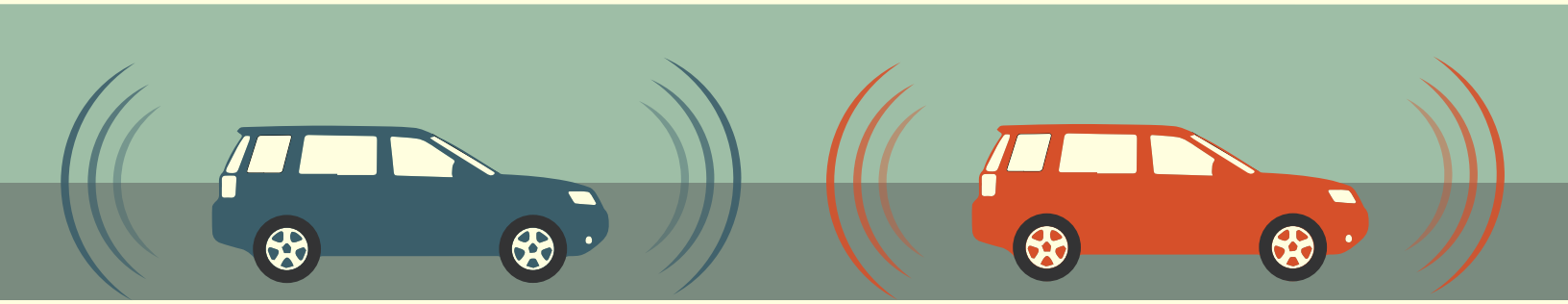
Presented by

University Transportation Research Center

4th Connected & Autonomous Vehicles Symposium

Innovative Applied Research and Deployment Opportunities



Wednesday, December 2, 2015

The CNSE Auditorium
The College of Nanoscale Science and Engineering
255 Fuller Rd. Albany, NY 12203

In partnership with

Intelligent Transportation Society Of NY (ITS-NY)

NYU Polytechnic School of Engineering

Rensselaer Polytechnic Institute (RPI)

SUNY Polytechnic Institute

Transportation Informatics (TransInfo), University at Buffalo/SUNY

Conference Website: www.connectedworkshop.com

The Fourth Symposium On Connected And Autonomous Vehicles

Organizing Committee

Camille Kamga
Director, UTRC

Joah Sapphire
Master of Ceremony
President
Global Dynamic Group, LLC

Michael Fancher
Vice President
Economic Outreach and Business Development
SUNY Polytechnic Institute

Kaan Ozbay
Professor
New York University (NYU)
Center for Urban Science+Progress (CUSP)

Adel W. Sadek
Professor
University at Buffalo/SUNY

Richard McDonough
Director
NYSDOT Connected Vehicle Program

Xuegang (Jeff) Ban
Associate Professor
Rensselaer Polytechnic Institute

Perhaps one of the greatest innovations in transportation is the development of connected and autonomous vehicles. In reaction to this new technology, UTRC organized the first annual Connected Vehicle Test-Bed Development & Integration Workshop held at the University at Buffalo in Buffalo, NY on June 1, 2012, the 2nd Connected and Self-driven Vehicles Symposium held at Rutgers University in Piscataway, NJ on June 17-18, 2013 and 3rd Connected & Autonomous Vehicle Conference held at SUNY Polytechnic Institute in Albany, NY on November 5-6, 2014.

Due to the success of these three conferences, UTRC is excited to hold the 4th Connected and Autonomous Vehicle Symposium at the SUNY Polytechnic Institute (SUNY Poly) in Albany, NY on December 2, 2015.

This Symposium will offer public transportation policy makers, public transportation operating agency executives, university researchers and industry representatives across the Internet of Things (IoT) universe of devices, connectivity and big data that offer vehicle related products or services the opportunity to hear directly from leaders in industry, university and government (IUG) that are contributing to significant connected and autonomous vechicle deployments.

Speakers will highlight the successful effort to align IUG through the Strategic Market Alignment of Roadway Technologies (SMART) Consortium strategy to generate real world connected and autonomous vehicle deployments as a pathway to realize the value of the $10 trillion IoT next industrial revolution.

Representatives from industry will detail how innovations in the IoT universe of devices, connectivity and big data are providing the technology pathways for sustainable development of connected and autonomous vehicles. As IoT applications becomes more mature numerous companies are deploying new technology in vehicles that dramatically improve safety and mobility.

With this technology transformation upon us New York City Department of Transportation (NYCDOT) is preparing for one of the the largest urban connected vehicle deployment in the United States. NYCDOT representatives will describe these plans and provide details on the technology architecture being contemplated. New York State Department of Transportation (NYSDOT) will also detail its suburban and rural connected vehicle pilot deployment proposal.

Finally, video demonstrations of autonomous vehicles with emphasis on benefits to public transportation will be offered at the end of the day. For example, Southwest Research Institute (SwRI) has developed an autonomous vehicle that follows temporary work zones to protect road construction workers.

Program Details

Dec 02, 2015

8:30 am – 9:00 am — **Breakfast and Registration**

9:00 am – 9:20 am — **Welcoming Remarks**

Camille Kamga Ph.D., Director, UTRC Region 2

Adam Spence, Assistant Secretary for Economic Development and Innovation, New York Governor Andrew Cuomo

9:20 am – 9:30 am — **NYSDOT Connected Vehicle Program**

Roderic Sechrist, Assistant Commissioner, NYSDOT

9:30 am – 9:50 am — **Unmanned Systems and Cross Connected Platforms**

Craig Marcinkowski, Director of Strategy and Business Development, Gryphon Sensors: Central New York Upstate Revitalization Initiative Proposal

9:50 am – 10:50 am — **Connected Vehicle Pilot Deployment Projects**

Tom Kearney, Freight Specialist, FHWA: USDOT Connected Vehicle Pilot Program Update

Michael Brown, Staff Engineer, SwRI: NYSDOT CV Pilot

Mohamad Talas, Ph.D., Deputy Program Manager, NYCDOT CV Pilot

Robert Rausch, Concept Development Lead, Transcore: NYC Pilot Technology

10:50 am – 11:30 am — **Policy and Private Capital Challenges and Opportunities**

Allen Biehler, Executive Director, University Transportation Center, Carnegie Mellon University: Policy issues related to new technology in transportation

Oliver Mitchell, Partner, Mach 5 Ventures: Discussion of venture capital view of investment opportunities and growth in connected and autonomous vehicle space

Program Details

Dec 02, 2015

11:30 am – 12:30 pm — **Connected and Autonomous Vehicle Performance Measures and Evaluation Tools**

Kaan Ozbay, Ph.D., Professor, New York University,
Tandon School of Engineering and Center for Urban Science and Progress (CUSP): Next Generation Simulation based Tools and Field Tests for Evaluating the Benefits of Connected Vehicle Technologies

Adel Sadek, Ph.D., Professor, University at Buffalo: Augmented Reality Platform for the Testing and Evaluation of Connected and Automated Vehicle Deployments

Xuegang (Jeff) Ban, Ph.D., Associate Professor, RPI: Urban Signalized Intersection Emission Estimation with Mobile Sensing

12:30 pm – 1:30 pm — **Lunch and Faculty Poster Exhibition**

1:30 pm – 2:00 pm — **SMART Consortium Progress and Framework for Success**

Michael Fancher, Vice President of Business Development, SUNY Poly

Joah Sapphire, President, Global Dynamic Group, LLC

2:00 pm – 2:30 pm — **Keynote on Data Capture: Next Generation Automotive Intelligence**

Thomas Mueller, Ph.D., Director of Business Line Mobility Sensors, AMS

2:30 pm – 3:10 pm — **Big Data Analytics: Solutions for the Big Data Challenge**

Jay Goodwyn, Executive Director,
IBM Buffalo Innovation Center: IBM's view and capabilities

Igor Tepermeister , Ph.D., Director of Systems, Innovation Center,
Intelligent Sensor Solutions, Inficon

3:10 pm – 3:20 pm — **Faculty Poster Exhibition**

Program Details

Dec 02, 2015

3:20 pm – 3:50 pm

Keynote on Data Connectivity: Intelligent Vehicle Solutions

Tao Zhang, Ph.D., Chief Scientist for Smart Connected Vehicles, Cisco Systems

3:50 pm – 4:40 pm

Data Connectivity: Enabling Innovations in Connected Vehicles and Beyond

Michael Watts, Ph.D., Associate Professor, MIT

Stelios Patsiokas, Ph.D., Chief Innovation Officer, Sirius XM Satellite Radio: Integration of Satellite Technology into the V2X Ecosystem

4:40 pm – 5:10 pm

Keynote on Data Actuation: Autonomous Vehicle Innovations

David Bruemmer, CEO and Co-Founder, 5D Robotics

5:10 pm – 5:40 pm

Data Actuation: Applications for Autonomous Air and Ground Vehicles

Larry Brinker, Executive Director, NUAIR Alliance: Unmanned Aerial Systems

Michael Brown, Staff Engineer, SwRI: Unmanned Ground Systems

5:40 pm – 7:30 pm

Reception

Speakers

Adam Spence

Assistant Secretary for Economic Development and Innovation
Office of Governor Andrew M. Cuomo

Adam Spence is the Assistant Secretary for Economic Development and Innovation in the Executive Chamber of New York Governor Andrew M. Cuomo. Mr. Spence is responsible for the development and implementation of Governor Cuomo's economic development efforts through the state's economic development agencies as well as the coordination and promotion of innovation acceleration across state government. Prior to joining the Executive Chamber, Mr. Spence served as a Senior Vice President in Empire State Development. Mr. Spence came to ESD from a career of investing in growing private companies across a wide range of industries.

Most recently, Mr. Spence was a Managing Director at American Capital, Ltd. where he launched and was co-head of the firm's junior capital investment business and was active in managing a portion of the firm's control buyout portfolio. Prior to joining American Capital, Mr. Spence was with Lend Lease Real Estate Investments where he invested in real estate tax credit deals and developed an equity investment program targeted at non-core urban areas. Mr. Spence began his career at Berkshire Capital Corporation, a boutique M&A advisory firm. Mr. Spence received an A.B. in History from Harvard College.

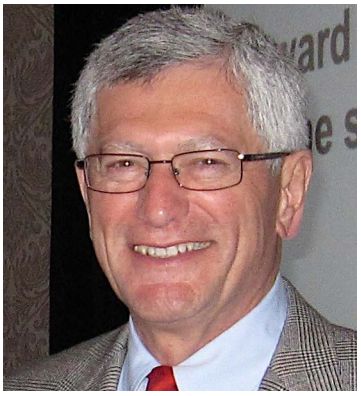
Adel Sadek

Professor, University at Buffalo
Director of Transportation Informatics Tier I University Transportation Center
Director of the University at Buffalo's Institute for Sustainable Transportation and Logistics

Dr. Sadek is a Professor in the Department of Civil, Structural and Environmental Engineering at the University at Buffalo (UB). He also serves as the Director of UB's Institute for Sustainable Transportation and Logistics, and the Director of the Transportation Informatics Tier I University Transportation Center. Before joining UB in 2008 to lead the development of the department's interdisciplinary program in transportation systems engineering, Dr. Sadek was an Associate Professor in the School of Engineering at the University of Vermont (UVM), and held a secondary appointment in the Department of Computer Science. He also served as co-Director of UVM's Complex Systems Center. Dr. Sadek is the recipient of the 1998 Milton Pikarsky Award for the best dissertation in the field of Transportation Science and Technology, awarded by the Council of University Transportation Centers, a National Science Foundation (NSF) CAREER award, and a 2011 IBM Smarter Planet Faculty Innovation Award.

Dr. Sadek's research interests span a wide range of topics including transportation modeling and simulation, intelligent transportation systems, artificial intelligence applications in transportation, traffic engineering, transportation planning, and infrastructure management. His research has been most recently funded by several agencies, including NSF, the Federal Highway Administration, New York State Energy Research and Development Authority (NYSERDA), New York State Department of Transportation (NYSDOT), Region II University Transportation Research Center (UTRC2), among others. Dr. Sadek is coauthor of two Transportation textbooks, along with more than 100 papers in peer-refereed journals and refereed conference proceedings. He currently serves as Associate Editor of the Transportation Research – Part C journal, and is on the Editorial Board Member of the Journal of Intelligent Transportation Systems. He is a member of the TRB committee on Artificial Intelligence and Advanced Computing Applications (ABJ70), and the committee on Surface Transportation Weather. He is also a member of the Advanced Technologies committee of the Transportation and Development Institute (T&DI) of the American Society of Civil Engineers (ASCE).

Speakers



Allen Biehler

Distinguished Service Professor of Transportation Systems & Policy
Carnegie Mellon University's Heinz College

Allen Biehler is a Distinguished Service Professor of Transportation Systems and Policy at Carnegie Mellon University's Heinz College. He is also the Executive Director of CMU's University Transportation Center, which aims to study, build, and deploy a targeted suite of complementary technologies and to inform policies to make surface transportation safer and more efficient. He served eight years as Secretary of the Pennsylvania Department of Transportation and was president of the American Association of State Highway Transportation Officials, following which he co-founded the State Smart Transportation Initiative, a program to assist state departments of transportation in pursuing sustainable practices. He also served on the executive committees of the American Public Transportation Association and Transportation Research Board.

Prior to being Secretary of PennDOT, Al was a Vice President with DMJM-Harris serving as Director of Planning and Preliminary Engineering for the Tren Urbano rail system in San Juan, Puerto Rico and Project Manager for the North Shore LRT Connector project in Pittsburgh, Pennsylvania. Earlier, Al was Director of Planning, Engineering and Construction at Port Authority of Allegheny County, the transit agency serving the Pittsburgh region. Al received a Bachelor of Science degree in Civil Engineering, University of Pittsburgh and a Certificate in Highway Transportation from Yale University.

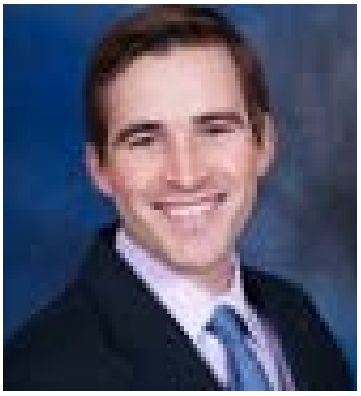
Camille Kamga

Director of the University Transportation Research Center
Assistant Professor, Department of Civil Engineering, The City College of NY, CUNY

Dr. Camille Kamga is Director for the University Transportation Research Center (UTRC) and an Assistant Professor of Civil Engineering at The City College of New York. As a consortium of 18 major U.S. academic institutions, UTRC asserts a significant role in the Federal Region 2 and nationally, conducting research and projects on surface transportation, carrying out training and educational programs and actively disseminating the results of its work. It is one of the few such Centers in the U.S. federally designated since 1987.

Dr, Kamga is a member of the TRB's Urban Transportation Data and Information Systems Committee (ABJ30). He serves in the Board of Director of the Intelligent Transportation Society of NY – a professional group providing education and outreach to foster the understanding of ITS applications and technologies. He is also a member of Education and Research Committee of the International Association of Transportation Regulators. He holds a Ph.D. in Civil Engineering from the Graduate Center of the City University of New York, specializing in Intelligent Transportation Systems (ITS). He is the 2006 recipient of the National Pikarsky Award for Outstanding Dissertation in Science and Technology from the Council of UTC.

Speakers



Craig Marcinkowski

Director of Strategy and Business Development
Gryphon Sensors LLC

Craig Marcinkowski is Director of Strategy and Business Development for Gryphon Sensors LLC, an SRC Company, Inc., a research and development company with more than 55 years of experience in defense, environment and intelligence. Gryphon Sensors is focused on developing commercial sensors systems for the safe integration of unmanned aircraft systems (UAS) into the NAS (National Airspace System). Mr. Marcinkowski has over 12 years of experience in the Defense and Aerospace industry, including software engineering, capture and program management, and domestic and international business development.

As Director of Strategy and Business Development for Gryphon Sensors, Mr. Marcinkowski is responsible for developing market and new product strategies, forming domestic and international partnerships, and capturing business in the highly exciting and fast growing market of Unmanned Aircraft Systems. Prior to the commercial spinoff of Gryphon Sensors from the Defense Side of SRC, Mr. Marcinkowski was a business development manager who lead International Business Development for SRC. He was responsible for the company's first international partnership agreements and the first direct commercial sale of SRC's Radar Systems Internationally. He was also the Business Development Lead for the creation of new SRC Processes pertaining to Conducting International Business and Signing International Partnerships.

Prior to joining SRC, Mr. Marcinkowski worked for Lockheed Martin Corporation where he began his career as a Software Engineer. He then served as a Program and Capture Manger for a major Army Radar program with a focus on International Business. Mr. Marcinkowski holds an MBA from Binghamton University, Binghamton, N.Y., and a bachelor's degree in computer engineering from Binghamton University, Binghamton, N.Y.

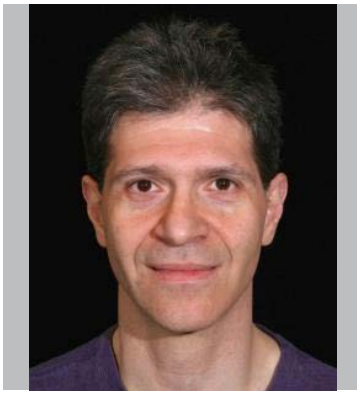
David Bruemmer

CEO & Co-Founder
5D Robotics

Keynote Speaker

David J. Bruemmer is CEO and Co-Founder of 5D Robotics, Inc. At 5D he works to develop innovations that can impact the future of robotics and enable more intelligent transportation. Bruemmer has led large scale robotics research programs for Army, Navy, Air Force, DARPA, Office of Naval Research and the Department of Energy. Bruemmer has been awarded 14 patents with many others pending, is a winner of the R&D 100 Award and has been recognized as an inventive young engineer by the academy of engineers. Over the past fifteen years, Mr. Bruemmer has developed robotic behaviors for landmine detection, guarded motion, high speed follow and autonomous navigation. At 5D Mr. Bruemmer's team has developed a novel positioning scheme that enables safe, efficient driving for both manned and unmanned vehicles. Recently, his research has focused on applying unmanned systems technology to the development and commercialization of self-driving kits for segways, golf-carts and other low-speed vehicles that can transport people seamlessly within an ecosystem. He is also pioneering applications for air-ground teaming. He has authored well over 50 peer reviewed journal articles, book chapters and conference papers on intelligent robotics. Prior to joining 5D, Mr. Bruemmer led a variety of ground vehicle efforts at the Robotics and Human Systems Department of the Idaho National Laboratory (INL). Mr. Bruemmer enjoyed finding ways to combine emerging science with mature engineering practices to generate innovative technology for the DOE, NASA, and DoD. Many of his projects focused on changing the way robots interact with humans and their environment, increasing mission speed and success. While at the INL he grew the intelligent systems portfolio by a factor of four. His team included a multi-disciplinary group of scientists and engineers including mechanical, electrical and computer engineers, human factors engineers, cognitive psychologists, computer scientists and roboticists. While at the INL, Mr. Bruemmer established contracts and research agreements with more than two dozen universities, a dozen national government labs and over 50 industry partners. Before working at the INL, Mr. Bruemmer served as a consultant to the Defense Advanced Research Projects Agency, where he worked to coordinate development of autonomous robotics technologies across several offices and programs including a variety of humanoid robotics projects.

Speakers



Igor Tepermeister

Director of Systems, Innovation Center, Intelligent Sensor Solutions
Inficon

Dr. Igor Tepermeister is the Director of Systems, Innovation Center, Intelligent Sensor Solutions for Inficon. Previously, he was Process Metrology Manager for Lybold Inficon, Founder and Vice President of Low Entropy Systems and Post-Doctoral Fellow at AT&T Bell Laboratories.

Igor possesses a Ph.D. and M.S. in Chemical Engineering from MIT and B.S. in Chemical Engineering from the University of California at Berkeley.

He holds a patent in "Inter-process sensing of wafer outcome" and has published in numerous periodicals.

Jay Goodwyn

Executive Director
IBM Buffalo Innovation Center

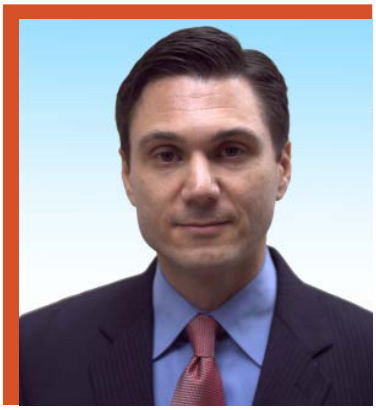
Jay Goodwyn is the Executive Director of the IBM Buffalo Innovation Center. With over 31 years of experience, he specializes in assisting clients in the strategy, planning and design of Business Intelligence solutions across numerous industries. In his various roles, including Director, Partner, Service Area Leader, Engagement Manager and Consultant, Mr. Goodwyn has advised many information system organizations from a variety of industries, including banking, insurance, government, healthcare, education, marketing and sales, manufacturing, agriculture and utilities

Mr. Goodwyn currently heads up the IBM Buffalo Innovation Center (IBIC). In his role as Executive Director, Mr. Goodwyn provides a wide array of capabilities to New York State, local Western NY business and many other organizations throughout the United States. Some of the focus areas at the IBIC include providing solutions for advanced analytics, big data, cloud computing and mobile computing. Through a collaboration with NY State, the IBIC has the objective of growing 500 high-tech jobs in Western NY over the course of 7 years.

In his previous position, Mr. Goodwyn led a Business Analytics consulting and services practice that provides full lifecycle capability of analytical solutions for the Healthcare industry. He has led many efforts concentrating in areas such as BI strategy, data integration, data warehousing design & build, rapid prototyping, and readiness assessments. In the role of Partner, Mr. Goodwyn has provided thought leadership, quality assurance and methodology guidance for numerous client projects. He has played a key role in the strategic planning, requirements definition, project approach definition, and architecture development on numerous business intelligence projects.

Mr. Goodwyn has been published in several technical journals including by CIO Magazine. He has spoken at various industry conferences including the IBM Information on Demand Conference covering topics such as Master Data Management, Healthcare Analytics and Crime Prevention Analytics. He has spoken at various industry conferences including the Pennsylvania HIE Conference in 2013. Mr. Goodwyn is an IBM certified consultant and holds the degree of Masters of Arts in Mathematics from the University of Buffalo.

Speakers



Master of Ceremony

Joah Sapphire

President
Global Dynamic Group, LLC

Joah Sapphire is a catalyst for innovation and possesses over twenty years of experience leading complex public and private organizations. Mr. Sapphire is the Founder and President of Global Dynamic Group, LLC. Previously he was Founding Partner of Verulam LLC, China Representative of Ospraie Management, LLC, CFO of NROTB, Deputy Commissioner of Suffolk County, Finance Director of Nassau County and Senior Analyst for the New York State Assembly.

Mr. Sapphire was a member of the organizing committees for the 3rd and 4th University Transportation Research Center Region 2 Symposiums on Connected and Autonomous Vehicles and the first annual Transportation Informatics Tier 1 University Transportation Center conference entitled "Big Data Analytics Transforming Transportation Operations, Management and Safety."

He was a contributor to NYSDOT's $10 million Connected Vehicle Pilot Proposal "Bringing the Internet of Things to Transportation" deemed acceptable by USDOT on September 14, 2015 and CNYREDC's $250 million URI Investment #1 Global Center for Unmanned Systems and Cross-Connected Platforms Proposal submitted on October 5, 2015.

Mr. Sapphire serves as adjunct professor for Columbia University's School of International and Public Affairs where he teaches Financial Management and was a faculty advisor for a Capstone Workshop in infrastructure investing. He is an industry affiliate of Cornell University's Program in Infrastructure Policy and a member of the Advisory Board of University at Buffalo's Institute for Sustainable Transportation and Logistics.

Mr. Sapphire received a Bachelor of Science from Cornell University and a Master of Public Administration from Columbia University.

Kaan Özbay

Professor
New York University, Tandon School of Engineering and Center for Urban Science and Progress (CUSP)

Kaan Ozbay (NYU) has recently joined Department of Civil & Urban Engineering and Center for Urban Science and Progress (CUSP) at New York University (NYU), on August 2013. Professor Ozbay was a tenured full Professor at the Rutgers University Department of Civil and Environmental Engineering until July 2013. He joined Rutgers University as an Assistant Professor in July, 1996. In 2008, he was a visiting scholar at the Operations Research and Financial Engineering (ORFE) Department of Princeton University. Dr. Ozbay's research interests in transportation cover a wide range of topics including the development of simulation models of large scale complex transportation systems, advanced technology and sensing applications for intelligent transportation systems, modeling and evaluation of traffic incident and emergency management systems, feedback based on-line real-time traffic control techniques, traffic safety, application of operations research techniques in network optimization and humanitarian inventory control, and transportation economics.

Speakers

Lawrence Brinker

Executive Director
NUAIR Alliance

Lawrence H. Brinker, Esq. is an experienced pilot and aviation attorney currently serving as the Executive Director & General Counsel of the NUAIR Alliance, a Not-for-Profit corporation with over 70 public, private, and academic partners, managing the Griffiss International Airport, FAA authorized, Unmanned Aircraft Systems Test Site in New York, Massachusetts, and Michigan.

He is retired from the US Air Force with 25 years total active and reserve service. During his military career he attained the rank of Lt. Colonel and held various positions including Command Pilot, Intelligence Officer, Operations Officer, Ethics Counsel, Congressional Liaison and Squadron Commander.

Brinker is also a FAA rated Airline Transport Pilot with multiple type ratings and over 8000 international and domestic flying hours. He is an FAA rated Flight Engineer in turbo-jet aircraft. He also served as an FAA Aviation Safety Inspector (Air Carrier).

He has served as legal and public policy advisor to private and public sector clients from around the world.

He attended the US Naval Academy and graduated from The Citadel with a BA in Political Science. He earned an MBA from Southern Illinois University and a JD degree from Atlanta Law School.

Mr. Brinker is a member of the Federal Bar Association, Georgia Bar Association, the NTSB bar Association, the Air Force Association, Lawyer Pilots Bar Association and serves as a panel attorney on the AOPA Legal Services Plan panel.

Michael Brown

Staff Engineer
Southwest Research Institute

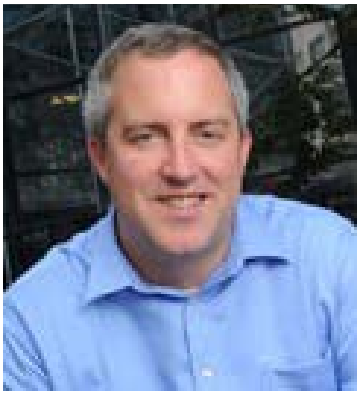
Mike Brown is a Staff Engineer with Southwest Research Institute and has been a leader in the research and development of intelligent systems for over eighteen years. He has served various federal, state, and commercial clients in projects spanning the areas of Advanced Traffic Management and Traveler Information Systems, Connected Vehicle Systems, and Vehicle Automation. Mike serves as a subject matter expert on many automated and connected vehicle related standards committees and he is currently leading the OmniAir Certification Services team for the USDOT Connected Vehicle – Next Stage Certification Program. Mike is also leading SwRI's Connected Vehicle Affiliated Testbed activities as part of the USDOT Affiliated Testbed program.

Speakers

Michael Fancher

Vice President for Economic Outreach and Business Development
SUNY Polytechnic Institute

Michael Fancher has over three decades of experience in industry, government and academia that includes over 18 years providing executive leadership at SUNY Poly for business development, economic outreach, workforce training alignment and guiding the Institute's innovation direction as the Executive Director of the NYS Center for Advanced Technology in Nanoelectronics and Nanomaterials. He is also an Associate Professor in Nanoeconomics. During his tenure, he has successfully developed a broad array of innovative public private partnerships with sustainable business models that support technology commercialization, entrepreneurial acceleration, workforce education, and regional cluster formation. Most notably, he has been directly responsible for the successful award of funding to establish the $150 million U.S. Photovoltaic Manufacturing Consortium (U.S. PVMC), the $500 million New York Power Electronics Manufacturing Consortium (NY-PEMC), and most recently was on the leadership team for preparation of the proposal resulting in the award of the $610 million American Institute for Manufacturing of Integrated Photonics. SUNY Poly CNSE was recently ranked by the National Science Foundation as first in the nation in private sector research funding for 2013. He has previously served as Deputy Director of Budget Studies for the New York State Assembly Ways and Means Committee and practiced as a Certified Public Accountant in New York State.



Michael Watts

Associate Professor
Massachusetts Institute of Technology

Professor Michael R. Watts is a principal investigator in the Research Laboratory of Electronics (RLE) and a member of the Electrical Engineering and Computer Science Department (EECS) at the Massachusetts Institute of Technology. He received his Bachelor of Science in Electrical Engineering from Tufts University in 1996. He then joined Draper Laboratory as a Member of Technical Staff in their Fiber Optics Group. In 1999 he became a Draper Fellow and received his SM and PhD degrees from MIT in 2001 and 2005, respectively. In 2005 he joined Sandia National Labs where he led their silicon photonics effort as a Principal Member of Technical Staff. In 2010 he returned to MIT as an Associate Professor.

Professor Watts' research focuses on photonic microsystems for low-power communications, sensing, and microwave-photonics applications. His current interests include the modeling, fabrication, and testing of large-scale implementations of microphotonic circuits, systems, and networks that are being integrated, directly or through hybrid techniques, with CMOS electronics for high-speed transmitting, switching, and routing applications of digital signals. Additional interests include large-scale microphotonic sensing and imaging arrays, along with optical phased arrays, nanophotonic antennas, nonlinear optics, and manipulations of optical-electromagnetic fields on-chip.

Speakers

Mohamad Talas

Director, ITS project Management and TMC
New York City Department of Transportation

Mohamad Talas has over 27 years in Traffic Engineering and Operation experience in New York City Department of Transportation. He currently serves as the Director for the NYC Department of Transportation ITS project Management and TMC Operation where he supervises NYC DOT ITS projects including the modernization 12,000 signals with Advanced Traffic Control, The NYC Midtown In Motion and recently the NYC Connected Vehicle Pilot. Dr. Talas also is Adjunct Professor at NYU –Poly Transportation Graduate Program.

Oliver Mitchell

Partner
Mach 5 Ventures

Oliver has been a leading investor and entrepreneur of emerging technologies for more than twenty years. As a partner of Mach 5 Ventures, Oliver advises and invests in early stage data-driven digital, hardware, and robotic companies. An example of recent exits have included Que Innovations, Ekso Bionics (OTCBB: EKSO), Locemia Solutions (acquired by Eli Lilly), and NovoCure (NASDAQ: NVSR). Oliver is also a chair of the Frontier Technology investment Committee of New York Angels, focusing on software innovations in the fields of autonomous mobility, industrial IoT cybersecurity, computer vision, remote sensing, data science, artificial intelligence, augmented reality, virtual reality, and nano science.

Previously, he was the Chairman & Chief Creative Officer of RobotGalaxy, a smart toy/kids entertainment brand that he founded in 2006. As father of five, Oliver launched RobotGalaxy to fill a personal need: he wanted a wholesome educational activity for his son. RobotGalaxy's patented web/app-connected toys were sold nationally at Toys'R'Us and other department stores.

Before RobotGalaxy, Oliver was involved in a number of successful technology ventures. Oliver was part of the executive team of Softcom/IVT, an interactive video startup backed by Allen & Co., Intel Capital (NASDAQ:INTC) and Sun Microsystems. At IVT, Oliver was instrumental in expanding the market for their products with such leading broadcasters as HBO, Showtime, and Home Shopping Network.

Prior to IVT, Oliver was a founding member of AmeriCash, Inc., a network of ATMs in high traffic retail locations. AmeriCash was acquired by American Express (NYSE:AXP) within 32 months of operations. Oliver was also instrumental in the development of Holmes Protection and its sale to ADT/Tyco International (NYSE:TYC). Oliver has extensive background in merchant banking and advertising. He started his career at Kirshenbaum, Bond & Partners.

Oliver holds 14 patents and has appeared on numerous television shows. He also serves as a chair of UJA Tech's division and mentor of the Entrepreneur Roundtable Accelerator in New York City. Over the past five years Oliver is probably best known as the Robot Rabbi, since his popular blog (RobotRabbi.com) has been a leading chronicler of the growth of the robotic/autonomous mobility sector.

Speakers

Robert Rausch

Vice President
TransCore ITS

Bob has over 45 years of experience in the design and installation of Intelligent Transportation Systems including both hardware and software for a wide range of ITS devices and systems.

He has been active in the "Connected Vehicle" program and continues to be active in the ITS standards program in both the US and internationally with ISO TC204. He is a member of the SAE DSRC working group, co-author of the International Standard for the Vehicle-Infrastructure messaging standards, is a member of the NTCIP working groups for Traffic Signal Controllers (NTCIP 1202 V3), and the NTCIP protocol working group (NTCIP 1102 V3); Note that all of these standards are essential for the Connected Vehicle Infrastructure deployment. He is also a member of the Advanced Transportation Controller working group and co-chairs Advanced Traffic Controller Cabinet committee.

He is currently TransCore's project manager for New York City's traffic management systems which includes more than 12,700 traffic controllers on an all wireless network, the implementation of integrated control for their ITS devices, integration of Adaptive Traffic Signal Control, and the implementation of a city-wide Transit Signal Priority system which uses central control without the costly field infrastructure. He is the Concept Development Lead for New York City's Connected Vehicle Pilot Deployment Project recently awarded by USDOT to demonstrate the benefits of the Connected Vehicle technology. He received both his Bachelors and Masters Degree in Electrical Engineering from MIT.

Roderic Sechrist

Assistant Commissioner
New York State Department of Transportation

Roderic Sechrist, P.E. is the Assistant Commissioner for the Operations and Asset Management Division of the New York State Department of Transportation (NYSDOT). He is responsible for the Department's Operations program including Transportation Maintenance, Traffic Safety and Mobility, Modal Safety and Security and Fleet Administration and Support. In this role, he has executive oversight of the Department's Connected Vehicle program as well the Intelligent Transportation Systems program.

Rod is responsible for the Department's Asset Management Program and co-chair's the Comprehensive Program Team that oversees the development of the Comprehensive Program and the Risk Based Transportation Asset Management Plan (TAMP). He is the Department lead in the development of performance measures and represents the agency nationally on committees involved with Asset and Performance Management.

During his more than 31+ year career with NYSDOT, Rod has held Operations Division positions at the Department's Albany headquarters, as well as at three different regional offices in Poughkeepsie, Buffalo and Hornell.

Rod is a licensed Professional Engineer in New York State. He holds an A.S. degree in Engineering Science from Corning Community College, a B.S. degree in Civil Engineering from the State University of New York at Buffalo and a M.P.S. in Community Service Administration from Alfred University.

Speakers

Stelios Patsiokas

Chief Innovation Officer
Sirius XM Satellite Radio

Dr. Stelios J. Patsiokas was born in Serres, Greece in 1953. He came to the United States in 1971 and entered Wilkes College in Wilkes-Barre, Pennsylvania under a tuition fellowship in August 1971. After the completion of his Bachelor's of Science Degree in Electrical Engineering in 1975, he entered Virginia Tech where he obtained a Masters of Science in Electrical Engineering in 1977 under a graduate assistantship. Dr. Patsiokas continued his studies at Virginia Tech, towards a Doctoral Degree in Electrical Engineering, which was completed in September of 1979.

Since immigrating to the United States, Dr. Patsiokas has become a driving force within the high-tech world of American and International business. Dr. Patsiokas was hired by XM Satellite radio in 1998 as Senior Vice President of Engineering. At XM he was initially responsible for the development of the waveform, custom chipsets, receiver hardware reference platforms and antennas. He was promoted to Executive Vice President of Engineering in 2001 and his responsibility areas expanded to include the implementation of the overall end-to-end radio link, repeater Network Radio design and installation, development of data services and the development and manufacturing of all aftermarket XM radio products many of them receiving Engineering and Innovation awards. The contributions made by Dr. Patsiokas have enabled Satellite Radio the ability to beam over 150 channels of audio programming to listeners anywhere in the United States. His work also led XM to be named Fortune Magazine's Product of the Year; one of Time Magazine's "Inventions of the Year;" Popular Science's 2001 "Best of What's New" in the Electronics category; and "Best of CES" at the 2001 Consumer Electronics Show.

Dr. Patsiokas is currently the Corporate Vice President and Chief Innovation Officer for Sirius XM Satellite Radio, America's only nationwide digital satellite radio service.

Prior to joining XM Satellite Radio, Dr. Patsiokas worked with Motorola, Inc. for nineteen years. During his tenure with Motorola, he was a major contributor in the areas of radio wave propagation, microcellular system design and the development of the cordless telephone second-generation technology (CT2). As Director of Product Development for Motorola's Messaging Systems Product Group, he developed the PageWriter 2000 two-way messaging device, Motorola's first software centric device.

Dr. Patsiokas received the Washington Immigrant Achievement Award from the American Immigration Law Foundation in March of 2002. He was inducted in the Space Technology Hall of Fame the same year. In 2014, Dr. Patsiokas was Graduation Commencement key note speaker in his Alma Mater, Wilkes University, where he received an honorary Doctorate of Science Degree.

Dr. Patsiokas holds 35 United States Patents in the area of RF Communication Systems and Wireless Devices.

Speakers

Tao Zhang

Chief Scientist for Smart Connected Vehicles
CISCO Systems

Keynote Speaker

Dr. Tao Zhang, an IEEE Fellow and Cisco Distinguished Engineer, joined Cisco in 2012 as the Chief Scientist for Smart Connected Vehicles, and has since also been leading initiatives to develop strategies, architectures, technology, and eco-systems for the Internet of Things (IoT) and Fog Computing. Prior or to joining Cisco, he was Chief Scientist and Director of Mobile and Vehicular Networking at Telcordia Technologies (formerly Bell Communications Research or Bellcore). For over 25 years, Tao has been in various technical and executive positions, directing research and product development in broadband, mobile, and vehicular networks and applications. His leadership and technical work have led to pioneering contributions that advanced the state of the art in fiber optic networks, all-IP cellular networks (3G/4G), mobile ad-hoc networks, and vehicular networks; and have resulted in disruptive technology, standards, and products.

Tao was elected a Fellow of the IEEE in 2010 and a Fellow of the Society of Information Reuse and Integration in 2015. He holds 49 US patents and has co-authored two books "Vehicle Safety Communications: Protocols, Security, and Privacy" (2012) and "IP-Based Next Generation Wireless Networks" (2004) published by John Wiley & Sons. He is the Chair of the IEEE Communications Society Technical Sub-Committee on Vehicular Networks and Telematics Applications. He was a founding Board Director of the Connected Vehicle Trade Association (CVTA) and has been serving on the industry advisory boards for several research organizations. Tao has been serving on editorial boards or as a guest editor for numerous leading technical journals including the IEEE Internet of Things (IoT) Journal, the IEEE Transactions on Vehicular Technology (TVT), the IEEE Journal of Selected Areas in Communications (JSAC), and the Springer Journal of Wireless Networks.

Thomas Mueller

Director of Buisness Line Mobility Sensors
AMS

Keynote Speaker

Mr. Thomas Mueller began his semiconductor industry career in 1995 when he joined the MEMS microsystems group at the Swiss Federal Institute of Technology (ETH Zurich).

In 2000 he joined ams to take over a corporate research position focused on magneto sensor technology. From 2003 to 2008 he headed the sensor interface design in ams' automotive business unit. From 2008 to 2014 he was the program manager for automotive full custom ICs (ASICs) at ams. In 2014 he took over the Business Line Mobility Sensors in the Division Sensors and Sensor Interfaces.

Mr. Mueller, holds a doctorate degree in Physics from ETH Zurich and several patents in microelectronic technology. Mr. Mueller is a citizen of Germany.

Speakers

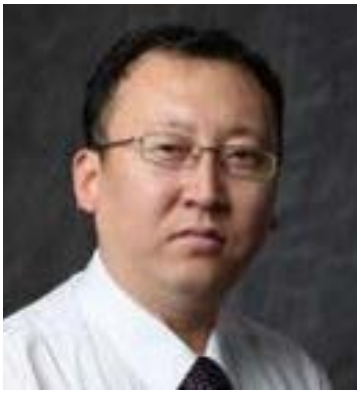
Tom Kearney

Freight Specialist
FHWA

Tom joined the Federal Highway Administration in February, 2000. After serving for seven years as a Statewide Planner in the New York Division Office, Tom joined the Office of Freight Management and Operations in May, 2007, serving as FHWA's Freight Operations Program manager. As part of these duties, Tom managed FHWA's Truck Parking Program, directed FHWA's Electronic-Permitting/Virtual Weigh Stations initiative, led USDOT's Smart Roadside Initiative and served as FHWA's Project Manager for USDOT's 2012 Comprehensive Truck Size & Weight Limits Study.

In August, 2015, Tom joined FHWA's Office of Technical Services serving as a freight specialist. Tom is a key content reviewer for two of the three recently awarded Connected Vehicle Pilot Program projects and is involved with a number of other projects with ties to the CV Program.

Prior to joining FHWA, Tom worked fourteen years at New York State Department of Transportation working in a variety of transportation planning related work areas. Tom served as Secretary to AASHTO's Sub Committee on Highway Transport (SCOHT) from 2011-15 and is a current member of TRB's Truck Size & Weight Committee (AT055). Tom also serves on the Community Advisory Board for the Regional Planning Program at Albany State University.



Xuegang (Jeff) Ban

Associate Professor
Rensselaer Polytechnic Institute

Dr. Xuegang (Jeff) Ban is an Associate Professor of the Civil and Environmental Engineering Department of Rensselaer Polytechnic Institute (RPI). He received his B.S. and M.S. in Automobile Engineering from Tsinghua University, and his M.S. in Computer Sciences and Ph.D. in Transportation Engineering from the University of Wisconsin at Madison. His research interests are in Transportation Network System Modeling and Simulation, Urban Traffic Modeling and Control, Intelligent Transportation Systems (ITS), and Connected/Automated Vehicles. He has published over 50 papers in refereed journals or as book chapters, and more than 40 papers in refereed conference proceedings. Dr. Ban is an Associate Editor of Journal of Intelligent Transportation Systems, Networks and Spatial Economics, and Transportmetrica B, and serves on the editorial board of Transportation Research, Part B & Part C. He is a member of the Network Modeling Committee (ADB30) and a member of the Vehicle-Highway Automation Committee (AHB30) of the Transportation Research Board (TRB), under the National Academies. He also served as the Elected Vice Chair (2010-2011) and Chair (2012-2013) of the ITS SIG (cluster) under the Transportation Science and Logistics (TSL) Society of INFORMS. Dr. Ban received the 2011 CAREER Award from the National Science Foundation (NSF), the New Faculty Award from the Council of University Transportation Centers (CUTC) and the American Road & Transportation Builders Association (ARTBA) in 2012, and the School of Engineering Research Excellence Award (for Junior Faculty) from RPI in 2014.

Transportation Modes Detection based on Acceleration

Yuchuan Zhang, Grace Wang, Xin Gao
Department of Computer Science
New Jersey Institute of Technology

Transportation modes detection of people's daily life has been a hot research topic in mobile computing area. In this poster, we address the fundamental problem of detecting different transportation modes like static, on foot, in a car, in a bus, in a train or in a subway. Prior related research are mainly based on Global Positioning System (GPS), Global System for Mobile Communications (GSM) or both of them combined with accelerometer to recognize transportation modes, which may cost plenty of smartphone energy and not work well in weak signal area. In this poster, we will only use embedded motion sensor on smartphones for transportation mode detection. In order to deal with uncertainty of position and orientation of smartphone, we use the resultant acceleration as our only input and then we process the value using mean, variance, kurtosis and skewness features, and training them in different classification models, like Decision Trees, Naive Bayes, and Support Vector Machines. By researching that different eigenvalue of different transportation modes using in these specific models, we can implement an app of transportation mode detection with most accurate and efficient model in mobile computing. To evaluate our approach, we conduct experiments with several users on various transportations and collecting data from smartphones. We will discuss the factors affect the detection accuracy and present potential improvements.

Analysis of Collisions and Applicability of V2V Solutions for Urban Areas in U.S.

Wei Hao*, Camille Kamga, Dan Wan
University Transportation Research Center, The City College of New York

The automobile industry has always shown a great interest in the adoption of safety technologies to improve the safety of its passengers and drivers, as well as road users including pedestrians. This paper prioritizes and statistically describes pre-crash scenarios as a basis for the identification of crash avoidance functions enhanced or enabled by vehicle-to-vehicle (V2V) communication technology in urban areas. Pre-crash scenarios depict vehicle movements and dynamics as well as the critical event immediately prior to the crash. Crash statistics are obtained from national crash databases including the 2011-2014 General Estimates System database. Based on the findings, recommendations for potential application areas for connected vehicle safety are introduced. This paper delineates the priority pre-crash scenarios and maps them to V2V-based safety applications under development.

**Corresponding Author*

Development and Evaluation of Smart Bus System

Liuhui Zhao*, Joyoung Lee*, Steven Chien*, Guiling Wang, Jinyu Yang*, and Shuang Song***
*John A. Reif, Jr. Department of Civil & Environmental Engineering | **Department of Computer Science
New Jersey Institute of Technology

Due to stochastic traffic conditions and fluctuated demand, transit passengers often suffer from unreliable services. Especially for buses, keeping on-time schedules is challenging as their routes are shared with non-transit traffics. Despite numerous efforts intended to improve the service quality of bus operation, such as bus signal priority and exclusive bus lane, no notable improvements that made dramatically increases in the bus ridership have been demonstrated. With the advance of real-time interaction between passengers and bus operators, bus operation can be more flexible, thereby resulting in an energy-efficient, eco-friendly, and cost-effective urban transportation mode. In a wirelessly connected environment, this study proposes a smart bus system (SBS) enabled by two-way communication to improve transit system reliability. The proposed system consists of dynamic route adjustment and smart transfer module, which enhances bus performance via real-time operational responses not only to traffic conditions but passenger requests, and eventually encourages bus ridership, and improves the mobility and sustainability of urban transportation. The performance of SBS will be evaluated against on-time performance, passenger travel time among others, based on predefined scenarios dealing with various factors likely affecting the effectiveness.

Traffic Prediction using Wireless Cellular Networks

Sabiha Wadoo
Department of Electrical and Computer Engineering
New York Institute of Technology

The major objective of this research is to obtain traffic information accurately from existing wireless infrastructure.
In this research, freeway traffic will be identified and modeled using data obtained from existing wireless cellular networks. Most of the previous research on freeway traffic control assumes the availability of traffic parameters like vehicle velocity and density. Such data is available only at a few locations on major highways where sensor nodes have been pre-deployed. In practical terms, to build a comprehensive network of sensors for this purpose is prohibitive in terms of the cost involved. However, an existing cellular network of a large wireless provider can be used for collecting traffic parameter information. As mobile devices have become very common, these devices can not only provide traffic parameter data but can also be used to receive real time traffic information using mobile applications.

The control of vehicular traffic to avoid congestion is an ongoing important area of research. In most of the literature, the collection of traffic parameters for feedback control is not addressed. It is assumed that the traffic velocity and density (and other parameters, if needed) are available through an array of sensors deployed throughout the length of the highways whose traffic they are intended to control. In practical terms, to build a network of sensors for this purpose is prohibitive in terms of the cost.

In this research the collection of traffic parameters is addressed using existing wireless cellular infrastructure.
Mobile network providers deploy cell sites along highways to provide seamless coverage while their customers are travelling. Typically, the necessary infrastructure exists on most highways. Mobile devices have become so ubiquitous that it can be assumed for a majority of the vehicles on the highway to have some type of a wireless cellular device. With the advent of third generation (3G) and fourth generation (4G) technology, data usage has grown tremendously, and mobile phones are not only connected to their networks during voice calls, but spend most of the time connected during data sessions--be it active browsing, streaming or accessing background data such as email. Thus, using mobile phones for traffic control is relevant and justified.

Data-driven Adaptive Optimal Control of Connected Vehicles

Weinan Gao*, Zhong-Ping Jiang*, Kaan Ozbay**
*NYU Tandon School of Engineering, ECE Dept. | **NYU Tandon School of Engineering and Center for Urban Science and Progress (CUSP)

A data-driven non-model-based approach is proposed for the adaptive optimal control of a class of connected vehicles, composed of n human-driven vehicles only transmitting motional data and an autonomous vehicle in the tail receiving the broadcasted data from preceding vehicles by wireless vehicle-to-vehicle (V2V) communication devices. An optimal control problem is formulated to minimize the errors of distance and velocity and to optimize the fuel usage. By employing reinforcement learning and adaptive dynamic programming (ADP) techniques, the optimal controller is obtained without relying on the accurate knowledge of system dynamics. The effectiveness of the proposed approaches is demonstrated via online learning control of connected vehicles in the Paramics' traffic micro-simulation.

Fault Tree Analysis of Autonomous Vehicles in Mixed Traffic Streams

Parth, Bhavsar*; Plaban, Das*; Joel, Levin*; Matthew, Paugh*; Robert, Reiss*; Kakan, Dey; Mashrur, Chowdhury****
*Rowan University | **Clemson University

The autonomous vehicles are viewed as the next revolution in the transportation system by both private sector and public agencies. The primary benefit of an autonomous vehicle is the elimination of driver-behavior related crash risk factors which are responsible for 94% of total crashes. At present, the National Highway Transportation Safety Administration (NHTSA) is working towards mandating vehicle-to-vehicle (V2V) connectivity for new vehicle models in the next few years. While companies are increasing their efforts to develop market ready V2V enabled vehicles, they are concurrently prototyping autonomous vehicles and testing them in controlled facilities as well as public roadways in mixed traffic. However, these new technologies will create a new set of challenges that must be addressed to ensure the viability of these vehicles equipped with highly tuned sensors and actuators, which, if not fully addressed may cause crashes and result in fatality, injuries, and property losses. As these future vehicles will have hundreds of electro-mechanical devices to enable self-driving, and be connected to cyber-space, avoiding potential intrusion threats requires a thorough failure risk analysis of future transportation systems that are characterized by autonomous and connected vehicles. The primary objective of this research is to develop fault tree-based risk models that represent hierarchical sequences of events that may result in the failure of an autonomous vehicle due to failure of technologies and equipment that controls the vehicle or failure of other components of the transportation system, such as infrastructure devices and other conventional vehicles in a mixed-traffic environment. The probability of failure of several events will be developed by (1) detailed review of vehicle and communication technologies and devices and (2) survey of experts using the Delphi survey method. Fault-tree models will be used to identify the minimal cut sets, which are the most critical combination of events that may lead to failures. Finally, a benefit-cost analysis will be performed to compare costs of risk reduction for autonomous vehicles in mixed traffic versus estimated benefits of such autonomous vehicles in the traffic stream. The presentation will include a summary of fault-tree analysis and corresponding risk implications of autonomous vehicles in mixed traffic.

Automated Cars: Queue Discharge at Signalized Intersections with 'Assured-Clear-Distance-Ahead' Driving Strategies

Scott E. Le Vine
Department of Geography
State University of New York (SUNY) at New Paltz

This study addresses the impacts of automated cars on traffic flow at signalized intersections. We develop and subsequently employ a deterministic simulation model of the kinematics of automated cars at a signalized intersection approach, when proceeding forward from a stationary queue at the beginning of a signal phase. In the discrete-time simulation, each vehicle pursues an operational strategy that is consistent with the 'Assured Clear Distance Ahead' criterion: each vehicle limits its speed and spacing from the vehicle head of it by its objective of not striking it, regardless of whether or not the future behavior of the vehicle ahead is cooperative. The simulation also incorporates a set of assumptions regarding the values of operational parameters that will govern automated cars' kinematics in the immediate future, which are sourced from the relevant literature.

We report several findings of note. First, under a set of assumed 'central' (i.e. most plausible) parameter values, the time requirement to process a standing queue of ten vehicles is decreased by 25.4% relative to human driven vehicles. Second, it was found that the standard queue discharge model for human-driven cars does not directly transfer to queue discharge of automated vehicles. Third, a wet roadway surface may result in an increase in capacity at signalized intersections. Fourth, a specific form of vehicle-to-vehicle (V2V) communications that allows all automated vehicles in the stationary queue to begin moving simultaneously at the beginning of a signal phase provides relatively minor increases in capacity in this analysis. Fifth, in recognition of uncertainty regarding the value of each operational parameter, we identify (via scenario analysis, calculation of arc elasticities, and Monte-Carlo methods) the relative sensitivity of overall traffic flow efficiency to the value of each operational parameter.

This study comprises an incremental step towards the broader objective of adapting standard techniques for analyzing traffic operations (e.g. the Highway Capacity Manual) to account for the capabilities of automated vehicles.

Impact of V2X Diffusion to Traffic Flow Efficiency and Control

Shaurya Agarwal*, Pushkin Kachroo, Benedetto Piccoli***, Kaan Ozbay***
*New York University | **University of Nevada Las Vegas | ***Rutgers University–Camden

This paper presents the framework to study the effects of varying diffusion levels of vehicles with V2X technology on the efficiency of traffic on transportation networks as well as on control of traffic network via intelligent vehicles. We use total entropy of the system as a measure the efficiency of traffic. We analyze efficiency of traffic under various scenarios on a circular as well as a straight track. Analysis includes, placement analysis of Autonomous Vehicles (AVs); penetration analysis of AVs, and effect of size of circular track. Results are consistent and are promising for future research

Notes

Notes

Partners

University Transportation Research Center

The Region 2 University Transportation Research Center (UTRC) is one of ten original University Transportation Centers established in 1987 by the U.S. Congress. These Centers were established with the recognition that transportation plays a key role in the nation's economy and the quality of life of its citizens. University faculty members provide a critical link in resolving our national and regional transportation problems while training the professionals who address our transportation systems and their customers on a daily basis.

Transportation Informatics (TransInfo), University at Buffalo/SUNY

TransInfo intends to: (1) become a leader in the emerging field of transportation informatics; (2) to harness the power of Big Data and informatics toolset to address critical transportation problems; and (3) to serve as a resource to USDOT and states' DOTs in effectively utilizing transportation data to support sound transportation planning, management and investments decisions.

SUNY Polytechnic Institute (SUNY Poly)

SUNY Polytechnic Institute (SUNY Poly) is New York's globally recognized, high-tech educational ecosystem, formed from the merger of the SUNY College of Nanoscale Science and Engineering and SUNY Institute of Technology. SUNY Poly offers undergraduate and graduate degrees in the emerging disciplines of nanoscience and nanoengineering, as well as cutting-edge nanobioscience and nanoeconomics programs at its Albany campus, and degrees in technology, professional studies, and the arts and sciences at its Utica/Rome campus.

NYU Polytechnic School of Engineering

NYU Polytechnic School of Engineering is a comprehensive school of engineering, applied sciences, technology and research, and is rooted in a 158-year tradition of invention, innovation and entrepreneurship. The institution, founded in 1854, is the nation's second-oldest private engineering school. In addition to its main campus in New York City at MetroTech Center in downtown Brooklyn, it also offers programs at sites throughout the region, around the globe and remotely through online learning. The NYU School of Engineering is an integral part of NYU Abu Dhabi, NYU Shanghai, and the NYU Center for Urban Science and Progress (CUSP) in downtown Brooklyn.

Rensselaer Polytechnic Institute (RPI)

Founded in 1824, Rensselaer Polytechnic Institute is the nation's oldest technological research university. The university offers degrees from five schools: Engineering; Science; Architecture; Humanities, Arts, and Social Sciences; and the Lally School of Management; as well as an interdisciplinary degree in Information Technology and Web Science.

Intelligent Transportation Society Of NY (ITS-NY)

ITS-NY is comprised of ITS-NY Member Organizations, and Provides: ITS education and outreach to foster the understanding of ITS applications and technologies; a forum for ITS interaction, discussion, and professional networking; and regularly scheduled and special meetings, conferences, and technical programs; and participation in national ITS events and forums.