Technology, IEEE Transactions on Intelligent Transportation Systems, IEEE/ASME Transactions on Mechatronics, IEEE Transactions on Industrial Electronics, IEEE/CAA Journal of Automatica Sinica, ASME Journal of Dynamic Systems, Measurement and Control, and International Journal of Vehicle Design. He has been a member of SAE Vehicle Dynamics Standards Committee and a Co-Chair for IEEE ITSS Technical Committee on Cooperative Driving.

Dr. Celeste Chavis, Assistant Professor, Dept. of Transportation and Urban Infrastructure Studies, Morgan State University

Dr. Chavis' research explores the intersection of transportation operations and planning, and equity in the United States and abroad. Recent work includes topics on transit signal optimization, effect of transit design on student absenteeism, bicycle safety planning and travel behavioral modeling.

Dr. Chavis holds a Doctor of Philosophy (2012) in Civil and Environmental Engineering from the University of California, Berkeley and is a licensed Professional Engineer in the State of Maryland.

Jonathan Cliffen, Telecom Product Development Lab, 3M Canada

Jonathan worked for a number of years as a key member of the 3M Telecom Product Development Lab designing and programming embedded systems for the Telecommunications Industry. Jonathan also has worked in 3M's Electromechanical Lab as a developer of many product and commercialization programs and is well versed in 3M technologies. More recently, Jonathan has designed several machine vision systems for manufacturing, automating quality inspection and providing new tools for 3M's Quality Assurance groups. He now acts as 3M Canada's technical lead for Connected and Autonomous Vehicles.

Jonathan Cliffen has a Bachelor's degree in Engineering Science from Western University and has been with 3M since 2000.

Dr. Karim El-Basyouny, Associate Professor, Dept. Of Civil and Environmental Engineering, University of Alberta

Dr. Karim El-Basyouny is an Associate Professor and inaugural City of Edmonton's Research Chair in Urban Traffic Safety at the University of Alberta. He is a co-founder and steering committee member for the Centre of Smart Transportation (CST) in the Department of Civil and Environmental Engineering. Dr. El-Basyouny is a member of the Safety Data, Analysis and Evaluation Committee and the Pedestrian Committee at the Transportation Research Board and sits on the editorial advisory board of the Journal of Analytic Methods in Accident Research (AMAR). He holds a M.Sc. (2006) and Ph.D. (2011) degrees in Transportation Engineering from the University of British Columbia, Canada. His research focuses on collision modeling and evaluation, and more recently on speed management, use of remote sensing data for highway design, and the role of intelligent transportation systems in improving safety. Over the past decade, Dr. El-Basyouny's research has been supported by several Canadian grants from federal, provincial, regional, and municipal agencies. He has published 99 peer reviewed journal and conference publications and delivered several key presentations both nationally and internationally.

Dr. Liping Fu, Director of the Innovative Transportation System Solutions (iTSS) Lab, University of Waterloo

Dr. Fu is a Professor in the Department of Civil and Environmental Engineering and Director of the Innovative Transportation System Solutions (iTSS) Lab at the University of Waterloo.He is a Fellow of Canadian Society for Civil Engineering and the past Chair of Transportation of Division of CSCE. Dr. Fu received Transportation Association of Canada (TAC)'s 2011 Academic Merit Award sponsored by Transport Canada for his long-term contribution to the advancement of the academic field and to the development of tomorrow's transportation leaders. Dr. Fu's research interest specifically focuses on evaluation and optimisation of large, complex traffic and transportation service systems where uncertainty and dynamics play a major role, and on the development of decision support tools for use in managing these systems. He has a long track record of research contributions to the areas of intelligent transportation systems, public transit, road safety, and winter road maintenance. Dr. Fu holds several international patent and software copyrights. Currently, Dr. Fu is leading a number of projects funded by NSERC, Transport Canada, Ministry of Transportation Ontario, City of Toronto, Region of Waterloo, Go Transit, and many industrial partners. He has served on numerous technical committees of various professional organizations, including Transportation Research Board's Committee, Editorial Advisory Board of the journal of Transportation Research, Intelligent Transportation Systems Society of Canada, Canadian Urban Transit Association, and Institute of Transportation Engineers.

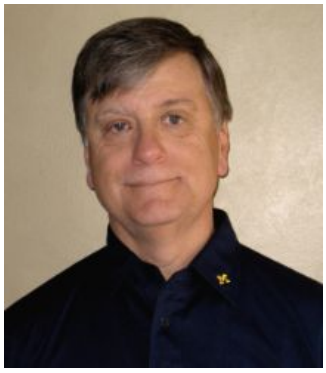
Ibrahim Gedeon, Chief Technology Officer, TELUS

Ibrahim is one of the global telecommunications industry's eminent thought leaders. He has carved out an international career by combining tremendous insight and skill as an applied scientist with a lighthearted and non-conventional approach to leadership. As Chief Technology Officer for TELUS, a leading national telecommunications company in Canada, he is responsible for all technology development and strategy, security, service and network architecture, service delivery and operational support systems, as well as service and network convergence, and network infrastructure strategies and evolution. Under his leadership the TELUS wireless broadband network has become one of the best in the world. Within industry Ibrahim has held

leadership roles and chaired many events in the IEEE and received the IEEE Canada's Outstanding Canadian Engineer Award in 2001. He serves on the board of the Next Generation Mobile Networks Alliance, the Alliance for Telecommunications Industry Solutions and the Institute for Communication Technology Management. He has a Bachelor's degree in Electrical Engineering from the American University of Beirut and a Master's in Electronics Engineering from Carleton University. In 2010, Ibrahim received a Honorary Doctor of Laws degree from the University of British Columbia. In 2014, he was elected as a Fellow of the Canadian Academy of Engineering (CAE) in recognition of his significant contributions to the field of engineering. He has been named five times to the Global Telecoms Business magazine's GTB Power 100, a list of the 100 most powerful and influential people in the telecoms industry.

Dave Grafton, Managing Principal, Tantus Solutions Group

Dave is a senior I.T. professional with 40 years' experience in the business applications arena. Prior to joining Tantus, Dave spent 15 years with IBM Canada in senior application management solutions and sales roles, retiring from IBM in December 2016 as the Application Innovation Services Leader for the Canadian Public Sector, responsible for annual service sales in excess of $100M. Dave's personal experience has covered several industries including large procurements and contract renewals in healthcare, energy, transportation and aerospace. He brings a wealth of insight into all matters related to application management, organizational assessment, sourcing strategy, large deal management, contract negotiation, and solution implementation.



Dave McNamara, Director, Connected Vehicle (CV) Services, Brandmotion LCC.

As the program manager for vehicle systems for the Tampa CV (V2X) Pilot (tampacvpilot.com), Dave led the vehicle integration. Brandmotion, a nationally known developer and distributor of automotive products was selected to be the Vehicle System Integrator for the pilot. The Tampa CV Pilot deploys a rich variety of connected vehicle applications (e.g. Wrong Way Entry and Pedestrian Collision Warnings) throughout downtown Tampa. We will equip ten Hillsborough Area Regional Transit (HART) buses and ten TECO Line Streetcars, and 1600 privately owned vehicles of all makes and models. Dave led the vehicle systems collaboration to create a common vehicle system specification (e.g. On-Board unit) across all suppliers. To date, this team has installed, tested and put on Tampa roads over 500 passenger cars as we are entering the data selection phase of the pilot. Dave' s 42-year career (linkedin.com/in/davidmcnamaramtsllc/) spans the "golden age" of automotive electronics, as a Ford Motor Company design manager responsible for the development of several high-volume products – powertrain sensors, body/vehicle networks, audiophile systems, Parking Aid Systems, Adaptive Cruise Control, and infotainment/connectivity products. After retirement from Ford in 2006, Dave consulted as McNamara Technology Solutions LCC working with leading automotive OEMS/suppliers, Leidos for the USDOT and other clients to advance Connected Vehicle/ADAS technology. From 2015 through 2016, Dave worked for Magna R&D; a leading automotive supplier of ADAS/Cameras based systems, before joining Brandmotion in 2016. Dave received his Bachelor Degree in Electrical Engineering from the University of Michigan, Ann Arbor, Michigan in December 1973 and his Masters degree in Solid State Physics with honors from the University of Florida, Gainesville, Florida in 1976. He has five US Patents in the areas of sensors, vehicle security and navigation. He is active in SAE, IEEE, and a speaker/participant at the Consumer Electronics Show and Telematics Update Conferences.

Jim Misener, Senior Director, Technical Standards, Qualcomm

Jim is the Senior Director of Technical Standards at Qualcomm, with expanded role to include development and executing strategies to establish cellular V2X ecosystems and foster global deployment. This ecosystem shift includes adaptation of ITS standards and application protocols, compliance and certification, trade association strategy and industry/government acceptance. In addition to his role with TSAG, Jim is a 5GAA Board member, an ITS California Board member, the SAE C-V2X Technical Committee Chair, an active member of IEEE 1609 Working Group, on the US TAG for ISO TC204 and active in the Transportation Research Board. Jim also serves as an Advisory Council member to the Carnegie Mellon University/University of Pennsylvania Transportation Center, Technologies for Safe and Efficient Transportation. Jim was early pioneer in vehicle-highway automation and vehicle safety communication at the California Partners for Advanced Transit and Highways (PATH) at UC Berkeley, beginning in the mid 1990s. He has served as the PATH Executive Director, Executive Advisor to Booz Allen Hamilton, and an independent consultant with clients ranging from Silicon Valley startups, the automotive industry and Federal and State government agencies. Jim holds BS and MS degrees from UCLA and USC.

Dragos Margineantu, AI Chief Technologist and Technical Fellow of Boeing Research & Technology

His research interests include learning planning and reasoning for decision systems, anomaly detection, human-in-the-loop learning, validation and testing of decision systems, cost-sensitive, active, and ensemble learning. Dragos was one of the pioneers in research on ensemble learning and cost-sensitive learning, and in statistical testing of learned models. At Boeing, he developed machine learning and AI based solutions for airplane maintenance, autonomous systems, airplane performance, surveillance, design, autonomous systems, and security. Dragos served as the Boeing principal investigator (PI) of the DARPA “Bootstrapped Learning” program and is the Boeing AI lead for the DARPA “Assured Autonomy” program, focusing on robust machine learning techniques for autonomous systems. He also served as PI of DARPA's "Learning Applied to Ground Robots" (LAGR) program and as the PI of several Boeing research projects in AI and machine learning. Dragos designed and developed the learning and computer vision components of Boeing’s “Opportune Landing Site” effort (AFRL). Dragos serves as the Editor of the Springer book series on “Applied Machine Learning” and as the Action Editor for Special Issues for the *Machine Learning* journal (MLj). He serves on the editorial board of both major machine learning journals (MLj and JMLR), and served as senior program committee member of ICML (the premier machine learning conference), KDD (the premier data mining conference) and AAAI (the premier AI conference). He was the chair of the KDD 2015 Industry and Government Track. He has edited a special issue of the *Machine Learning* journal on Event Detection (Machine Learning 79:3, June 2010).

Barry Pekilis, Intelligent Transportation Systems (ITS) Program Technical Leader, National Research Council Canada

Dr. Barry Pekilis is the Intelligent Transportation Systems (ITS) Program Technical Leader for the National Research Council Canada. His mandate includes helping Canadian governments, industries and academia develop and build their ITS capacity, and to foster a national ITS ecosystem of small and medium-sized (SME) Canadian enterprises to innovate, promote and export next-generation ITS technologies to global markets.Prior to NRC, Barry managed the ITS / Connected

Vehicle (CV) file As a Senior Engineer for Transport Canada, first, as part of the ITS Policy Branch, and then later, under the ecoTECHNOLOGY for Vehicles Program (eTV). Barry was instrumental in bringing together the vision, funding and partnerships that led to creation of ACTIVE-AURORA, Canada's first Connected Vehicle testbed. Before joining the federal government, Barry worked as a Research Engineer in Transit ITS at the Ministry of Transportation of Ontario, and as a real-time, embedded system Software Engineer for a variety of small- and medium-sized technology companies. Barry received his Ph.D. in Software Reliability Engineering from the University of Waterloo. He sits on the steering committee for the Centre for Smart Transportation Steering Committee at the University of Alberta, and he is a member of the Transportation Research Board (TRB) Standing Committees on ITS and Vehicle-Highway Automation.

Dr. Tony Qiu, Associate Professor, Dept. of Civil Engineering and Environmental Engineering, University of Alberta

Dr. Tony Qiu is an Associate Professor in the Department of Civil and Environmental Engineering at the University of Alberta (U of A) and holds the Canada Research Chair in Cooperative Transportation Systems. Since joining the U of A in 2009, Dr. Qiu founded the Intelligent Transportation Systems (ITS) research lab, now called the Centre for Smart Transportation (CST). Dr. Qiu received his Ph.D. from the University of Wisconsin-Madison in 2007 and his BSc. and MSc. from Tsinghua University of China in 2001 and 2003, respectively. From 2008-2009, he worked as a postdoctoral researcher in the California PATH Program at the University of California, Berkeley.

Rod Schebesch, Vice President and Smart Mobility Lead, Stantec

Rod has spent his 27-year career enhancing mobility. He specializes in the implementation of new transportation technology—and in understanding how that technology will transform North American transportation networks. With a focus on building smarter cities, Rod is always striving to find greater infrastructure efficiencies that positively impact the built environment. He has led projects involving automated vehicles, transit-rideshare technology, driverless shuttles, and smart cities planning. Currently, he is serving as Stantec's program manager for ACTIVE-AURORA, Canada's largest connected-automated-vehicles test bed.

Dr. Yu Zhang, Associate Professor, Department of Civil and Environmental Engineering, University of South Florida

Dr. Zhang is an expert of network modeling and system analysis with applications in air transportation, multimodal transportation, and shared mobility. Dr. Zhang aims at developing innovative methodologies and concepts for resilient, efficient, and sustainable transportation systems. She has published more than 30 journal papers, including in top transportation journals such as Transportation Research Part B, Part C, Part D, and Part E. Dr. Zhang is serving on the editorial board for Transportation Research Part C and International Journal of Sustainable Transportation, and is an invited referee for Transportation Science, Transportation Research Part A, Part B, Part C, Part D, Part E, Journal of Air Transport Management, Networks and Spatial Economics, Journal of Cleaner Production, Journal of Air Transport Management, Journal of Intelligent Transportation Systems, European Journal of Operation Research etc. Dr. Zhang serves as the Chair for Transportation Research Board (TRB) Airfield and Airspace Capacity and Delay (AV060) committee, the Immediate Past President for Chinese Overseas Transportation Association (COTA). Dr. Zhang holds Ph.D. and M.S. from the University of California Berkeley in Civil and Environmental

Engineering and Bachelors from Southeast University of China in Transportation Engineering. Dr. Zhang is the recipient of the 2010 Fred Burggraf Award, for excellence in transportation research by researchers 35 years of age or younger, presented by TRB of the National Academies of Science.

Shane Zumpf, Software Development, WYDOT Connected Vehicle Project, Trihydro

Shane Zumpf is an Enterprise Developer Specialist with over 13 years' experience as a software architect, specializing in creating enterprise applications. He is a certified Microsoft developer and has architected and lead development efforts on a variety of complex software systems for the past 7 years. Shane is currently the Application Development Lead for the WYDOT Connected Vehicle pilot project for the and is responsible for the system design, application development oversight and schedule as well as testing.