University Transportation Centers

26th Annual Outstanding Student of the Year Awards

Transportation Research Board

96th Annual Meeting

Marriott Marquis

Washington, DC

January 7, 2017

U.S. Department of Transportation

WELCOME

Welcome to the 26th Annual Outstanding Student of the Year Awards ceremony, sponsored by the U.S. Department of Transportation (U.S. DOT) and administered by the Office of the Assistant Secretary for Research and Technology (OST-R).

Each year at the annual winter meeting of the Transportation Research Board (UTC), the U.S. DOT honors outstanding students from participating University Transportation Centers for their achievements and promise for future contributions to the transportation field. Students of the Year are selected based on their accomplishments in such areas as technical merit and research, academic performance, professionalism, and leadership.

The U.S. DOT will also honor two students from the Air Transportation Centers of Excellence, sponsored by the Federal Aviation Administration (FAA). An additional student, selected by Secretary Anthony Foxx, will be presented with the Recognizing Aviation and Aerospace Innovation in Science and Engineering (RAISE) award.

The Secretary's RAISE Award

Recognizing Aviation and Aerospace Innovation in Science and Engineering

The Secretary's RAISE Award was created by the U.S. DOT to recognize innovative scientific and engineering concepts and student achievements that have the potential to significantly impact the future of aerospace or aviation. The Administrator of the FAA accepted student submissions and conducted an evaluation based on the technical merit of each concept and also considered such elements as professionalism and leadership qualities. Eligible students must be U.S. citizens or permanent residents, be enrolled in a U.S.-based college or university, and may participate and be recognized as individuals or in teams.

Secretary Ray LaHood initiated this award to incentivize students to think creatively in developing innovative solutions to aviation and aerospace issues, and to share those innovations with the broader transportation community. Secretary Anthony Foxx has continued to support the RAISE Award and has remained as the final selecting authority.

It is with great pleasure that the Executive Committee of the Council of University Transportation Centers (CUTC) joins with the U.S. DOT and the FAA to highlight the prestigious Secretary's RAISE Award at our Annual Outstanding Student of the Year Awards Ceremony. On behalf of the Secretary of Transportation, the CUTC Executive Committee is delighted to include the RAISE Award for the first time this year in a combined effort to recognize outstanding student achievement in transportation studies, encourage exceptional examination of our challenges, and facilitate the development of new solutions to accelerate advancements in the field by the next generation of transportation scientists.

Rachael Tompa

FAA Center for Excellence for Commercial Space Transportation

Secretary's RAISE Award Recipient

Rachael Tompa, a graduate student in the Aeronautic and Astronomic Department at Stanford University, was chosen by Secretary Foxx for the Secretary's RAISE Award (Recognizing Aviation and Aerospace Innovation in Science and Engineering). Rachael's thesis titled "Innovation in Optimal Aircraft Rerouting during Commercial Space Launches" examines a critical airspace management challenge. Her concept explores a method to minimize disruptive airspace closures and aircraft rerouting that are typically implemented to maintain safety during commercial space launch operations. The model Rachael proposes captures the launch vehicle trajectory, probability of anomaly, potential debris trajectories, and adjacent air traffic to establish optimal dynamic aircraft rerouting responses.

This work clearly addresses a current airspace management challenge, and Rachael's approach to solving it reflects superior technical merit as well as significant applicability and potential impact on the commercial space transportation community. Secretary Foxx is pleased to recognize Ms. Rachael Tompa with this distinguished award for her extraordinary research, scholarly achievements, and vision.

Federal Aviation Administration

Air Transportation Centers of Excellence

Under the authority provided in Public Law 101-508, the FAA establishes Air Transportation Centers of Excellence (COEs) to create cost-sharing partnerships with academia, industry, and government organizations throughout the U.S. With support from the FAA, other government and industry organizations, the Air Transportation COEs perform basic research through engineering development and prototyping, education, training, and technology transfer.

These multidisciplinary partnerships forge unions between academic institutions and the public sector (FAA, airport authorities, state/local governments, etc.), and the private sector (airlines, manufacturers, etc.). The FAA has created COEs to address short- and long-term aviation-related issues to focus on: Technical Training and Human Performance, Unmanned Aircraft Systems, Alternative Jet Fuels and Environment, General Aviation Safety, Commercial Space Transportation, Advanced Materials, Cabin Environment and Intermodal Research, Aircraft Noise and Aviation Emissions Mitigation, General Aviation Research, Airworthiness Assurance, Operations Research, Airport Technology, and Computational Modeling of Aircraft Structures.

Under the enabling legislation, the FAA has established 13 COE partnerships with more than 100 universities throughout the U.S. Critical research outcomes are documented in more than 2,500 publications, reports, master's level theses, and doctoral dissertations. Funded through contracts and matching grant awards, FAA COEs currently reflect a level of effort exceeding $600M. The one-to-one matching contributions are provided by academia, industry, state and local entities, international affiliates, and other non-federal sources.

Further strengthening the relationships with industry and other partners, the FAA makes a 10-year commitment to support each COE. These joint investments provide an opportunity for a strong student outreach component and facilitate the education of a pool of scientists to serve as the next generation of aviation professionals. FAA COEs provide a trusted business structure with research and organizational strategies necessary to conduct critical research while assuring the nation that a cadre of world-class scientists are prepared to identify solutions for existing and anticipated aviation and related transportation challenges.

University Transportation Centers Program

The past year has been busy for the U.S. DOT, as the agency celebrated 50 years of service and launched new initiatives designed to set transportation in motion toward a more connected, accessible, and sustainable future. The University Transportation Centers (UTC) Program bolstered those efforts, advancing research on topics such as connected vehicles, pedestrian and cyclist safety, freight performance measures, and emissions reduction technologies.

For 26 years, the UTC Program has advanced U.S. technology and expertise in transportation through education, research, and technology transfer at universities nationwide under the management of the U.S. DOT's Office of the Assistant Secretary for Research and Technology. The UTC Program was created by Section 314 of the Surface Transportation and Uniform Relocation Assistance Act of 1987, 49 U.S.C. §5317, with the primary purpose of conducting research.

The Intermodal Surface Transportation Equity Act (ISTEA) of 1991 reauthorized the UTC Program through fiscal year (FY) 1997, and expanded its mission to include education and technology transfer. In addition to the 10 Regional Centers, ISTEA created 3 "National" Centers and 6 University Research Institutes at universities named in ISTEA. This expansion led the U.S. DOT to adopt a strategic planning approach to program management based on a mission and set of goals that applied to all 13 centers and 6 institutes. The U.S. DOT extended the grants to the Regional Centers for three years, and announced its intention to reopen the program to competition, which occurred in 1994.

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) reauthorized the UTC Program for an additional six years and increased the total number of centers from the original 10 to 33. In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) increased the number of centers to 60. In addition to the 10 Regional Centers, which were competitively selected, 10 Tier-1 funded centers were also competitively selected. With the exception of the Title III centers, all of the UTCs are required to provide a 1-for-1 funding match. *(Continued next page.)*

The Surface Transportation Extension Act of 2011 (the Extension Act), gave discretion to redistribute the funds allocated to specific research projects and programs designated in SAFETEA-LU. In accordance with the Extension Act, the U.S. DOT competitively awarded grants to 22 UTCs in the amount of approximately $3.5 million each to 10 Tier 1 UTCs, two Tier 1 Transit-Focused UTCs, and 10 Regional UTCs. These grants were awarded in 2011, and FY 2012 funds were added following extension legislation.

Under the surface transportation reauthorization, Moving Ahead for Progress in the 21st Century Act (MAP-21), 35 grants were awarded in September 2013, and two additional grants were awarded in early 2014. UTCs under the MAP-21 authorization represent five national UTCs funded at up to $3.5 million per FY; 10 Regional Centers funded at up to $2.75 million per year; and up to 20 Tier 1 UTCs funded at up to $1.5 million per fiscal year. Tier 1 UTCs are required to provide a match of 50 percent of the amount of the grant; all other UTCs must provide a match in an amount at least equal to the U.S. DOT grant.

Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94), signed in December 2015, was the first federal law in over a decade to provide long-term funding for surface transportation infrastructure planning and investment. The FAST Act authorized $305 billion in spending from FYs 2016 through 2020 for the maintenance of existing and establishment of new initiatives in research, education and workforce development, and the facilitation of technology transfer. To fulfill the FAST Act federal mandate, U.S. DOT hosted a grant competition that resulted in the announcement of 32 new UTCs in December 2016.

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RAISE	**Rachael Tompa** Aeronautic and Astronomic Department at Stanford University
FAA COE	**Nicholas Rock** Brigham Young University
	Kathryn (Katie) Tippey Texas A&M University

University Transportation Centers

Outstanding Students of the Year

Students are organized by primary mode of interest/study area.

AIR	**Ken Bao** University of Missouri, St. Louis
MARITIME	**Timothy Moody** University of Arkansas, Fayetteville
MULTIMODAL	**Timothy Brathwaite** University of California, Berkeley
	Nicholas Fournier University of Massachusetts, Amherst
	Tara Goddard Portland State University
	Steven Landry Michigan Technological University
	Oscar Rodriguez University of Texas Rio Grande Valley
PUBLIC TRANSIT	**Austin Gibble** University of South Florida
	Axel Hellman University of Southern California
	Matthew Palm University of California, Davis
	Lerone Savage CUNY Hunter College
	Jane Shinn San Jose State University
	Dan Wan City College of New York, CUNY
RAIL	**William Barbour** University of Illinois at Urbana-Champaign
	Samantha Chadwick University of Illinois at Urbana-Champaign
ROAD	**Hiba Abdel-Jaber** Princeton University
	Afrid Alavee Sarker University of Memphis

University Transportation Centers

Outstanding Students of the Year (continued)

ROAD (CONT.)

Emily Black
University of Alabama at Birmingham

Marcus Brewer
Texas A&M University

Katelyn Freeseman
University of Minnesota

Mehdi Honarvar Nazari
Washington State University

Matthew Hopkins
Missouri University of Science and Technology

Andrew Jayankura
University of Nevada, Reno

Chris Kaffine
Carnegie Mellon University

Brent Kostich
Western Michigan University

Holly Lloyd
Utah State University

Michael Motro
University of Texas at Austin

Cameron Murray
University of Oklahoma

Karl Olson
University of Maine, Orono

Samuel Redd
Iowa State University

Jeffrey Sadler
University of Virginia

Adrian Sandt
University of Central Florida

Stephanie Seki
Carnegie Mellon University

Parker Sorenson
University of Connecticut

Dustin Souders
Florida State University

Maria Torres-Rodriguez
University of Puerto Rico, Mayaguez

Joseph Lake Trask
North Carolina State University

Donald Watson
University of Florida

Sherilyn Wee
University of Hawaii at Manoa

Rachael Tompa

Secretary's RAISE Award Recipient

Stanford University

FAA Center of Excellence for Commercial Space Transportation

Rtompa2@stanford.edu

Bio

Rachael Tompa is currently a PhD candidate in the Department of Aeronautics and Astronautics at Stanford University. She is also a member of the Stanford Intelligent Systems Laboratory (SISL). Her interests are in developing advanced algorithms for robust decision-making systems, particularly in the field of Air and Space Traffic Management. Rachael has participated in several educational outreach programs to encourage interest in science, technology, engineering, math, and aviation. She is also a private pilot.

Degree and Graduation Date (or Anticipated Date)

PhD candidate in the Department of Aeronautics and Astronautics at Stanford University.

Bachelor's degree in Mechanical Engineering and Physics from Northeastern University, 2014.

Preferred Career after Graduation

Rachael plans to continue her PhD studies and pursue a career in the private sector.

Broad Research Interest Area

Commerical space transportation.

Specific Research Area

Integration of commerical space transportation into the National Airspace System.

Primary Mode(s)

Air

Top Accomplishment in 2016

Rachael's top accomplishment was receiving a National Science Foundation Graduate Research Fellowship.

Thesis Title and Summary

"Aircraft Rerouting during Commercial Space Launches."

This research explores how to make dynamic airspace closures during commercial space launches with limited geographic extent. The problem is modeled as a Markov decision process. It defines when an aircraft should be rerouted to minimize inconvenience and cost while maintaining safety, based on launch vehicle trajectory, probability of anomaly, potential debris trajectories, and air traffic.

Nicholas Rock

Georgia Institute of Technology

FAA Center of Excellence for Alternative Jet Fuels and the Environment

nrock3@gatech.edu

Bio

Nicholas Rock's undergraduate research on aircraft engine exhaust jets earned him first place at the Brigham Young University Idaho Research and Creative Works Conference.

As a graduate student at Georgia Tech, Nicholas performed experimental combustor testing that supported the development of the Pratt and Whitney geared turbofan engine. Nicholas also has extensive humanitarian experience, having performed two years of volunteer service for his church, where he held addiction recovery classes and taught other life success skills.

Degree and Graduation Date (or Anticipated Date)

PhD from Georgia Institute of Technology, 2019.
Master's degree from Georgia Institute of Technology.
Bachelor's degree in Mechanical Engineering from Brigham Young University, 2014.

Preferred Career after Graduation

Nicholas aspires to pursue a career in academia.

Broad Research Interest Area

Infrastructure systems.

Specific Research Area

Alternative aviation fuels.

Primary Mode(s)

Air

Top Accomplishment in 2016

At the 2016 American Society of Mechanical Engineers Turbo Expo Conference in Seoul, South Korea, Nicholas presented his research on the physical mechanism governing flame stability in liquid fueled aviation engines. Further findings were submitted in November 2016 for publication in the 2017 Turbo Expo.

Thesis Title and Summary

"Lean Blowout Sensitivities in a Liquid Fueled Combustor: Fuel Composition and Preheat Temperature Effects."

The broader deployment of alternative aviation fuels is limited by an inadequate scientific understanding of the influence of liquid fuel properties on flame stability. This is a key performance metric in the fuel certification process. Experimental data has demonstrated that the cause of flame blowout (extinction) is air temperature dependent. Stable combustion can be achieved by using easily vaporized fuels at low temperatures and fuels with high chemical reactivity at high temperatures.

Kathryn (Katie) Tippey

Texas A&M University

FAA Center of Excellence for General Aviation Safety (PEGASAS)

Katie.Tippey@Vanderbilt.edu

Bio

Katie Tippey received her PhD in Industrial and Systems Engineering from Texas A&M University in August 2016. She received a bachelor's degree in Economics and Mathematics from the University of Alabama, as well as a master's degree in Economics (also from Alabama), and an Industrial and Operations Engineering degree from the University of Michigan. Katie Tippey's dissertation research involves investigating novel displays for their impact on measures of operator workload and situation awareness. In addition to aviation, Katie is an active researcher in many other domains, including medicine, nuclear power, and ground transportation.

Degree and Graduation Date (or Anticipated Date)

PhD in Industrial and Systems Engineering from Texas A&M University, August 2016.
Master's degree in Economics from the University of Alabama.
Bachelor's degree in Economics and Mathematics from the University of Alabama.
Industrial and Operations Engineering degree from the University of Michigan.

Preferred Career after Graduation

Katie is currently conducting post-doctoral work at Vanderbilt University.

Broad Research Interest Area

Investigating novel displays for their impact on measures of operator workload and situation awareness.

Specific Research Area

Human factors engineering in transportation and in complex systems.

Primary Mode(s)

Air

Top Accomplishment in 2016

Katie worked extensively with researchers and technicians at the FAA William J. Hughes Technical Center (WJHTC) and other FAA COE General Aviation affiliated institutions to organize a sophisticated simulator study that was conducted at WJHTC in summer 2015.

Thesis Title and Summary

"Supporting Multitasking; Evaluation of Novel Input and Output Characteristics to Support Primary and Secondary Task Performance using Situation Awareness and Mental Workload."

Katie's dissertation research involves investigating novel displays, such as wearable multisensory displays, for their impact on measuring operator workload and situation awareness.

Ken Bao

University of Missouri, St. Louis

Center for Transportation Studies

kqtqhd@mail.umsl.edu

Bio

Ken Bao is currently enrolled in the master's program in economics at the University of Missouri – St. Louis (UMSL). His main project explores the cost comparison of restructuring the Essential Air Service (EAS) program. Other projects include the viability of an intermodal hub in St. Louis and the effects of capital and operating subsidies on the productivity of mass transit agencies.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Economics from UMSL, 2017.

Bachelor's degree in Finance (minor in economics) from UMSL.

Preferred Career after Graduation

Ken plans to pursue doctoral studies, with an expected graduation date of 2023.

Broad Research Interest Area

NA

Specific Research Area

Cost analysis, value of time estimation, and subsidy effects on firm behavior.

Primary Mode(s)

Air and ground

Top Accomplishment in 2016

Ken helped write and edit an article exploring the cost comparison of restructuring the EAS program that was accecpted for presentation at the 2016 TRB conference.

Thesis Title and Summary

"Cost Analysis: Substituting Ground Transportation for Subsidized Essential Air Services."

The paper looked at the cost savings of replacing the EAS with a general subsidy for intercity passenger transport. Results show this kind of substitution can provide community residents and the federal government with substantial savings.

Tim Moody

University of Arkansas at Fayetteville

Maritime Transportation Research and Education Center

moody.ta@gmail.com

Bio

Tim Moody received his bachelor's degree in Civil Engineering from the University of Arkansas at Fayetteville in 2015. Tim is currently enrolled as a master's student in the Department of Civil Engineering at the University of Arkansas. His research focuses on rapid and non-destructive evaluation of levees using geophysical methods. This research involves collecting resistivity and surface wave data along levees and comparing the results to more traditional geotechnical properties from cone penetration tests and/or boring logs/standard penetration test measurements. He plans to graduate in spring 2017.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Civill Engineering from the University of Arkansas, 2017.
Bachelor's degree in Civill Engineering from the University of Arkansas at Fayetteville, 2015.

Preferred Career after Graduation

Tim plans to pursue a career in the public sector.

Broad Research Interest Area

Infrastructure systems and materials.

Specific Research Area

Levee evaluation and geophysical methods.

Primary Mode(s)

Maritime

Top Accomplishment in 2016

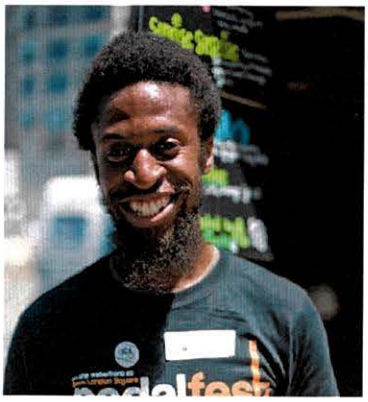
Tim helped collect and process data from the Mel-Price Wood River Levee system.

Thesis Title and Summary

"Rapid and Non-Destructive Evaluation of Levees Using Resistivity and Surface Wave Methods."

Many levees throughout the U.S. are in poor condition and need to be evaluated to determine which sections should be repaired or replaced first. Geophysical methods, particularly resistivity and surface wave methods, provide a more continuous and rapid evaluation of levees than traditional geotechnical methods. They can also be used to cost effectively determine the stiffness and soil type of levees, allowing a section-by-section evaluation of the levee.

Timothy Brathwaite



University of California, Berkeley

University of California Center on Economic Competitiveness in Transportation and University of California Transportation Center

timothyb0912@berkeley.edu

Bio

Timothy Brathwaite completed a bachelor's degree in Urban Studies and Planning at the University of New Orleans, and he received dual master's degrees in City Planning and Civil Engineering in 2014 at the University of California-Berkeley (UCB). He is currently a Civil Engineering PhD candidate at UCB. Timothy's research focuses on discrete choice modeling in general, and the choice of bicycling for commute purposes in particular. Timothy has interned with numerous organizations, from transportation consulting firms (Fehr and Peers, and Cambridge Systematics), to the public sector (City of Oakland Bicycle Facilities Program) and private sector (Data Science team at Lyft).

Degree and Graduation Date (or Anticipated Date)

PhD in Civil Engineering from UCB, 2017.
Dual master's degrees in City Planning and Civil Engineering from UCB, 2014.

Preferred Career after Graduation

Timothy plans to work in the private sector.

Broad Research Interest Area

Transportation planning and policy.

Specific Research Area

Travel demand modeling.

Primary Mode(s)

Multimodal

Top Accomplishment in 2016

Tim reduced costs from Lyft's carpool operations by improving the probability models used in their matching algorithm.

Thesis Title and Summary

"Improving the Policy Relevance and Accuracy of Bicycle Demand Models: Addressing the Issues of Omitted Roadway-Level Variables, Class Imbalance, and Irrational Decision Making."

This thesis is motivated by the desire to improve the discrete choice models used to predict the impact of various policies on the percentage of commuters traveling by bicycle. Critically, it develops (1) new ways to incorporate commonly omitted but important roadway-level variables directly into mode choice models, (2) new models to deal with the relatively lower numbers of cyclists in typical household travel surveys, and (3) new models of two-stage decision making to address the possibly non-compensatory strategies that individuals might use when deciding whether or not to consider bicycling as a travel mode.

Nicholas Fournier

University of Massachusetts, Amherst

Safer-SIM University Transportation Center

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Bio

Nicholas Fournier is a graduate student at the University of Massachusetts, Amherst where he is pursuing a PhD and dual master's degrees. His research focus is bicycle safety, sustainable transportation, and mobility on demand. He is currently an intern for the U.S. DOT at Volpe, the National Transportation Systems Center. Prior to graduate school, Nicholas worked as a civil engineer in San Francisco, where he was actively involved in bicycle advocacy and planning.

Degree and Graduation Date (or Anticipated Date)

PhD from the University of Massachusetts, Amherst, 2018.

Dual master's degrees in Transportation Engineering and Regional Planning from the University of Massachusetts, Amherst, 2017.

Bachelor's degrees in Civil and Environmental Engineering from the University of Massachusetts, Amherst, 2011.

Preferred Career after Graduation

Nicholas plans to work in the private sector.

Broad Research Interest Area

Transportation planning, traffic engineering.

Specific Research Area

Bicycle safety, sustainable transportation, mobility on demand.

Primary Mode(s)

Multimodal

Top Accomplishment in 2016

Nicholas won the International Institute of Transportation Engineers Daniel B. Fambro Student Paper Award for his paper titled "A Seasonal Demand Model Using a Sinusoidal Function." This paper is currently under review in Transportation Research Part D. Nicholas also received the Dwight D. Eisenhower Graduate Fellowship.

Thesis Title and Summary

"Evaluating Bicycle Infrastructure Using a Driving Simulator."

Simulating bicycle infrastructure in a driving simulator enables an in-depth evaluation of infrastructure effectiveness based on driver behavior. When combined with a questionnaire, findings show that driver experience as a cyclist has an impact on driving behavior.

Tara Goddard

Portland State University

National Institute for Transportation and Communities

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Bio

Tara Goddard is a PhD candidate in the Nohad A. Toulan School of Urban Studies and Planning at Portland State University, where her dissertation research explores drivers' attitudes and behaviors toward bicyclists. She holds a master's degree in Civil Engineering from the University of California, Davis, and served as the Bicycle/Pedestrian Coordinator for the city of Davis, California from 2007 to 2011.

Tara's research interests include all things related to transportation safety, in particular the intersections of transportation and social psychology and their influence on differential experiences and safety outcomes on the road, especially for women and people of color.

Degree and Graduation Date (or Anticipated Date)

PhD in Urban Studies from Portland State University, 2017.
Master's degree in Civil Engineering from the University of California, Davis, 2005.

Preferred Career after Graduation

Tara plans to pursue a career in academia.

Broad Research Interest Area

Transportation planning.

Specific Research Area

Travel behavior, transportation safety, and design.

Primary Mode(s)

Multimodal

Top Accomplishment in 2016

Tara wrote the book chapter "Theorizing Bicycle Justice Using Social Psychology: Examining the Intersection of Mode and Race with the Conceptual Model of Roadway Interactions" in Bicycle Transportation and Urban Transformation: Bicycling for All?, published by Routledge.

Thesis Title and Summary

"Drivers' Attitudes and Behaviors toward Bicyclists: Intermodal Interactions and Implications for Road Safety."

Bringing together social psychological theories with existing techniques for measuring driver attitudes, stereotypes about bicyclists and views about normative roadway behavior, and driver's self-reported behavior when interacting with bicyclists, this research utilized an online survey to measure drivers' explicit attitudes and self-reported behaviors. Subconsciously held evaluations of drivers and bicyclists, which may better predict behavior in a high-speed, high-stress environment like the roadway, are tested using an Implicit Association Test (IAT). These attitudes toward bicyclists, and their relationship with self-reported safety-related behaviors, suggest there are potential educational, legal, programmatic, and infrastructural interventions to improve bicyclist safety.

Steven Landry

Michigan Technological University

National University Rail Center

sglandry@mtu.edu

Bio

Steven Landry is a PhD student in the Applied Cognitive Science and Human Factors program at Michigan Technological University. His research interests include in-vehicle information system design, driver safety, and multimodal interaction. He is the president of the Humane Interface Design Enterprise, a student-run organization that focuses on the usability and user-experience aspects of mobile application and website development.

Degree and Graduation Date (or Anticipated Date)

PhD in Applied Cognitive Science and Human Factors from Michigan Technological University, 2019.

Master's degree in Applied Cognitive Science and Human Factors from Michigan Technological University, 2016.

Bachelor's degree in Psychology from Southeastern Louisiana University.

Preferred Career after Graduation

Steven plans to pursue a career in the public sector, private sector, or academia.

Broad Research Interest Area

Intelligent transportation systems.

Specific Research Area

In-vehicle information systems, auditory displays, and driver safety.

Primary Mode(s)

Multimodal

Top Accomplishment in 2016

Steven's thesis was presented at the 2016 Joint Rail Conference and submitted to the journal, Transportation Research Part F: Traffic Psychology and Behavior, in August 2016.

Thesis Title and Summary

"Getting Active with Passive Crossings: Investigating the Efficacy of In-Vehicle Auditory Alerts for Rail-Road Crossings."

This thesis presents a series of experiments designing and testing an in-vehicle auditory alert (IVAA) system at grade railroad crossings. A statistical model was created describing the relationship between the analyzed acoustic parameters of the alerts and the psychological ratings collected from participants. This model guided the auditory design of the IVAA system tested in a follow-up study. Results showed that the prototype IVAA for railroad crossings increased safe and compliant driving behaviors.

Oscar O. Rodriguez

University of Texas Rio Grande Valley

University Transportation Center for Railway Safety

oscar.o.rodriguez01@utrgv.edu

Bio

Oscar Rodriguez completed both his bachelor's and master's degrees in Mechanical Engineering with honors from the University of Texas Rio Grande Valley. He is the first in his family to graduate from a university. Oscar worked as an undergraduate research assistant for two years with the University Transportation Center for Railway Safety (UTCRS) as part of the bearing testing and vibration analysis teams. He learned the basics from faculty and graduate students and transitioned to his own project.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Mechanical Engineering from the University of Texas Rio Grande Valley, 2017.

Bachelor's degree in Mechanical Engineering from the University of Texas Rio Grande Valley.

Preferred Career after Graduation

Oscar plans to consult in the private sector.

Broad Research Interest Area

Transportation planning, materials.

Specific Research Area

Testing and development of roadside equipment.

Primary Mode(s)

Multimodal

Top Accomplishment in 2016

Oscar is the lead author and presenter of two papers related to his thesis at the American Society of Mechanical Engineers (ASME) Joint Rail Conferences. He was also awarded the 2016 ASME Rail Transportation Division Graduate Student Conference Scholarship. At the University of Texas Rio Grande Valley, Oscar maintains a 4.0 GPA and was nominated for the 2016 Student Employee of the year. He has also volunteered more than 125 hours to community engagement activities, one of the main staples of the UTCRS.

Thesis Title and Summary

"The Effect of Heat Generation in the Railroad Bearing Thermoplastic Elastomer Suspension Element on the Thermal Behavior of Railroad Bearing Assembly."

This study conducted on the thermoplastic elastomer suspension element implemented on the truck assembly of a freight railcar evaluates the internally-generated heat produced by hysteresis heating resulting from an applied oscillatory load. Findings will provide a better understanding of the effect of this phenomenon on the structural integrity and thermal management of the railroad bearing assembly.

Austin Gibble

University of South Florida

National Center for Transit Research

agibble@live.com

Bio

Austin Gibble's multidisciplinary graduate research at the University of Southern Florida (USF) encompasses electric vehicles, equity in transportation investments, freight and livability, complete streets and access to transit, integration of shared mobility services, benchmarking surveys, and transportation network company regulations. His current cumulative GPA is 3.9. Austin is the President of the LiveMove USF Student Organization, an organization dedicated to active transportation; and Vice President of the USF Student Planning Organization. Austin previously worked for the Central Indiana Regional Transportation Authority and conducted outreach work for the Indianapolis Metropolitan Planning Organization.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Urban and Regional Planning from the University of South Florida, 2017.

Preferred Career after Graduation

Austin plans to consult in the public or private sector.

Broad Research Interest Area

Transportation planning, transport policy.

Specific Research Area

Public transit, bicycle and pedestrian planning, regional planning.

Primary Mode(s)

Public transit and multimodal.

Top Accomplishment in 2016

Austin's most notable work is a report he submitted for presentation at the 2017 National APA Conference. The report examines equity in transportation investments, develops a new methodology for identifying communities of concern, and examines the impacts of transportation investments on these communities.

Thesis Title and Summary

A thesis title and summary were not provided.

Axel Hellman

University of Southern California

METRANS Transportation Center

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Bio

Axel Hellman focused on sustainable planning when completing his bachelor's degree. He has interned with transportation agencies such as New Jersey Transit and the Port Authority of New York and New Jersey. He currently works at OurBus, Inc., a transit technology startup.

Degree and Graduation Date (or Anticipated Date)

Bachelor's degree in Public Policy, Planning, and Development from USC, 2016.

Master's degree in Planning from USC, 2017.

Preferred Career after Graduation

Axel plans to work in the private sector.

Broad Research Interest Area

Transportation planning and transport policy.

Specific Research Area

Private sector and informal transit.

Primary Mode(s)

Public transit

Top Accomplishment in 2016

Axel presented to the Port Authority executive leadership on opportunities for the Holland Tunnel support site redevelopment and modernization.

Thesis Title and Summary

"Transportation and Infrastructure Planning."

This case study of transportation planning, development, funding, public/private partnerships presents a policy for a local redevelopment site.

Matthew Palm

University of California, Davis

National Center for Sustainable Transportation

mattdpalm@gmail.com

Bio

Matthew Palm holds a bachelor's degree in History from the University of California, Santa Cruz (UC Santa Cruz) and a master's degree in Public Policy from Oregon State University. Matt worked for the Oregon Department of Transportation analyzing the relationship between higher housing densities and housing costs. This work brought him to the University of California, Davis (UC Davis) where he conducted research on how to integrate state, regional, and federal housing programs with sustainable transportation planning goals. Data produced for his research is being utilized by multiple state agencies in California to evaluate the state's affordable housing programs. He also conducted research evaluating how voters respond to 'ballot box transportation planning.'

Degree and Graduation Date (or Anticipated Date)

PhD from UC Davis, December 2016.

Master's degree in Public Policy from Oregon State University.

Bachelor's degree in History from UC Santa Cruz.

Preferred Career after Graduation

Matt plans to pursue careers in either academia or the public sector.

Broad Research Interest Area

Transportation planning and policy.

Specific Research Area

Integrated transportation and housing planning, public transportation, regional planning, and affordable housing.

Primary Mode(s)

Public transit

Top Accomplishment in 2016

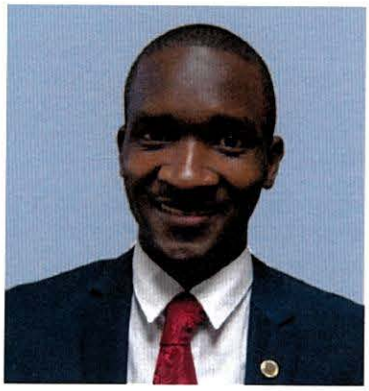
Matt was the lead author for an article published in Transportation, the second author for a paper published in Transport Geography. His dissertation is already being used by state agencies to improve housing programs.

Thesis Title and Summary

"The Prospect for Aligning State and Federal Housing Policies with Sustainable Transport Goals."

This dissertation examines the ability of affordable housing programs to align with sustainable transportation planning goals. California's Regional Housing Needs Allocation 'fair share' housing mandate and the federal government's Section 8 housing voucher programs are examined with respect to their ability to improve low-income residents' access to transit and jobs. California's Transit Oriented Development affordable housing grants are tested for their impacts on affordable housing development costs.

Lerone Savage



CUNY Hunter College

University Transportation Research Center, Region II

lersavage@aol.com

Bio

Lerone Savage is enrolled in the Geography master's program at Hunter College. As an undergraduate, Lerone received a $4,100 fellowship from Hunter College President Jennifer Raab to conduct a research project under Dr. Hongmian Gong's supervision. Lerone used the fellowship to develop a Python script for detecting carpooling using geographic information system (GIS) and Global Positioning System (GPS) traces collected by smartphones, which he discussed in his senior thesis.

Lerone has also interned with the Metropolitan Transit Authority (MTA). He aspires to advance transportation research and create products that will improve transit networks.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Geography from Hunter College, 2016.

Bachelor's degree in Geography/Geographic Information Science and Cartography from Hunter College.

Preferred Career after Graduation

Lerone plans to pursue his PhD, and then has plans to work in academia, the public sector, or the private sector.

Broad Research Interest Area

Transportation planning and intelligent transportation systems.

Specific Research Area

Travel mode detection.

Primary Mode(s)

Public transit and multimodal.

Top Accomplishment in 2016

Lerone presented at the American Association of Geographers (AAG) national conference in San Francisco and the Penn Honors Diversity Symposium.

Thesis Title and Summary

"Travel Mode Detection in New York City Using Smartphones and Cyber Geographic Information Systems (GIS): Case Study of New York City."

This study involves the use of smartphone data for travel mode detection in New York City. This research focuses on how accelerometer data (in addition to latitude, longitude, and time) can be incorporated into mode detection algorithms to differentiate travel modes. The study also provides a framework for combining GIS techniques with a decision tree to classify travel modes such as walk, subway, train, car, and bus.

Jane S. Shinn

San Jose State University

Mineta Transportation Institute

Jshinn94@gmail.com

Bio

Jane Shinn is enrolled in the Master of Science in Transportation Management program at the Mineta Transportation Institute, located within the Lucas Graduate School of Business at San Jose State University. She is currently working on facility programming for a transit hub planned to be the busiest in California; the San Jose Diridon Intermodal Station. She is also developing an equity program for the Silicon Valley Express Lanes Program, as well as a delivery program for a proposed $6.5 billion sales tax measure. Jane is a member of SPUR San Jose and the San Francisco Bay Area Chapter of Women's Transportation Seminar.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Transportation Management from San Jose State University, 2017.

Preferred Career after Graduation

Jane plans to pursue a career in the public sector.

Broad Research Interest Area

Transportation planning and policy.

Specific Research Area

Jane is developing an Equity program for the Silicon Valley Express Lanes Program.

Primary Mode(s)

Public transit

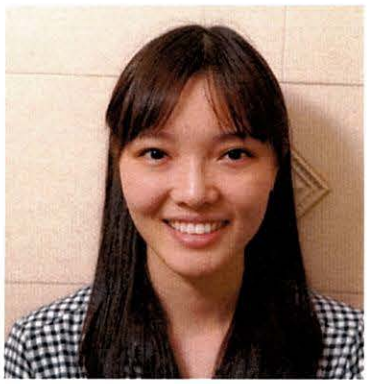
Top Accomplishment in 2016

Jane was recently promoted to the position of Senior Management Analyst at the Valley Transportation Authority in Santa Clara County, California.

Thesis Title and Summary

A thesis title and summary were not provided.

Dan Wan



City College of New York, City University of New York

University Transportation Research Center, Region II

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Bio

Dan Wan is currently a civil engineering PhD student at the City College of New York. She earned her master's and bachelor's degrees at Huazhong University of Science and Technology in China.

Dan has worked on travel demand of taxis, toll elasticity, riders' perception of Select Bus service, and intersection safety. From 2014 to 2015, she also interned with the public transit development group in the New York City Department of Transportation.

Degree and Graduation Date (or Anticipated Date)

PhD in Civil Engineering from City College of New York, 2017.

Master's and bachelor's degrees in Transportation Engineering from Huazhong University of Science and Technology, 2012 and 2009.

Preferred Career after Graduation

Dan plans to pursue a career in either the private sector or academia.

Broad Research Interest Area

Transport policy and traffic engineering.

Specific Research Area

Public bus service; intersection safety; toll elasticity; travel demand of taxi, connected vehicle, bike lane, and freight.

Primary Mode(s)

Public transit

Top Accomplishment in 2016

Dan participated in New York City's "Work Zone Coordination and Management" project, published three papers, and coauthored three other papers. Two of the papers related to the Selected Bus Service in New York City were accepted by the journal, *Transport Policy and Public Transport*.

Thesis Title and Summary

"Calibrating Safety Performance Functions for Intersections in New York City: Relaxing the Functions in Space."

This study will rigorously analyze intersection crashes in New York City. By regressing local safety data at the jurisdiction level, this study will additionally explore the spatially varying Safety Performance Functions (SPFs) that can largely account for the geographical heterogeneity of intersection safety. The SPFs developed in this study will serve as important predictive tools for the city's transportation agencies and practitioners.

William Barbour

University of Illinois, Urbana-Champaign

Center for Transportation Studies

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Bio

William Barbour has a strong multidisciplinary background through his work at Oak Ridge National Laboratory and CSX Transportation. His initial research focused on using mobile sensor platforms in natural resource and agricultural applications. He is now using a data-driven algorithm design to research improvements in freight train arrival time estimates nationwide. Findings will benefit not only public and community safety but also rail network fluidity. William's interests range from sensors and electrical engineering to data mining and analytics, applied to public and urban transportation systems, systems engineering and optimization, and sustainability.

Degree and Graduation Date (or Anticipated Date)

Bachelor's degree in Biosystems Engineering from the University of Tennessee, Knoxville, 2015.

Master's degree in Civil Engineering from the University of Illinois, Urbana-Champaign, 2017.

Preferred Career after Graduation

William plans to pursue doctoral studies.

Broad Research Interest Area

Intelligent transportation systems and freight.

Specific Research Area

Rail grade crossing safety.

Primary Mode(s)

Rail

Top Accomplishment in 2016

William was awarded a U.S. DOT Eisenhower Transportation Fellowship. He supplemented his graduate research on railroads through his work in the Operations Research, Modeling, and Analytics group at CSX Transportation. He was also an invited presenter at the Data Quality in an Era of Big Data workshop and participated in the ThinkChicago Ideas Week.

Thesis Title and Summary

"Supporting Automated Operations with Improved Arrival Time Predictions on U.S. Freight Railroads."

Even though improvements in safety awareness and infrastructure have led to a decrease in rail crossing accidents, from an operational perspective the accidents that do occur are still extremely costly. They are also risky due to the dangerous cargo transported. Uncertainty in arrival times also presents challenges for emergency services, which can be unexpectedly delayed or gridlocked by stopped trains. More accurate freight and passenger train estimated times of arrival will improve the planning response to forecasted stoppages and promote a more fluid rail network.

Samantha Chadwick

University of Illinois, Urbana-Champaign

National University Rail Center

Schadwi2@illinois.edu

Bio

Samantha Chadwick is a graduate research assistant with the Rail Transportation and Engineering Center at the University of Illinois, Urbana-Champaign (UIUC). Her research focus is increasing highway-rail grade crossing safety through minimizing the risk of train derailments. In 2010, Sam interned for HNTB Corporation where she designed light, commuter, and high-speed rail systems. While earning her master's degree at UIUC, she was President of the American Railway Engineering and Maintenance-of-Way Association (AREMA) student chapter. In 2013, as a Henry Luce Scholar, Sam spent one year in Taipei interning at Taiwan High Speed Rail Corporation and studying Mandarin Chinese.

Degree and Graduation Date (or Anticipated Date)

PhD from UIUC, 2016.

Master's degree and bachelor's degree in Civil Engineering from UIUC, 2014 and 2010.

Preferred Career after Graduation

Sam plans to consult in the public and private sector.

Broad Research Interest Area

Transportation planning, transportation policy, and freight.

Specific Research Area

Highway-rail grade crossing safety, passenger and freight train safety.

Primary Mode(s)

Rail

Top Accomplishment in 2016

Sam presented her research findings at the Grade and Level Crossing Symposium in Helsinki, an international conference to recognize and promote the latest research on grade crossing safety.

Thesis Title and Summary

"Quantifying Train Derailment Risk at Highway-Rail Grade Crossings."

Highway-rail grade crossing collisions have the potential to cause casualties and property damage and to release hazardous materials, especially if the collision results in a derailment. Since resources for highway-rail grade crossing improvements are limited, it is important to identify which crossings pose the greatest risk to the public in order to increase safety at the most critical locations. Sam's goal is to quantify the train derailment risk at highway-rail grade crossings and to maximize the safety benefit of grade crossing upgrades by providing a tool that identifies crossings with the highest risk.

Hiba Abdel-Jaber

Princeton University

Center for Advanced Infrastructure and Transportation (CAIT)

hiba@princeton.edu

Bio

Hiba Abdel-Jaber is a PhD student at Princeton, where she received her master's degree in 2014 after obtaining her bachelor's degree from the American University in Dubai (AUD) in 2012. Her research primarily focuses on monitoring pre-stressed concrete structures using long-gauge fiber-optic sensors. She is conducting this research with Princeton's Department of Civil and Environmental Engineering's Structural Health Monitoring Lab (SHMlab).

Hiba was awarded the American University in Dubai (AUD) Valedictorian Award in 2012 and Princeton's Gordon Y.S. Wu Fellowship in Engineering in 2014, and the 2016 Charlotte Elizabeth Proctor Honorific Fellowship from Princeton.

Degree and Graduation Date (or Anticipated Date)

PhD from Princeton University, 2017.

Master's degree from Princeton University, 2014.

Bachelor's degree in Civil Engineering from the American University in Dubai, 2012.

Preferred Career after Graduation

Hiba plans to pursue a career in the private sector.

Broad Research Interest Area

Infrastructure systems.

Specific Research Area

Monitoring of pre-stressing force transfer, long-term pre-stress losses, and early-age cracks.

Primary Mode(s)

Road

Top Accomplishment in 2016

Hiba was awarded the Charlotte Elizabeth Proctor Honorific Fellowship from the Graduate School of Princeton University for 2016–2017.

Thesis Title and Summary

"Long-Term Structural Health Monitoring (SHM) of Prestressed Concrete Structures Using Fiber Optic Sensors."

Hiba's dissertation focuses on creating new data-analysis methods for measurements taken with strain sensors in prestressed concrete structures. The objective is to transform measurements into parameters that indicate the performance and behavior of the structure, such as the distribution of long-term pre-stress losses, and the status and effects of early-age cracks.

Afrid Alavee Sarker

University of Memphis

National Center for Freight and Infrastructure Research and Education

alavee09@gmail.com

Bio

Afrid Sarker is a doctoral student and a Herff Fellow at the Herff College of Engineering. He is also an active national student member of the American Society of Civil Engineers and Institute of Transportation Engineers. In 2015, his academic performance earned him the Trucking Industry Defense Association Student of the Year Award. Afrid has been involved in several projects sponsored by the U.S. Department of Transportation, Tennessee Department of Transportation, Wisconsin Department of Transportation, and Maryland State Highway Administration. He has also contributed to several projects sponsored by the National Center for Freight and Infrastructure Research and Education.

Degree and Graduation Date (or Anticipated Date)

PhD from the University of Memphis, 2017.

Master's degree in Transportion Engineering from the University of Memphis, 2015.

Preferred Career after Graduation

Afrid plans to work in the public or private sector.

Broad Research Interest Area

Transportation planning and traffic engineering.

Specific Research Area

Secondary crash modeling.

Primary Mode(s)

Road

Top Accomplishment in 2016

Afrid presented the findings from his master's thesis in the frontline journals: *Accident Analysis and Prevention* and *Transportation Research Part C: Emerging Technologies.*

Thesis Title and Summary

"Secondary Crashes: Identification, Visualization, and Prediction."

Secondary crash occurrences can lead to a significant increase in traffic delay and reduced safety. Even though a relatively small number of all crashes are secondary, their identification along with the primary contributing factors is imperative. This study has two primary objectives: 1) devise a procedure to identify secondary crashes in a large-scale, multimodal transportation network; 2) develop prediction models to determine primary contributing factors that induce secondary crashes.

Emily Black

The University of Alabama at Birmingham

The National Center for Transportation Systems Productivity and Management

emb3003@gmail.com

Bio

Emily Black received a bachelor's degree in Civil Engineering from the University of Alabama in 2012, and is currently a graduate student at the University of Alabama at Birmingham. She interned at Alabama Power Company in 2011 in the Transmission Line Services department assisting the Geographic Information Sysems (GIS) team. In 2013, Emily was hired at the Alabama Power Company and is now the Light Detection and Ranging (LiDAR) specialist for the transmission system in Alabama.

Degree and Graduation Date (or Anticipated Date)

Master's degree from the University of Alabama, 2017.

Bachelor's degree in Civil Engineering from the University of Alabama, 2012.

Preferred Career after Graduation

Emily plans to work in the private sector.

Broad Research Interest Area

Infrastructure systems and materials.

Specific Research Area

Accelerated Bridge Construction (ABC), high strength materials (high strength steel, ultra-high performance concrete, and fiber-reinforced polymers).

Primary Mode(s)

Road

Top Accomplishment in 2016

Emily helped with the implementation of the new Southern Company-wide LiDAR specifications in Alabama.

Thesis Title and Summary

"Innovative Modular High Performance Lightweight Decks for Accelerated Bridge Construction."

According to the Federal Highway Administration, as of 2015, approximately 10 percent of bridges in the U.S. are structurally deficient, and another 14 percent are functionally obsolete. Extended construction times and traffic delays limit the number of bridge projects that state departments of transportation are able to complete each year. To help meet the growing demand for rapid bridge rehabilitation and reconstruction across the U.S., the University of Alabama at Birmingham, in collaboration with Florida International University and the University of Central Florida, is researching potential bridge deck systems using high-strength materials that can be implemented using accelerated bridge construction techniques.

Marcus Brewer

Texas A&M University

Center for Advancing Transportation Leadership and Safety (ATLAS)

m-brewer@tamu.edu

Bio

Marcus Brewer is a doctoral candidate and an associate research engineer at Texas A&M Transportation Institute (TTI). He has over 17 years of research experience in TTI's Roadway Design Program. An award-winning writer, he has authored or co-authored more than 100 research reports and peer-reviewed papers, and has been the lead or contributing author of a variety of state, national, and international policy and guidance documents.

Degree and Graduation Date (or Anticipated Date)

PhD in Civil Engineering from Texas A&M University, 2017.

Master's degree in Civil Engineering from Texas A&M University.

Bachelor's degree in Civil Engineering from the University of Kansas.

Preferred Career after Graduation

Marcus plans to pursue a career in the public sector.

Broad Research Interest Area

Infrastructure systems, traffic engineering.

Specific Research Area

Roadway and roadside design and safety, pedestrian mobility, and operational effects of geometric design.

Primary Mode(s)

Road

Top Accomplishment in 2016

Marcus was named an Eno Fellow as part of the 2016 Eno Future Leaders Development Conference.

Thesis Title and Summary

"Comparison of SHRP2 Naturalistic Driving Data to Geometric Design Speed Characteristics on Freeway Ramps."

Current geometric design guidelines provide information to designers on appropriate design speeds for freeway entrance and exit ramps. These guidelines are based on practices dating back several decades; however, it is unclear how well the speeds suggested by existing design guidance reflect current driving behavior. This study looks at driving data on freeway ramps from the SHRP2 Naturalistic Driving Study and compares it to the design characteristics of those ramps.

Katelyn Freeseman

University of Minnesota

Center for Highway Pavement Preservation

katelyn.freeseman@gmail.com

Bio

Katelyn Freeseman recently completed her PhD. Her thesis focus was nondestructive evaluation of concrete pavements, under the guidance of Dr. Lev Khazanovich. She is currently employed by the Institute for Transportation at Iowa State University, performing and managing bridge and transportation-related research for private, federal, and state agencies.

Degree and Graduation Date (or Anticipated Date)

PhD from the University of Minnesota, 2016.

Master's degree from the University of Minnesota.

Bachelor's degree in Civil Engineering (emphasis on structural engineering) from Iowa State University.

Preferred Career after Graduation

Katelyn is currently pursuing a career in academia.

Broad Research Interest Area

Infrastructure systems, materials.

Specific Research Area

Nondestructive evaluation of concrete.

Primary Mode(s)

Road

Top Accomplishment in 2016

In addition to defending her thesis, Katelyn co-authored several papers, including "Effect of Early Opening on Concrete Pavement Fatigue Damage," in the *TRB Journal* and "Nondestructive Monitoring of Subsurface Damage Progression in Concrete Columns Damaged by Earthquake Loading" in *Engineering Structures.*

Thesis Title and Summary

"Nondestructive Evaluation Advancements for Damage Detection in Concrete."

This thesis focuses on the nondestructive and quantitative detection of a variety of concrete applications using an ultrasonic linear array device. Factors considered included the detection of load-induced damage in laboratory beams and a full-scale reinforced concrete column, in addition to standard life-cycle damage in concrete pavements caused by freeze thaw and alkali-silica reaction degradation. The end result was the development of successful, efficient, and objective damage detection methods.

Mehdi Honarvar Nazari

Washington State University

Center for Environmentally Sustainable Transportation in Cold Climates

m.honarvarnazari@wsu.edu

Bio

Mehdi Nazari is a research associate and laboratory manager at Washington State University. He held similar positions at the Western Transportation Institute. His doctoral studies focus on UTC research relating to bio-based anti-icers and DOT research relating to protecting equipment and the environment from the negative effects of deicers. Mehdi has published and presented a variety of transportation-related topics. He has also demonstrated leadership by mentoring undergraduate students.

Degree and Graduation Date (or Anticipated Date)

PhD in Environmental Engineering from Washington State University, 2019.

PhD in Metallurgical and Materials Engineering from the University of Tehran, 2010.

Preferred Career after Graduation

Mehdi plans to pursue a career in academia.

Broad Research Interest Area

Infrastructure systems.

Specific Research Area

Stormwater runoff, green infrastructure, energy harvesting, water quality.

Primary Mode(s)

Road

Top Accomplishment in 2016

Mehdi authored one paper for the ASCE *Journal of Materials in Civil Engineering,* two book chapters, one UTC project final report, one TRB Conference Proceedings paper, and three poster presentations. He has also co-authored a journal article.

Thesis Title and Summary

"Microbial Fuel Cell-Based Bioenergy Harvesting and Its Application to Green Stormwater Infrastructure."

Microbial fuel cells (MFC) can be used as a maintenance-free power source for treating deicer-laden stormwater runoff collected from the roadway surface. One key innovation is to apply nanotechnology to MFC. This greatly improves power density and efficiency in harvesting bioenergy from the natural waters, using biominerals naturally replenished by native populations of safe manganese oxidizing microorganisms abundant in natural waters.

Matthew Hopkins

Missouri University of Science and Technology

Research on Concrete Applications for Sustainable Transportation (RE-CAST)

mshbq2@mst.edu

Bio

Matthew Hopkins received his bachelor's degree in civil engineering at the Missouri University of Science and Technology (Missouri S&T) in 2011. Promptly, he received the Chancellor's Fellowship to pursue his master's degree at Missouri S&T. His master's research focused on the structural performance of fiber-reinforced polymer (FRP) sandwich panels for bridge decking. He received his master's degree in Civil Engineering in 2014 and received the Chancellor's Fellowship a second time to pursue his doctorate at Missouri S&T.

Currently, his research focuses on the design and application of specialty concretes, specifically high-strength self-consolidating concrete (HS-SCC) and its applications to infrastructure.

Degree and Graduation Date (or Anticipated Date)

PhD from Missouri S&T, 2018.

Bachelor's and master's degrees in Civil Engineering from Missouri S&T, 2011 and 2014.

Preferred Career after Graduation

Matthew has aspirations of a career in the private sector.

Broad Research Interest Area

Matthew is interested in materials. His research focused on cement-based materials for bridges and pavements.

Specific Research Area

Cement-based materials for bridges and pavements.

Primary Mode(s)

Road

Top Accomplishment in 2016

Matthew completed a statistical design experiment to optimize the mixture proportions for HS-SCC. He is currently analyzing the data to model the effect of mix proportions on the fluidity and compressive strength development of HS-SCC, and hopes to publish the results in the near future.

Thesis Title and Summary

"Design and Performance of High Strength Self-Consolidating Concrete."

This research includes the material design of HS-SCC and an its performance in potential structural applications related to infrastructure. The material design includes experimental optimization of mix proportions and an investigation of internal curing techniques to improve performance. This includes both the effect of rheology during casting and the structural performance of large-scale elements.

Andrew V. Jayankura

University of Nevada, Reno

Center for Advanced Transportation Education and Research (CATER)

ajayankura@gmail.com

Bio

Andrew Jayankura is currently employed by the Regional Transportation Commission of Washoe County as a Traffic Engineer. During his graduate studies at the University of Nevada, Reno, he worked on numerous projects including signal timing, traffic modeling, and controller programming. This work was extremely helpful in his research into developing a feasible signal-phasing scheme accommodating exclusive bicycle movements. After graduation, Andrew joined Atkins in Denver, Colorado, where he worked on numerous traffic projects including freeway, roundabout, and intersection modeling, design guide development, and level of service studies. He is currently working for the Regional Transportation Commission of Washoe County in Nevada.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Civil Engineering from the University of Nevada, Reno, 2015.

Preferred Career after Graduation

Andrew is currently working in the public sector.

Broad Research Interest Area

Transportation planning, traffic engineering.

Specific Research Area

Signal timing and optimization, traffic simulation and modeling, and traffic operations.

Primary Mode(s)

Road, multimodal.

Top Accomplishment in 2016

Andrew developed and designed example construction design sheets for the traffic portion of the 2016 NDOT Design Guide. Sheets included layout plans, and various schedules in signals, lighting, and ITS example sets.

Thesis Title and Summary

"Bicycle Movements Accommodated by Efficient Split and Lead-Lag Signal Phasing."

Based on a case study intersection, findings from a new signal-phasing scheme developed to accommodate vehicles, bicyclists, and pedestrians show increased intersection performance.

Chris Kaffine

Carnegie Mellon University

University Transportation Center for Safety

ckaffine@andrew.cmu.edu

Bio

Chris Kaffine is pursuing an integrated master's/bachelor's degree in Electrical and Computer Engineering at Carnegie Mellon University (CMU). Chris has worked on research that applyies computer vision to track pedestrian traffic at busy intersections using adaptive traffic signals. The objective of this research is to understand the impact of smart traffic systems on pedestrian traffic. The ultimate goal is to integrate pedestrian data into these systems to actively improve pedestrian traffic flow. More recently, he has worked on camera-based methods of tracking vehicle speeds for a smartphone app to enable widespread collection of this data.

Degree and Graduation Date (or Anticipated Date)

Integrated master's/bachelor's degree in Electrical and Computer Engineering from Carnegie Mellon University, 2018.

Preferred Career after Graduation

Chris will continue his studies and pursue a doctoral degree.

Broad Research Interest Area

Intelligent transportation systems.

Specific Research Area

Pedestrian traffic detection.

Primary Mode(s)

Road

Top Accomplishment in 2016

In 2016, Chris developed and tested a pedestrian traffic monitoring system.

Thesis Title and Summary

A thesis title and summary were not provided.

Brent Kostich

Western Michigan University

Transportation Research Center for Livable Communities

brent.kostich@wmich.edu

Bio

Brent Kostich is currently a Mechanical Engineering graduate student. Brent's research focuses on the area of modeling and simulation of mechanical dynamic systems, specifically pertaining to bicycles. He recently worked on a research project to assess bicycle transportation infrastructure, rider comfortability, and rider control scheme. In 2014 and 2015, Brent led tutoring/instruction sessions for undergraduate dynamics courses, and tutored undergraduate students on using MATLAB software for system simulation and data processing.

Degree and Graduation Date (or Anticipated Date)

Master's and bachelor's degrees in Mechanical Engineering from Western Michigan University, 2017.

Preferred Career after Graduation

Brent plans to work in the private sector.

Broad Research Interest Area

Intelligent transportation systems.

Specific Research Area

Bicycle dynamics and modeling, low degree-of-freedom rider control.

Primary Mode(s)

Road

Top Accomplishment in 2016

Brent received a second place award for his conference poster presentation in the 2016 TRCLC Summer Conference.

Thesis Title and Summary

"Analysis of Skill-Based Rider Control Efforts in a Transportation Environment."

Skill level was analyzed as a primary means for relating rider comfortability to a given bicycle transportation environment. Collected data revealed control trends used by highly skilled bikers to best manipulate a bicycle when riding in such environments. Based on these trends, conclusions were drawn about the importance of key dynamic variables that can be used to assess future studies of bicycle transportation.

Holly Lloyd

Utah State University

Mountain-Plains Consortium

Hollylloyd99@gmail.com

Bio

Holly Lloyd is a native of Roy, Utah and attended Weber State University where she earned her bachelor's degree in Business Administration with an emphasis on supply chain management. After working in the private sector, she decided to pursue a graduate degree in Civil Engineering at Utah State University and focus on transportation. For her master's project, working closely with her advisor Dr. Ziqi Song, she analyzed the safety effectiveness of Utah's diverging diamond interchanges.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Civil Engineering from Utah State University, 2016.

Bachelor's degree in Business Administration from Weber State University.

Preferred Career after Graduation

Holly plans to work in the private sector.

Broad Research Interest Area

Infrastructure systems

Specific Research Area

Diverging diamond interchange, safety analysis, alternative intersection design.

Primary Mode(s)

Road

Top Accomplishment in 2016

Holly won the Institute of Transportation Engineers (ITE)-sponsored Intermountain Section Student Paper competition and presented her research findings at the ITE Intermountain Section annual conference.

Thesis Title and Summary

"A Comprehensive Safety Analysis of Diverging Diamond Interchanges."

The safety effectiveness of the Diverging Diamond Interchange (DDI) was studied using an Empirical Bayes before-after study method. Diamond interchanges that were converted to DDIs along the main interstate corridor in Utah were analyzed using crash counts from the before and after periods to determine if crash rates were positively affected by the conversion to the DDI configuration.

Michael Motro

University of Texas at Austin

Data-Supported Transportation Operations and Planning (D-STOP) Center

moatrow@gmail.com

Bio

Michael Motro is a PhD student in the Wireless Networking and Communications Group (WNCG) in the Department of Electrical & Computer Engineering at the University of Texas at Austin, studying under Professor Joydeep Ghosh. He is currently working on the Communications and Radar-Supported Transportation Operations and Planning (CAR-STOP) project, developing and prototyping connected collision avoidance systems for the Texas Department of Transportation.

Degree and Graduation Date (or Anticipated Date)

PhD from the University of Texas at Austin, 2019.

Bachelor's degree in Electrical and Computer Engineering from Duke University, 2014.

Preferred Career after Graduation

Michael plans to pursue a career in academia.

Broad Research Interest Area

Infrastructure systems, intelligent transportation systems.

Specific Research Area

Connected and automated vehicles.

Primary Mode(s)

Road

Top Accomplishment in 2016

Michael helped to write and edit an article titled "Vehicular ad-hoc network simulations of overtaking maneuvers on two-lane rural highways" published in *Transportation Research Part C.*

Thesis Title and Summary

"Predictive Collision Avoidance Techniques."

The addition of on-vehicle sensors and inter-vehicular communication enables vehicles to automatically prevent dangerous incidents. This task's inherently predictive nature encourages probabilistic techniques, but its inherently dangerous nature makes experiments or validation difficult. Instead, both real-world driving data and microscopic simulations are used to develop and assess collision avoidance techniques.

Cameron Murray

University of Oklahoma

Southern Plains Transportation Center

camerondmurray@gmail.com

Bio

Cameron attended historic Little Rock Central High School before attending the University of Arkansas in Fayetteville, AR. His interests include college football and Olympic weightlifting. In 2012, Cameron received the Baker Student Fellowship from the American Concrete Institute, and in 2016 an Eisenhower Graduate Fellowship.

Degree and Graduation Date (or Anticipated Date)

PhD from the University of Oklahoma, 2017.

Master's (2014) and bachelor's degrees, University of Arkansas.

Preferred Career after Graduation

After completing his PhD Cameron plans to either consult or pursue a career in academia.

Broad Research Interest Area

Infrastructure systems, materials.

Specific Research Area

Pre-stressed concrete bridges.

Primary Mode(s)

Road

Top Accomplishment in 2016

Cameron designed, built, and tested an 18-foot-long, 4-girder prestressed concrete bridge inside the Fears structural engineering lab at the University of Oklahoma.

Thesis Title and Summary

"Shear and Load Distribution Behavior of Type-II Aashto Bridge Girders."

Older prestressed concrete bridges in Oklahoma typically experience deterioration due to their age. They were also designed using a different code than the one used today. Two 45-year-old AASHTO Type-II bridge girders were tested to determine their residual shear capacity and compare with current demands. A scale bridge was also constructed in the laboratory to examine load transfer when the bridge is loaded close to the ends.

Karl Olson

University of Maine, Orono

Marine Engine Testing and Emissions Laboratory

Karl.olson@maine.edu

Bio

Karl Olson is a native of Bethel, Maine and a graduate of Gould Academy. He earned a bachelor's degree in Chemistry from Wheaton College in Norton, Massachusetts, where he was also a four-year member of the NCAA baseball team. Prior to graduate school, Karl worked for a leading biotech company, focusing on liquid handler quality assurance. Karl also holds a Federal Aviation Administration private pilots certificate.

Degree and Graduation Date (or Anticipated Date)

Master's degree from the University of Maine, Orono, 2018.

Bachelor's degree in Chemistry, Wheaton College.

Preferred Career after Graduation

Karl plans to work in the private sector.

Broad Research Interest Area

Materials and freight.

Specific Research Area

Alternative fuels, energy, biomass, and biomolecules.

Primary Mode(s)

Road, rail, maritime.

Top Accomplishment in 2016

In addition to completing graduate course work in the areas of catalysis, transport phenomena, and kinetics, Karl has developed experimental protocols to determine best reactant feed conditions, reaction protocols, and analysis methods. He is also collecting kinetic data to help maximize product conversion and selectivity.

Thesis Title and Summary

"Propane Diols: Value Added Coproducts of Biodiesel Production."

As biodiesel production has increased, so has the volume of glycerol, one of the main byproducts of biodiesel. Because of its low commercial value, glycerol is mostly disposed of as waste. Karl is researching catalytic reactions into producing a more economically viable product from glycerol. The first phase consists of using commercially available nickel on a silica-alumina catalyst in a continuous flow reactor.

Samuel Redd

Iowa State University

Accelerated Bridge Construction

sredd@iastate.edu

Bio

Samuel Redd holds a bachelor's degree in construction engineering from Iowa State University (ISU), where he is also pursuing his master's degree in structural engineering. As an undergraduate, Sam conducted research with the university's Bridge Engineering Center (BCE) for over a year. He is excited to continue to work with BCE as a graduate student, though with more responsibilities and a greater workload.

Outside of his studies, Sam is the president of the ISU weightlifting club, and also enjoys volunteering with Habitat for Humanity. He balances most of his free time between reading and finding ways to stay active.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Structural Engineering from Iowa State University, 2015.

Bachelor's degree in Construction Engineering from Iowa State University.

Preferred Career after Graduation

Sam is currently employed by Felsburg Holt & Ullevig, a consulting firm in Denver, Colorado.

Broad Research Interest Area

Infrastructure systems.

Specific Research Area

Bridge engineering.

Primary Mode(s)

Road

Top Accomplishment in 2016

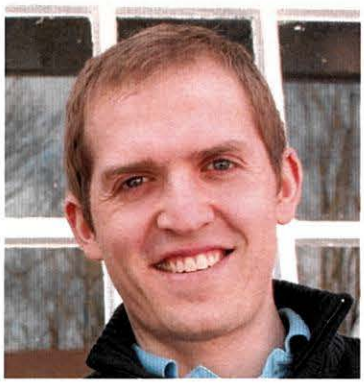
Sam made a number of notable presentations at top-tier conferences, and gave an internationally attended webinar on his thesis topic.

Thesis Title and Summary

"Laboratory Testing of Integral Abutment Details for Accelerated Bridge Construction."

The benefits of integral abutment bridges have rarely been tied to the Accelerated Bridge Construction (ABC) movement. Currently, little documentation or information is available on the performance of integral abutments used for ABC. This research studied the strength, durability, and constructability of two ABC integral abutment details through laboratory testing.

Jeffrey Sadler



University of Virginia

Mid-Atlantic Transportation Sustainability Center University Transportation Center

jms3fb@virginia.edu

Bio

Jeffrey Sadler's doctoral research focuses on the prediction of coastal flooding and its impacts on infrastructure. Jeffrey enjoys the freedom to learn provided by an academic setting. He also enjoys teaching and recently designed and taught a summer camp class on storm water monitoring.

Degree and Graduation Date (or Anticipated Date)

PhD from the University of Virginia, 2018.

Bachelor's and master's degrees in Civil and Environmental Engineering from Brigham Young University, 2013 and 2015.

Preferred Career after Graduation

Jeffrey plans to pursue a career in academia.

Broad Research Interest Area

Infrastructure systems.

Specific Research Area

Sea level rise, flood prediction, urban hydrology, and machine learning.

Primary Mode(s)

Road

Top Accomplishment in 2016

Jeffrey helped mentor a team of undergraduate students, including a MATS UTC undergraduate summer intern, into researching the effects of sea level rise on roadway flooding. Based on the research findings he submitted an article to the Journal of Infrastructure Systems.

Thesis Title and Summary

"Machine Learning Approaches to Urban Coastal Flood Prediction and Adaptation."

This thesis focuses on using machine learning to predict flooding in complex, urban coastal environments and using the results to prioritize resource spending for maintaining roadway infrastructure. It is some of the first research to use machine-learning approaches to predict urban coastal flooding. Given the multiple factors influencing coastal flooding and their complex interactions, machine learning approaches are considered better candidates for predicting floods over traditional, physically-based models.

Adrian Sandt

University of Central Florida

Southeastern Transportation Center

ajsandt@gmail.com

Bio

Adrian Sandt graduated summa cum laude with a bachelor's degree in Civil Engineering and a math minor from the University of Central Florida (UCF) in May 2014. He was immediately admitted to the Civil Engineering PhD program at UCF in fall 2014. Adrian received the prestigious UCF Trustees Fellowship. He has been working on wrong-way driving (WWD) research at UCF since 2012, and has been involved with research on transit and highway advisory radio. Adrian also obtained a SAS data mining certificate from UCF, and his team won second place in the 2016 SAS Analytics Shootout competition.

Degree and Graduation Date (or Anticipated Date)

PhD in Civil Engineering from UCF.

Bachelor's degree in Civil Engineering from UCF, 2014.

Preferred Career after Graduation

Adrian plans to pursue a career in academia.

Broad Research Interest Area

Intelligent transportation systems, traffic engineering.

Specific Research Area

Wrong-way driving and advanced traveler information systems.

Primary Mode(s)

Road

Top Accomplishment in 2016

Adrian finished second in the 2016 SAS Analytics Shootout; obtained STC grant for project titled "Evaluating the Potential of Connected Vehicles in Combating Wrong-Way Driving."

Thesis Title and Summary

Preliminary title: "Optimizing the Locations of Advanced ITS WWD Countermeasures on Florida Limited Access Facilities."

This thesis will focus on determining the optimal locations to install advanced ITS wrong-way driving (WWD) countermeasures on toll roads and interstates in Florida. An optimization model will be developed that maximizes the reduction in WWD events from these countermeasures, while minimizing cost and considering other potential constraints.

Stephanie Seki

Carnegie Mellon University

Technologies for Safe and Efficient Transportation

sseki@andrew.cmu.edu

Bio

Stephanie Seki's doctoral research focuses on understanding the lifecycle impacts and policy implications for alternative fuels, including natural gas and liquid fuels, and the distribution of ethanol fuel for light-duty vehicles. She is currently researching policy implications from alternatively-fueled buses and autonomous vehicles. Stephanie was formerly a geotechnical and environmental engineer in Boston working on complex redevelopment and remediation projects.

Degree and Graduation Date (or Anticipated Date)

PhD in Engineering and Public Policy from Carnegie Mellon University, 2016.

Master's degree in Engineering and Public Policy from Carnegie Mellon University, 2015.

Bachelor's degree in Civil Engineering from Carnegie Mellon University, 2008.

Preferred Career after Graduation

Stephanie plans to work in the public sector after graduation.

Broad Research Interest Area

Transport policy and infrastructure systems.

Specific Research Area

Biofuels, natural gas, environmental impacts from transportation fuels, transportation fuel distribution, and stochastic modeling.

Primary Mode(s)

Road

Top Accomplishment in 2016

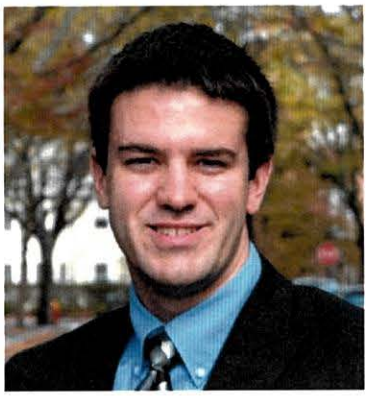
Stephanie completed her PhD dissertation in Engineering and Public Policy.

Thesis Title and Summary

"Evaluating the Economic, Environmental, and Policy Implications of Ethanol as a Transportation Fuel in Pennsylvania."

Motivated by federal policy to increase domestically produced fuels, this thesis focuses on costs and emissions for producing ethanol from natural gas; an area that has not yet been fully explored. Findings show the conversion of natural gas to ethanol is neither economically nor environmentally feasible. Additional analysis includes the estimated cost of increasing ethanol consumption, which is not typically included in impact assessments.

Parker Sorenson



University of Connecticut

New England University Transportation Center

parker.d.sorenson@gmail.com

Bio

Parker Sorenson is a second year graduate student pursuing his master's degree in Transportation and Urban Engineering at the University of Connecticut (UConn). Before joining his advisors, Dr. Norman Garrick and Dr. Atkinson-Palombo in the Sustainable Cities Research Group, Parker graduated with a bachelor's degree in Civil Engineering from UConn in 2015. Within the Sustainable Cities Research Group, Parker focuses on understanding complex shared spaces and the interactions that take place between users across a wide spectrum of these spaces. He was honored to receive the Department of Civil Engineering Teaching Assistant of the Semester Award for spring 2016.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Transportation and Urban Engineering from UConn, 2017.

Bachelor's degree in Civil Engineering from UConn, 2015.

Preferred Career after Graduation

Parker plans to pursue a consulting career.

Broad Research Interest Area

Intelligent Transportation Systems and traffic engineering.

Specific Research Area

Shared space, urban design, urban user interactions across modes, urban space modeling, safety in urban contexts, and automated vehicles.

Primary Mode(s)

Road

Top Accomplishment in 2016

Parker was awarded Teaching Assistant of the Semester in the Department of Civil and Environmental Engineering at UConn in spring 2016. He was instrumental in overhauling lab materials for computer-aided design (CAD) instruction, and was solely responsible for teaching CAD to some 60 undergraduates.

Thesis Title and Summary

"Visualizing the Operational Differences among Different Shared Space and Traditional Stop-Controlled Environments."

This research uses video analysis to digitize the trajectories of users through a wide variety of shared spaces. This analysis allows for the characterization of the observed differences in the interactions between pedestrians, bicyclists, and vehicles in these complex urban environments. Visual and statistical results of safety measures are also presented.

Dustin J. Souders

Florida State University

Center for Accessibility and Safe Transportation for an Aging Population (ASAP)

DustinSouders@gmail.com

Bio

Dustin Souders is a psychology doctoral student working in the area of human factors, aging, and transportation safety. Dustin graduated with bachelor's and master's degrees in psychology from Florida State, and has worked as a graduate researcher for both the Center for Research and Education on Aging and Technology Enhancement (CREATE) Lab, as well as the university's Aging Drivers and Pedestrians (ADaPts) project.

Dustin has accumulated three pertinent publications, and is a member of the Transportation Research Board's Committee on Safe Mobility of Older Persons (ANB60). The goal of his research is to leverage advanced vehicle technologies to safely maintain older adults' mobility.

Degree and Graduation Date (or Anticipated Date)

PhD in Psychology from Florida State University, 2017.

Master's and bachelor's degrees in Psychology from Florida State University.

Preferred Career after Graduation

After obtaining his PhD, Dustin aspires to pursue a career in consulting, the private sector, or academia.

Broad Research Interest Area

Transportation planning.

Specific Research Area

Aging and human factors issues surrounding advanced vehicle technologies.

Primary Mode(s)

Roads

Top Accomplishment in 2016

Dustin's recent paper on older and younger adults' valuation of blind spot detection, which focused on older adults and advanced vehicle technologies, was accepted for publication in a special issue of *Accident Analysis & Prevention.*

Thesis Title and Summary

"Experiencing Multiple Advanced Vehicle Technologies in the Driving Task: Effects on Older and Younger Drivers' Simulated Driving Performance and Acceptability Ratings."

Advanced vehicle technologies are changing the driving environment and task. Both older and younger drivers stand to benefit from these technologies, but only if they use them and find them useful. This thesis aims to assess the effect of multiple advanced vehicle technologies on older and younger drivers' simulated driving performance, as well as rating the acceptability of these technologies.

Maria Torres-Rodriguez

University of Puerto Rico, Mayaguez

Transportation Informatics University Transportation Center

Maria.torres3@upr.edu

Bio

As part of her graduate research Maria Torres-Rodriguez is currently performing a safety analysis and evaluation of a highway in the western region of Puerto Rico and identifying countermeasures to improve user safety. Maria also joined the research team of TransInfo-UPRM in January 2016 and has been developing mobile applications for Puerto Rican police officers.

Degree and Graduation Date (or Anticipated Date)

Master's degree in Transporation Engineering from the University of Puerto Rico, 2017.

Bachelor's degree in Civil Engineering from the University of Puerto Rico.

Preferred Career after Graduation

Maria plans to pursue a career in either the public or private sector.

Broad Research Interest Area

Transportation planning, traffic engineering, and intelligent transportation systems.

Specific Research Area

Safety

Primary Mode(s)

Road

Top Accomplishment in 2016

Maria presented at the 2016 TransInfo Symposium.

Thesis Title and Summary

"Analysis and Evaluation of Safety Countermeasures for PR-111 Highway: Moca and San Sebastián Municipalities."

The 21 kilometers (13 miles) stretch of the PR-111 highway connecting the municipalities of Moca and San Sebastian has one of the highest frequency of vehicle crashes. The purpose of the research is to use the Highway Safety Manual to evaluate this section of the highway, analyze safety measures that can be implemented and, using cost-benefit analysis, identify the most viable solution to decreasing crash frequency.

Joseph Lake Trask

North Carolina State University

Institute of Transportation Research and Education

jltrask@ncsu.edu

Bio

Lake Trask has focused his doctoral research on mathematical optimization and algorithm development. He also assisted in conducting research for freeway traffic operations, and worked with the Institute for Transportation Research and Education to help develop the Java based FREEVAL computational engine for the upcoming Highway Capacity Manual (HCM) 6th edition.

Recently, Lake has been developing optimization approaches for the HCM freeway facilities methodology, as well as extending the development of FREEVAL for improved data-driven analysis.

Degree and Graduation Date (or Anticipated Date)

PhD in Operations Research from North Carolina State, 2016.

Bachelor's degree in Mathematics from Davidson College, 2011.

Preferred Career after Graduation

Lake plans to consult.

Broad Research Interest Area

Transportation planning and intelligent transportation systems.

Specific Research Area

Optimization, algorithms, freeway traffic operations, and linear programming.

Primary Mode(s)

Road

Top Accomplishment in 2016

Lake successfully completed his PhD studies at North Carolina State University.

Thesis Title and Summary

"Optimization Approaches for Calibration and Analysis of Congested Freeway Facilities."

This research looks at optimization approaches for congested freeways analysis. A linear programming formulation of the Highway Capacity Manual's freeway facilities methodology is developed for congestion management applications, and a framework for improved model calibration is developed using system identification approaches and solved using a genetic algorithm metaheuristic.

Donald (Don) Watson

University of Florida

Southeastern Transportation Research, Innovation, Development, and Education Center (STRIDE)

dwatson.don@gmail.com

Bio

Donald Watson is working toward a PhD in Civil Egineering with a focus on traffic operations and simulation at the University of Florida (UF). During his master's and PhD studies, Don worked with Dr. Scott Washburn to develop a custom traffic microsimulation program called SwashSim. This program is currently being used in a National Cooperative Highway Research Program project titled "Improved Analysis of Two-Lane Highway Capacity and Operational Performance." Don's work on this project lays the foundation for a new two-lane highway chapter for the Highway Capacity Manual.

Degree and Graduation Date (or Anticipated Date)

PhD in Civil Engineering from UF, May 2017.

Master's degree in Engineerng from UF, 2012.

Bachelor's degree in Civil Engineering from UF, May 2011.

Preferred Career after Graduation

Don plans to pursue a career in the public sector.

Broad Research Interest Area

Traffic engineering.

Specific Research Area

Traffic operations, traffic simulation, and two-lane highways.

Primary Mode(s)

Road

Top Accomplishment in 2016

Don received the Attributes of a Gator Engineer Award for Integrity. This award is given annually to one PhD student in the University of Florida's College of Engineering. It is considered the greatest distinction of any student award given by the college.

Thesis Title and Summary

"Modeling and Estimation of Heavy Vehicle Effects on Two-Lane Highway Traffic Operations."

The Highway Capacity Manual currently uses passenger car equivalent (PCE) values to estimate the impact of heavy vehicles on two-lane highway traffic operations. This study introduces a general speed-flow model for the mixed traffic stream, which eliminates the need for PCEs. The model is adaptable to various inputs, such as the roadway alignment, heavy vehicle percentage, and passing designation of the roadway.

Sherilyn Wee

University of Hawai'i at Manoa

Electric Vehicle Transportation Center

swee@hawaii.edu

Bio

Sherilyn Wee is a PhD candidate in Economics at the University of Hawai'i at Manoa. She is an energy economist specializing in economic and policy issues in the electricity and transportation sectors, particularly for Hawai'i. In addition to publishing one of her dissertation chapters, she has also co-authored a number of journal articles in her capacity as a research assistant for the University of Hawai'i Economic Research Organization.

Degree and Graduation Date (or Anticipated Date)

PhD in Economics from the University of Hawai'i at Manoa, 2016.

Preferred Career after Graduation

Sherilyn plans to pursue a career in the public sector.

Broad Research Interest Area

Transport policy.

Specific Research Area

Electric vehicles and policy analysis.

Primary Mode(s)

Road

Top Accomplishment in 2016

Sherilyn defended her dissertation and published two peer-reviewed journal articles on transportation.

Thesis Title and Summary

"It's Electric: Factors Affecting PV and EV Adoption."

This dissertation focuses on the potential role of consumers in mitigating climate change by reducing greenhouse gas emissions in the two largest emitting sectors in the U.S.— electricity and transportation. The first essay assesses the impact of solar photovoltaic on home values in Hawai'i. The second essay is a state-level analysis estimating the effectiveness of nine electric vehicle policy incentives, financial and otherwise, on electric vehicle (EV) adoption in the U.S. The final essay covers the behavioral and social component of EV adoption by investigating the influence of geographic peers on EV uptake, using Hawai'i as a case study.

U.S. Department of Transportation