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# Letter from the Chair

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This report highlights the accomplishments of the University of Maryland Department of Civil and Environmental Engineering faculty, staff and students during the fiscal years 2012 and 2013, predating my assumption to the role of chair of the department in January 2014.

With more than 440 undergraduates and 200 graduate students, the Department of Civil and Environmental Engineering continues to build upon a rich history at Maryland that spans more than 100 years since the department's establishment in 1908. Our faculty, students, and alumni are actively engaged in research, education, and practice that address a wide variety of challenges impacting life on a daily basis. CEE researchers are working across disciplines to tackle critical issues ranging from the impact of climate change on U.S. national security, to the correlation between strategic transportation development and economic competitiveness, to the need for energy-efficient techniques to improve water quality in regions most impacted by water scarcity.

In 2012, Dr. Lei Zhang, current Associate Professor and Director of the National Transportation Center at Maryland, received a National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award for his work on "Reliability as an Emergent Property of Transportation Networks." The CAREER Award is the NSF's most prestigious award in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research.

In March 2012, Professor David Lovell was named the recipient of the Engineers Without Borders USA Peter J. Bosscher Faculty Advisor Award for Outstanding Leadership. That same year, as UMD's Engineers Without Borders faculty mentor, Lovell helped lead a team of 11 students, faculty and professional engineers to Addis Alem, Ethiopia, to implement a pedestrian bridge design. The project, the second completed in the community by EWB-UMD, was the culmination of 12 months of student design work and consultation with professionals. The pedestrian bridge, constructed using reinforced concrete, serves as a sustainable means for humans and livestock to cross a stream that passes through the community. The bridge serves as a substitute for previously constructed bridges that were consistently damaged by yearly flooding.

In May 2012, Professor Allen P. Davis was awarded a \$632,000 grant by the Prince George's County Government for "Stormwater Nitrogen and Phosphorus Removal to Meet TMDLs." The project provided recommendations on media and configurations for bioretention and sand filters for enhanced removal of nitrogen and phosphorus from urban stormwater runoff.

During the summer of 2012, CEE Research Professor Gerry Galloway contributed to the National Academy of Sciences report, "Disaster Resilience: A National Imperative." The report calls for a national vision and culture of resilience to natural and human-caused disasters. Today, Galloway plays a critical role in the department's newly established Center for Disaster Resilience.

Later that year, CEE Research Professor Stuart Milner and Electrical and Computer Engineering Professor Christopher Davis received a \$1 million contract from the Federal Highway Administration for a three-year project using cooperating high-definition cameras to monitor traffic characteristics such as vehicle speeds and types, incidents, and congestion in the transportation infrastructure. Their research project entitled, "Cooperating Camera

Platforms for Ultra High Resolution Traffic Surveillance and Autonomous Event Detection,” is designed to provide much improved cooperating camera traffic surveillance.

In early 2013, the Department of Civil and Environmental Engineering hosted a symposium on “Infrastructure & Community Resilience: Natural & Human-Caused Disasters.” The symposium drew attendees from the federal government, industry, and academia, and focused on how the states of Maryland, Delaware, and Virginia, and the District of Columbia could work together to improve regional community resilience to disasters.

Later that spring, Professor Gang-Len Chang’s Traffic Safety and Operations Lab was awarded a project of \$542,778 over an 18-month period for the design and operation of an Advanced Incident Response System for the Eastern Shore region. Sponsored jointly by FHWA/MSHA, the project is an extension of Chang’s Intelligent Transportation Systems research.

On May 8, 2013, the White House recognized Center for Advanced Transportation Technology Laboratory (CATT Lab) Director Michael L. Pack as a “Transportation Champion of Change.” The Transportation “Champion of Change” program recognizes honorees for their exemplary leadership in developing or implementing transportation technology solutions to enhance performance, reduce congestion, improve safety, and facilitate communications across the transportation industry at the local, state or national level.

A CEE team was awarded a 2013 People, Prosperity and the Planet (P3) Phase I grant from the U.S. Environmental Protection Agency (EPA). The team included civil engineering students Catherine Birney, Michael Lee, Vincent Fiedler and Elizabeth Manzi and Assistant Professor Baoxia Mi, who also oversees UMD’s Membrane Innovation Lab. The team’s project, Solar-Powered Membrane System for Emergency Drinking Water Supply, is aimed at developing a system for emergency drinking water supplies that offers sustainable water purification technology that can be used for both emergency and household drinking water.

Additional department achievements are outlined in this report, including faculty and student honors, grants and publications.

Looking to the future, we will continue to build on the successes and strengths of our department and programs. Our unique position offers us the opportunity to create a stronghold of interdisciplinary expertise, increase and enhance collaborative research opportunities, and be a guiding force in the future of civil and environmental engineering.



**Professor and Chair**

Department of Civil and Environmental Engineering  
A. James Clark School of Engineering

# Faculty Titles

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- Ayyub, Bilal M., Affiliate Researcher, Center for Risk Communication Research
- Ayyub, Bilal M., Affiliate Professor, Reliability Engineering Program
- Baecher, Gregory B., Professor, Civil & Environmental Engineering
- Baecher, Gregory B., Glenn L. Martin Institute Professor of Engineering, College of Engineering
- Bhende, Ameya R, Systems Programmer, CapWIN
- Bhende, Ameya R, Network Engineer, CapWIN
- Bhende, Ameya R, Systems Administrator, CapWIN
- Brubaker, Kaye L., Associate Professor, Civil & Environmental Engineering
- Brubaker, Kaye L., Director, Maryland Water Resources Research Center
- Cable, John Hart, Sr Res Eng, Civil & Environmental Engineering
- Cable, John Hart, Director, Project Management Center for Excellence
- Chang, Benjamin C, RITIS Web Developer, CATT Lab
- Chang, Gang-Len, Professor, Civil & Environmental Engineering
- Chang, Peter C., Associate Professor, Civil & Environmental Engineering
- Cirillo, Cinzia, Associate Professor, Civil & Environmental Engineering
- Cirillo, Cinzia, Affiliate Professor, University of Montreal - CIRRELT
- Condellone, Lennie, Software Engineer, CapWIN
- Couture, Michael, Software Engineer, CATT Lab
- Cui, Qingbin, Assistant Professor, Civil & Environmental Engineering
- Davis, Allen P., Professor, Civil & Environmental Engineering
- Douglass, Raymond Rennell, Software Engineer, CATT Lab
- Dye, Richard R., Asst Res Schl, Civil & Environmental Engineering
- Farokhi Sadabadi, Kaveh, Faculty Research Assistant, Civil & Environmental Engineering
- Forman, Barton, Science Collaborator, NASA Goddard Space Flight Center
- Fu, Chung C., Research Professor, Civil & Environmental Engineering
- Fu, Chung C., Director, The Bridge Engineering Software & Technology (BEST) Center
- Fu, Chung C., (Affiliate), Civil & Environmental Engineering

- Gabriel, Steven A., Full Professor, Civil & Environmental Engineering
- Gabriel, Steven A., Full Professor, Applied Mathematics and Scientific Computation Program
- Gabriel, Steven A., Affiliate Full Professor, Institute for Systems Research
- Gabriel, Steven A., Affiliate Full Professor, School of Public Policy
- Gabriel, Steven A., Faculty Director, Master of Engineering and Public Policy Program (joint between Engineering
- Goulias, Dimitrios, Associate Professor, Civil & Environmental Engineering
- Goulias, Dimitrios, Director, Undergraduate Program , Civil & Environmental Engineering
- Haghani, Ali, Professor & Chair, Civil & Environmental Engineering
- Haghani, Ali, Director, Center for Integrated Transportation System Management (CITSM)
- Hamedi, Masoud, Assistant Research Scientist, Civil & Environmental Engineering
- Ivanov, Nikola, Faculty Research Assistant, Civil & Environmental Engineering
- Jacobs, Thomas H., Associate Research Scientist, Civil & Environmental Engineering
- Jacobs, Thomas H., Director, Center for Advanced Transportation Technology
- Jacobs, Thomas H., Director, Maryland Transportation Technology Transfer Center
- Keane, Carly, Faculty Research Assistant, Civil & Environmental Engineering
- Kramida, Gregory, Lead Software Engineer, Traffic Safety and Operations Laboratory, ENGR-Civil &
- Kramida, Gregory, Graduate Teaching Assistant, CMSC - Dept. of Computer Science
- Lees, Jenny , Lead Artist, Center for Advanced Transportation Technology Laboratory
- Lin, Cheng, Research Associate, Civil & Environmental Engineering
- Lovell, David J., Associate Professor, Civil & Environmental Engineering
- Lovell, David J., Associate Professor, Institute for Systems Research
- Lovell, David J., Associate Professor, Applied Mathematics and Statistics
- Lucman, Walter, 3D Development Manager, Center for Advanced Transportation Technology Laboratory
- Lund, Andrew Scott, Database Administrator, CATT Laboratory
- McCuen, Richard H., Professor, Civil & Environmental Engineering
- Miller-Hooks, Elise, Professor, Civil & Environmental Engineering
- Miller-Hooks, Elise, Adjunct Full Professor, Structural Engineering, Ben-Gurion University of the Negev, Beer
- Miller-Hooks, Elise, Policy Analyst, In 2012 (part of sabbatical): USDOT, Office of Intelligence, Security, and

- Mushi, Andrew, Faculty Research Assistant, Civil & Environmental Engineering
- Nasir, Syed Maalik, DBA, CATTLab
- Pack, Michael L., Director, CATT Laboratory, Civil & Environmental Engineering
- Pack, Michael L., Member, Human Computer Interaction Laboratory
- Pansare, Manoj, Faculty Research Assistant, Civil & Environmental Engineering
- Parnian, Dorothy Brown, Faculty Research Assistant, Department of Civil & Environmental Engineering
- Schoener, George E, Executive Director, I-95 Corridor Coalition
- Schonfeld, Paul M., Professor, Civil & Environmental Engineering
- Schwartz, Charles W., Professor, Civil & Environmental Engineering
- Skibniewski, Miroslaw Jan, Professor, Dept. Civil & Environmental Engineering, Project Management Program
- Skibniewski, Miroslaw Jan, Affiliate Professor (by courtesy), Dept. of Decision, Operations and Information
- Smith, Barry, Network Administrator, Center for Advanced Transportation Technology Laboratory
- Stellfox, Edwin, Faculty Research Assistant, CEE
- Torrents, Alba, Professor, Civil & Environmental Engineering
- Twisdale, Denise H., Faculty Research Assistant, Civil & Environmental Engineering
- VanDaniker, Michael Robert, Visualization Manager, University of Maryland Center for Advanced Transportation
- Young, Stanley Ernest, Research Associate, Civil & Environmental Engineering
- Young, Stanley Ernest, Research Engineer, Center for Advanced Transportation Technology
- Yu, Haiyin, Professor, College of Chemistry and Materials Science, Anhui Normal University
- Yu, Haiyin, Research Associate, Department of Civil and Environmental Engineering, University of Maryland
- Zhang, Lei, Assistant Professor, Civil & Environmental Engineering
- Zhang, Yunfeng, Associate Professor, Civil & Environmental Engineering

# Department Highlights

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*Jan. 12, 2012*

## **CATT Lab Engineer Chairs Council**

[http://civil.umd.edu/news/news\\_story.php?id=6219](http://civil.umd.edu/news/news_story.php?id=6219)

Nikola Ivanov, Systems Engineer and Senior Technical Advisor at the Center for Advanced Transportation Technology Laboratory (CATT Lab) served as the interim chair of the Operations and Preservation Group Young Members Council (YMC) of the Transportation Research Board (TRB). Ivanov was also elected to represent the TRB Operations and Preservation Group as a member of the parent Young Members Council reporting directly to the Executive Committee of TRB.

TRB recently established the YMC in order to encourage and expand young professional participation in all aspects of the TRB community. YMC aims to serve all transportation professionals under the age of 36 in advancing the national transportation research agenda. The goal of this group is to provide opportunities for young professionals to get involved, network, and learn.

*Jan. 30, 2012*

## **Zhang Receives NSF Career Award**

[http://civil.umd.edu/news/news\\_story.php?id=6254](http://civil.umd.edu/news/news_story.php?id=6254)

Lei Zhang received the Faculty Early Career Development (CAREER) Award from the National Science Foundation (NSF) for his work on "Reliability as an Emergent Property of Transportation Networks."

*Feb. 7, 2012*

## **Engineers Without Borders Implements Ethiopia Bridge Project**

A team of 11 students, faculty mentor David Lovell and two professional engineers traveled to Addis Alem, Ethiopia to implement a pedestrian bridge design in Jan. 2012. This project, the second completed in the community by EWB-UMCP, was the culmination of 12 months of student design work and consultation with professionals.

The pedestrian bridge, constructed using reinforced concrete, serves as a sustainable means for humans and livestock to cross a stream that passes through the community. The bridge serves as a substitute for previously constructed bridges that were consistently damaged by yearly flooding. Students worked alongside community members during the construction process, which involved extensive material procurement, construction of masonry foundations and falsework to support the structure as it cured.

*March 27, 2012*

## **Lovell Receives National Engineers Without Borders Award**

[http://civil.umd.edu/news/news\\_story.php?id=6373](http://civil.umd.edu/news/news_story.php?id=6373)

CEE Professor David Lovell was named the 2012 recipient of the Peter J. Bosscher Faculty Advisor Award for Outstanding Leadership by Engineers Without Borders USA.

The award recognizes faculty advisors within EWB-USA who provide outstanding leadership and mentorship to their student chapter. It is named for the late Peter J. Bosscher, who was an EWB-USA faculty advisor at the University of Wisconsin-Madison in addition to being actively involved with the national organization.

Lovell has been working with EWB at the University of Maryland since 2004, leading students on trips to assess and implement sustainable engineering projects in Burkina Faso, Ethiopia, and the Pine Ridge Indian Reservation, among others.

*May 4, 2012*

**Baecher Appointed to Water Institute of the Gulf Science Board**

[http://civil.umd.edu/news/news\\_story.php?id=6462](http://civil.umd.edu/news/news_story.php?id=6462)

Gregory Baecher was appointed to the Scientific and Engineering Advisory Council of the Water Institute of the Gulf (TWIG). The Council provides scientific and technical advice to the Institute on issues related to coastal protection and restoration in support of Louisiana's Comprehensive Master Plan for a Sustainable Coast.

*May 4, 2012*

**Baecher Receives Panamanian National Award for Science and Technology**

[http://civil.umd.edu/news/news\\_story.php?id=6463](http://civil.umd.edu/news/news_story.php?id=6463)

Gregory Baecher was one of ten engineers recognized by Panama's National Secretariat for Science, Technology and Innovation for Significant Contributions in Science and Technology at the 2012 Engineering and Infrastructure Congress organized by the Panama Canal Authority.

*May 18, 2012*

**Prince George's County Awards Davis \$632,000 Grant**

[http://civil.umd.edu/news/news\\_story.php?id=6506](http://civil.umd.edu/news/news_story.php?id=6506)

Allen P. Davis was awarded a \$632,000 grant by the Prince George's County Government for "Stormwater Nitrogen and Phosphorus Removal to Meet TMDLs." The project provided recommendations on media and configurations for bioretention and sand filters for enhanced removal of nitrogen and phosphorus from urban stormwater runoff.

*June 5, 2012*

**Skibniewski Chairs International Scientific Committee of the CC2012**

[http://civil.umd.edu/news/news\\_story.php?id=6544](http://civil.umd.edu/news/news_story.php?id=6544)

Professor Mirosław Skibniewski was named Chairman of the International Scientific Committee of the 2012 Creative Construction Conference held in Budapest, Hungary, June 30 – July 30, 2012. He delivered the first keynote address during the proceedings of the event attended by construction researchers from more than 20 countries on four continents.

*July 30, 2012*

**Gabriel Lead Author of Book on Complementarity Modeling in Energy Markets**

[http://civil.umd.edu/news/news\\_story.php?id=6657](http://civil.umd.edu/news/news_story.php?id=6657)

Steven A. Gabriel is the lead author of *Complementarity Modeling in Energy Markets*, a book that presents mathematical, engineering and economic models for the energy sector based on optimization and game theory collectively called, "complementarity."

*Aug. 6, 2012*

**Galloway Contributes to National Academy of Sciences Report on Disaster Resilience**

[http://civil.umd.edu/news/news\\_story.php?id=6667](http://civil.umd.edu/news/news_story.php?id=6667)

Gerry Galloway contributed to the National Academy of Sciences report, "Disaster Resilience: A National Imperative."

The report calls for a national vision and culture of resilience to natural and human-caused disasters.

"Without innovations to improve resilience, the cost of disasters will continue to rise both in absolute dollar amounts and in losses to social, cultural, and environmental systems in each community," said Susan L. Cutter, director of the Hazards and Vulnerability Research Institute at the University of South Carolina and chair of the committee that wrote the report. "Enhancing our resilience to disasters is imperative for the stability, progress, and well-being of the nation."



*Aug. 30, 2012*

**Ph.D. Student James Jones Wins FAA Research Stipend**

[http://civil.umd.edu/news/news\\_story.php?id=6727](http://civil.umd.edu/news/news_story.php?id=6727)

CEE Ph.D. student James Jones received a \$10,000 stipend by the Graduate Research Award Program on Public-Sector Aviation Issues for the 2012- 2013 academic year. The award helped fund his research on "Algorithms for Dynamic Resequencing of En Route Flights."

The award is sponsored by the Federal Aviation Administration of the U.S. Department of Transportation and administered by the Airport Cooperative Research Program (ACRP) of the Transportation Research Board/National Academies. Jones is advised by Associate Professor David Lovell (CEE/Institute for Systems Research).

*Oct. 21, 2012*

**Project Management Institute Honors Cable**

[http://civil.umd.edu/news/news\\_story.php?id=6842](http://civil.umd.edu/news/news_story.php?id=6842)

The Project Management Institute (PMI), the world's largest association for project managers, honored John Cable with a 2012 PMI Distinguished Contribution Award for his service to PMI and his dedication to excellence in project management education. A global panel of experts awards this honor annually to one individual who advances the field of project management.

"John Cable's superior contributions will have broad, lasting impact on the field of project management, and therefore on business," said David Pells of *PM World Journal*. "His efforts directly impact the national and global economy."

"It has been my deep pleasure to serve the PMI Global Accreditation Center for Project Management Educational Programs (GAC) first as a founding member and then as chairman of the GAC board," Cable said. "It has been a privilege to lead the development of the GAC into a well-recognized global accreditation body working with an extraordinary group of board members. Together we have made the organization what it is today. Personally, I appreciate the recognition of the PMI community for my service to the GAC and look forward to its continuing success in setting innovative standards for college program accreditation."

*Oct. 24, 2012*

**Davis and Milner Receive \$1 Million Federal Highway Administration Contract**

[http://civil.umd.edu/news/news\\_story.php?id=6847](http://civil.umd.edu/news/news_story.php?id=6847)

Stuart Milner and Electrical and Computer Engineering Professor Christopher Davis received a \$1 million contract from the Federal Highway Administration for a three-year project using cooperating high-definition cameras to monitor traffic characteristics such as vehicle speeds and types, incidents, and congestion in the transportation infrastructure.

Their research project entitled, "Cooperating Camera Platforms for Ultra High Resolution Traffic Surveillance and Autonomous Event Detection," is designed to provide much improved cooperating camera traffic surveillance.

Milner and Davis' system has the capability to recognize "events" in the highway infrastructure and relay this information to command centers in real time.

*Dec. 4, 2012*

**Cable Named Editorial Advisor for *PM World Journal***

[http://www.civil.umd.edu/news/news\\_story.php?id=6949](http://www.civil.umd.edu/news/news_story.php?id=6949)

Professor John Cable, Director of the Project Management Center for Excellence in the A. James Clark School of Engineering, was named to the Editorial Advisory Board for the global *PM World Journal*. The

*PM World Journal* is a monthly e-journal devoted to the creation of new knowledge and continuous learning related to professional program and project management.

According to David Pells, *PM World Journal* Managing Editor, "As chair of PMI's Global Accreditation Center, John Cable has been one of the most active and visible leaders in the global project management academic community over the last ten years. His recent contributions have had a broad impact on the field of project management. We are honored to have him join our advisory team."

**Dec. 19, 2012**

**Kim Building Lecture Hall Named for CEE Alumnus**

[http://www.civil.umd.edu/news/news\\_story.php?id=6991](http://www.civil.umd.edu/news/news_story.php?id=6991)

Stanley Zupnik (B.S. '59, civil engineering), founder of Majestic Builders of Chevy Chase, made a \$500,000 pledge to the A. James Clark School of Engineering Dean's Fund. In recognition of this generous gift, the Clark School named the large lecture hall in the Jeong H. Kim Engineering Building Stanley Zupnik Hall.

**Jan. 17, 2013**

**Gabriel Named to *Journal of Energy Engineering* Editorial Board**

[http://www.civil.umd.edu/news/news\\_story.php?id=7025](http://www.civil.umd.edu/news/news_story.php?id=7025)

Dr. Steven Gabriel was named a member of the editorial board of the *Journal of Energy Engineering*, a publication of the American Society of Civil Engineers. The *Journal of Energy Engineering* reports on the scientific and engineering knowledge in the planning, development, management, and finances of energy-related programs.

**March 5, 2013**

**CapWIN and Microsoft Team up to Develop New Windows 8 Applications**

[http://www.civil.umd.edu/news/news\\_story.php?id=7171](http://www.civil.umd.edu/news/news_story.php?id=7171)

The Microsoft Corporation and the University of Maryland CapWIN Program worked together to develop a prototype mobile criminal justice (CJIS) query application designed specifically for Windows 8 Tablets. Building on CapWIN's existing secure infrastructure, the new Windows 8 solution will take advantage of Microsoft's new operating system to create a streamlined, tablet oriented interface for mobile officers to access mission critical CJIS datasets.

**March 21, 2013**

**Alumnus Rauch Named to University System of Maryland Board of Regents**

[http://civil.umd.edu/news/news\\_story.php?id=7210](http://civil.umd.edu/news/news_story.php?id=7210)

Clark School of Engineering alumnus Robert D. Rauch, (civil engineering, '73), P.E., has been appointed as a new member of the University System of Maryland (USM) Board of Regents. The appointment, made by Maryland Governor Martin O'Malley, was recently confirmed by the Maryland Senate.

Rauch is a principal with the civil engineering and construction management firm Robert D. Rauch & Associates, Inc., of Easton, Md. His sons, Casey and Dustin, both engineers from the University of Maryland, are associates at the firm.

**March 25, 2013**

**Austin, Petnga Awarded Best Conference Paper at CSER-13**

[http://civil.umd.edu/news/news\\_archives.php](http://civil.umd.edu/news/news_archives.php)

Associate Professor Mark Austin (CEE, Institute of Systems Research) and his Ph.D. student, Leonard Petnga, won the Best Paper Award at the 13<sup>th</sup> Conference on Systems Engineering Research (CSER-13), which took place March 19-22, 2013, in Atlanta. The winning paper is "Ontologies of Time and Time-Based Reasoning for Model-Based Systems Engineering of Cyber-Physical Systems."

*April 2, 2013*

**Skibniewski Named Member of Poland's National Academy of Engineering**

[http://civil.umd.edu/news/news\\_story.php?id=7247](http://civil.umd.edu/news/news_story.php?id=7247)

On March 19, Professor Miroslaw Skibniewski was informed of his election to membership in Poland's National Academy of Engineering. Following nomination by its Membership Committee, the Academy's General Assembly voted unanimously to admit Skibniewski as a member for his leadership and contributions in the field of construction engineering, and for his sustained service as editor of international scholarly journals in civil engineering and construction.

*April 16, 2013*

**UMD Hosts Symposium on Disaster Resilience, Co-Sponsored by NAE, NSF**

[http://civil.umd.edu/news/news\\_story.php?id=7286](http://civil.umd.edu/news/news_story.php?id=7286)

On April 11, 2013, the University of Maryland Department of Civil and Environmental Engineering hosted a symposium on "Infrastructure & Community Resilience: Natural & Human-Caused Disasters." The symposium drew attendees from the federal government, industry, and academia, and focused on how the states of Maryland, Delaware, and Virginia, and the District of Columbia could work together to improve regional community resilience to disasters.

*April 25, 2013*

**Traffic Safety and Operations Lab Awarded \$542,778 Project**

[http://civil.umd.edu/news/news\\_story.php?id=7314](http://civil.umd.edu/news/news_story.php?id=7314)

Professor Gang-Len Chang's Traffic Safety and Operations Lab was awarded a project of \$542,778 over an 18-month period for the design and operation of an Advanced Incident Response System for the Eastern Shore region. Sponsored jointly by FHWA/MSHA, the project is an extension of Chang's Intelligent Transportation Systems research.

*April 28, 2013*

**Hylton Receives Boren Scholarship**

[http://civil.umd.edu/news/news\\_story.php?id=7319](http://civil.umd.edu/news/news_story.php?id=7319)

Department of Civil and Environmental Engineering senior Erin Hylton was awarded the prestigious Boren Scholarship for International Study, funded by the National Security Education Program. Boren Scholarships provide opportunities for undergraduates to study in world regions critical to U.S. interests.

*May 10, 2013*

**Pack Receives "Champion of Change" Award from White House**

[http://civil.umd.edu/news/news\\_story.php?id=7380](http://civil.umd.edu/news/news_story.php?id=7380)

On May 8, 2013, the White House recognized Center for Advanced Transportation Technology Laboratory (CATT Lab) Director Michael L. Pack as a Transportation "Champion of Change." The Transportation "Champion of Change" program recognizes honorees for their exemplary leadership in developing or implementing transportation technology solutions to enhance performance, reduce congestion, improve safety, and facilitate communications across the transportation industry at the local, state or national level.

*July 9, 2013*

**UMD Steel Bridge Team Reaches National Competition**

[http://civil.umd.edu/news/news\\_story.php?id=7480](http://civil.umd.edu/news/news_story.php?id=7480)

The Department of Civil and Environmental Engineering's Steel Bridge Team took third place at the 2013 ASCE Mid-Atlantic Student Conference held at the University of Pittsburgh, Johnstown from April 20-21, qualifying them for the 2013 National Student Steel Bridge Competition held in Seattle at the University of Washington May 31-June 1.

*August 5, 2013*

**MDSE Sends Team to Sierra Leone to Support Community Projects**

[http://civil.umd.edu/news/news\\_story.php?id=7534](http://civil.umd.edu/news/news_story.php?id=7534)

In June 2013, Maryland Sustainability Engineering (MDSE) sent six members of the Sierra Leone Project team to Africa on an in-country assessment trip to investigate and collect data pertaining to three upcoming projects the organization plans to work on for Calaba Town, a small community on the outskirts of Freetown.

*August 19, 2013*

**Championing Our Nation's Water Resource Infrastructure**

[http://civil.umd.edu/news/news\\_story.php?id=7556](http://civil.umd.edu/news/news_story.php?id=7556)

On July 25, 2013, Research Professor Galloway testified before the U.S. Senate Committee on Energy and Natural Resources on the "Aging U.S. Water Infrastructure: A Badly neglected National Problem." In his presentation, Galloway discussed the current state of our country's water infrastructure, the extent to which it supports our society, and how it is consistently underfunded and overlooked. He identified the primary areas of concern facing our water resources, including an aging infrastructure, a changing climate, increasing energy demands, a lack of funding, and a short sighted view on the importance and cost of repairs.

*October 10, 2013*

**UMD Steel Bridge Team Meets Members of Congress at AISI Steel Day in D.C.**

[http://civil.umd.edu/news/news\\_story.php?id=7682](http://civil.umd.edu/news/news_story.php?id=7682)

The Department of Civil and Environmental Engineering Steel Bridge Team participated in American Iron and Steel Institute's (AISI) "Steel Day" event, held on Oct. 4, 2013, in Washington, D.C. at AISI's downtown headquarters. The event, a collaboration between AISI, the National Steel Bridge Alliance (NSBA) and the House and Senate Steel Caucuses, featured the University of Maryland's large-scale bridge model in addition to models from the University of Akron, University of Delaware and the University of California-Berkeley.

*November 7, 2013*

**Alumnus Appointed Director of Climate Change Science Institute**

[http://civil.umd.edu/news/news\\_story.php?id=7728](http://civil.umd.edu/news/news_story.php?id=7728)

Department of Civil and Environmental Engineering alumnus Jack D. Fellows ('76, B.S., '78, M.S., '84, Ph.D.) has been appointed director of the Climate Change Science Institute (CCSI) at Oak Ridge National Laboratory (ORNL). He will lead and continue to develop programs and strategic initiatives for ORNL in climate change science.

*November 26, 2013*

**Ayyub Appointed Chair of Research Committee on Risk Technology**

[http://civil.umd.edu/news/news\\_story.php?id=7771](http://civil.umd.edu/news/news_story.php?id=7771)

Professor Bilal M. Ayyub was appointed to the American Society of Mechanical Engineers' (ASME) Board on Research & Technology Development (BRTD) as chair of the Research Committee on Risk Technology.

*November 26, 2013*

**CEE Team Awarded Grant to Support International Collaboration**

[http://civil.umd.edu/news/news\\_story.php?id=7772](http://civil.umd.edu/news/news_story.php?id=7772)

CEE faculty won a \$60,000 grant to support international collaboration with the Politecnico di Torino in Torino, Italy. The team consists of Associate Professor Cinzia Cirillo, Associate Professor Dimitrios Goulias, and Professor Paul Schonfeld.

*December 2, 2013*

**Hylton Named Marshall Scholar**

[http://civil.umd.edu/news/news\\_story.php?id=7778](http://civil.umd.edu/news/news_story.php?id=7778)

CEE Senior Erin Hylton was named a 2014 Marshall Scholar. Hylton is one of approximately 40 Marshall Scholars selected from a pool of more than 900 nominees nationwide to receive a scholarship, which fully supports two years of graduate study in the United Kingdom.

*December 3, 2013*

**UMD Team Awarded an EPA 2013 People, Prosperity and the Planet Grant**

[http://civil.umd.edu/news/news\\_story.php?id=7783](http://civil.umd.edu/news/news_story.php?id=7783)

A CEE team was awarded a 2013 People, Prosperity and the Planet (P3) Phase I grant from the U.S. Environmental Protection Agency (EPA). The team included CE students Catherine Birney, Michael Lee, Vincent Fiedler and Elizabeth Manzi and Assistant Professor Baoxia Mi who also oversees UMD's Membrane Innovation Lab. The team's project, Solar-Powered Membrane System for Emergency Drinking Water Supply, is aimed at developing a system for emergency drinking water supplies that offers sustainable water purification technology that can be used for both emergency and household drinking water.

*December 19, 2013*

**Schwartz Appointed Chair of the Department of Civil and Environmental Engineering**

[http://civil.umd.edu/news/news\\_story.php?id=7865](http://civil.umd.edu/news/news_story.php?id=7865)

Professor Charles W. Schwartz was selected chair of the Clark School's Department of Civil and Environmental Engineering. Schwartz began his position on Jan. 6, 2014.

# Faculty Honors: 2012-2013 Fiscal Years

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## **Amde M. Amde**

President, Ethiopian Community Center in Maryland  
Editor, Journal of the American Masonry Society  
Editor-in-Chief, International Journal of Advanced Structures and Geotechnical Engineering

## **Sherif Aggour**

Department of Civil and Environmental Engineering Faculty Service Award

## **Mark A. Austin**

Best Paper Award, INCOSE 2012, Rome, Italy  
Best Conference Paper Award, CSER 2013  
ISR Outstanding Systems Engineering Faculty Award

## **Ahmet Aydilek**

ASCE Walter Huber Research Prize  
Department of Civil and Environmental Engineering Faculty Teaching Award

## **Bilal Ayyub**

Reviewer of the Intergovernmental Panel on Climate Change (IPCC), Work Group II on Impacts, Adaptation and Vulnerability: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation  
Advisor to Governor Martin O'Malley on the Governor Emergency Management Advisory Council  
Certificate of Appreciation for Active, Impartial and Significant Contribution as an International Evaluator, Shota Rustaveli National Research Science Foundation, Tbilisi, Georgia, 2013.

## **Gregory B. Baecher**

Panamanian National Award for Science and Technology Innovation

## **Kaye L. Brubaker**

Lilly Fellow (UM Center for Teaching Excellence)

## **John Hart Cable**

Distinguished Contribution Award for 2012 by the Project Management Institute  
Appointed to the Editorial Advisory Board of the *PM World Journal*

## **Allen P. Davis**

Association of Environmental Engineering & Science Professors Distinguished Service Award for Government Affairs

## **Dimitrios Goulias**

Faculty Service Award, A. James Clark School of Engineering

## **David Lovell**

Philip Merrill Faculty Mentor  
ENGAGED Faculty Member, A. James Clark School of Engineering  
EWB Peter J. Bosscher Faculty Advisor Award for Outstanding Leadership  
Research Awards Luncheon, UMCP  
University of Maryland 15<sup>th</sup> Annual Research Leaders Luncheon

## **Baoxia Mi**

Environmental Protection Agency People, Prosperity and the Planet Award

**Elise Miller-Hooks**

2012 JCEM (Journal of Construction Engineering and Management) Best Paper Award

**Michael Pack**

Chair of the 2011 International Visualization in Transportation Symposium in Chicago  
Finalist, ITS America Best of ITS Awards

**Brian Phillips**

NSF Travel Award for the China-USA Third Workshop on Research Collaboration for Disaster Evolution/Resilience of Civil Infrastructure and Urban Environment, Berkeley, California

NSF Travel Award for the Second U.S.-PRC Young Researcher's Forum, Harbin, China

NSF/NEES Travel Award for the Hybrid Workshop at Quake Summit 2013, Reno, Nevada

NSF/NEES Travel Award for the China-USA 4<sup>th</sup> Workshop on Research Collaboration for Disaster Evolution/Resilience of Civil Infrastructure and Urban Environment

NSF/NEES Travel Award for NEES/E-Defense Collaboration Earthquake Research Program 10<sup>th</sup> Planning Meeting, Kyoto, Japan

NSF/NEES Travel Award for the SERIES Concluding Workshop: Joint with US-NEES "Earthquake Engineering Research Infrastructures" Ispra, Italy

**Paul M. Schonfeld**

Best Paper Award at Transport Research Arena Conference, Athens

**Mirosław Skibniewski**

Elected Member, The National Academy Of Engineering, Poland

Visiting Eminent Scholar, Arizona State University

Dean's Podium Invited Speaker, College of Engineering Sciences, Ben-Gurion University

Distinguished Visiting Professor, University of Technology Sydney, Australia

**Lei Zhang**

2011 Best Overall Paper Award, World Symposium on Transport and Land Use

2012 Fred Burggraf Award for Excellence in Transportation by a Researcher 35 Years of Age or Younger, Transportation Research Board, National Academy of Sciences

NSF Faculty Early Career Development (CAREER) Award

Fred Burggraf Award for Excellence in Transportation Research by a Researcher 35 Years of Age or Younger, Transportation Research Board, National Academy of Sciences

2013 TRB Best Paper Award

**Shanjiang Zhu**

Best Presentation of 2011 Doctoral Seminar in Transportation Modeling, Transportation Research Board, National Academy of Sciences

# Student Honors/Scholarships:

## 2012-2013 Fiscal Years

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- Amir-Faryar, Behzad: published a paper in the Journal of the American Society of Testing and Materials [Aggour, Mohamed Sherif]
- Amir-Faryar, Behzad: published a paper in the 15th World Conference on Earthquake Engineering [Aggour, Mohamed Sherif]
- Amir-Faryar, Behzad: published a paper in the Electronic Journal of Geotechnical Engineering [Aggour, Mohamed Sherif]
- Razmi, Jafar: paper accepted in the ASCE Journal of Bridge Engineering [Aggour, Mohamed Sherif]
- Razmi, Jafar: paper accepted in Journal of Structure and Infrastructure Engineering [Aggour, Mohamed Sherif]
- Razmi, Jafar: paper accepted in the Journal of Computer-Aided Civil and Infrastructure Engineering [ Aggour, Mohamed Sherif]
- LaBaw, S. Marie: published a paper in the International Journal of Geotechnical Engineering [ Aggour, Mohamed Sherif]
- Rattapon Somna: Published Journal Paper [Amde, Amde M.]
- Andreas Paraschos: Journal Paper Accepted [Amde, Amde M.]
- Seth Adam Rogge: Published Refereed Conference Paper [Amde, Amde M.]
- Jesse Villatoro: Presentation, LSAMP Program at University of Maryland [Amde, Amde M.]
- Rabih Hajnajib: Journal Paper Accepted [Amde, Amde M.]
- Parastoo Delgoshaei: Co-inventor on a US Patent Filing: Method and System for Ontology-Enabled Traceability. US PTO 13311158. [Austin, Mark A.]
- Parastoo Delgoshaei: Conference paper presented at INCOSE 2012, Rome, Italy. [Austin, Mark A.]
- Parastoo Delgoshaei: Conference paper presented at SERC 2012, St. Louis, MO. [Austin, Mark A.]
- Joseph Johnnie: Conference paper presented at SERC 2012, St. Louis, MO. [Austin, Mark A.]
- Matt Mosteller: Conference paper presented at INCOSE 2012, Rome, Italy. [Austin, Mark A.]
- Matt Mosteller: Outstanding Systems Engineering Paper Award, INCOSE 2012, Rome, Italy. [Austin, Mark A.]



- Matt Mosteller: Article published in INCOSE Insight Magazine, December, 2012. [Austin, Mark A.]
- Matt Mosteller: Winner of the 2012 Deans Master's Student Research Award Competition. [Austin, Mark A.]
- Bora Cetin: Outstanding Teaching Assistant Award, University of Maryland [Aydilek, Ahmet H.]
- Carmen Franks: Geosynthetics Institute Doctoral Dissertation Fellowship [Aydilek, Ahmet H.]
- Yan Wang: First author on published paper, "Implementing a Nonlinear Groundwater Module in the Soil and Water Assessment Tool (SWAT)," Hydrological Processes [Brubaker, Kaye L.]
- Yan Wang: First author and presenter (oral): "A Diagnostic Support System for BMP Selection in Small Urban Watersheds," American Geophysical Union Fall Meeting, San Francisco, CA.[Brubaker, Kaye L.]
- Sunghee Kim: First author on published paper, "Comparison of gauge and MPE precipitation data for the Chesapeake Bay Watershed Model," Hydrologic Engineering.[Brubaker, Kaye L.]
- David Gleason: 2nd place in the student presentation competition at the "Managing for a Healthy and Sustainable Chesapeake Bay: Human and Ecological Risk" conference hosted by Society of Environmental Toxicology & Chemistry, Chesapeake-Potomac Regional Chapter [Davis, Allen P.]
- Ian Peterson: 3rd place in the student presentation competition at the "Managing for a Healthy and Sustainable Chesapeake Bay: Human and Ecological Risk" conference hosted by Society of Environmental Toxicology & Chemistry, Chesapeake-Potomac Regional Chapter [Davis, Allen P.]
- Poornima Natarajan: CEE Kirlin Poster Review Day 1st Place Award Winner, Ph.D [Davis, Allen P.]
- Carmen Franks: CEE Kirlin Poster Review Day 3rd Place Award Winner, Ph.D [Davis, Allen]
- Briner, Tim: 2012 PTI scholarship recipient sponsored by AMSYSCO Inc. [Fu, Chung C.]
- Amir Mortazavi: A. Mortazavi, S. Azarm, S.A. Gabriel, 2012. "Adaptive Gradient Assisted Robust Design Optimization Under Interval Uncertainty," Engineering Optimization, in press. [Gabriel, Steven A.]
- Sauleh Siddiqui: S. Siddiqui and S.A. Gabriel, 2012. "An SOS1-Based Approach for Solving MPECs with a Natural Gas Market Application," Networks and Spatial Economics, accepted, May. [Gabriel, Steven A.]
- Sauleh Siddiqui: S. Siddiqui, S. Azarm, S.A. Gabriel, 2012. "A Modified Normal Boundary Intersection Method for Efficient Generation of Pareto Frontier", Structural and Multidisciplinary Optimization, accepted April. [Gabriel, Steven A.]
- Ibrahim Abada: I. Abada, V. Briat , S.A. Gabriel, O. Massol, 2012. "A Generalized Nash-Cournot Model for the European Natural Gas Markets with a Fuel Substitution Demand Function: the GaMMES Model," Networks and Spatial Economics, accepted, April. (Abada from University of Paris Ouest-Nanterre, Paris, France) [Gabriel, Steven A.]

- Carlos Ruiz: C. Ruiz , A.J. Conejo, S.A. Gabriel, "Pricing Non-Convexities in an Electricity Pool," 2012. IEEE Transactions on Power Systems, accepted, January. (Ruiz from UCLM in Spain) [Gabriel, Steven A.]
- Seksun Moryadee: Analysis of Future LNG Infrastructure Capacity Using the World Gas Model, 4<sup>th</sup> International Conference on Computational Logistics, Copenhagen, Denmark, Sept. 25, 2013. [Gabriel, Steven A.]
- S. Moryadee, S.A. Gabriel, H.G. Avetisyan, "Investigating the Potential Effects of U.S. LNG Exports on Global Natural Gas Markets," accepted, Energy Strategy Reviews, 2013. [Gabriel, Steven A.]
- Chalida U-tapao: C. U-tapao, S.A. Gabriel, C. Peot and M. Ramirez, "A Stochastic MPEC for Sustainable Wastewater Management," submitted to EURO Journal on Computational Optimization, August 2013. [Gabriel, Steven A.]
- Chalida U-tapao: C. U-tapao, S.A. Gabriel, C. Peot and M. Ramirez, "A Stochastic, Multiobjective, Mixed-Integer Optimization Model for Management of Wastewater-Derived Energy," submitted to J. of Energy Engineering, January, 2013. [Gabriel, Steven A.]
- Karimi, Sahand Sasha: Paper submitted and accepted at the International Journal of Pavement Engineering [Goulias, Dimitrios]
- Karimi, Sahand Sasha: Paper peer-reviewed and presented at the ATINER 2013 Conference. [Goulias, Dimitrios]
- Elham Sharifi: Presented a paper at the 92nd Annual Meeting of the Transportation Research Board. [Haghani, Ali]
- Hadi Sadrsadat: Presented a paper in the 53rd Annual Meeting of the Transportation Research Forum [Haghani, Ali]
- Elham Sharifi: Presented a paper in the Annual Meeting of INFORMS [Haghani, Ali]
- Hyoshin Park: Had a paper accepted at the 54th Annual Transportation Research Forum [Haghani, Ali]
- Hyoshin Park: Had a paper accepted in The 8th Triennial Symposium on Transportation Analysis, San Pedro de Atacama, Chile [Haghani, Ali]
- Mona Asudegi: Had a paper accepted at the ICORES 2013, Barcelona- Spain [Haghani, Ali]
- Mona Asudegi: Presented a paper in the Annual Meeting of INFORMS [Haghani, Ali]
- Hadi Sadrsadat: Presented a paper in the Annual Meeting of INFORMS [Haghani, Ali]
- Mona Asudegi: Presented a paper at the 92nd Annual Meeting of the Transportation Research Board. [Haghani, Ali]
- Yashar Aliari: Published a paper in Transportation Research Record [Haghani, Ali]
- Yanru Zhang: Had a paper accepted in Transportation Research Record [Haghani, Ali]
- Wenxin Qiao: Had a paper accepted in Journal of Intelligent Transportation Systems [Haghani, Ali]

- Wenxin Qiao: Had a paper published in Transportation Research Record [Haghani, Ali]
- Wenxin Qiao: Presented a paper in the Annual Meeting of INFORMS [Haghani, Ali]
- Ali Shafahi: Had a paper accepted at the ICORES 2013, Barcelona- Spain [Haghani, Ali]
- Ali Shafahi: Presented a paper in the Annual Meeting of INFORMS [Haghani, Ali]
- Ali Shafahi: Published a paper in International Journal of Project Management [Haghani, Ali]
- Ali Shafahi: Presented a paper in ICORES 2013 in Barcelona, Spain [Haghani, Ali]
- Mona Asudegi: Published a paper in Transportation Research Record: Journal of Transportation Research Board [Haghani, Ali]
- Yang Lu: Submitted a paper to Transportation Research Part C [Haghani, Ali]
- Yang Lu: Presented a paper at the 92nd Annual Meeting of the Transportation Research Board. [Haghani, Ali]
- Kaveh Farokhi: Had a paper accepted in Journal of Intelligent Transportation Systems [Haghani, Ali]
- Kaveh Farokhi: Presented a paper at the 92nd Annual Meeting of the Transportation Research Board. [Haghani, Ali]
- Kaveh Farokhi: Presented a paper in the 19th ITS World Congress, Vienna, Austria [Haghani, Ali]
- Hadi Sadrsadat: Presented a paper at the 92nd Annual Meeting of the Transportation Research Board. [Haghani, Ali]
- Taehyeong Kim: Published a paper in Transportation Research Record [Haghani, Ali]
- Zhentian Sun: Had a paper accepted in Transport Policy [Haghani, Ali]
- Azadeh Norouzi: Submitted a paper to 2013 ITS World Congress [Haghani, Ali]
- Kiavash Parvan: Published a paper in the Proceedings of the 30th International Conference of the System Dynamics Society, St. Gallen, Switzerland [Haghani, Ali]
- Farzad Daneshgar: Had a paper accepted for Transportation Research Record [Haghani, Ali]
- Amir Ahrari: Presented a paper in the INFORMS Annual Meeting [Haghani, Ali]
- Mona Asudegi: Presented a paper in the 2<sup>nd</sup> International Conference on Operation Research and Enterprise Systems [Haghani, Ali]
- Mona Asudegi: Presented a paper in Federal Energy Regulatory Commission (FERC) workshop and Transatlantic Infraday, Washington, D.C. November 2013 [Haghani, Ali]
- Mona Asudegi: Presented a paper in INFORMS 2013 [Haghani, Ali]

- Elham Sharifi: Presented a paper in the 26<sup>th</sup> European conference on Operational Research, Rome, Italy, July 1-4, 2013 [Haghani, Ali]
- Elham Sharifi: Presented a paper in Transportation Research Board Annual Conference, 2013 [Haghani, Ali]
- Rafael Olarte: Presented a paper in 17<sup>th</sup> IRF World Meeting & Exhibition, Riyadh, Saudi Arabia, November 9 - 13, 2013 [Haghani, Ali]
- Rafael Olarte: Presented a paper in INFORMS 2013 [Haghani, Ali]
- Rafael Olarte: Presented a paper in 2013 Freeway & Managed Lane Operations Meeting and Conference, Atlanta [Haghani, Ali]
- Yanru Zhang: Published two papers in Transportation Research Record Journal of Transportation Research Board [Haghani, Ali]
- Yanru Zhang: Published a paper in Transportation Research Part C [Haghani, Ali]
- Yanru Zhang: Presented a paper in Transportation Research Board Annual Conference, 2013 [Haghani, Ali]
- Yanru Zhang: Presented a paper in INFORMS 2013 [Haghani, Ali]
- Yanru Zhang: Presented a paper in Transportation Research Forum 2013 [Haghani, Ali]
- Yanru Zhang: Presented a paper in TRISTAN VIII in Chile [Haghani, Ali]
- Yanru Zhang: Presented a poster in INFORMS 2013, entered in the poster competition and placed in the top 5 [Haghani, Ali]
- Yanru Zhang: Published a paper in Journal of Intelligent Transportation Systems [Haghani, Ali]
- Erin Hylton: Marshall Scholarship [Lovell, David J.]
- Yaolin Liu: Published paper, first author. Liu, Y., Mi, B.\* (2012). "Combined fouling of forward osmosis membranes: synergistic foulant interaction and direct observation of fouling layer formation." *Journal of Membrane Science*, 407-408, pp. 136-144. [Mi, Baoxia]
- Yaolin Liu: Accepted paper, first author. Liu, Y., Ronsenfield, E., Hu, M., Mi, B.\* "Direct observation of bacterial deposition on and detachment from nanocomposite membranes embedded with silver nanoparticles." *Water Research*, accepted [Mi, Baoxia]
- Yaolin Liu: Oral presentation at a national conference, co-author, Xiang, Y., Leng, Y., Liu, Y., Mi, B. (2012). [Mi, Baoxia]
- "Integration of experiments and simulation to understand membrane-foulant interactions." 2012 North American Membrane Society Annual Meeting, New Orleans, LA, June 10-13. [Mi, Baoxia]
- Meng Hu: Future faculty fellowship [Mi, Baoxia]
- Meng Hu: Submitted paper, first author, Hu, M., Mi, B.\* "Enabling Graphene Oxide Nanosheets as Water Separation Membranes." *Environmental Science & Technology* [Mi,

Baoxia]

- Meng Hu: Oral presentation at a national conference, first author, Hu, M., Zhong, K., Ehrman, S.E., Mi, B. (2012). "Effects of particle morphology on the anti-microbial and anti-adhesion performances of silver embedded polysulfone membranes and rate of silver leaching." 2012 North American Membrane Society Annual Meeting, New Orleans, LA, June 10-13. [Mi, Baoxia]
- Meng Hu: Travel award from North American Membrane Society for presentation of "Layer-by-layer assembly of cross-linked graphene oxide membranes," 2013. [Mi, Baoxia]
- Mercedeh Tariverdi: Helene M. Overly Memorial Graduate Scholarship from the Women's Transportation Seminar, 2012 [Miller-Hooks, Elise]
- Zhang, Ruiyang: Selected for 2013 NSF Asia-Pacific Summer School on Smart Structures Technology in Daejeon, South Korea [Phillips, Brian]
- Whittaker, Anna: Woodward-Clyde Consultants Award for outstanding junior [Phillips, Brian]
- Various: All papers shown in Publications Section were published with students and former students. [Schonfeld, Paul M.]
- Cheng-Chieh (Frank) Chen: Won the Best Paper Award for paper co-authored with me at Transport Research Arena Conference, Athens, Apr. 2012 [Schonfeld, Paul M.]
- Eung-tcheol Kim: Promoted Chairman of Civil Engineering Dept. at Univ. of Incheon [Schonfeld, Paul M.]
- Myungseoh Kim: Published journal paper: Kim, M., Schonfeld, P. and Kim, E. "Comparison of Vertical Alignments for Rail Transit," Journal of Transportation Engineering, 139-2, ASCE, Feb. 2013, pp. 230-238. [Schonfeld, Paul]
- Myungseoh Kim: Published journal paper: Kim, M., Schonfeld, P., and Kim, E. "Simulation-based Rail Transit Optimization model," Transp. Res. Record 2374, Dec. 2013, pp. 143-153. [Schonfeld, Paul]
- Myungseoh Kim: Published journal paper: Markovic, N. and Schonfeld, P. "Integrating Bus Services with Mixed Fleets," Transportation Research Part B, vol. 55B, Sept. 2013, pp. 227-244 [Schonfeld, Paul]
- Nikola Markovic: Published journal paper: Markovic, N. and Schonfeld, P. "Stochastic Scheduling for a Single-Terminal Transfer System with Poisson Arrivals," Strojniski Vestnik (Slovenian J. of Mechanical Engineering), 59-9, 2013, pp. 564-572. [Schonfeld, Paul]
- Reuben Juster: Published Journal Paper: Juster, R. and Schonfeld, P. "Personal Rapid Transit as Urban Transportation," Transp. Res. Record 2350, Dec. 2013, pp. 128-135. [Schonfeld, Paul]
- Khosravifar, Sadaf: Accepted to the Clark School's Future Faculty Program [Schwartz, Charles W.]
- Vecino, Gustavo: Paper published in ASCE Journal of Management in Engineering [Skibniewski, Miroslaw Jan]
- Ghosh, Saumyendu: Several journal papers published [Skibniewski, Miroslaw Jan]

- His-Hsien Wei: Received Israel government fellowship for research at Ben-Gurion University [Skibniewski, Miroslaw Jan]
- Natasha Andrade: selected as a student board member for SETAC [Torrents, Alba]
- Maia Tatinclaux: Paper received first place (cash award) at Society for Environmental Toxicology and Chemistry (CPRC-SETAC) Annual Spring Meeting, April 22, 2013 [Torrents, Alba]
- Maia Tatinclaux: Second place at UMD GRID [Torrents, Alba]
- Maia Tatinclaux: Invited to present at Mid Atlantic Biosolids Association (MABA) conference: The Science of Biosolids: Current Research and Implications for Management [Torrents, Alba]
- Kyle Rush: Selected for NHTSA Student Competition [Young, Stanley Ernest]
- Chenfeng Xiong: Best student paper award, International Road Federation [Zhang, Lei]
- Yijing Lu: Best student paper award, International Road Federation [Zhang, Lei]
- Yijing Lu: 2013 TRF Best Student Paper Award [Zhang, Lei]
- Noah Blum: received the Dwight Eisenhower Graduate Fellowship from US DOT in April 2012 [Zhang, Yunfeng]

# Grants and Contracts

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- **FY ITS Maryland Administration Contract**  
PI: Alexander, Michael  
Sponsor: Intelligent Transportation  
Start-End: 07/01/2012 - 06/30/2013
- **Development of Design Guidelines for Proper Selection of Graded Aggregate Base in MD**  
PI: Aydilek, Ahmet H.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 06/23/2011 - 03/01/2013
- **Geoenvironmental Impacts of Using High Carbon Fly Ash in Structural Fill Applications**  
PI: Aydilek, Ahmet H.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 04/01/09 - 06/30/12
- **Geotechnical and Environmental Impacts of Steel Slag Use in Highway Construction**  
PI: Aydilek, Ahmet H.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 04/04/12 - 12/31/14
- **GIS-Based Digital Preservation of Highway Soil Map**  
PI: Aydilek, Ahmet H.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 06/10/2013 - 01/01/2014
- **Digital Preservation and Archival of Maryland DOT Historical Highway Photolog**  
PI: Aydilek, Ahmet H.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 05/05/2013 - 01/01/2014
- **Soil Slope Failure Investigation Management System**  
PI: Aydilek, Ahmet H.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 11/23/09 - 08/31/12
- **Agreement with Phoenix Services LLC**  
PI: Aydilek, Ahmet H.  
Sponsor: Phoenix Services  
Start-End: 04/04/2012 - 12/15/2013
- **Host Visiting Researcher from Hyundai Heavy Industries to Investigate Project Risk Analysis Management**  
PI: Ayyub, Bilal M.  
Sponsor: Hyundai Heavy Industries Company Limited  
Start-End: 09/19/2011 - 09/18/2012
- **Systems Wide Risk and Reliability Assessment of Civil Works Infrastructure**  
PI: Baecher, Gregory  
Sponsor: Army Corps of Engineers  
Start-End: 01/01/2010 - 12/31/2012
- **Collaborative Research: Investigation of the Effect of Fly Ash Variability on Cement Paste Mic**  
PI: Amde, Amde M.  
Sponsor: NSF  
Start-End: 04/15/12 - 03/31/15
- **Graduate Assistance in Areas of National Need**  
PI: Amde, Amde M.  
Sponsor: U.S. Department of Education  
Start-End: 09/01/2012 - 08/31/2015
- **Using Bar Codes and Electronic Chips to Track and Store Sample and Structure Data**  
PI: Amde, Amde M.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 02/17/12 - 12/31/13
- **Task Order #1: Analysis of Schedule Delay Risk in Subsurface Explorations**  
PI: Baecher, Gregory  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 06/20/2011 - 06/30/2012
- **Developing a Quantitative Risk Model for Flooding of Plant Infrastructure**  
PI: Brubaker, Kaye  
Sponsor: District of Columbia Water and Sewer Authority  
Start-End: 12/01/11 - 05/31/15
- **Water Resources Research Center Annual Base Grant**  
PI: Brubaker, Kaye  
Sponsor: U.S. Geological Survey  
Start-End: 03/01/2011 - 02/29/2012
- **GISHydroNXT Development in ArcGIS/Python - Phase IV**  
PI: Brubaker, Kaye

**Sponsor:** STMD – Maryland State  
**Start-End:** 07/01/2013 – 06/30/2014

- **Optimizing Sensor Placement for Detection of Scour**  
**PI:** Brubaker, Kaye  
**Sponsor:** MIPS-Maryland Industrial  
**Start-End:** 01/15/2013 – 01/14/2014
- **GISHydro Maintenance and Upgrade**  
**PI:** Brubaker, Kaye  
**Sponsor:** STMD-Maryland State  
**Start-End:** 07/01/2012 – 06/30/2013
- **Developing Mesoscopic Models for the Before and After Study of the Inter-County Connector: Phase-One**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 01/11/11 – 06/30/12
- **Development & Testing of an Intelligent Dilemma Zone**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 06/26/07 – 06/30/12
- **Development of an Applied Technology Traffic and Safety Program**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 07/23/2010 – 06/30/2015
- **TO#25: Performance Evaluation of CHART for Year 2011-2013**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 05/01/2011 – 04/30/2014
- **TO#3: Operations and Maintenance of Eastern Shore Traffic System**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 07/01/2009 – 06/30/2012
- **Task Order #91- Development of an Emergency Evacuation System for Baltimore Region**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 07/01/2008 – 02/01/2012
- **Task Order #92 Performance of CHART from 2008-2010**  
**PI:** Chang, Gang-Len  
**Sponsor:** STMD-Maryland State Highway Administration

**Start-End:** 05/01/2008 – 02/29/2012

- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U S Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U S Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Chang, Gang-Len  
**Sponsor:** U S Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012
- **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Chang, Gang-Len  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 – 06/30/2012



- **Tier 1 University Transportation Center - Year 3 Budget**  
PI: Chang, Gang-Len  
Sponsor: U.S. Department of Transportation-Other  
Start-End: 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center - Year 3 Budget**  
PI: Chang, Gang-Len  
Sponsor: U S Department of Transportation-Other  
Start-End: 10/01/2006 - 06/30/2012
- **Planning for and Responding to Successive Damage Events in Naturally Deteriorating Surface**  
PI: Chang, Gang-Len  
Sponsor: Pennsylvania State  
Start-End: 08/01/2013 - 07/30/2014
- **2011 Eisenhower Graduate Fellowship - Michael Maness**  
PI: Cirillo, Cinzia  
Sponsor: U.S. Dept of Transportation. Federal Highway Admin.  
Start-End: 09/01/2011 - 09/01/2012
- **Lynna Nguyen Eisenhower Fellowship**  
PI: Cirillo, Cinzia  
Sponsor: U.S. Department of Transportation - Federal  
Start-End: 07/01/2012 - 06/30/2013
- **Dynamic Choice Models for Challenging Societies With an Application to Car Ownership Decisions**  
PI: Cirillo, Cinzia  
Sponsor: NSF  
Start-End: 09/01/11 - 08/31/15
- **UTC Program 2011 and 2012**  
PI: Cirillo, Cinzia  
Sponsor: Pennsylvania State  
Start-End: 01/01/12 - 08/31/14
- **GWDC Match Grant for JARC Project**  
PI: Cirillo, Cinzia  
Sponsor: Community Foundation for National Capital Region  
Start-End: 05/01/11 - 10/31/12
- **Job Access and Reverse Commute in the Washington Metropolitan Area: A Plan for Improving Mobility of Disadvantaged Individuals**  
PI: Cirillo, Cinzia  
Sponsor: Metropolitan Washington Council of Governments  
Start-End: 01/01/12 - 12/13/12
- **Tier 1 University Transportation Center - Year 3 Budget**  
PI: Cirillo, Cinzia  
Sponsor: U S Department of Transportation-Other  
Start-End: 10/01/2006 - 06/30/2012
- **Tools to Support Greenhouse Gas Emissions (GHG) Reduction: A Regional Effort (MAUTC-2008-01)** Sponsor: Pennsylvania State University  
PI: Cirillo, Cinzia  
Start-End: 12/01/2008 - 09/30/2012
- **Tools to Support Greenhouse Gas Emissions (GHG) Reduction: A Regional Effort (MAUTC-2008-01)**  
PI: Cirillo, Cinzia  
Sponsor: Pennsylvania State University  
Start-End: 12/01/2008 - 09/30/2012
- **Estimation Tools for Advanced Transportation Models**  
PI: Cirillo, Cinzia  
Sponsor: Pennsylvania State  
Start-End: 05/01/2013 - 04/30/2014
- **Task Order #1: Analysis of Schedule Delay Risk in Subsurface Explorations**  
PI: Cui, Qingbin  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 06/20/2011 - 06/30/2012
- **Biomat Testing for Runoff Water Quality Improvement...**  
PI: Davis, Allen P.  
Sponsor: USDA-ARS (Agricultural Research Service)  
Start-End: 04/25/2007 - 04/24/2012
- **Enhancements for N and P Removal From New SCMs**  
PI: Davis, Allen P.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 08/17/11 - 07/31/12
- **Enhanced Nutrient and Sediment Reduction at the UMD**  
PI: Davis, Allen P.  
Sponsor: Prince George's County  
Start-End: 12/01/2010 - 06/30/15
- **In Situ Remediation of Soil DDT and Dieldrin Residues at BARC to Reduce Earthworm**  
PI: Davis, Allen P.  
Sponsor: USDA-Agricultural Research Service  
Start-End: 10/01/2011 - 09/30/2012

- **High School Science and Low Impact Development**  
PI: Davis, Allen P.  
Sponsor: Low Impact Development Center  
Start-End: 05/01/12 - 05/31/13
- **Technical Support for Assessment and Watershed Protection**  
PI: Davis, Allen P.  
Sponsor: Michael Baker Corporation  
Start-End: 08/01/2012 - 07/31/2017
- **Geotextiles Filters for Urban Stormwater Management**  
PI: Davis, Allen P.  
Sponsor: MIPS-Maryland Industrial Partnerships Program  
Start-End: 02/01/12 - 07/01/13
- **Soil DDx Reduction**  
PI: Davis, Allen P.  
Sponsor: USDA-ARS (Agricultural Research Service)  
Start-End: 09/29/2010 - 09/30/2013
- **Stormwater Nitrogen and Phosphorus Removal to Meet TMDLs**  
PI: Davis, Allen P.  
Sponsor: Prince George's County  
Start-End: 12/01/10 - 06/30/15
- **Wet Infiltration Basin Transitional Performance Studies**  
PI: Davis, Allen P.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 08/08/11 - 07/31/12
- **Recommended Stormwater Control Measures for Multi-Modal Transportation Infrastructure in Maryland and...**  
PI: Davis, Allen P.  
Sponsor: STMD - Maryland State Highway  
Start-End: 04/01/2013 - 01/31/2014
- **NDA with Harsco**  
PI: Davis, Allen P.  
Sponsor: Harsco Corporation  
Start-End: 03/15/2013 - 03/14/2014
- **Evaluation of an Agricultural Stormwater Cascade System**  
PI: Davis, Allen P.  
Sponsor: MIPS-Maryland Industrial  
Start-End: 01/15/2013 - 01/14/2014
- **Risk Assessment and Reduction for Trace Elements in Soils and Crops**  
PI: Davis, Allen P.  
Sponsor: USDA-Agricultural Research
- **Start-End: 09/27/2012 - 08/31/2014**
- **W.O.#45 - I95 Corridor Coalition Consulting Services**  
PI: Frankle, Kathleen M.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 03/01/02 - 12/31/12
- **Florida DOT Probe Expansion Project**  
PI: Frankle, Kathleen M.  
Sponsor: Florida DOT  
Start-End: 06/01/2010 - 06/30/2013
- **New Jersey DOT Vehicle Probe**  
PI: Frankle, Kathleen M.  
Sponsor: New Jersey Agency of Transportation  
Start-End: 07/01/2008 - 06/30/2013
- **INRIX 2011 Data for MdSHA**  
PI: Frankle, Kathleen M.  
Sponsor: STMD-Maryland State Highway  
Start-End: 07/01/2012 - 09/30/2012
- **Regional Operations Forums for Advancing Systems Operations, Mgmt. & Reliability**  
PI: Frankle, Kathleen M.  
Sponsor: The National Academies - Transportation  
Start-End: 10/01/2012 - 09/30/2014
- **E-Learning for Training Traffic Incident Responders and Managers**  
PI: Frankle, Kathleen M.  
Sponsor: The National Academies - Transportation  
Start-End: 09/01/2012 - 03/30/2015
- **Completion of Coalition Truck Parking Project**  
PI: Frankle, Kathleen M.  
Sponsor: STMD-Maryland State Highway  
Start-End: 02/01/2012 - 12/31/2013
- **I-95 Corridor Coalition Consulting Services - Year 18**  
PI: Frankle, Kathleen M.  
Sponsor: STMD-Maryland State Highway  
Start-End: 01/01/2012 - 12/31/2013
- **Coalition Web Site Maintenance - Year 18**  
PI: Frankle, Kathleen M.  
Sponsor: STMD-Maryland State Highway  
Start-End: 01/01/2012 - 12/31/2013
- **Coalition Vehicle Probe Pooled Fund**

- PI: Frankle, Kathleen M.  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 03/01/2012 - 06/30/2012
- **Operations Academy – Year 18**  
 PI: Frankle, Kathleen M.  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 10/01/2011 - 12/31/2012
  - **I-95 Corridor Coalition Administrative Services – Year 18**  
 PI: Frankle, Kathleen M.  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 11/01/2011 - 12/31/2012
  - **FHWA Opportunity State Workshop**  
 PI: Frankle, Kathleen M.  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 02/01/2009 - 03/31/2012
  - **Development of Weather Responsive Traffic Management (WRTM) Training Course**  
 PI: Frankle, Kathleen M.  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 10/01/2011 - 06/30/2012
  - **Computer Programs for Bridge Design and Analysis**  
 PI: Fu, Chung C.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 08/04/2010 - 08/03/2015
  - **Development of a Self-Sustained Wireless Integrated Structural Health Monitoring System for Highway Bridges**  
 PI: Fu, Chung C.  
**Sponsor:** U.S. Department of Transportation  
**Start-End:** 07/15/2011 - 07/14/2013
  - **Task #1: Addition of New LRFD Shear Connector Design**  
 PI: Fu, Chung C.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 12/09/11 - 02/15/12
  - **Theoretical and Field Experimental Evaluation of Skewed Modular Slab Bridges**  
 PI: Fu, Chung C.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 02/15/2011 - 02/29/2012
  - **Serviceability-related issues for Bridge Live Load Deflection and Construction Closure Pours**  
 PI: Fu, Chung C.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 05/01/2013 - 04/30/2014
  - **Development of Advanced Visual BDGM**  
 PI: Fu, Chung C.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 08/01/2012 - 07/31/2013
  - **Development of Mathematical Models and Optimization Methods for Energy Procurement Problems at Air Liquide**  
 PI: Gabriel, Steven A.  
**Sponsor:** American Air Liquide  
**Start-End:** 09/20/10 - 12/31/13
  - **LinkS Project**  
 PI: Gabriel, Steven A.  
**Sponsor:** Norwegian University of Science and Technology  
**Start-End:** 12/09/2009 - 06/08/2014
  - **LinkS Project**  
 PI: Gabriel, Steven A.  
**Sponsor:** Norwegian University of Science and Technology  
**Start-End:** 12/09/2009 - 06/08/2014
  - **Proposal to Support Graduate Student Research**  
 PI: Gabriel, Steven A.  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 10/01/11 - 09/30/12
  - **Proposal to support research (Chalida U-Tapao)**  
 PI: Gabriel, Steven A.  
**Sponsor:** District of Columbia Water  
**Start-End:** 10/01/2012 - 09/30/2013
  - **Evaluation of National Dam Safety Program (NDSP)**  
 PI: Galloway, Gerald E.  
**Sponsor:** U.S. Department of Interior-U.S. Geological Survey  
**Start-End:** 07/26/11 - 02/29/12
  - **Material Quality Assurance Risk Assessment**  
 PI: Goulias, Dimitrios  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 02/01/10 - 03/31/12

- Effective Implementation of Ground Penetrating Radar (GPR) for Condition Assessment**  
 PI: Goulias, Dimitrios  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 04/01/2013 - 03/31/2014
- Improving BASINS/HSPF Predictions of Nitrogen Export to Improve TMDL Accuracy Using NASA Imagery**  
 PI: Gutierrez-Magness, Angelica L.  
 Sponsor: University of Wisconsin-Madison  
 Start-End: 09/01/09 - 07/31/14
- 2012 Undergraduate Internship**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 11/19/09 - 02/28/12
- Assessment of Data Quality Needs for Use in Transportation Applications**  
 PI: Haghani, Ali  
 Sponsor: Pennsylvania State  
 Start-End: 07/01/11 - 12/31/12
- Teaming Agreement with Booz Allen Hamilton**  
 PI: Haghani, Ali  
 Sponsor: Booz, Allen and Hamilton  
 Start-End: 05/07/2012 - 05/06/2013
- NDA Between Booz Allen Hamilton and UMD**  
 PI: Haghani, Ali  
 Sponsor: Booz, Allen and Hamilton  
 Start-End: 04/04/2012 - 04/03/2013
- Automated Low-Cost and Real-Time Truck Parking Information System**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 03/29/12 - 03/31/13
- Graduate Student Support for the HSIS-IV**  
 PI: Haghani, Ali  
 Sponsor: University of North Carolina-Chapel Hill  
 Start-End: 12/01/11 - 11/30/16
- Evaluation of Dynamic Message Signs and Their Potential Impact on Traffic Flow**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 12/20/10 - 12/31/12
- E-VERIFY: Estimation and Display of Real-Time Travel Time**  
 PI: Haghani, Ali  
 Sponsor: HNTB Corporation  
 Start-End: 11/08/11 - 09/28/12
- On-Site Research Support for Maryland State Highway Administration**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 10/23/2009 - 06/30/2012
- Open Ended Agreement for Research Services-Office of Materials and Technology**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 09/16/2008 - 12/31/2012
- Open Ended Agreement for Research Services-Office of Materials and Technology**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 12/22/2009 - 12/31/2013
- SHA Match: Assessment of Data Quality Needs for use in Transportation Applications**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 02/14/12 - 02/28/13
- TO#7: I-95 Corridor Coalition Year 17 Projects**  
 PI: Haghani, Ali  
 Sponsor: STMD-Maryland State Highway Administration  
 Start-End: 08/01/2009 - 12/31/2013
- Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
 Sponsor: U.S. Department of Transportation-Other  
 Start-End: 10/01/2006 - 06/30/2012
- Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
 Sponsor: U.S. Department of Transportation-Other  
 Start-End: 10/01/2006 - 06/30/2012
- Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
 Sponsor: U.S. Department of Transportation-Other  
 Start-End: 10/01/2006 - 06/30/2012
- Tier 1 University Transportation Center**

- PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
 PI: Haghani, Ali  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Undergraduate Student Internship at Maryland Transportation Authority**  
 PI: Haghani, Ali  
**Sponsor:** STMD-Maryland Transportation Authority  
**Start-End:** 05/01/2011 - 09/30/2013
  - **Use of Probe Data for Arterial Roadway Travel Time Estimation and Freeway Medium-term Travel Time**  
 PI: Haghani, Ali  
**Sponsor:** Pennsylvania State  
**Start-End:** 07/01/2013 - 06/30/2014
  - **The Impact of Data Source on Travel Time Reliability Assessment**  
 PI: Haghani, Ali  
**Sponsor:** STMD- Maryland State Highway  
**Start-End:** 02/01/2013 - 06/30/2013
  - **Undergraduate Student Internship at Maryland State Highway Administration**  
 PI: Haghani, Ali  
**Sponsor:** STMD- Maryland State Highway  
**Start-End:** 05/01/2013 - 04/30/2014
  - **Master Agreement with Maryland State Highway Administration**  
 PI: Haghani, Ali  
**Sponsor:** STMD- Maryland State Highway  
**Start-End:** 08/01/2012 - 12/31/2016
  - **Validation and Augmentation of INRIX Arterial Travel Time Data Using Independent Sources**  
 PI: Haghani, Ali  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 03/01/2013 - 06/30/2014
  - **Agreement with DDOT-MATOC Support**  
 PI: Jacobs, Thomas Hans  
**Sponsor:** District of Columbia  
**Start-End:** 06/22/2011 - 06/21/2012
  - **CHART Umbrella Agreement**  
 PI: Jacobs, Thomas Hans  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 07/01/2009 - 06/30/2014
  - **CIVSN Systems Architect (FY12-15)**  
 PI: Jacobs, Thomas Hans  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 04/01/2012 - 06/30/2015
  - **Impact of Weather and Incidents on Travel Reliability**  
 PI: Jacobs, Thomas Hans  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 07/01/2012 - 06/30/2013

- **Regional Coordination on Transportation Mobilization for Severe Weather Events**  
PI: Jacobs, Thomas Hans  
Sponsor: Metropolitan Washington Council of Governments  
Start-End: 01/01/2012 - 03/31/2012
- **MATOC FY12 Operations Support (VDOT Portion)**  
PI: Jacobs, Thomas Hans  
Sponsor: Metropolitan Washington Council of Governments  
Start-End: 07/01/2011 - 06/30/2012
- **Mobility Performance Measure Development and Reporting Support FY12**  
PI: Jacobs, Thomas Hans  
Sponsor: STMD-Maryland State Highway  
Start-End: 07/01/2012 - 06/30/2012
- **MATOC Operations Support FY12**  
PI: Jacobs, Thomas Hans  
Sponsor: STMD-Maryland State Highway  
Start-End: 07/01/2012 - 06/30/2012
- **FY2012 DDOT-MATOC Support**  
PI: Jacobs, Thomas Hans  
Sponsor: District of Columbia  
Start-End: 07/01/2012 - 06/30/2012
- **MATOC FTA**  
PI: Jacobs, Thomas Hans  
Sponsor: U.S. DOT - Federal Transit Administration  
Start-End: 09/01/2011 - 12/31/2012
- **Deployment, Use and Effect of Real-Time Traveler Information Systems NCHRP 08-82**  
PI: Jacobs, Thomas Hans  
Sponsor: Westat Corporation  
Start-End: 02/11/2011 - 10/11/2012
- **TO#4 - CHART FY 10-14**  
PI: Jacobs, Thomas Hans  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 07/01/2009 - 03/31/2012
- **EWB Program Support for Brazil Project**  
PI: Lovell, David J.  
Sponsor: St. Margaret's Church  
Start-End: 06/01/11 - 05/31/12
- **Collaborative Research: Elucidating the Mechanisms for Inhibition of Biofueling on Polymeric Membranes Modified with Polyelectrolyte Multilayers and Antimicrobial Nanoparticles**  
PI: Mi, Baoxia  
Sponsor: NSF  
Start-End: 08/08/11 - 08/31/15
- **Integration of Experiments and Simulations for Molecular-Level Understanding of Membrane Fouling Mechanisms**  
PI: Mi, Baoxia  
Sponsor: NSF  
Start-End: 08/08/11 - 08/31/14
- **GHG Tool for On - Road Emissions Estimate**  
PI: Miller-Hooks, Elise  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 01/12/2011 - 01/31/2012
- **Dynamic Team Deployment in Urban Search and Rescue**  
PI: Miller-Hooks, Elise  
Sponsor: Pennsylvania State University  
Start-End: 08/01/2012 - 05/31/2013
- **Smarter Algorithms for Managing Ridesharing Services**  
PI: Miller-Hooks, Elise  
Sponsor: MIPS-Maryland Industrial Partnerships  
Start-End: 08/01/2012 - 07/31/2013
- **IPA with USDOT**  
PI: Miller-Hooks, Elise  
Sponsor: U.S. Department of Transportation  
Start-End: 10/03/2011 - 06/30/2012
- **Research Experience for Undergraduates in Transportation at the University of Maryland**  
PI: Miller-Hooks, Elise  
Sponsor: Pennsylvania State  
Start-End: 07/01/07 - 01/31/13
- **Resilience in Rail-Based Intermodal Transportation Systems: Performance Measurements and Decisions Support**  
PI: Miller-Hooks, Elise  
Sponsor: NSF  
Start-End: 07/01/2010 - 06/30/2012
- **Smart Algorithms for Managing Paratransit Services**  
PI: Miller-Hooks, Elise  
Sponsor: MIPS-Maryland Industrial Partnerships Program  
Start-End: 08/01/11 - 07/31/12
- **Tier 1 University Transportation Center**  
PI: Miller-Hooks, Elise

**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012

- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Miller-Hooks, Elise

**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012

- **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tools to Support Greenhouse Gas Emissions (GHG) Reduction: A Regional Effort (MAUTC-2008-01)**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** Pennsylvania State University  
**Start-End:** 12/01/2008 - 09/30/2012
- **Tools to Support Greenhouse Gas Emissions (GHG) Reduction: A Regional Effort (MAUTC-2008-01)** **Sponsor:** Pennsylvania State University  
**PI:** Miller-Hooks, Elise  
**Start-End:** 12/01/2008 - 09/30/2012
- **Next Generation Algorithms and Decision Support Tools for Managing Ridesharing Services, Phase 2**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** MIPS-Maryland Industrial  
**Start-End:** 08/01/2013 - 07/31/2014
- **SHA Carbon Footprint Estimation and Greenhouse Gas Mitigation Plan**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** STMD-Maryland State  
**Start-End:** 05/01/2013 - 12/31/2013
- **Student Support for Rezi Faturechi**  
**PI:** Miller-Hooks, Elise  
**Sponsor:** Pennsylvania State  
**Start-End:** 11/01/2012 - 10/31/2013
- **Hybrid Wireless Network Control Software for Intelligence, Surveillance and Reconnaissance**  
**PI:** Milner, Stuart D.  
**Sponsor:** Army Research Lab  
**Start-End:** 07/27/10 - 07/26/15
- **Qualifying and Assuring Information Transfer in Dynamic Heterogeneous Wireless Networks**  
**PI:** Milner, Stuart D.  
**Sponsor:** AFOSR-Air Force Office of Scientific Research  
**Start-End:** 03/01/09 - 05/31/12
- **MSP Task Order #4: ACRS Mod 4 - Trainer Costs**  
**PI:** Moscoso, Rodrigo E.  
**Sponsor:** STMD-Maryland State Police  
**Start-End:** 11/01/2009 - 09/30/2013

- **MSP Task Order #7: Phase 2 CAD/RMS and Interoperability Implementation Project**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD-Maryland State Police  
Start-End: 12/01/2011 - 06/30/2016
- **MSP Task Order #4: ACRS Mod3 SaDIP**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD-Maryland State Police  
Start-End: 11/01/2009 - 09/30/2013
- **MSP-MOU Task Order #2 E-Tix Development Projects Modification #3**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD-Maryland State Police  
Start-End: 06/01/2009 - 12/31/2012
- **Developer Toolkit Agreement - with Colossus, Inc.**  
PI: Moscoso, Rodrigo E.  
Sponsor: Colossus, Incorporated DBA  
Start-End: 10/01/2012 - 09/30/2014
- **University of Maryland Support to Maryland State Police Technical Services - Task Order #9: Enterprise**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD - Maryland State  
Start-End: 07/01/2012 - 06/30/2016
- **Agreement with Montgomery County Police Department**  
PI: Moscoso, Rodrigo E.  
Sponsor: Montgomery County Police Department  
Start-End: 02/04/2011 - 02/03/2012
- **MSP Task Order #9 RCAS Data Extraction and Access**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD-Maryland State Police  
Start-End: 12/01/2011 - 06/30/2012
- **MSP Task Order #5 Forensic Sciences Technical Projects**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD-Maryland State Police  
Start-End: 04/01/2010 - 12/31/2012
- **Automated Crash Reporting System (ACRS)**  
PI: Moscoso, Rodrigo E.  
Sponsor: STMD-Maryland State Police  
Start-End: 10/01/2011 - 09/30/2012
- **Work Zone Data Collection and Performance Monitoring**  
PI: Nair, Rahul  
Sponsor: STMD-Maryland State Highway  
Start-End: 07/01/2011 - 06/30/2012
- **Battelle Subcontract (236833) ICM Initiative: Demonstration Phase Evaluation Program**  
PI: Pack, Michael L.  
Sponsor: Battelle Memorial Institute  
Start-End: 09/10/2010 - 01/30/2012
- **TO #26: Virtual Incident Management Training Deployment and System Maintenance**  
PI: Pack, Michael L.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 01/01/2011 - 12/31/2012
- **NDA & Data Sharing Agreement - GDOT Georgia NaviGator XML**  
PI: Pack, Michael L.  
Sponsor: Georgia DOT  
Start-End: 05/17/2012 - 05/17/2013
- **TO #27: Performance Measures Using Vehicle Probe Data Phase II - Year 17**  
PI: Pack, Michael L.  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 04/01/2011 - 03/30/2012
- **TO#10: Archived Data for Coalition Vehicle Probe**  
Sponsor: STMD-Maryland State Highway Administration  
Start-End: 02/01/2010 - 01/31/2014
- **Traffax Bluetooth Data Dissemination & Analysis Through RITIS Sponsor: MIPS-Maryland Industrial Partnerships Program**  
PI: Pack, Michael L.  
Start-End: 02/01/2010 - 02/03/2012
- **UASI 190-01 - Expansion of Capabilities for Regional Integrated Transportation Information System**  
PI: Pack, Michael L.  
Sponsor: Government of the District of Columbia Homeland Security & E  
Start-End: 08/01/2009 - 04/30/2012
- **MDOT First Responder Training System**  
PI: Pack, Michael L.  
Sponsor: STMD- Maryland State  
Start-End: 07/01/2013 - 06/30/2015
- **CHART User Interface Design Lab & Technology Incubation Test Bed**  
PI: Pack, Michael L.  
Sponsor: STMD - Maryland State  
Start-End: 07/01/2013 - 06/30/2015
- **NHDOT-ATMS - Telvent Teaming Agreement**  
PI: Pack, Michael L.



**Sponsor:** Telvent Farradyne  
**Start-End:** 03/15/2013 - 03/15/2014

- **NDA and Teaming Agreement with IBI Group**  
**PI:** Pack, Michael L.  
**Sponsor:** IBI Group  
**Start-End:** 03/11/2013 - 03/10/2014
- **NDA with Open Roads for Teaming on New England ATMS/TIS RFP Prep**  
**PI:** Pack, Michael L.  
**Sponsor:** Open Roads Consulting Inc.  
**Start-End:** 02/15/2013 - 02/14/14
- **NDA with Delcan for Teaming on New England ATMS/TIS RFP Prep**  
**PI:** Pack, Michael L.  
**Sponsor:** Delcan Corporation  
**Start-End:** 02/15/2013 - 02/14/14
- **NHDOT Requests for Proposal: Advanced Transportation Management Systems/Traveler Information**  
**PI:** Pack, Michael L.  
**Sponsor:** Open Roads Consulting Inc.  
**Start-End:** 07/13/2012 - 07/13/14
- **High Availability Real-time Monitoring and Archived Analysis Tools for Virtual Weigh Stations - Phase II**  
**PI:** Pack, Michael L.  
**Sponsor:** STMD - Maryland State  
**Start-End:** 01/01/2013 - 12/31/2013
- **Maryland Transportation Authority Spatial Data License Agreement**  
**PI:** Pack, Michael L.  
**Sponsor:** STMD-Maryland State  
**Start-End:** 12/10/2012 - 12/09/13
- **Real-time & Archive Capacity Improvements with Enhancements to RITIS Performance Monitoring Tools**  
**PI:** Pack, Michael L.  
**Sponsor:** STMD - Maryland State  
**Start-End:** 10/01/2012 - 06/30/2013
- **Florida DOT CDW Dashboard Performance Measures Research**  
**PI:** Pack, Michael L.  
**Sponsor:** Florida DOT  
**Start-End:** 10/01/2012 - 09/30/2013
- **VDOT MATOC Task - Probe-based Performance Measurement Enhancements**  
**PI:** Pack, Michael L.  
**Sponsor:** Metropolitan Washington  
**Start-End:** 10/01/2012 - 03/31/2013
- **Non-Disclosure Agreement between UMD and SWRI**

**PI:** Pack, Michael L.  
**Sponsor:** Southwest Research  
**Start-End:** 08/01/2012 - 07/31/2017

- **Understanding CHART's Effectiveness and Identification of Areas for Growth**  
**PI:** Pack, Michael L.  
**Sponsor:** STMD - Maryland State  
**Start-End:** 08/01/2012 - 07/31/2013
- **Emergency, Weather & Traffic Information to the Public: Enhancements & Support**  
**PI:** Pack, Michael L.  
**Sponsor:** Government of the District of Columbia  
**Start-End:** 10/01/2012 - 05/31/2014
- **RITIS Enhancements**  
**PI:** Pack, Michael L.  
**Sponsor:** Government of the District of Columbia  
**Start-End:** 10/01/2012 - 05/31/2014
- **RITIS Operations & Maintenance**  
**PI:** Pack, Michael L.  
**Sponsor:** Government of the District of Columbia  
**Start-End:** 10/01/2012 - 05/31/2014
- **Improved Methods for Operating Public Transportation Services**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** Pennsylvania State  
**Start-End:** 08/01/11 - 01/31/13
- **Software-Simulated Test and Evaluation of Military Mission Using Positioning and Routing Algorithms**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** Morgan State University  
**Start-End:** 06/08/2009 - 09/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.

- Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
- **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012
  - **Integration of Multimodal Transportation Services**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** Morgan State University  
**Start-End:** 05/15/2013 - 08/14/14
  - **Evasive Flow Capturing Problem: Optimal Allocation of Weigh-in Motion Stations, Tollboths, and Security**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** NSF  
**Start-End:** 09/01/2013 - 08/31/2016
  - **Needs, Barriers, and Analysis Methods for Integrated Urban Freight Transportation**  
**PI:** Schonfeld, Paul M.  
**Sponsor:** Pennsylvania State  
**Start-End:** 09/14/2012 - 01/31/2014
  - **Design and Evaluation of Foamed Asphalt Base Materials**  
**PI:** Schwartz, Charles W.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 08/18/09 - 10/31/12
  - **Material Properties of CIR/FDR Asphalt Concrete For Pavement Design**  
**PI:** Schwartz, Charles W.  
**Sponsor:** The National Academies - Transportation Research Board - NCHRP  
**Start-End:** 06/04/12 - 12/03/14
  - **TO# 2 - Technical Support for Collection of HMA Data: On-Site Laboratory Technical Support**  
**PI:** Schwartz, Charles W.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 08/15/11 - 07/31/12
  - **TO#4: Technical Support for Collection of HMA Data: General Laboratory Support**  
**PI:** Schwartz, Charles W.  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 08/15/11 - 07/31/12
  - **Using RFID Technology to Better Manage and Assess Pavements**  
**PI:** Schwartz, Charles W.  
**Sponsor:** U.S. Department of Transportation  
**Start-End:** 09/12/08 - 10/15/12
  - **Local Technical Assistance Program (LTAP) 2011**  
**PI:** Stellfox, Edwin  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 01/01/2011 - 03/31/2012
  - **Maryland SHA MUTCD Update Training Sessions**  
**PI:** Stellfox, Edwin

- Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 04/01/2012 - 09/30/2012
- **Assessing Levels and the Fate of PFC's in Biosolids and Sludge Processing**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 10/01/11 - 12/30/13
  - **Environmental Fate of Brominated Flame Retardants in Biosolids Land Application Programs**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 10/01/11 - 12/30/13
  - **A Feasibility Study to Assess the Energy Benefits of Sediment Microbial Fuel Cells in Wastewater Treatment**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 06/01/12 - 12/30/13
  - **Innovative Approaches to Capture Nitrogen and Air Pollutant Emissions from Poultry**  
**PI:** Torrents, Alba  
**Sponsor:** University of Delaware  
**Start-End:** 09/01/2012 - 08/31/2015
  - **Investigating the Environmental Chemistry Fate and Transport of Agrochemicals and Other Pollutants**  
**PI:** Torrents, Alba  
**Sponsor:** USDA-ARS (Agricultural Research Service)  
**Start-End:** 09/11/2008 - 07/31/2012
  - **Environmental Fate of Brominated Flame Retardents in Biosolids Land Application Programs**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 10/01/2011 - 09/30/2012
  - **DC WASA Funding: "Nuria Lozano - TCC and TCS Biosolids", Jennifer Olszewski - Assessing the fate of Steroid Hormones...", "Natasha Andrade - Environmental Fate of Brominated Flame..."**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 10/01/10 - 09/30/13
  - **Utilizing Sustainable Remediation Technologies to Reduce Bioavailability and Transport of Chlorinated Organic**  
**PI:** Torrents, Alba  
**Sponsor:** USDA-ARS (Agricultural Research Service)  
**Start-End:** 09/29/2010 - 09/30/2013
  - **Utilizing On-Line Sensors and Laboratory-Scale Simulations to Examine Critical Factors Influencing the Formation of Odorous VOC in Biosolids**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water and Sewer Authority  
**Start-End:** 02/01/12 - 12/30/13
  - **Water Resources Research Center Annual Base Grant**  
**PI:** Torrents, Alba  
**Sponsor:** U.S. Department of Interior-U.S. Geological Survey  
**Start-End:** 03/01/11 - 02/29/16
  - **Investigation of Energy Benefit of Sediment Microbial Fuel Cells in Wastewater Treatment - Maia**  
**PI:** Torrents, Alba  
**Sponsor:** District of Columbia Water  
**Start-End:** 10/01/2012 - 09/30/2013
  - **ADVANCE: Crafting A Culture of Investment**  
**PI:** Wigginton, Krista R.  
**Sponsor:** NSF  
**Start-End:** 10/01/10 - 09/30/15
  - **Inkjet Imprinted Paper for Poliovirus Detection and Differentiation**  
**PI:** Wigginton, Krista R.  
**Sponsor:** Virginia Polytechnic Institute & State University  
**Start-End:** 06/01/12 - 11/01/12
  - **MTA for Diagnostic Hybrids, Inc.**  
**PI:** Wigginton, Krista R.  
**Sponsor:** Diagnostic Hybrids  
**Start-End:** 02/28/2012 - 02/28/2013
  - **MTA for The Washington University**  
**PI:** Wigginton, Krista R.  
**Sponsor:** Washington University in Saint Louis  
**Start-End:** 11/16/2011 - 11/16/2012
  - **Transition from a Class B to a Class A Biosolids Treatment Train at the Blue Plains Wastewater Treatment Plant: Impact on Emerging Pathogen Concentrations**  
**PI:** Wigginton, Krista R.  
**Sponsor:** District of Columbia Water and Sewer Authority

- Start-End:** 02/08/12 - 08/31/13
- **BRIGE: A Reductionist Approach to Enterovirus Disinfection**  
**PI:** Wigginton, Krista  
**Sponsor:** NSF  
**Start-End:** 08/15/2012 - 08/14/14
  - **North Carolina DOT Probe Expansion Project**  
**PI:** Young, Stanley Ernest  
**Sponsor:** North Carolina Department of Transportation  
**Start-End:** 11/01/2008 - 10/31/2015
  - **TO#14 - Vehicle Probe Data For MDSHA & MDTA**  
**PI:** Young, Stanley Ernest  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 09/01/2010 - 08/30/2013
  - **TO# 24: I-95 Corridor Coalition Vehicle Probe - Year 18**  
**PI:** Young, Stanley Ernest  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 12/01/2010 - 06/30/2012
  - **TO#14: Vehicle Probe Data For MDSHA & MDTA**  
**PI:** Young, Stanley Ernest  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 09/01/2010 - 08/30/2013
  - **TO#24: I-95 Corridor Coalition Vehicle Probe - Year 18**  
**PI:** Young, Stanley Ernest  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 12/01/2010 - 06/30/2012
  - **TO24: I-95 Corridor Coalition Vehicle Probe - Year 18**  
**PI:** Young, Stanley Ernest  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 12/01/2010 - 06/30/2012
  - **Career: Reliability as an Emergent Property of Transportation Networks**  
**PI:** Zhang, Lei  
**Sponsor:** NSF  
**Start-End:** 09/01/12 - 08/31/17
  - **Developing a Data and Modeling Framework for Integrated Transportation Operations and Planning**  
**PI:** Zhang, Lei  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 03/28/2011 - 06/30/2012
  - **Development of the Multimodal Transportation Analysis Framework**  
**PI:** Zhang, Lei  
**Sponsor:** MacroSys Research and Technology  
**Start-End:** 06/15/2010 - 06/14/2012
  - **Integrate MOSAIC and Enterprise GIS for Sustainable Transportation Planning**  
**PI:** Zhang, Lei  
**Sponsor:** STMD-Maryland State Highway  
**Start-End:** 01/01/2012 - 12/31/2013
  - **NDA Between ATRI and UMD**  
**PI:** Zhang, Lei  
**Sponsor:** American Transportation Research  
**Start-End:** 02/01/2012 - 05/31/2014
  - **E-VERIFY: Agent-Based Approach for Integrated Traveler and Driver Behavior Modeling**  
**PI:** Zhang, Lei  
**Sponsor:** U.S. Dept of Transportation. Federal Highway Admin.  
**Start-End:** 04/01/2011 - 05/31/2014
  - **E-VERIFY: Design of a Completely New Approach for a National Long Distance Travel Survey Instrument**  
**PI:** Zhang, Lei  
**Sponsor:** Battelle Memorial Institute  
**Start-End:** 08/29/11 - 08/11/13
  - **Long-Distance & Rural Travel Transferable Parameters for Statewide Travel Forecasting Model**  
**PI:** Zhang, Lei  
**Sponsor:** Cambridge Systematics  
**Start-End:** 02/11/2011 - 08/11/2012
  - **MOSAIC Phase Two: Sustainability Impact of Multimodal Corridor Improvements in Urbanized**  
**PI:** Zhang, Lei  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 03/24/2011 - 08/31/2012
  - **Task No. SHA/UM/2-25: Development of a Framework for Transit-Oriented Development (TOD)**  
**PI:** Zhang, Lei  
**Sponsor:** STMD-Maryland State Highway Administration  
**Start-End:** 01/18/12 - 05/31/13
  - **Tier 1 University Transportation Center - Year 3 Budget**  
**PI:** Zhang, Lei  
**Sponsor:** U.S. Department of Transportation-Other  
**Start-End:** 10/01/2006 - 06/30/2012

- **ICC Before and After Study: Transition Phase**  
 PI: Zhang, Lei  
 Sponsor: STMD-State of Maryland  
 Start-End: 01/01/2013 - 12/31/2013
- **MOSAIC Phase Three: Comprehensive Model Calibration and Validation and Additional Model**  
 PI: Zhang, Lei  
 Sponsor: STMD-Maryland State  
 Start-End: 01/01/2013 - 06/30/2014
- **Development of Methods to Identify Travel Trip Purpose for Travel Behavior Data Collection Analysis**  
 PI: Zhang, Lei  
 Sponsor: Battelle Memorial Institute  
 Start-End: 09/01/2012 - 08/31/2013
- **CAREER: Integrated Research and Education in Smart Sensing System**  
 PI: Zhang, Yunfeng  
 Sponsor: NSF  
 Start-End: 01/08/2008 - 01/31/2012
- **Collaborative Research: Fish-Inspired Ultra-Sensitive Infrasound Motion Sensor for Civil Infrastructure Monitoring**  
 PI: Zhang, Yunfeng  
 Sponsor: NSF  
 Start-End: 09/01/2010 - 08/31/2012
- **2012 Dwight Eisenhower Transportation Fellowship Program - Blum**  
 PI: Zhang, Yunfeng  
 Sponsor: U.S. Department of Transportation - Federal Highway Admin.  
 Start-End: 06/01/2012 - 05/31/2013
- **Development of a Self-Sustained Wireless Integrated Structural Health Monitoring System for Highway Bridges**  
 PI: Zhang, Yunfeng  
 Sponsor: U.S. Department of Transportation  
 Start-End: 07/15/2011 - 07/14/2013
- **Sensor-driven Structural Health Prognosis System for Continuous Reliability Assessment of Tubular Steel**  
 PI: Zhang, Yunfeng  
 Sponsor: NSF  
 Start-End: 09/01/2010 - 08/31/2013

# Faculty Publications: 2012-2013 Fiscal Years

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## Sections:

Full Books

Chapters in Books

Refereed Articles in Archival Journals

Articles in Conf. Proceedings

Other Presentations at conferences, seminars, symposia & outside institutions

Other Publications/Presentations

## AGGOUR

Refereed Articles in Archival Journals

Amir-Faryar, B. and Aggour, M.S. "Determination of Optimum Fiber Content in a Fiber-Reinforced Clay", Journal of Testing and Evaluation, ASTM, Vol. 40, No. 2, March 2012, pp. 334-337.

LaBaw, S.M. and Aggour, M.S. "Earth Pressures in Trench Rescue Shoring Systems", International Journal of Geotechnical Engineering, Vol. 6, 2012, pp. 297-308.

Amir-Faryar, B., Aggour, M.S., O'Connell, D., Suter, K., Finnen, R. and Miller, K. "Effect of Construction Sequence on Adjacent Underground Structures", Electronic Journal of Geotechnical Engineering, Vol. 17/Y, EJGE Paper #12.354, 2012, pp. 3739-3752

Razmi, J., Ladani, L. and Aggour, M.S. "Fatigue Life of Piles in Integral Abutment Bridges, A Case Study", ASCE's Journal of Bridge Engineering. ASCE, Vol. 18, No. 10, October 2013, pp. 1105-1117.

Razmi, J., Ladani, L. and Aggour, M.S. "Fatigue Crack Initiation and Propagation in Piles of Integral Abutment Bridges" Journal of Computer-Aided Civil and Infrastructure Engineering. Vol. 28, No. 5, May 2013, pp. 389-402.

Razmi, J., Ladani, L. and Aggour, M.S. "Finite Element Simulation of Pile Behavior Under Thermo-mechanical Loading in Integral Abutment Bridges", Journal of Structure and Infrastructure Engineering. Available on-line 2013.

Faryar, Behzad and Aggour, M.S. "Effect of Fiber Inclusion on Dynamic Properties of

Clay", Journal of Geomechanics and Geoengineering

Articles in Conf. Proceedings

Amir-Faryar, B. and Aggour, M.S. "Dynamic Properties of Fiber Reinforced Clay", Proceedings, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012, 7 pp

Amir-Faryar, B., Aggour, M.S., Naranji, E. and Agharazi, A. "Modification of Natural Period of a Clayey Site Using Fiber Improvements", Proceedings, 50th International Conference on Earthquake Engineering, Skopje, Macedonia, May 2013

Razmi, J. Aggour, M.S. and Ladani, L. "Analytical Determination of Pile Failure Due to Fatigue", Proceedings of the 7th New York City Bridge Conference, Aug. 26-27, 2013.

Amir-Faryar, B. and Aggour, M.S. "Fiber Reinforcement Optimization Using a Soil Approach", accepted for publication ASCE Geo-Congress 2014

## AMDE

Refereed Articles in Archival Journals

Somna, R., Jaturapitakkul, C. and Amde, A.M., "Effect of Ground Fly Ash and Ground Bagasse Ash on the Durability of Recycled Aggregate Concrete," Journal of Cement and Concrete Composites, Elsevier Limited, Oxford, United Kingdom, 34(2012) 848- 854

Amde, A.M. and Livingston, "Improved Neutron Based System for NDE of Salt Contamination and Moisture in Historic Masonry, The Journal of the American Masonry Society, Boulder, Colorado

A.M. Amde, A. Paraschos and L. Momena, "Bridge Approach Slabs", Journal of Civil Engineering Practice, Boston Society of Civil Engineers, ASCE

A Azzam, Y. ZHANG, A. M. Amde, R. A. Livingston, "Effect of Potassium on the kinetics of Delayed Ettringite Formation in Concrete", Journal of Zhejiang University

Amde, A.M., Hajnajib, R. and Paraschos, A., "Predrilled Holes in Skewed Integral Abutment Bridges," Journal of the Boston Society of Civil Engineers, ASCE.

Jhunyawhatt, T., Amde, A.M. and Paraschos, A., "Effects of Bridge Length and Span

Variations in Curved Integral Abutment Bridges," Journal of Civil Engineering and Construction Technology.

Articles in Conf. Proceedings

Amde, A.M. and Rogge, S., "Enhancing Durability of Pervious Concrete Through the Use of Admixtures," International Conference on Sustainability Challenges & Advances in Concrete Technology (SCACT 2012), Coimbatore, India, May 2-4, 2012. (Keynote Paper)

Amde, A.M., "Abating Acid Mine Drainage Through the Use of Fly Ash and Other Byproducts," Sustainability and Advances in Concrete Technology (SACT 2012), Calicut, India, May 7-8, 2012. (Keynote Paper)

Livingston, R.A., Azzam, A. and Amde, A.M., "The Use of the Coefficient of Variation to Distinguish Between Different Modes of Damage in Expansion Measurement Data," International Congress on Durability of Concrete, Trondheim, Norway, June 18-21, 2012.

Amde, A.M. and Livingston, "Improved Neutron Based System for NDE of Salt Contamination and Moisture in Historic Masonry, 15th International Brick and Block Masonry Conference (15IBMaC), Florianopolis, Brazil, June 3-6, 2012.

Amde, A.M. and Livingston, R.A., "Studies on Delayed Ettringite Formation," International Conference on Advances in Cement and Concrete Technology in Africa (ACCTA 2013), Johannesburg, January 28-30, 2013. (Keynote Paper)

Amde, A.M., Williams, K. and Livingston, R.A., "Influence of Fine Aggregate Lithology on Internal Sulfate Attack in High Early Strength Concrete," RILEM International Workshop on Performance-based Specification and Control of Concrete Durability, Zagreb, 11 - 13 June 2014.

A.M. Amde, H. Khong, R.A. Livingston and J.W. Newman, "micro-crack Detection In Concrete Using Laser Shearography," International Conference on Emerging Trends in Civil Engineering, ICETCE 2014, Hyderabad, 6-8th January, 2014.

Amde, A.M. and Livingston, R.A., "Mitigation of Internal Sulfate Attack in New and Old Concrete," Second International Conference on Advances in

Materials and Techniques in Civil Engineering, ICAMAT 2014, Coimbatore, 9-11 January, 2014. (Keynote paper) ICAMAT - 2014

Livingston, R.A., Amde, A.M. and McMorris, N. "Evaluation of the Q-factor as a Metric for Distributed Damage in Concrete," The American Society of Nondestructive Testing, 25-27, August, 2014.

Other Presentations at conferences, seminars, symposia & outside institutions

Amde, A.M., "Internal Sulfate Attack on Bridge Structures in Maryland," ACI Chapter, Addis Ababa, Ethiopia, January 2012.

Amde, A.M., "Nondestructive and Destructive Methods for Evaluation of Damage in Concrete Infrastructures," Distinguished Professor Ramakrishnan Endowment Lecture, Institution of Engineers, Coimbatore, 10 January, 2014

Livingston, R., Amde, A.M., et al., "Measurement of Concrete Damage Mechanics by Internal Friction and Laser Shearography," BAM Federal Institute for Materials Research and Testing, Berlin, 18 September, 2013.

Amde, A.M., "Studies On Delayed Ettringite Formation," Hunan University, Changsha, People's Republic of China, June 2013.

Amde, A.M., "Studies On Delayed Ettringite Formation," Sinoma Research Center, Beijing, People's Republic of China, June 2013

Amde, A.M., "Studies On Delayed Ettringite Formation," Zhejiang University of Science and Technology, Hangzhou, People's Republic of China, May 2013.

Amde, A.M., "Ethiopian Community Center in Maryland," The Civic Center, Silver Spring, Maryland, 6 April 2013. (Keynote Address)

Other Publications/Presentations

Amde, A.M. and Rogge, S., "Development of High Pervious Concrete Specifications for Maryland Conditions," Maryland State Highway Administration Research Report, Project Number SP009B4F, Final Report, February 2013, 125 pages

**AUSTIN**

Refereed Articles in Archival Journals

Delgoshai P. and Austin M.A., ``Software Patterns for Traceability of Requirements to Finite-State Machine Behavior," Tenth Annual Conference on Systems Engineering Research, St. Louis, Missouri, March 19-22, 2012.

Johnnie J., Austin M.A., Sriram G., Conway M. and Misra A., ``Systems Engineering and Metabolic Engineering: A Side-by-Side Comparison," Tenth Annual Conference on Systems Engineering Research, St. Louis, Missouri, March 19-22, 2012.

Delgoshai P. and Austin M.A., ``Software Patterns for Traceability of Requirements to Finite-State Machine Behavior: Application to Rail Transit Systems Design and Management," Fourteenth Annual International Symposium of The International Council on Systems Engineering, Rome, Italy, 2012.

Mosteller M., Austin M.A., Yang S., and Ghodssi R., ``Platforms for Engineering Experimental Biomedical Systems," Fourteenth Annual International Symposium of The International Council on Systems Engineering, Rome, Italy, 2012.

Austin M.A. and Johnson J., Compositional Behavior Modeling and Formal Validation of Canal System Operations with Finite State Automata,' Computer-Aided Civil and Infrastructure Engineering, Submitted December 2012

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#### Other Presentations at conferences, seminars, symposia & outside institutions

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**Aydilek**



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Aydilek A.H.\* (2012). "Geotextile Tubes in Dewatering Applications", (Invited Lecture), 1st International Ankara Geosynthetics Symposium, June 2012, Ankara, Turkey.

Aydilek A.H.\* (2012). "Geosynthetics in Sediment Control", (Invited Lecture), 1st International Ankara Geosynthetics Symposium, June 2012, Ankara, Turkey

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Aydilek A.H. "Recycled Concrete Aggregate Reuse in Highways", 11th Transportation Maritimes and Communication Conference, Istanbul, Turkey, September 2013.

Aydilek A.H. "Green Highways: Sustainable Construction Practices by Using Recycled Materials", invited lecture at Pennsylvania State University, State College, Pennsylvania, March 2013

#### Other Publications/Presentations

Aydilek A. H., Haider, I., Hatipoglu, M., and Cetin, B. (2013). "Development of Design Guidelines for Maryland Graded Aggregate Highway Base Materials", Report submitted to the Maryland State Highway Administration, 98 p.

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#### **AYYUB**

##### Full Books

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Monograph, Series Number CDRM 6, ASCE, Reston, VA, March 2012, 192 pp

Risk Analysis in Engineering and Economics, Chapman and Hall/CRC Press, second edition in press expected in 2014

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Ayyub, B. M., "Fundamentals of Risk Analysis," in Thermal Power Plant Performance Analysis, Springer Series in Reliability Engineering, Edited by Gilberto F de Souza, ISBN 978-1-4471-2308-8, pp. 147-187.

Kearney, M. S., Ayyub, B. M., Markham, K., and Ritter, J. A., "Summary of Breakout Session Discussion: Potential Solution Tracks, Research Needs and Directions," in Sea Level Rise and Coastal Infrastructure: Prediction, Risks, and Solutions, edited by B. M. Ayyub and M. Kearney, Council on Disaster Risk Management (CDRM) Monograph, Series Number CDRM 6, ASCE, Reston, VA, March 2012.

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Ayyub, B. M., "Systems Resilience for Multi-Hazard Environments: Definition, Metrics and

Valuation for Decision Making," Risk Analysis J., 1-16, DOI: 10.1111/risa.12093, 2013

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#### Articles in Conf. Proceedings

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Ayyub, B. M., "Electric Distribution Resilience: Is Undergrounding a Solution?" 6th Congress on Forensic Engineering, Panel Discussion: Resilience Engineering, San Francisco, CA, November 1, 2012.

Ayyub, B. M., "Systems Resilience for Multi-Hazard Environments: Definition, Metrics and Valuation for Decision Making," National Institute of Standards and Technology, Engineering Laboratory, December 19, 2012.

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Lombardo, F. T., and Ayyub, B. M., "Challenges on Adaptation to a Changing Climate: Wind Speed and Wave Height as Case Studies," 2013 Carbon Management

Technology Conference, AIChE, ASCE and ASME, Oct. 21-23, 2013 in Alexandria, VA

Ayyub, B. M., "Infrastructure Resiliency in a Changing Climate: Definition, Metrics and Valuation for Decision Making," 2013 Carbon Management Technology Conference, AIChE, ASCE and ASME, Oct. 21-23, 2013 in Alexandria, VA.

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## **BAECHER**

### Full Books

Ddzombak, D.A., et al., Corps of Engineers Water Resources Infrastructure: Deterioration, Investment, or Divestment? National Academies Press, Washington, 2012.

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Lu, Y, Cui, Q., Chen, X. and Baecher G.B. (2014). "Model for schedule risk evaluation of subsurface explorations," Transportation Research Board Record, Washington DC

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Baecher, G.B. (2013). "Spillway accidents and failures," HydroVision2013, Denver

### Involved in international collaboration

Baecher, G.B. (2013). "Simulating hydropower dam system risks," American Nuclear Society Winter Meeting, Washington DC, November

### Involved in international collaboration

### Other Presentations at conferences, seminars, symposia & outside institutions

T.H. Wu Distinguished Lecture, Ohio State University, "The Evolution of Engineering Risk Analysis," April 15, 2013, Columbus OH.

USACE Risk Management Center, "Recent developments in dam safety risk assessment," January 17, 2013, Denver CO  
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## **BRUBAKER**

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**GL CHANG**

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Lin, Y. and G. L. Chang, "Transit Priority Strategies for Multiple Routes under Headway-based Operations," *Journal of Transportation Research Record* 2356, 34-43, 2013

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Zhang, X. and G. L. Chang, "An optimization model for guiding pedestrian-vehicle mixed flows during an emergency evacuation." *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, DOI: 10.1080/15472450.2013.824763, 2013.

Zhang, X. and G. L. Chang, "Optimal Control

Strategies with an Extended CTM model for Massive Vehicular-Pedestrian Mixed Flows in the Evacuation Zone," *Journal of Advanced Transportation*, (2013), DOI: 10.1002/atr

Kim, W., Liu, Y., Chang, G. L., "A decision model for justifying the benefits of detour operation under non-recurrent congestion," *Journal of Transportation Engineering*, ASCE Vol. 139, NO. 1, 2013, 40-49

Xin Zhang, Gang-Len Chang. Optimal control strategies with an extended cell transmission model for massive vehicular- pedestrian mixed flows in the evacuation zone. *Journal of Advanced Transportation* , DOI: 10.1002/atr.1243, 2013

Yen-Yu Chen and Gang-Len Chang. A Macroscopic Signal Optimization Model for Arterials Under Heavy Mixed Traffic Flows. *IEEE Transactions on Intelligent Transportation Systems*, DOI: 10.1109/TITS.2013.2289961, 2013

Xin Zhang and Gang-Len Chang. A dynamic evacuation model for pedestrian-vehicle mixed-flow networks. *Transportation Research Part C: Emerging Technologies*, Vol. 40, pp: 75-92, 2013

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Xianfeng Yang, Gang-Len Chang and Saed Rahwanji. Development of a Signal Optimization Model for Diverging Diamond Interchange. *ASCE Journal of Transportation Engineering*, DOI: 10.1061/(ASCE)TE.1943-5436.0000657, 2013.

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Xianfeng Yang, Yang (Carl) Lu, Gang-Len Chang. A Dynamic Signal Priority Control Strategy to Mitigate the Off-ramp Queue Spillback to the Freeway Mainline Segment. Transportation Research Record: Journal of the Transportation Research Board (accepted), 2013

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Yang, X. and G. L. Chang, "Real-Time Traffic Queue Length Estimation at the Freeway Off-Ramp using Dual-Zone Dectors," Proceedings of 21st ITS World Congress, Detroit

Lu, Y. (Carl), M. Franz, G. L. Chang, "Exploring the Use of Advanced Traffic Management Systems (ATMS) to Mitigate Atypical Bottlenecks," ITS World Congress, Detroit

#### Other Presentations at conferences, seminars, symposia & outside institutions

Franz, M. and G. L. Chang, "Signal timing to prevent collisions in dynamic dilemma zones," presentation at 6th Regional Traffic Signal Forum & ITS MD Annual Meeting, 2012

Chang, G. L., "ATMS development and Implementation in the Capital Region," invited presentation at the ITS workshop by Northern Chiao-Tung university, May 2012.

Chang, G. L. and Yang, L., "Development of computer tools for preliminary design of unconventional intersection," at Maryland MDQI annual conference, Baltimore, 2012

Chang, G. L., and Y. Ku, "Planning and design tools for nonconventional intersections," presented at Intersections Joint Subcommittee of AHB65, AFB10, TRB 2012 annual conference, 2012

Zhang, L., G. L. Chang, and S. Zhu, "Meso or Micro? Integrating Positive Travel Demand and

Dynamic Supply Models for Advanced Planning Applications," presentation at 2013 Transportation Research Board 2013 annual conference, Washington DC

Chang, G. L. and J. I. Lan, "Development of a mixed-flow signal optimization software for urban network," invited presentation at Info Tech-2013 world congress conference, Dalian, China, June 2013

Franz, M. and G. L. Chang, "Design and Evaluation of an Intelligent Dilemma zone protection system for high-speed rural intersections," ITE mid-Atlantic Colonial annual conference, Baltimore, 2013

Chang, G. L., "Challenges and suggestions to East-Asia Transportation Professionals," keynote speech at East-Asia Transportation 2013 annual conference, 2013, Taipei, Taiwan

#### **P. CHANG**

##### Articles in Conf. Proceedings

Chang, P, and Liao, L. (2012) "A New Mobile Detection System of Real-time Structural Stability Determination Based on Multi-sensor Data Fusion," Geo-Com Conference 2012.

#### **CIRILLO**

##### Refereed Articles in Archival Journals

Cirillo, C., E. Cornelis and Ph.L. Toint. (2012) "A model of weekly labour participation for a Belgian synthetic population". Network and Spatial Economics, Volume 12(1), pp. 59-73.

Munger, D., P. L'Ecuyer, F. Bastin, C. Cirillo and B. Tuffin (2012) "Estimation strategies for complex discrete choice models".

Transportation Research part B, 46(2), pp. 305-320.

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Erdoan, S., Cirillo C. and JM Tremblay "An Analysis of Demand for Vanpooling and Implications on GHG Mitigation", International Journal of Sustainable Transportation.

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*Involved in international collaboration*

Hetrakul, P. and C. Cirillo (2014) "A latent class choice based model system for railway optimal pricing and seat allocation" Transportation Research part E, 61(1), pp.68-83.

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Beltway". Transportation Letters: the International Journal of Transportation Research. 6(1), pp. 23 -35

Liu, Y., Tremblay J.M. and C. Cirillo (2013) "An integrated model for discrete and continuous decisions with application to vehicle ownership, type and usage choices".

Urena Serulle, N. and C. Cirillo (2013) "Resilience of Transportation Systems: a framework of analysis" Transport Reviews (under 2nd review)

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Urena Serulle, N. and C. Cirillo (2013) "Measuring Accessibility to Safe Zones of Low Income Population in the Event of Localized Evacuation. Transportation Research Record.

Cherchi, E. and C. Cirillo (2013) "Understanding variability and habit in modal choices: a day to day, week to week analysis on panel data" Transportation Research Record

Cirillo, C., and L. Nguyen (2013) "Low income access to jobs: evidence of spatial mismatch in the Washington Metropolitan area"

Hetrakul, P. and C. Cirillo (2013) "Customer heterogeneity in revenue management for railways services"

Articles in Conf. Proceedings

Cirillo, C., Tremblay J.M. and Y. Liu (2013) "Ordered and unordered Discrete-Continuous Models: comparative analysis for household vehicle holding and mileage raveled decisions" Proceedings of 92nd TRB Transportation Research Board, Washington DC, January 2013.

Other Presentations at conferences, seminars, symposia & outside institutions

Advances in discrete choice modelling: non-parametric mixed logit and dynamic model estimation (applications to Revenue Management), KU-Leuven, Belgium, May 16, 2013

*Involved in international collaboration*

Course on Advanced Discrete Choice Models. National Chao Tong University, Taipei Taiwan. July 15-24, 2013.

*Involved in international collaboration*

Large scale model systems for national planning. Department of Transportation. Taiwan, July 23rd, 2013.

*Involved in international collaboration*

Introduction to large scale model systems - HEART Summer School. KTH, Stockholm (Sweden), September 4th, 2013.

*Involved in international collaboration*

Heterogeneity and dynamics in demand model for revenue management with an application to intercity railway pricing. Erasmus Business School, Rotterdam, NL, October 16th, 2013

Other Publications/Presentations

**CUI**

Refereed Articles in Archival Journals

Liu, X\*, Hsu, S\*. and Cui, Q. (2012). "Carbon Accounting Protocol in Construction". Carbon Management Technology Conference, Feb 7-8, 2012, Orlando, FL.

Lu, Y.\*, Jiang, X.\* and Cui, Q. (2012). "Green Value Chain: Evidence from the Construction Industry". 2012 Construction Research Congress, May 24, 2012, Lafayette, IN

Zhu, X.\* and Cui, Q. (2012). "Delivering Solar Highway Project: A Case Study". 2012 Construction Research Congress, May 24, 2012, Lafayette, IN.

Deng, Q\*. and Cui, Q. (2012). "Energy Performance Contracts and Guarantee Design", 2012 International Conference on Construction and Real Estate Management

(ICCREM 2012, October 1-2, 2012, Kansas City, MO.

Sharma, D.\* and Cui, Q. (2012). "Subsidy Allocation Mechanism for Successful Implementation of Green Contracting Strategies", Proceedings of International Group for Lean Construction (IGLC) 20th Conference, July 17-20, San Diego, CA.

Lu, Y. , Cui, Q. and Le, Y. "Turning Green to Gold in the Construction Industry: Fable or Fact?" ASCE Journal of Construction Engineering and Management, 139(8), 1026-1036

Liu, X., Cui, Q. and Charles Schwartz (2014) "Greenhouse Gas Emissions of Alternative Pavement Designs: Framework Development and Illustrative Application" Journal of Environmental Management.132, 313-322

Peng, W., Cui, Q., and Chen, J. (2014). "An Option Game Model for Optimizing Concession Terms and Public Subsidies on Public-Private Partnerships". " Transportation Research Record: Journal of the Transportation Research Board, National Academies (accepted).

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Articles in Conf. Proceedings

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Other Presentations at conferences, seminars, symposia & outside institutions  
Other Publications/Presentations

**DAVIS**

Refereed Articles in Archival Journals

O'Neill, S.W. and Davis, A.P. "Water



- Treatment Residual as a Bioretention Amendment for Phosphorus. I. Evaluation Studies," J. Environ. Eng, ASCE. 138(3) 318-327 (2012).
- O'Neill, S.W. and Davis, A.P. "Water Treatment Residual as a Bioretention Amendment for Phosphorus. II. Long-term Column Studies," J. Environ. Eng, ASCE. 138(3) 328-336 (2012).
- Davis, A.P., Traver, R.G., Hunt, W.F., Brown, R.A., Lee, R. and Olszewski, J.M. "Hydrologic Performance of Bioretention Stormwater Control Measures," J. Hydrologic Eng, ASCE. 17(5), 604-614 (2012).
- Zhang, L., Seagren, E.A., Davis, A.P., and Karns, J.S. "Effects of Temperature on Bacterial Transport and Destruction in Bioretention Media: Field and Laboratory Evaluations," Water Environ. Res. 84(6) 485-496 (2012).
- Hunt, W.F., Davis, A.P., and Traver, R.G. "Meeting Hydrologic and Water Quality Goals through Targeted Bioretention Design," J. Environ. Eng, ASCE. 138 (6) 698-707 (2012).
- Davis, A.P., Stagge, J.H., Jamil, E. and Kim, H. "Hydraulic Performance of Grass Swales for Managing Highway Runoff," Water Research, accepted for publication, 46(20), 6775-6786 (2012).
- Stagge, J.H., Davis, A.P., Jamil, E. and Kim, H. "Performance of Grass Swales for Improving Water Quality from Highway Runoff," Water Res., 46(20), 6731-6742 (2012).
- Centofanti, T., Siebecker, M.G., Chaney, R.L., Davis, A.P., Sparks, D.L. "Hyperaccumulation of nickel by *Alyssum corsicum* is related to solubility of Ni mineral species," Plant and Soil, 359 71-83 (2012).
- Franks, C.A., Davis, A.P., and Aydilek, A. "Geosynthetic Filters for Water Quality Improvement of Urban Stormwater Runoff," J. Environ. Eng, ASCE, 138 (10) 1018-1028 (2012).
- Sample, D.J., Grizzard, T.J., Sansalone, J., Davis, A.P., Roseen, R., Walker, J. "Assessing Performance of Manufactured Treatment Devices for the Removal of Phosphorus from Urban Stormwater," J. Environ. Mgmt 113 279-291 (2012).
- Broadhurst, C.L., Bauchan, G.R., Murphy, C.A., Tang, Y.-T., Pooley, C. Davis, A.P., Chaney, R.L. "Accumulation of Zinc and Cadmium and Localization of Zinc in *Picris divaricata* Vant," Environ. Exp. Bot., 87, 1-9 (2013).
- Olszewski, J.M. and Davis, A.P. "Comparing the Hydrologic Performance of a Bioretention Cell with Pre-Development Values," J. Irrig. Drain. Engg. 139(2), 124-130 (2013).
- Jones, P.S. and Davis, A.P. "Spatial Accumulation and Strength of Affiliation of Heavy Metals in Bioretention Media," J. Environ. Eng, ASCE, 139 (4) 479-487 (2013).
- Becker, J., Aydilek, A., Davis, A.P., and Seagren, E.A. "Evaluation of Leaching Protocols for Testing of High Carbon Fly Ash/Soil Mixtures," J. Environ. Eng, ASCE, 139 (5) 642-653 (2013)
- Ozkok, E., Davis, A.P., and Aydilek, A. "Leaching of As, Cr., and Cu from High Carbon Fly Ash/Soil Mixtures," J. Environ. Eng, ASCE, 139 (11) 1397-1408 (2013).*
- Franks, C.A., Aydilek, A. and Davis, A.P. "Modeling Hydraulic Conductivity of a Geotextile Filter during Suspended Solids Accumulation," Geosynthetics International, 20 (5) 332-343 (2013).
- Centofanti, T., Sayers, Z., Cabello-Conejo, M.I., Kidd, P., Nishizawa, N.K., Kakei, Y., Davis, A.P., Sicher, R.C., Chaney, R.L. "Zylem exudate composition and root-to-shoot nickel translocation in *Alyssum* species," Plant and Soil, 373 (1-2) 59-75 (2013).
- Liu, J. and Davis, A.P. "Phosphorus Speciation and Treatment using Enhanced Phosphorus Removal Bioretention," Environ. Sci. Technol, in press.
- Franks, C.A., Davis, A.P., and Aydilek, A. "Effects of Runoff Characteristics and Filter Type on Geotextile Stormwater Treatment," J. Irrig. Drain. Engg., in press.
- Broadhurst, C.L., Chaney, R.L., Davis, A.P., Cox, A., Kumar, K., Green, C.E. "Growth and Cadmium Phytoextraction by Swiss Chard, Maize, Rice, *Noccaea caerulea* and *Alyssum murale* in pH Adjusted Biosolids Amended Soils," Int. J. Phytoremediation, in press.

Articles in Conf. Proceedings

Davis, A.P. "Bioretention for Enhanced Nitrogen and Phosphorus Removal," Invited Talk, Transportation Research Board 91st Annual Meeting, Washington, DC, January 24, 2012.

Liu, J. and Davis, A.P. "Bioretention Retrofit for Enhanced Phosphorus Removal," ASCE World Environmental & Water Resources Congress '12, Albuquerque, NM, May 23, 2012.

Other Presentations at conferences, seminars, symposia & outside institutions

Davis, A.P. "Creating 'Green' Stormwater with Bioretention: Engineering, not Black Box," Invited Featured Speaker, Low Impact Development (LID) in Houston, Rice University, Houston, TX, February 26, 2013.

Gleason, D. and Davis, A.P. "Effective Stormwater Treatment using Recycled Material Media," ASCE World Environmental & Water Resources Congress '13, Cincinnati, OH, May 20, 2013

Peterson, I. and Davis, A.P. "Advanced Denitrification of Stormwater Runoff using Bioretention Systems," ASCE World Environmental & Water Resources Congress '13, Cincinnati, OH, May 22, 2013

Khorsha, G. and Davis, A.P. "Management of Nitrogen in Stormwater Runoff using a Modified Conventional Sand Filter," ASCE World Environmental & Water Resources Congress '13, Cincinnati, OH, May 22, 2013.

Davis, A.P. "'Green' Stormwater in the US: Some History," Keynote Speech, 16th IRCS Conference and International Symposium on Rainwater Utilization, Beijing/Nanjing, China, July 1, 2013.

Davis, A.P. "LID Research" & "Bioretention Media," Invited Panelist, 2013 International Low Impact Development Symposium, St. Paul, MN, August 19 and 20, 2013.

Liu, J. and Davis, A.P. "Bioretention Retrofit for Enhanced Phosphorus Removal," 2013

International Low Impact Development Symposium, St. Paul, MN, August 19, 2013.

Peterson, I. and Davis, A.P. "Advanced Denitrification of Stormwater Runoff using Bioretention Systems," 2013 International Low Impact Development Symposium, St. Paul, MN, August 19, 2013.

Li, L. and Davis, A.P. "Nitrogen Sources and Stormwater Composition in Urban Catchments," 2013 International Low Impact Development Symposium, St. Paul, MN, August 20, 2013.

Khorsha, G. and Davis, A.P. "Retrofitting a Conventional Sand Filter for Capture and Complete Nitrification of Influent Nitrogen in Stormwater Runoff," 2013 International Low Impact Development Symposium, St. Paul, MN, August 21, 2013

Other Publications/Presentations

**FORMAN**

Full Books

Forman, B. A., R. H. Reichle, and M. Rodell, "Assimilation of terrestrial water storage from GRACE in a snow-dominated basin," *Water Resources Research*, 48(1), doi:10.1029/2011WR011239, 2012.

Forman, B. A. and S. A. Margulis, "Impact of covariance localization on ensemble estimation of surface downwelling longwave and shortwave radiation fluxes," *Journal of Hydrometeorology*, 13(4), doi:10.1175/JHM-D-11-073.1, 2012.

Forman, B. A., R. H. Reichle, and C. Derksen. "Estimating passive microwave brightness temperature over snow-covered land in North America using a land surface model and an artificial neural network," *IEEE Transactions on Geoscience and Remote Sensing*, doi:10.1109/TGRS.2013.2237913, 2013.

Forman, B. A. and R. H. Reichle. Using a support vector machine and a land surface model to estimate large-scale passive microwave brightness temperatures over snow-covered land in North America," *IEEE*

Journal of Selected Topics in Applied Earth Observations and Remote Sensing, In Review.

Articles in Conf. Proceedings

Forman, B. A., R. H. Reichle, and M. Rodell. GRACE assimilation in a snow dominated basin, American Meteorological Society Annual Meeting, New Orleans, Louisiana, United States, 2012

Toure, A. M., R. H. Reichle, B. A. Forman, G. M. J. De Lannoy. Assimilation of MODIS snow cover fraction observations into the NASA GEOS-5 land data assimilation system, MODIS Science Meeting, Silver Spring, Maryland, 2012

Forman, B. A., R. H. Reichle, and C. Derksen. AMSR-E brightness temperature estimation using a land surface model and an artificial neural network, Eastern Snow Conference, Claryville, New York, United States, 2012.

Forman, B. A. and R. H. Reichle. Passive microwave brightness temperature prediction over snow-covered land using an artificial neural network and a land surface model, American Geophysical Union Annual Meeting, San Francisco, California, United States, 2012.

Forman, B. A. and R. H. Reichle. The spatial scale of model errors and assimilated retrievals in a terrestrial water storage assimilation system, American Meteorological Society Annual Meeting, Austin, Texas, United States, 2013.

Li, R., C. W. Schwartz, and B. A. Forman. Sensitivity of predicted pavement performance to climate properties, American Society of Civil Engineers Airfield and Highway Pavement Conference, Los Angeles, California, United States, 2013.

Forman, B. A. and R. H. Reichle. AMSR-E brightness temperature estimation using a land surface model and a support vector machine, 70th Eastern Snow Conference, Huntsville, Ontario, Canada, 2013.

Xue, Y. and B. A. Forman. Sensitivity analysis of artificial neural network (ANN) brightness temperature predictions: A case study over snow-covered regions in North America using the Advanced Microwave Sounding Radiometer (AMSR-E), 70th Eastern Snow Conference, Huntsville, Ontario, Canada,

2013.

Tarik, S. B., B. A. Forman, G. De Lannoy, and R. H. Reichle. Evaluation of the NASA microwave radiative transfer model for soil moisture estimation using Aquarius brightness temperature observations, American Geophysical Union Annual Meeting, San Francisco, California, United States, 2013

Forman, B. A. and R. H. Reichle. Estimating passive microwave brightness temperature over snow-covered land in North America using a land surface model and a support vector machine, American Geophysical Union Annual Meeting, San Francisco, California, United States, 2013

Xue, Y. and B. A. Forman. Sensitivity analysis of artificial neural network (ANN) brightness temperature predictions over snow-covered regions in North America using the Advanced Microwave Sounding Radiometer (AMSR-E) from 2002 to 2011, American Geophysical Union Annual Meeting, San Francisco, California, United States, 2013.

Schwartz, C. W., B. A. Forman, and R. Li. Climate data for mechanistic-empirical pavement design, International Society for Asphalt Pavements Conference, Raleigh, North Carolina, United States, 2014.

Other Presentations at conferences, seminars, symposia & outside institutions

Forman, B. A.. Control theory and machine learning applications in hydrology, University of Virginia Engineering Seminar Series, Charlottesville, Virginia, United States, 2012.

Forman, B. A., Global freshwater: A view from space, UMD Sustainability Seminar, College Park, Maryland, United States, 2013.

Other Publications/Presentations

**GABRIEL**  
Full Books

S.A. Gabriel, A.J. Conejo J.D. Fuller, B.F. Hobbs, C. Ruiz, Complementarity Modeling In Energy Markets, Springer, 2013 (came out in July 2012 but officially the copyright is 2013)

Chapters in Books

S.A. Gabriel, Complementarity Applications with Emphasis on Infrastructure Models, Encyclopedia of Operations Research and

Management Science, S.I. Gass and M.C. Fu, eds., Springer, NY, 2013, 206-219

S.A. Gabriel, A. Moe, K.E. Rosendahl, M. Tsygankova, 2013. "The Likelihood and Potential Implications of a Natural Gas Cartel", Handbook on Energy and Climate Change, Edward Elgar Publishing Limited, Cheltenham, UK.

*Involved in international collaboration*

Refereed Articles in Archival Journals

S.A. Gabriel, K.E. Rosendahl, R. Egging, H. Avetisyan, S. Siddiqui, 2012. "Cartelization in Gas Markets: Studying the Potential for a 'Gas OPEC' ," Energy Economics, 34(1), 137-152.

J. Eckhause, S.A. Gabriel, D. R. Hughes, 2012. "An Integer Programming Approach for Evaluating R&D Funding Decisions with Optimal Budget Allocations," IEEE Transactions on Engineering Management, 59(4), 679-691.

Y. Shim, M. Fodstad, S. A. Gabriel, A. Tomasgard, 2012. "A Branch-and-Bound Method for Discretely-Constrained Mathematical Programs with Equilibrium Constraints," January 2011, in review, Annals of Operations Research, doi: 10.1007/s10479-012- 1191-5

C. Ruiz , A.J. Conejo, S.A. Gabriel, 2012. "Pricing Non-Convexities in an Electricity Pool," IEEE Transactions on Power Systems, 27(3), 1334-1342.

S. Siddiqui and S.A. Gabriel, 2012. "An SOSI-Based Approach for Solving MPECs with a Natural Gas Market Application," Networks and Spatial Economics, pp. 1-23, doi:10.1007/s11067-012-9178-y.

A. Mortazavi, S. Azarm, S.A. Gabriel, 2012. "Adaptive Gradient Assisted Robust Design Optimization Under Interval Uncertainty," Engineering Optimization, DOI: 10.1080/0305215X.2012.734818.

S.A. Gabriel, A.J. Conejo, C. Ruiz, Sauleh Siddiqui , 2012. "Solving Discretely-Constrained, Mixed Linear Complementarity Problems with Applications in Energy, " Computers and Operations Research, published online, <http://dx.doi.org/10.1016/j.cor.2012.10.017>

S.A. Gabriel, S. Siddiqui, A.J. Conejo, C. Ruiz, 2013, "Discretely-Constrained, Nash-Cournot Games in Energy," Networks and Spatial Economics, 13(3), 307-326.

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D. Huppmann, S.A. Gabriel, F. U. Leuthold, 2013. A Note of Allowing Negative Energy Prices in a Discretely Constrained MPEC," corrigendum to S.A. Gabriel, F.U. Leuthold, 2010. "Solving Discretely-Constrained MPEC Problems with Applications in Electric Power Markets," Energy Economics, 32, 3-14.

*Involved in international collaboration*

S.Moryadee, S.A. Gabriel, H.G. Avetisyan, "Investigating the Potential Effects of U.S. LNG Exports on Global Natural Gas Markets, Energy Strategy Reviews, 2013.

S.A. Gabriel, C. U-tapao, C. Peot, M. Ramirez, "A Multi-Objective, Mixed-Integer Optimization Model for Biosolids-Energy Management: Case Study for the District of Columbia Water and Sewer Authority," submitted to J. of Env. Eng., May, 2013.

C. Ruiz, A.J. Conejo, J.D. Fuller, S.A. Gabriel, B.F. Hobbs, "Complementarity Models for Decision Making in Energy Markets," submitted Spring 2013.

*Involved in international collaboration*

Iliana Shandurkova and S.A. Gabriel, "Electricity Retailer's Behavior in a Highly Competitive and Smart-Grid-Dominated Electricity Market," submitted Spring 2013.

*Involved in international collaboration*

C. U-tapao, S.A. Gabriel, C. Peot, and M. Ramirez, "A Stochastic, Multiobjective, Mixed-Integer Optimization Model for Management of Wastewater-Derived Energy," submitted to J. of Energy Engineering, January, 2013

C. U-tapao, S.A. Gabriel, C. Peot, and M. Ramirez, "A Stochastic MPEC for Sustainable Wastewater Management," submitted to EURO Journal on Computational Optimization, August, 2013.

Other Presentations at conferences, seminars, symposia & outside institutions

A New Method for MPECs with a Natural Gas Application, keynote talk at Workshop on Managing Uncertainty in Energy Systems and Markets, Oppdal, Norway, March 21-25, 2012. (invited keynote talk)

Models for the Energy Sector with a Focus on Renewables Integration, keynote talk at Workshop: Modellgestützte Analysen für die Strommarktgestaltung zur Integration erneuerbarer Energien im Rahmen der Energiewende (MASMIE)“ Stiftung Mercator, DIW, Berlin, Germany, October 12, 2012. (invited keynote talk)

Analysis of the U.S. Shale Gas Exports in Natural Gas Global Markets, presentation to Electricité de France, Paris, France, May 30, 2012 (with Seksun Moryadee and Hakob Avetisyan).  
[http://www.isr.umd.edu/news/news\\_story.php?id=6661](http://www.isr.umd.edu/news/news_story.php?id=6661)

Analysis of the U.S. Shale Gas Exports in Natural Gas Global Markets, presentation to Chinese State Grid (ERISG), Beijing, China, 25, 2012 (with Seksun Moryadee and Hakob Avetisyan).  
[http://www.isr.umd.edu/news/news\\_story.php?id=6661](http://www.isr.umd.edu/news/news_story.php?id=6661)

Analysis of the U.S. Shale Gas Exports in Natural Gas Global Markets, presentation to China National Petroleum Corporation (CNPC), Beijing, China, 26, 2012 (with Seksun Moryadee and Hakob Avetisyan).  
[http://www.isr.umd.edu/news/news\\_story.php?id=6661](http://www.isr.umd.edu/news/news_story.php?id=6661)

Analysis of the U.S. Liquefied Natural Gas Exports in Natural Gas Global Markets, presentation to U.S. Department of Energy, Washington, DC, July 26, 2012 (with Seksun Moryadee and Hakob Avetisyan).  
[http://www.isr.umd.edu/news/news\\_story.php?id=6661](http://www.isr.umd.edu/news/news_story.php?id=6661)

A New Method for MPECs with a Natural Gas Application, ISMP 2012, Berlin, Germany, August 19-24, 2012 (with Sauleh Siddiqui).

Investigation of European Gas Market: Nord Stream, South Stream, and Southern Corridor Pipeline Cases, Electricité de France, October 11, 2012 (with Seksun Moryadee and Hakob Avetisyan).

The Impact of Carbon Costs on the Global Natural Gas Market, INFORMS Phoenix, Arizona, October 14-17, 2012 (with Hakob Avetisyan-presenter).

A Stochastic Optimization Model with Varying Objectives for Renewable Energy Investment at AWTP, INFORMS Phoenix, Arizona, October 14-17, 2012 (with Chalida U-tapao-presenter).

Investigation of European Gas Market: Nord Stream, South Stream, and Southern Corridor Pipeline Cases, INFORMS Phoenix, Arizona, October 14-17, 2012 (with Seksun Moryadee and Hakob Avetisyan).

Network Equilibrium Models with a Focus on Energy, Intelligent Automation, Inc. Colloquia Series, The Institute for Systems Research, University of Maryland, College Park, MD USA February 6, 2013.

Network Equilibrium Models with a Focus on Energy, Auburn University, Alabama, Feb. 13 2013.

An SOS1-based Approach for Solving MPECs with Applications in Energy (with S. Siddiqui and C. U-tapao), GERAD, Montréal, Canada, February 28, 2013.

*Involved in international collaboration*

Selected Recent Results in Global Gas Market Modeling, 10th Computational Management Science Meeting, Montréal, Canada, May 1, 2013.

*Involved in international collaboration*

Energy Price Forecasting with Spikes (with Jean Andre, Kim Levy, Baptiste Salasc\*, Alexana Cranmer), EURO Conference, Rome, Italy, July 3 2013. \*=presenter

*Involved in international collaboration*

An SOS1-based Approach for Solving MPECs with Applications in Energy, EURO 2013 Conference, Rome, Italy, July 3, 2013 (with C. U-tapao, S. Siddiqui).

MPECS with Energy Applications (lead talk for Mini-Symposium on Applications and Solutions for Non-convex Stochastic Programs), 13th International Conference on Stochastic Programming, Bergamo, Italy, July 8, 2013 (with C. U-tapao and S. Siddiqui).

*Involved in international collaboration*

A Discretely-Constrained MPEC from the Natural Gas Industry—How to Solve It, 13th International Conference on Stochastic Programming, Bergamo, Italy, July 8, 2013 (with M. Fodstad, Y. Shim, and A. Tomasgard).

*Involved in international collaboration*

Energy policy environment in the United States: A state level assessment. LinkS Meeting. Final project meeting of the LinkS project, Oslo, Norway, August 2013 (with and A. Blohm).

*Involved in international collaboration*

Estimating the accessible Marcellus shale gas resource subject to land use patterns and regulatory requirements. LinkS Meeting. Final project meeting of the LinkS project, Oslo, Norway, August, 2013 (with A. Blohm).

*Involved in international collaboration*

Analysis of Future LNG Infrastructure Capacity Using the World Gas Model, 4th International Conference on Computational Logistics, Copenhagen Denmark Sep 25, 2013 (with S. Moryadee\*). \*=presenter

The Competition in the European Gas Market: Using the World Gas Model (2012 and 2014 Versions), The Changing World of Natural Gas Workshop, National Research University, Higher School of Economics, Moscow, Russia, September 27, 2013 (with

S. Moryadee).

Analyzing LNG Capacity Requirements Globally Using the World Gas Model, INFORMS Annual Meeting 2013 Minneapolis, Minnesota, Oct 7, 2013 (with S. Moryadee).

Analyzing LNG Capacity Requirement Globally Using the World Gas Model 2014" EMF 31: North American Natural Gas & Energy Markets in Transition, October 30, 2013 (with S. Moryadee).

#### Other Publications/Presentations

##### **Goulias**

##### Refereed Articles in Archival Journals

Karimi, S., D. G. Goulias and C. Schwartz, Evaluation of Superpave HMA mixture properties at the plant versus behind the paver: Statistical Comparison of QC and QA data. ASCE Transportation Engineering Journal. American Society of Civil Engineers, Reston Virginia. TEENG-1134R2, J. Transp. Eng., 138(7), 924-932.

Karimi, S., D. Goulias and C. Schwartz. "Risk and Expected Pay Factor Analysis for Assessing Gap and Dense Graded Superpave Mixture Specifications." International Journal of Pavement Engineering, Vol. 00, No. 0, 13-24, GPAV 2013 (0197).

Khosravifar, S., C. Schwartz, and D. Goulias. "Mechanistic Structural Properties of Foamed Asphalt Stabilized Base Materials." International Journal of Pavement Engineering, Vol. 00, No. -0, 1-12, GPAV 2013 (0236).

Upadhyaya, S., D. Goulias, and K. Obla. "Maturity Based Field Strength Predictions of Sustainable Concrete Using High Volume Fly Ash as Supplementary Cementitious Material." ASCE Materials Journal. American Society of Civil Engineers, Reston, Virginia.

Kim, H., and D. Goulias. "Shrinkage Behavior of Sustainable Concrete with Crushed Returned Concrete Aggregate." ASCE Materials Journal. American Society of Civil

Engineers, Reston, Virginia.

Awoke, G., and D. Goulias. "Pavement Friction Analysis and Prediction of Deterioration Rate and Friction Life." ASCE Transportation Journal. American Society of Civil Engineers, Reston, Virginia.

Awoke, G., and D. Goulias. "Relating Pavement Friction and Mixture Properties through Partial Least Squares Analysis." ASCE Transportation Journal. American Society of Civil Engineers, Reston, Virginia.

#### Articles in Conf. Proceedings

Khosravifar S., D. Goulias, and C. Schwartz, "Laboratory Evaluation of Foamed Asphalt Stabilized Base Materials," Geo- Congress 2012 - State of the Art and Practice in Geotechnical Engineering. Oakland, CA, March 26-29, 2012.

Khosravifar S., C. Schwartz and D. Goulias, 'Foamed Asphalt Stabilized Base: A Case Study' for the Highway Topic of the TDI 2013 , Airfield & Highway Pavement Conference in Los Angeles, CA, June 9-12, 2013

Khosravifar S., C. Schwartz and D. Goulias, "Mechanistic Structural Properties of Foamed Asphalt Stabilized Base Materials." TRB Paper 13-2544, Transportation Research Board, Washington D.C., January 13-17, 2013.

Khosravifar S., C. Schwartz and D. Goulias, "Time-Dependent Stiffness Increase of Foamed Asphalt Stabilized Base Material," BCRRA Bearing Capacity of Roads, Railways and Airfield, Norway, June 25-27, 2013.

Goulias D., and S. Karimi, "Variability Analysis and OC Curves for Assessing Contractor and Agency Risks Associated with Construction Materials Acceptance." 3rd Annual International Conference on Civil Engineering, Greece, 10-13 June 2013.

#### Other Presentations at conferences, seminars, symposia & outside institutions

Goulias D. "Characterization & Performance of Highway Materials: Behavior, NDT, Durability Assessment & Fatigue Modeling." Shortcourse, Politecnico di Torino, Torino, Italy, June 19 & 20, 2014.

*Involved in international collaboration*

Goulias D. "Quality Assurance/ Quality Control of Highway Materials, Expected Pay & Risk Analysis." Shortcourse, Politecnico di Torino, Torino, Italy June 26 & 27, 2014

*Involved in international collaboration*

#### Other Publications/Presentations

##### **HAGHANI**

#### Refereed Articles in Archival Journals

Aliari Kardede, Y. and A. Haghani, 2011, "Using Bluetooth Sensor Data for Ground-Truth Testing of Reported Travel Times," Transportation Research Record 2038, Journal of Transportation Research Board, pp. 167-172.

Qiao\*, W., A. Haghani, and M. Hamedi, 2011, "Short Term Travel Time Prediction Considering the Weather Impact," Transportation Research Record 2308, Journal of Transportation Research Board, pp. 61-72.

Afshar\*, A, and A. Haghani, 2011, "Modeling Integrated Supply Chain Logistics in Real-Time Large-Scale Disaster Relief Operations," Socioeconomic Planning Sciences, Volume 46, No. 4, pp. 327-338.

Haghani, A., and M. Hamedi, 2013, "Application of Bluetooth Technology in Traffic Detection, Surveillance and Traffic Management," Journal of Intelligent Transportation Systems, Volume 17, No. 2, pp. 107-109

Qiao\*, W., A. Haghani, and M. Hamedi, 2013, "A Non-Parametric Model for Short-Term Travel Time Prediction Using Bluetooth Data," Journal of Intelligent Transportation Systems, Volume 17, No. 2, pp. 165-175

Sun, Z., X. H. Li, W. Qiao, and A. Haghani, 2013, "Entropy-Based Performance Evaluation on Institutional Structures of Trunk Highway Management: Case Study in

China," *Transport Policy*, No. 27(c), pp. 85-91.

*Involved in international collaboration*

Daneshgar\*, F., A. Haghani, and S. Mattingly, 2013, "Evaluating Beat Structure and Truck Allocation for the Tarrant County Courtesy Patrol," *Transportation Research Record 2334 Volume 2, Journal of Transportation Research Board*, pp. 40-49

Asudegi\*, M., and A. Haghani, 2013, "Optimal Number and Location of Node-Based Sensors for Travel Time Data Collection in Networks," *Transportation Research Record 2338, Journal of Transportation Research Board*, pp. 35-43

Zhang\*, Y., R. Sun, A. Haghani, and X. Zeng, 2013, "Univariate Volatility Based Models for Improving Quality of Travel Time Reliability Forecasting," *Transportation Research Record 2365, Journal of Transportation Research Board*, pp.73-81.

*Involved in international collaboration*

Lu\*, Y., A. Haghani, and W. Qiao, 2013, "A Macroscopic Traffic Flow Model for Real-Time Traffic State Estimation along Signalized Arterial Corridor," Accepted for publication in *Transportation Research Record, Journal of Transportation Research Board*.

Zhang\*, Y., A. Haghani, and R. Sun, 2014, "Stochastic Volatility Modeling Approach to Account for Uncertainties in Travel Time Reliability Forecasting," Accepted for publication in *Transportation Research Record, Journal of Transportation Research Board*

Zhang\*, Y., Y. L. Zhang, and A. Haghani, and X. Zeng, 2014, "A Hybrid Short-Term Traffic Flow Forecasting Method Based on Spectral Analysis and statistical Volatility Model," Accepted for Publication in *Transportation Research Part C*.

Shafahi, A., and A. Haghani, 2014, "Modeling Contractors' Project Selection and Markup Decisions influenced by Eminence," Accepted for publication in *International*

*Journal of Project Management*, <http://dx.doi.org/10.1016/j.ijproman.2014.01.013>.

Articles in Conf. Proceedings

Parvan\*, K., H. Rahmandad and A. Haghani, 2012, "Estimating the Impact Factor of Undiscovered Design Errors on Construction Quality," *Proceedings of the 30th International Conference of the System Dynamics Society*, July 22-26, St. Gallen, Switzerland.

Lu\*, Y., Qiao, W., and A. Haghani, 2012, "Game Theoretic Approach over a Hazardous Material Transportation Network," *Proceedings of the 12th COTA International Conference of Transportation Professionals (CICTP)*, Beijing, China, pp. 3558-3569

Zoto, J., R.J. La, M. Hamedi, and A. Haghani, 2012, "Estimation of Average Vehicle Speeds Traveling on Heterogeneous Lanes Using Bluetooth Sensors," *Proceedings of the 76th IEEE Vehicular Technology Conference*, Quebec City, Canada, September 3- 6.

Hamedi, M., A. Haghani, and S. Yang, 2012, "Reliable Transportation of Humanitarian Supplies in Disaster Response: Model and Heuristic," *Proceedings of the 2012 Energy Efficient Transportation Networks Conference (Procedia-Social and behavioral Sciences)*, September 10-13, Cite Descartes, France, pp. 1205-1219.

Sadabadi\*, K.F., and A. Haghani, 2012, "First Order Velocity Based Travel Time Model," *Proceedings of the Intelligent Transportation Systems Conference, IEEE, Anchorage, Alaska*, September 16-19.

Sadabadi\*, K.F., and A. Haghani, 2012, "Indirect Travel Time Data Validation Using Higher Order Crossings Analysis," *Proceedings of the 19th World Congress on Intelligent Transportation Systems, Vienna, Austria*, October 22-26.

Qiao\*, W., Y. Lu, C. F. Xiong, and A. Haghani, 2012, "Measurement of Transport Network Vulnerability from the System Prospective: A Game Theory Approach," *Proceedings of the 5th International Symposium on*



Transportation Network reliability, Hong Kong, China.

Sadrsadat\*, H., H. Poorzahedi, A. Haghani, and E. Sharifi, 2012, "Bus Network Design Using Genetic Algorithm," Proceedings of the 53rd Annual Transportation Research Forum, Tampa, FL, March 15-17.

Shafahi\*, A., and A. Haghani, 2013, "A Linearization Approach for Project Selection with Interdependencies in Resource Costs," Proceedings of the 2nd International Conference on Operations Research and Enterprise Systems (ICORES), Barcelona, Spain, February, SciTePress, pp. 230-235.

Asudegi\*, M., and A. Haghani, 2013, "A Predictive-Reactive Dynamic Scheduling under Projects' Resource Constraints for Construction Equipment," Proceedings of the 2nd International Conference on Operations Research and Enterprise Systems (ICORES), Barcelona, Spain, February, SciTePress, pp. 334-337.

Hamed, M., A. Haghani, and Y. R. Zhang, 2013, "Travel Time Reliability Measurement Sensitivity to Data Source Selection," Proceedings of the 17th IRF World Meeting and Exhibition, Riyadh, Saudi Arabia, November 9-13

Norouzi\*, A., A. Haghani, M. Hamed, and K. Ghoseiri\*, 2013, "Impact of Dynamic Message Signs on Occurrence of Road Accidents," Proceedings of the 2013 ITS World Congress, Tokyo, Japan.

Olarte\*, R., and A. Haghani, 2013, "Metering for Special Use Lanes Via Lotteries," Proceedings of the 17th IRF World Meeting and Exhibition, Riyadh, Saudi Arabia, November 9-13.

Kim\*, T., A. Haghani, and H. Kim, 2013, "Algorithm for one-to-one time dependent shortest path on real networks," 92nd Annual Meeting of the Transportation Research Board Compendium of Papers, Washington DC.

*Involved in international collaboration*

Sadabadi\*, K.F., and A. Haghani, 2013, "Travel Time Based Freeway Flow Estimation: A Case of Two Detector Problem," 92nd Annual Meeting of the Transportation Research Board Compendium of Papers, Washington DC

Qiao\*, W., A. Haghani, M. Hamed, and C. F. Shao, 2013, "Freeway Path and Multi-Step Ahead Travel Time Prediction under Various Weather Scenarios," 92nd Annual Meeting of the Transportation Research Board Compendium of Papers, Washington DC

Sadrsadat\*, H., A. Haghani, and E. Sharifi, 2013, "The Inventory Routing Problem with Third-Party Logistics," 92nd Annual Meeting of the Transportation Research Board Compendium of Papers, Washington DC.

Park, H., X. Zhang, and A. Haghani, 2013, "ATIS: Interpretation of Bayesian Neural Network for predicting the duration of detected incidents," 92nd Annual Meeting of the Transportation Research Board Compendium of Papers, Washington DC

Asudegi\*, M., and A. Haghani, 2013, "Dynamic Demand Management with Real-Time Pricing in Smart Grid," Federal Energy Regulatory Commission (FREC) workshop and Annual Transatlantic Infraday Conference, Washington, DC, November

Park\*, H., A. Haghani, and M. Hamed, 2013, "Quantifying Non-recurrent Congestion Impact on Secondary Incidents Using Probe Vehicle Data," Proceedings of the 54th Annual Transportation Research Forum, Annapolis, MD, [http://www.trforum.org/forum/downloads/2013\\_proceedings.pdf](http://www.trforum.org/forum/downloads/2013_proceedings.pdf).

Park\*, H., A. Haghani, and M. Hamed, 2013, "Real-Time Filtering of Vehicle Probe Data for secondary Incident Prediction," Proceedings of the 8th Triennial Symposium on Transportation Analysis (TRISTAN VIII), San Pedro de Atacama, Chile, [http://www.isci.cl/tristan/data/Traffic/TRISTAN8\\_paper\\_146.pdf](http://www.isci.cl/tristan/data/Traffic/TRISTAN8_paper_146.pdf).

Sun, Z., X. H. Li, and A. Haghani, 2013,

"Influence of Fuel Price and Tax Reform on Investment and Financing of Trunk Highways: A Case Study in China," Proceedings of the 54th Annual Transportation Research Forum, Annapolis, MD

Other Presentations at conferences, seminars, symposia & outside institutions

Ghoseir<sup>\*</sup>, K., A. Haghani, and M. Hamed, 2012, "Statistical Pattern Recognition for Real-Time Ridesharing," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Qiao<sup>\*</sup>, W., and A. Haghani, 2012, "Path and Multi-step Ahead Freeway Travel Time Prediction," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Lu<sup>\*</sup>, Y., and A. Haghani, 2012, "Calibrating Parameters of Traffic Flow Models Using a Particle Filter Ensemble Method," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Asudegi<sup>\*</sup>, M., and A. Haghani, 2012, "Dynamic Demand Management in Smart Grid," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Ahrari<sup>\*</sup>, A., and A. Haghani, 2012, "A Stochastic Decision Support System for Dynamic Integrated Project Scheduling and Equipment Operation Planning," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Sharifi<sup>\*</sup>, E., and A. Haghani, 2012, "Dispatching and Relocation of Heterogeneous Emergency Vehicles," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Shafahi<sup>\*</sup>, A., A. Haghani, and M. Hamed, 2012, "The Impact of Reputation on Project Selection," Presented at the Annual Meeting of the Institute for Operations Research and

the Management Science (INFORMS), Phoenix, Arizona, October 14-17.

Sadr<sup>\*</sup>, H., A. Haghani, and E. Sharifi<sup>\*</sup>, 2012, "The Inventory Routing Problem with Third Party Logistics", Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17

Qiao<sup>\*</sup>, W., and A. Haghani, 2012, "Path and Multi-step ahead Freeway Travel Time Prediction" Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Phoenix, Arizona, October 14-17

Zhang<sup>\*</sup>, Y., Y. Zhang, C. Shao, and A. Haghani, 2012, "Multivariate Short-Term Traffic Flow Forecasting: Multi-dimensional Scaling Combined GRNN Based Approach," Presented at the Innovations in Traffic Flow Theory and Characteristics and Highway Capacity and Quality of Service Symposium, June 19-22, Ft. Lauderdale, FL.

Sadr<sup>\*</sup>, H., H. Poorzahedi, A. Haghani, and E. Sharifi<sup>\*</sup>, 2012, "Bus Network Design using Genetic Algorithm", Presented at the 53th Annual Transportation Research Forum, Tampa, Florida, March 15-17.

Haghani, A., 2012, "A Sustainable Wireless Sensor Network for Traffic Data Collection," Presented at the CICTP Conference, Beijing, China

Haghani, A., 2012, "Travel Time Prediction in Vehicle Probe Project," Keynote Speech, Presented at the 2012 International Seminar on China-America-Australia Intelligent Transportation System, Hangzhou, China.

Park<sup>\*</sup>, H., and A. Haghani, 2014, "Identification and Prediction of Secondary Crashes Using Vehicle Probe Data," Invited for presentation at the AFB20 Committee meeting at the 93rd Annual Meeting of the Transportation Research Board, Washington DC, January

Park<sup>\*</sup>, H., Y. Aliyari, and A. Haghani, 2013, "Stochastic and Dynamic Approaches for Optimal Placement of Portable Point-to-point Sensors," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Minneapolis, Minnesota, October 6-9 (Interactive/Poster competition top 5).

Zhang\*, Y. R., and A. Haghani, 2013, "Sensor Allocation along a Freeway Corridor for Travel Time Reliability Measurement," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Minneapolis, Minnesota, October 6-9

Olarte\*, R., and A. Haghani, 2013, "High-Occupancy/Toll Lanes with Lotteries and Auctions," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Minneapolis, Minnesota, October 6-9

Asudegi\*, M., and A. Haghani, 2013, "A real Time Algorithm for Demand Management in Smart Grid," Presented at the Annual Meeting of the Institute for Operations Research and the Management Science (INFORMS), Minneapolis, Minnesota, October 6-9

Park\*, H., and A. Haghani, 2013, "Identification and Prediction of Secondary Incidents," Presented at the 9th Annual US- Korea Conference, Civil Engineering Theme, August, Washington DC, January

Haghani, A., E. Sharifi, and H. Sadrsadat, 2013, "Active Relocation and Dispatching of Ambulance Department Heterogeneous Fleet," Presented at the 26th European conference on Operational Research, Rome, Italy, July 1-4

Sadrsadat\*, H., A. Haghani, and E. Sharifi, 2013, "The Inventory Routing Problem with Third-Party Logistics," Presented at the 92nd Annual Meeting of the Transportation Research Board, Washington DC, January.

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#### Other Publications/Presentations

Hamedi, M. and A. Haghani, 2012, "DDOT ITS Master Plan Task 3: Estimation of Real-Time Travel Time and Development of a Solution for Travel Time Display," Report prepared for District Department of Transportation.

Ahdi, F., M. Kalantari Khandani, M. Hamedi, and A. Haghani, 2012, "Traffic Data Collection

and Anonymous Vehicle Detection Using Wireless Sensor Networks," Report No. MD-12-SP009B4H, Maryland Department of Transportation State Highway Administration

Haghani, A., M. Hamedi, Kiavash Parvan, and Yang Lu, 2012, "I-95 Corridor Coalition Vehicle Probe Project: Validation of INRIX Data, Monthly Report, North Carolina," Monthly report prepared for the I-95 Corridor Coalition, June.

Haghani, A., M. Hamedi, K.F. Sadabadi, Kiavash Parvan, and Yang Lu, 2012, "I-95 Corridor Coalition Vehicle Probe Project: Validation of INRIX Data, Monthly Report, Rhode Island," Monthly report prepared for the I-95 Corridor Coalition, April-May.

Haghani, A., S. Farzinfard, M. Hamedi, F. Ahadi, and M. Kalantari Khandani, 2013, "Automated Low-Cost and Real-Time Truck Parking Information System," Report No. MD-13-SP209B4M, Maryland Department of Transportation State Highway Administration

#### **LOVELL**

##### Refereed Articles in Archival Journals

Churchill, A.M. and D. J. Lovell. Coordinated aviation network resource allocation under uncertainty. *Transportation Research E*, vol. 48, no.1, pp. 19-33.

Churchill, Andrew M., Yorghos Tripodis, and David J. Lovell (2012). Sun glare impacts on freeway congestion: Geometric model and empirical analysis. *Journal of Transportation Engineering*, vol. 138, no.10, pp. 1196-1204.

Lovell, David J., Kleoniki Vlachou, Tarek Rabbani, and Alexandre Bayen (2013). A diffusion approximation to a single airport queue. *Transportation Research Part C: Emerging Technologies*, vol. 33, pp. 227-237.

Churchill, Andrew M., David J. Lovell, Avijit Mukherjee, and Michael O. Ball (2013). Determining the number of airport arrival slots. *Transportation Science*, vol. 47, no. 4, pp. 526-541

Shrestha, Deepak, David J. Lovell, and Yorghos Tripodis (2012). The effect of intended following duration on car-following

distance. Submitted to ASCE Journal of Transportation Engineering

Vlachou, Kleoniki, and David J. Lovell (2013). Mechanisms for equitable resource allocation when airspace capacity is reduced. Transportation Research Record 2325, pp. 97-102.

Mark L. Anderson, Jr., Christopher Y. Brown, Thomas A. Brubaker, Andrew M. Churchill, Sara K. Clarke, Gregory M. Crosswhite, Michael K. De Palatis, David A. Fried, Leslie C. Jones, Daniel A. Zelman, and David J. Lovell. "An electrophoretic display technology for selectively retroreflective signs and pavement markers." Submitted to ASCE J. Transp. Eng.

#### Articles in Conf. Proceedings

Jones, James, David J. Lovell, and Michael O. Ball (2012). Algorithms for Dynamic Resequencing of En Route Flights to Relieve Terminal Congestion. Proceedings of the 5th International Conference on Research in Air Transportation, Berkeley, CA, USA

Wang, R., Michael O. Ball, and David J. Lovell (2012). Ration-by-Weight of Efficiency and Equity: A new allocation method in ground delay program planning. Proceedings of the 5th International Conference on Research in Air Transportation, Berkeley, CA, USA.

C. Jones, D. J. Lovell, and M. O. Ball (2013). En route speed control methods for transferring terminal delay. Proceedings of the 10th USA/Europe Air Traffic Management Research and Development Seminar (ATM2013), Chicago, IL.

#### Other Presentations at conferences, seminars, symposia & outside institutions

Vlachou, D. J. Lovell, M. O. Ball (2013). Benefits analysis of improved strategic and operational flight predictability. INFORMS 2013, Minneapolis, MN

#### Other Publications/Presentations

### **McCUEN**

#### Chapters in Books

McCuen, R.H. "Hydrologic Modeling in 2050: Knowledge Requirements in a Multinonstationary Environment," chapter in

Environmental and Water Resources in 2050: A Vision and Path Forward." ASCE Press.

McCuen, R. H. "Creativity: An essential problem-solving tool for water resources in 2050," chapter in Environmental and Water Resources in 2050: A Vision and Path Forward," ASCE Press.

Olszewski, J. and McCuen, R. " Modeling of Wetland Systems" Chap. 11 of Handbook of Engineering Hydrology, pp. 233-245. 2013

#### Refereed Articles in Archival Journals

Rew, S. and McCuen, R.H. "Accuracy Assessment of Unit Hydrographs: Point vs. Spatially Integrated Input." J. Hydrologic Engineering, ASCE, V17(1): 23-31, Jan. 2012

Ezzell, E. and McCuen, R.H. "Dynamic Curve Numbers: Concept and Application." J. Flood Engineering, V3(1): 29-38, 20102

O'Dea, M., Graham, F. and McCuen, R. "Factors Important in Developing Regional Steel Corrosion Models." Intern. J. of Structural Engineering V. 2(3):1-10. 2012

Cook, L. and McCuen, R. "The Hydrologic Response of Solar Farms," ASCE J. Hydrologic Engineering. Vol 18(5):536-541. 2013

Bray, S. N. and McCuen, R. "Importance of Assumptions of Independence and Dependency between Multiple Flood Sources," (IN PRESS)

Govindaraju, R., McCuen, R, and Hantush, M. "Looking to the future of Hydrologic Engineering: ASCE J. of Hydrologic Engineering, 18(3): 297-298. 2013

Dicks, J. and McCuen, R. "Modeling the Building Life Cycle for Energy Sustainability Under Conditions of Uncertainty." J. Structural Engineering. (under review)

McCuen, R.H. and Klimesmith, D. "Detection and Adjustment of Nonstationary Corrosion Measurements" J. Structural Engineering. 2(2):9-15, 2013

McCuen, R., Sharkey, M. and Walker, A. "Trash Deposition in Streams and Rivers," ASCE J. of Hydrologic Engineering (in press)

Govindaraju, R., McCuen, R., and Hantush, M.

"Publishing in the Journal of Hydrologic Engineering," ASCE J. of Hydrologic Engineering, (in press)

Casey, M., Stagge, J., Moglen, G., and McCuen, R. "The Effect of Watershed Subdivision in Rainfall-Runoff Modeling," ASCE J. Hydrologic Engineering. (under review)

## Mi

### *Refereed Articles in Archival Journals*

Liu, Y., Mi, B. (2012). "Combined fouling of forward osmosis membranes: synergistic foulant interaction and direct observation of fouling layer formation." *Journal of Membrane Science*, 407-408, pp. 136-144.

Mi, B., Elimelech M. (2013) "Silica scaling and scaling reversibility in forward osmosis." *Desalination*, 312, 75-81.

Coronell, O., Mi, B., Mariñas, B.J., Cahill, D. (2013) " Modeling the Effect of Charge Density in the Active Layers of Reverse Osmosis and Nanofiltration Membranes on the Rejection of Arsenic(III) and Potassium Iodide." *Environmental Science and Technology*, 47 (1), pp. 420-428.

Liu, Y.\*, Ronsenfield, E.\*, Hu, M.\*, Mi, B. (2013) "Direct observation of bacterial deposition on and detachment from nanocomposite membranes embedded with silver nanoparticles." *Water Research*, 47 (9), pp. 420-428.

Hu, M.\*, and Mi, B. (2013). "Enabling graphene oxide nanosheets as water separation membranes." *Environmental Science and Technology*, 47(8), pp. 3715-3723

Wang, H., Zaghloul, M., Mi, B., Leng, Y., and Silver, J. (2013) "Development and evaluation of nanotechnology courses at The George Washington University." *Journal of Nano Education*, 5(1), pp. 79-84

Xiang, Y., Liu, Y.\*, Mi, B., Leng, Y. (2013). "Hydrated polyamide membrane and its interaction with alginate: A molecular

dynamics study." *Langmuir*, 29(37), pp. 11600-11608.

Yang, Q.#, Mi, B. (2013). "Nanomaterials for membrane fouling control: Accomplishments and challenges." *Advances in Chronic Kidney Disease*, 20(6), pp. 536-555.

Chen, S.C., Su, J., Fu, F.J., Mi, B., Chung, T.S. (2013). "Gypsum (CaSO<sub>4</sub>• 2H<sub>2</sub>O) Scaling on Polybenzimidazole and Cellulose Acetate Hollow Fiber Membranes under Forward Osmosis." *Membranes*, 3(4), pp. 354-374.

Yu, H.#, Kang, Y.\*, Liu, Y.\*, Mi, B. (2014). "Grafting polyzwitterions onto polyamide by click chemistry and nucleophilic substitution on nitrogen: A novel approach to enhance membrane fouling resistance." *Journal of Membrane Science*, 449(1), pp. 50-57

Liu, Y.\*, Mi, B. (2014). "Effects of organic macromolecular conditioning on gypsum scaling of forward osmosis membranes." *Journal of Membrane Science*, 450, pp. 153-161.

Gao, Y.#, Hu, M.\*, and Mi, B. (2014). "Membrane surface modification with TiO<sub>2</sub>-Graphene Oxide for enhanced photocatalytic performance." *Journal of Membrane Science*, 455, pp. 349-356.

Mi, B. (2014). "Graphene oxide membranes for ionic and molecular sieving." *Science*, 343(6172), pp. 740-742.

Hu, M.\*, and Mi, B. (2014). "Graphene oxide membranes: Layer-by-layer assembly via electrostatic interaction and elucidation of water and solute transport mechanisms." *Environmental Science and Technology*, submitted.

### *Articles in Conf. Proceedings*

Xiang, Y., Leng, Y., Liu, Y., Mi, B. (2012). "Integration of experiments and simulation to understand membrane-foulant interactions."

2012 North American Membrane Society Annual Meeting, New Orleans, LA, June10-13

Hu, M., Zhong, K., Ehrman, S.E., Mi, B. (2012). "Effects of particle morphology on the anti-microbial and anti-adhesion performances of silver embedded polysulfone membranes and rate of silver leaching." 2012 North American Membrane Society Annual Meeting, New Orleans, LA, June10-13.

Coronell, O., Mi, B., Mariñas, B.J.\*, Cahill, D. (2012) "Relating contaminant rejection by thin-film composite membranes to the charge density in membrane active layers." 2012 North American Membrane Society Annual Meeting, New Orleans, LA, June10- 13

Mi, B. (2013). "Surface modification of polyamide membranes using RAFT polymerization and click chemistry to inhibit biofouling in forward osmosis process." ICMAT2013 - The 7th International Conference on Materials for Advanced Technologies, Singapore, July 1-5.

Hu, M.\*, Mi, B. (2013). "Layer-by-layer assembly of cross-linked graphene oxide membranes." 2013 North American Membrane Society Annual Meeting, Boise, ID, June 8-12.

Liu, Y.\*, Emdadi, L., Liu, D., Mi, B. (2013). "Grafting zeolite nanoparticles onto polyamide membranes for enhanced antifouling performance in forward osmosis membrane processes." 2013 North American Membrane Society Annual Meeting, Boise, ID, June 8-12

Mi, B., Hu, M.\* (2013). "Graphene oxide membranes for water purification." Association of Environmental Engineering and Science Professors Meeting 50th Anniversary Conference, Golden, CO, July 14-16

Mi, B., Yu, H.-Y. (2013). "Grafting polyzwitterions to polyamide membranes for improved antifouling performance." 246th American Chemical Society National Conference, Indianapolis, IN, September 8-12.

Hu, M.\*, Mi, B. (2013). "Highly tunable graphene-oxide nanocomposite membranes." 246th American Chemical Society National Conference, Indianapolis, IN, September 8-12.

Kang, Y.\*, Mi, B. (2013). "Incorporation of graphene oxide into the polysulfone matrix to enhance the performance of ultrafiltration membranes." 246th American Chemical Society National Conference, Indianapolis, IN, September 8-12.

Other Presentations at conferences, seminars, symposia & outside institutions

Mi, B. (2012). Penn State University-Harrisburg, "Forward Osmosis Membrane Fouling: Mechanisms and Mitigation." Invited seminar, November 12

**MILLER HOOKS**

Refereed Articles in Archival Journals

Chen, L. and E. Miller-Hooks (2012). "Resilience in Intermodal Freight Transport Networks," volume 46, 109-123.

Kuo, A. and E. Miller-Hooks (2012). "Developing Responsive Rail Services through Collaboration," Transportation Research - Part B, 46(3), 424-439

Avetisyan, H., E. Miller-Hooks and S. Melanta (2012). "Decision Tools to Aid in Reducing Greenhouse Gas Emissions from Transportation Construction Projects," ASCE Journal on Construction Engineering and Management 138(5), 631-641

Nair, R., H. Mahmassani, and E. Miller-Hooks (2012). "A Porous Flow Approach to Modeling Heterogeneous Traffic in Disordered Systems," Transportation Research Part - B 45(9), 1331-1345.

Erdogan, S. and E. Miller-Hooks (2012). "A Green Vehicle Routing Problem," Transportation Research - Part E 48, 100-114

Miller-Hooks, E., X. Zhang and R. Faturechi (2012). "Measuring and Maximizing Resilience of Freight Transportation Networks,"

Computers and Operations Research 39(7)  
1633-1643.

Paraphantakul, C., E. Miller-Hooks and S. Opananon. "Scheduling Deliveries with Backhauls in Thailand's Cement Industry," Transportation Research Record 2269, 73-82

Chen, L. and E. Miller-Hooks (2012). "Optimal Team Deployment in Urban Search and Rescue," Transportation Research - Part B 46, 984-999

Melanta, S., E. Miller-Hooks and H. Avetisyan (2013). "A Carbon Footprint Estimation Tool for Transportation Construction Projects," ASCE Journal on Construction Engineering and Management 139(5), 547-555.

Nair, R., J. Kumi, K. Denny and E. Miller-Hooks (2013) "Robust Dynamic Distribution of Security Assets in Transit Systems," Transportation Research Record 2350, 91-101.

Nair, R. and E. Miller-Hooks (2014). "Equilibrium Network Design of Shared Vehicle Systems," European Journal of Operational Research 235, 47-61. Accepted 2013, coming to print in 2014

Faturechi, R. and E. Miller-Hooks. "Disaster resilience in civil infrastructure systems: quantification and optimization," in press in Computer-Aided Civil and Infrastructure Engineering Systems: Special Issue on Sustainability and Resilience of Spatially Distributed Civil Infrastructure Systems (available electronically).

Faturechi, R., E. Levenberg and E. Miller-Hooks (2014). "Evaluating and Optimizing Resilience of Airport Pavement Networks," Computers and Operations Research 43, 335-348.

*Involved in international collaboration*

Avetisyan, H., E. Miller-Hooks, S. Melanta and B. Qi (2014). "Effects of Vehicle Technologies, Traffic Volume Changes, Incidents and Work Zones on Greenhouse

Gas emissions Production," Transportation Research Part D 26, 10-19.

Feng, L. and E. Miller-Hooks. "A Mathematical Modeling and Solution Framework to Support Crowd Management given Changing Pedestrian Goals," in press in Transportation Research Part C: Special Issue on Crowd Dynamics and Pedestrian Modeling (revision submitted in 2013, accepted in 2014).

Nair, R., E. Miller-Hooks. R. Hampshire and A. Busic (2013). "Large-Scale Bicycle Sharing Systems: Analysis of V'elib'," International Journal of Sustainable Transportation 7(1), 85-106.

Feng, L., E. Miller-Hooks and V. Brannigan (2014). "Mathematical Modeling of Command and Control in Crowd Movement," in press in the Transportation Research Record.

Feng, L., P. Schonfeld, E. Miller-Hooks and M. Mohebbi (2014). "Optimizing Ridesharing Services for Airport Access," in press in the Transportation Research Record.

Faturechi, R. and E. Miller-Hooks (2014). "A Comprehensive Review of the Literature on Disaster Performance Analysis of Transportation Systems," in press in the ASCE Journal of Infrastructure Systems.

Kuo, A. and E. Miller-Hooks. "Combinatorial Auctions of Railroad Track Capacity in Vertically Separated Markets," in second round of reviews for publication in Journal of Rail Transport Planning and Management.

Nair, R. and E. Miller-Hooks. "Design of a Large-Scale Bicycle Sharing System for Washington D.C.," in second round of reviews for publication Journal of the Operational Research Society.

Faturechi, R., S. Isaac, E. Miller-Hooks and L. Feng. "Emergency Shelter Design for Geographic and Building Environments using Stochastic and Robust Optimization," in review for publication in the European Journal of the Operational Research.

Taiwan, December 2012.

*Involved in international collaboration*

Faturechi, R. and E. Miller-Hooks. "Resilience in Passenger Transportation Networks," in second round of reviews for publication in Transportation Research Part B.

Zhang, X. and E. Miller-Hooks. "Scheduling Short-Term Recovery Activities to Maximize Transportation Network Resilience," in second round of reviews for publication in ASCE Journal of Computing in Civil Engineering.

Zhang, X., E. Miller-Hooks and K. Denny. "The Role of Network Topology in Resilience of Transportation Systems," in review for publication.

*Articles in Conf. Proceedings*

Feng, L., E. Miller-Hooks and V. Brannigan (2012). "Mathematical Modeling of Command and Control in Evacuation involving Large Public Gatherings," Proceeding of the 4th International Symposium on Human Behaviour in Fire, Cambridge University, Cambridge, United Kingdom, 2012

Feng, L. and E. Miller-Hooks (2012). "Modeling Pedestrian Route Choice during Large Public Gatherings," in the Proceedings of the 6th International Conference on Pedestrian and Evacuation Dynamics - PED 2012, Zurich, Switzerland, June 2012.

Miller-Hooks, E., "Resilience in Infrastructure Systems," invited speaker in the Department of Civil Engineering at Johns Hopkins University, Baltimore, Maryland, February 2012.

KEYNOTE: Miller-Hooks, E., "Resilience in Urban Infrastructure Systems," INFRADAY, invited Keynote Speaker, November 2012.

Miller-Hooks, E., "Dynamic Allocation of Resources in Urban Search and Rescue Operations," invited speaker in the Department of Business Administration and Graduate Institute of Logistics Management at the National Dong Hwa University, Hualien,

Miller-Hooks, E., "Combinatorial Auctions for Collaboration in Rail-Based Intermodal Goods Transport: A European Perspective," invited speaker in the Department of Business Administration and Graduate Institute of Logistics Management at the National Dong Hwa University, Hualien, Taiwan, December 2012.

Miller-Hooks, E., "Optimal Team Deployment in Urban Search and Rescue Operations," Invited Speaker in the 2012 Conference and Annual Meeting of Chinese Institute of Transportation held at the National Cheng Kong University, Tainan, Taiwan, December 2012.

KEYNOTE: Miller-Hooks, E., "Resilience in Transportation Infrastructure Systems," invited Keynote Speaker in the 2012 Conference and Annual Meeting of Chinese Institute of Transportation held at the National Cheng Kong University, Tainan, Taiwan, December 2012.

Feng, L. and E. Miller-Hooks. "Modeling Pedestrian Route Choice during Large Public Gatherings," presented at the 6th International Conference on Pedestrian and Evacuation Dynamics - PED 2012, Zurich, Switzerland, June 2012.

Miller-Hooks, E., "Resilience in Rail-Based Intermodal Transportation Systems: Performance Measurement and Decision Support," NSF CMMI Engineering Research and Innovation Conference, Boston, July 2012

Feng, L., E. Miller-Hooks\* and V. Brannigan. "Mathematical Modeling of Command and Control in Evacuation involving Large Public Gatherings," presented at the 5th International Symposium on Human Behaviour in Fire, Cambridge University, Cambridge, United Kingdom, September 2012.

Faturechi, R., E. Levenberg, E. Miller-Hooks and X. Zhang. "Maximizing Resilience of Airport Runway and Taxiway Pavement



Networks through Stochastic Programming,” INFORMS, Phoenix, October 2012.

Feng, L. and E. Miller-Hooks. “Pedestrian Route Choice in a Changing Physical Environment,” INFORMS, Phoenix, October 2012.

Faturechi, R. and E. Miller-Hooks. “Resilience in Passenger Transportation Networks,” INFORMS, Phoenix, October 2012.

Miller-Hooks, E., R. Faturechi, L. Feng, and S. Isaac. “Robust Shelter Location in Geographic and Building Environments,” at INFORMS, Phoenix, October 2012.

Paraphantakul, C., E. Miller-Hooks and S. Opananon. “Scheduling Deliveries with Backhauls in Thailand’s Cement Industry,” presented at the 91st Annual Meeting of the Transportation Research Board, Washington, D.C., January 2012.

Nair, R., H. Mahmassani and E. Miller-Hooks. “A Porous Flow Model for Disordered Heterogeneous Traffic Streams,” presented at the 91st Annual Meeting of the Transportation Research Board, Washington, D.C., January 2012

Kuo, A. and E. Miller-Hooks (2013). “Combinatorial Auctions of Railroad Track Capacity in Vertically Separated Markets,” to appear in the Proceedings of the Transportation Research Board.

Markovic, N., R. Nair, P. Schonfeld, E. Miller-Hooks and M. Mohebbi (2014). “Optimizing Dial-a-Ride Services for the Washington, D.C. Region,” in the Proceedings of the Transportation Research Record.

*Other Presentations at conferences, seminars, symposia & outside institutions*

Miller-Hooks, E., M. TariVerdi and X. Zhang (2012). “Standardizing and Simplifying Safety Service Patrol Benefit-Cost Ratio Estimation: SSP-BC Tool Development Methodology,” Technical Report, I-95 Corridor Coalition.

Miller-Hooks, E., M. TariVerdi and X. Zhang (2012). “Standardizing and Simplifying Safety Service Patrol Benefit-Cost Ratio Estimation: SSP-BC Users’ Manual,” Technical Report, I-95 Corridor Coalition.

Miller-Hooks, E., R. Nair, J. Kumi and K. Denny (2012). Robust Dynamic Distribution of Security Assets in Transit Systems,” Technical Report, Mid-Atlantic University Transportation Center, Pennsylvania State University.

Miller-Hooks, E., S. Melanta, B. Qi and H. Avetisyan (2012). “GHG Emissions Tool to Support Emissions Estimation in On-Road Transport along Freeways and Arterials,” Technical Report, Maryland State Highway Administration number MD-10-SP109B4X

Miller-Hooks, E., S. Melanta, B. Qi and H. Avetisyan (2012). “User Manual for the On-Road Simulation Emission Estimation Model (ORSEEM) Tool,” Technical Report, Maryland State Highway Administration number MD-10-SP109B4X

Nair, R., J. Kumi, K. Denny and E. Miller-Hooks. “Robust Dynamic Distribution of Security Assets in Transit Systems,” 92nd Annual Meeting of the Transportation Research Board, Washington, D.C., January 2013.

Kuo, A. and E. Miller-Hooks. “Combinatorial Auctions of Railroad Track Capacity in Vertically Separated Markets,” 92nd Annual Meeting of the Transportation Research Board, Washington, D.C., January 2013.

Miller-Hooks, E.\* and M. TariVerdi.” Dynamic Team Deployment in Urban Search and Rescue,” XXVI EURO-INFORMS 26th European Conference on Operational Research, Rome, Italy, July 2013.

Miller-Hooks, E.\*, R. Faturechi, L. Feng and S. Isaac. “Emergency Shelter Design for Geographic and Building Environments using Stochastic and Robust Optimization,” International Conference on Stochastic Programming, invited mini-symposium, Bergamo, Italy, July 2013.

*Involved in international collaboration*

Feng, L.\* , P. Schonfeld, E. Miller-Hooks and M. Mohebbi (2013). "Optimizing Ridesharing Services for Airport Access," presented at INFORMS, Minneapolis, October 2013.

Faturechi, R.\* and E. Miller-Hooks. "A Comprehensive Review of the Literature on Disaster Performance Analysis of Transportation Systems," presented at INFORMS, Minneapolis, October 2013.

Miller-Hooks, E.\* , X. Zhang and K. Denny, "The Role of Network Topology in the Resilience of Transportation Systems," presented at INFORMS, Minneapolis, October 2013.

TariVerdi, M.\* , E. Miller-Hooks and M. Adan, "Real-Time Policies for Post-Disaster Urban Search and Rescue Team Deployment," presented at INFORMS, Minneapolis, October 2013.

*Involved in international collaboration*

Feng, L.\* , N. Vodopivec\* and E. Miller-Hooks. "Supporting Special-Needs Populations in Evacuation," presented at INFORMS, Minneapolis, October 2013.

Markovic, N.\* , R. Nair, P. Schonfeld, E. Miller-Hooks and M. Mohebbi. "Optimizing Dial-a-Ride Services for the Washington, D.C. Region," presented at the 93rd Annual Meeting of the Transportation Research Board, Washington, D.C., January 2014.

Feng, L.\* , P. Schonfeld, E. Miller-Hooks and M. Mohebbi. "Optimizing Ridesharing Services for Airport Access," presented at the 93rd Annual Meeting of the Transportation Research Board, Washington, D.C., January 2014.

Feng, L.\* , E. Miller-Hooks and V. Brannigan. "Mathematical Modeling of Command and Control in Crowd Movement," presented at the 93rd Annual Meeting of the Transportation Research Board, Washington, D.C., January 2014.

Miller-Hooks, E., "Creating International Rail-Based IM Freight Services: A European Perspective," invited speaker in the Department of Industrial Engineering and Management, Ben Gurion University of the Negev, March 2013.

## PHILLIPS

### *Refereed Articles in Archival Journals*

Phillips, B.M. and B.F. Spencer, Jr. (2012). "Model-based Multi-Actuator Control for Real-Time Hybrid Simulation." ASCE Journal of Engineering Mechanics, 139(2): 219-228.

Phillips, B.M. and B.F. Spencer, Jr. (2012). "Model-based Feedforward-Feedback Actuator Control for Real-Time Hybrid Simulation." ASCE Journal of Structural Engineering, (accepted, published online March 6, 2012).

Iba, D., B.M. Phillips, and B.F. Spencer, Jr. (2012). "Evaluation of Semi-Active Control Using Harmonically Varying Damping by Real-Time Hybrid Simulation." Journal of System Design and Dynamics, 6(1): 1-11.

Li, J., B.F. Spencer, Jr., A.S. Elnashai, and B.M. Phillips. (2012). "Substructure Hybrid Simulation with Multiple-Support Excitation." ASCE Journal of Engineering Mechanics, 138(7): 867-876.

Phillips, B.M., N.E. Wierschem, and B.F. Spencer, Jr. "Model-Based Multi-Metric Control of Uniaxial Shake Tables." Earthquake Engineering and Structural Dynamics, (published online ahead of print).

Friedman, A., S.J. Dyke, and B.M. Phillips. (2013). "Over-driven control for large-scale MR dampers." Smart Materials and Structures, 22(4): 1-15.

Asai, T., C.M. Chang, B.M. Phillips, B.F. Spencer, Jr. "Real-time hybrid simulation of a smart outrigger damping system for high-rise buildings" Engineering Structures, (accepted).

Phillips, B.M., S. Takada, B.F. Spencer, Jr., and Y. Fujino. "Feedforward actuator controller development using the backward- difference method for real-time hybrid simulation." *Smart Structures and Systems* (accepted).

*Involved in international collaboration*

Friedman, A., S.J. Dyke, B.M. Phillips, R. Ahn, B. Dong, Y. Chae, N. Castaneda, Z. Jiang, J. Zhang, Y. Cha, A. Ozdagli, B.F. Spencer, Jr., J.M. Ricles, R.E. Christenson, A. Agrawal, R. Sause. "Large-Scale Real-Time Hybrid Simulation for Evaluation of Advanced Damping System Performance." *Journal of Structural Engineering* (accepted).

Liu, J., S.J. Dyke, H.J. Liu, X.Y. Gao, and B.M. Phillips. (2013). "A novel integrated compensation method for actuator dynamics in realtime hybrid structural testing." *Structural Control and Health Monitoring*, 20(7): 1057-1080.

Cha, Y., A. Agrawal, B.M. Phillips, and B.F. Spencer, Jr. "Direct performance-based design with 200 kN MR dampers using multi-objective cost effective optimization for Steel MRFs" *Engineering Structures* (accepted).

Articles in Conf. Proceedings

Phillips, B.M. and B.F. Spencer, Jr. (2012). "Real-Time Hybrid Simulation of Complex Structures using Multi-Actuator Control." *Proceedings of the 15th World Conference on Earthquake Engineering*. Lisbon, Portugal, September

Phillips, B.M. and B.F. Spencer, Jr. (2012). "Real-Time Hybrid Simulation with Model-Based Multi-Metric Feedback." *Proceedings of the International Conference on Earthquake Engineering Research Challenges in the 21st Century*, Keynote Presentation, Harbin, China, May

Phillips, B.M. and B.F. Spencer, Jr. (2012). "Model-Based Control of Shake Tables with Multi-Metric Feedback." *Proceedings of the International Conference on Earthquake Engineering Research Challenges in the 21st Century*, Harbin, China, May

Kim, S.J., R.E. Christenson, B.M. Phillips, and B.F. Spencer, Jr. (2012). "Geographically Distributed Real-Time Hybrid Simulation of MR Dampers for Seismic Hazard Mitigation." *Proceedings of the ASCE 43rd Structures Congress*, March.

Other Presentations at conferences, seminars, symposia & outside institutions

Phillips, B.M. (2012). "Real-Time Hybrid Simulation for Structural Performance Evaluation." *Johns Hopkins University Civil Engineering Seminar Series*, November 1.

Phillips, B.M., B.F. Spencer Jr., Y.B. Chae, A. Friedman, K. Kazemibidokhti, J.M. Ricles, and S.J. Dyke. (2012). "Model-Based Real-Time Hybrid Simulation for Large-Scale Experimental Evaluation" *Quake Summit 2012*, Boston, Massachusetts, June.

Phillips, B.M., S. Takada, B.F. Spencer, Jr., and Y. Fujino. (2013). "Real-Time Hybrid Simulation Actuator Control using the Backward Difference Method." *Conference of the ASCE Engineering Mechanics Institute*, Chicago, Illinois, August 4 - 7.

Phillips, B.M. (2013). "Real-Time Hybrid Simulation for Structural Performance Evaluation." *University of Virginia Civil Engineering Seminar Series*, November 15.

Other Publications/Presentations

Phillips, B.M. and B.F. Spencer, Jr. (2012). "Model-based Framework for Real-Time Dynamic Structural Performance Evaluation." *Newmark Structural Engineering Laboratory Report Series*, University of Illinois, Urbana, IL, No. 31.

Phillips, B.M., Y. Chae, B.F. Spencer, Jr., and J.M. Ricles. (2012). "Preliminary 3DOF Benchmark Study", *Network for Earthquake Engineering Simulation* (database), Dataset.

Phillips, B.M., Z. Jiang, B.F. Spencer, Jr., R.E. Christenson, S.J. Dyke. (2013). "MR Damper Characterization - UIUC - Damper 3", *Network for Earthquake Engineering Simulation* (database), Dataset, DOI:10.4231/D3PC2T80D.

Phillips, B.M., Takada, S., Spencer Jr., B.F., and Fujino, Y. (2014). "System identification of servo-hydraulic system." Network for Earthquake Engineering Simulation (NEES)(distributor). Dataset. DOI: 10.4231/D3ZP3W09Z.

*Involved in international collaboration*

Phillips, B.M., Takada, S., Spencer Jr., B.F., and Fujino, Y. (2014). "System identification of servo-hydraulic system with outer-loop control." Network for Earthquake Engineering Simulation (NEES)(distributor). Dataset. DOI: 10.4231/D3V11VK7Z.

Phillips, B.M., Takada, S., Spencer Jr., B.F., and Fujino, Y. (2014). "Tracking performance of outer-loop controllers." Network for Earthquake Engineering Simulation (NEES)(distributor). Dataset. DOI: 10.4231/D3Q814S4P.

*Involved in international collaboration*

Phillips, B.M., Takada, S., Spencer Jr., B.F., and Fujino, Y. (2014). "Real-time hybrid simulation of 9-story structure with MR damper." Network for Earthquake Engineering Simulation (NEES)(distributor). Dataset. DOI: 10.4231/D3KH0DZ9F.

*Involved in international collaboration*

## **SCHONFELD**

### Refereed Articles in Archival Journals

Kang, M., Jha, M. and Schonfeld, P. "Applicability of Highway Alignment Optimization Model," Transp. Research Part C: Emerging Technologies, 21-1C, Apr. 2012, pp. 257-286.

Kim, M. and Schonfeld, P. "Conventional, Flexible and Variable-type Bus Services," J. of Transportation Engineering, ASCE, 138-3, March 2012, pp. 263-273.

Wang, S. and Schonfeld, P. "Simulation-based Scheduling of Mutually Exclusive Projects with Precedence and Regional Budget Constraints," Transp. Res. Record 2273, 2012,

pp 1-9.

Lai, X. and Schonfeld, P. "Optimization of Rail Transit Alignments Considering Vehicle Dynamics," Transp. Res. Record 2275, 2012, pp 77-87.

Kim, M., Schonfeld, P. and Kim, E. "Comparison of Vertical Alignments for Rail Transit," Journal of Transportation Engineering, 139-2, ASCE, Feb. 2013, pp. 230-238.

*Involved in international collaboration*

Kim, M., Schonfeld, P. and Kim, E. "Simulation-based Rail Transit Optimization Model," Transp. Res. Record 2374, Dec. 2013, pp.143-153.

*Involved in international collaboration*

Markovic, N. and Schonfeld, P. "Stochastic Scheduling for a Single-terminal Transfer System with Poisson Arrivals," Strojnikski Vestnik (Slovenian J. of Mechanical Eng.), 59-9, 2013, pp. 564-572.

*Involved in international collaboration*

Juster, R. and Schonfeld, P. "Personal Rapid Transit as Urban Transportation," Transp. Res. Record 2350, Dec. 2013, pp. 128- 135.

Kim, M. and Schonfeld, P. "Integrating Bus Services with Mixed Fleets," Transportation Research Part B, Vol. 55B, Sept. 2013, pp.227-244.

*Involved in international collaboration*

Markovic, B. and Schonfeld, P. "Planning Dial-a-Ride Services: Statistical and Metamodeling Approach," accepted for the Transp. Res. Record 2352, pp. 120-127.

*Involved in international collaboration*

Yang, N., Kang, M., Schonfeld, P. and Jha, M. "Multi-objective Optimization of Highway Alignments Incorporating Preference Information," *Transportation Research Part C*, Vol. C-40, Jan. 2014, pp. 36-48.

*Involved in international collaboration*

Yang, N., Wang, S. and Schonfeld, P. "Simulation-Based Optimization of Waterway Projects using a Parallel Genetic Algorithm," accepted for *International Journal of Operations Research and Information Systems*, June 2013; forthcoming in Vol. 6-1, 2015.

*Involved in international collaboration.*

Feng, L., Miller-Hooks, E., Schonfeld, P. and Mohebbi, M. "Optimizing Ridesharing Services for Airport Access," accepted for the *Transp. Res. Record*, Oct. 2013.

*Involved in international collaboration*

Li, Z. and Schonfeld, P. "Hybrid Simulated Annealing and Genetic Algorithm for Optimizing Arterial Signal Timings under Oversaturated Traffic Conditions," submitted to the *Journal of Advanced Transportation*, Feb. 2013.

*Involved in international collaboration.*

Kim, M. and Schonfeld, P. "Integration of Conventional and Flexible Bus Services with Timed Transfers," submitted to *Transportation Research Part B*, Nov. 2013.

*Involved in international collaboration.*

Sun, Y. and Schonfeld, P. "Schedule-based Route Choice Estimation for Rail Transit Passengers using Automatic Fare Collection Data," submitted to the *J. of Transportation Engineering*, ASCE, Dec. 2013.

*Involved in international collaboration*

Articles in Conf. Proceedings

Kim, M., Schonfeld, P. and Kim, E. "Speed Optimization for Rail Transit Alignments Connecting Stations at Different Elevations," *Annual TRB Meeting*, Jan. 2012 (12-4363).

Markovic, N. and Schonfeld, P. "Location of Truck Inspection Stations Based on Stochastic Flows," *Annual TRB Meeting*, Jan. 2012 (12-2624).

Markovic, N., Drobnyak, Z. and Schonfeld, P. "Non-stationary Markov Chain Framework for Optimizing Dedicated Check-In Service," *Annual TRB Meeting*, Jan. 2012 (12-3902).

Markovic, N. and Schonfeld, P. "Simulation-based Optimization of Recovery for a Multi-terminal Freight Transportation System," *Annual TRB Meeting*, Jan. 2012 (12-2650).

Wang, S. and Schonfeld, P. "Simulation-Based Scheduling of Mutually Exclusive Projects with Precedence and Regional Budget Constraints," *Annual TRB Meeting*, Jan. 2012 (12-1164).

Lai, X. and Schonfeld, P. "Optimization of Rail Transit Alignments Considering Vehicle Dynamics," *Annual TRB Meeting*, Jan. 2012 (12-2553).

Chen, C.C. and Schonfeld, P. "A Hybrid Heuristic Technique for Optimizing Intermodal Logistics Timed Transfer Systems," *Proc. of 2012 Transport Research Arena Conference*, Elsevier, Apr. 2012. (Winner of Best Paper Award at this conference, awarded Apr. 24, 2012.)

Chen, C.C. and Schonfeld, P. "Clustering Analysis for Airport Parking," *The 17th International Conference of the Hong Kong Society for Transportation Studies, Transportation & Logistics Management*, Dec.15-17, 2012, Hong Kong (HKSTS 118).

Chen, C.C. and Schonfeld, P. "A Dispatching Model for Countering Delay Propagation in Intermodal Logistics Timed-transfer Systems," *Annual TRB Meeting*, Jan. 2013 (13-1640).

*Involved in international collaboration*

Markovic, B. and Schonfeld, P. "Planning Dial-a-Ride Services: Statistical and Metamodeling Approach," Annual TRB Meeting, Jan. 2013 (13-4205).

*Involved in international collaboration*

Juster, R. and Schonfeld, P. "Personal Rapid Transit as Urban Transportation," Annual TRB Meeting, Jan. 2013 (13-1186).

Besinovic, N, Markovic, B. and Schonfeld, P. "Optimal Allocation of Truck Inspection Stations Based on k-Shortest Paths," Annual TRB Meeting, Jan. 2013 (13-3123).

*Involved in international collaboration*

Kim, M., Schonfeld, P. and Kim, E. "Simulation-based Rail Transit Optimization Model," Annual TRB Meeting, Jan. 2013 (13-1196).

*Involved in international collaboration*

Chen, C.C. and Schonfeld, P. "Uncertainty Analysis for Flexible Airport Gate Development," 13th COTA International Conference of Transportation Professionals, Shenzhen, Aug. 13-16, 2013.

*Involved in international collaboration*

Other Presentations at conferences, seminars, symposia & outside institutions

Kim, M. and Schonfeld, P. "Integration of Conventional and Flexible Bus Services," Workshop on Enhancing Intermodal Passenger Travel, Montreal, Canada, May 2012.

Other Publications/Presentations

Kim, M., Schonfeld, P. and Cheong, S. "Integration of Fixed and Flexible Route Public Transportation Systems," Phase 1 Report for the Mid-Atlantic Universities Transportation Center, Univ. of Maryland, College Park, Jan. 2012.

Kim, M., and Schonfeld, P. "Integration of Fixed and Flexible Route Public Transportation Systems," Phase 2 Report for the Mid- Atlantic Universities Transportation Center, Univ. of Maryland, College Park, March 2012.

Kim, M. and Schonfeld, P. "Variable Mode Operation with Mixed Fleets," TSC Report 2012-24, Univ. of Maryland, College Park, July 2012.

Wang, Z. and Schonfeld, P. "Energy and Environmental Considerations in Highway Alignment Optimization," TSC Report 2012-25, Univ. of Maryland, College Park, July 2012

Kim, M., Juster, R., Cirillo, C. and Schonfeld, P. "Critical Factors for Motorcycle Incidents," TSC Report 2012-26, Univ. of Maryland, College Park, July 2012

Kim, M., Kim, E. and Schonfeld, P. "Effects of Introducing a Distance-based Road User Fee Policy in Korea," TSC Report 2012- 27, Univ. of Maryland, College Park, July 2012

Chen, C.C., Wang, S. and Schonfeld, "Dynamic Path Optimization for Unmanned Military Vehicles," TSC Report 2013-21, Univ. of Maryland, College Park, Jan. 2013

*Involved in international collaboration*

Markovic, N. and Schonfeld, P. "Location of Truck Inspection Stations Based on Stochastic Flows," TSC Report 2013-23, Univ. of Maryland, College Park, Jan. 2013.

*Involved in international collaboration*

Markovic, N., Drobnjak, Z. and Schonfeld, P. "Non-stationary Markov Chain Framework for Optimizing Dedicated Check-In Service," TSC Report 2013-24, Univ. of Maryland, College Park, Jan. 2013.

*Involved in international collaboration*

Markovic, N. and Schonfeld, P. "Simulation-based Optimization of Recovery for a Multi-terminal Freight Transportation System," TSC Report 2013-25, Univ. of Maryland, College Park, Jan. 2013.

*Involved in international collaboration*

Chen, C.C. and Schonfeld, P. "A Dispatching Model for Countering Delay Propagation in Intermodal Logistics Timed-transfer Systems," TSC Report 2013-26, Univ. of Maryland, College Park, Feb. 2013

*Involved in international collaboration*

Besinovic, N, Markovic, B. and Schonfeld, P. "Optimal Allocation of Truck Inspection Stations Based on k-Shortest Paths," TSC Report 2013-27, Univ. of Maryland, College Park, Feb. 2013.

*Involved in international collaboration*

Drobnjak, Z., Markovic, N. and Schonfeld, P. "Dispatching Trucks for Drayage Operations," TSC Report 2013-28, Univ. of Maryland, College Park, Feb. 2013.

*Involved in international collaboration*

Sanchez, A., Unnikrishnan, A., Martinelli, D., Schonfeld, P. and Kim, M., "Improved Methods for Operating Public Transportation Services," Final Report, Mid Atlantic Universities Transportation Center, March 2013.

*Involved in international collaboration*

Sun, Y. and Schonfeld, P. Schedule-based Route Choice Estimation with Automatic Fare Collection Data for Rail Transit Passengers," TSC Report 2013-30, Univ. of Maryland, College Park, Aug. 2013.

*Involved in international collaboration*

Besinovic, N., Markovic, N., Markovic, M., Schonfeld, P., and Goverde R. "Optimizing Work Zones for a Double-track Railway Line," TSC Report 2013-31, Univ. of Maryland, College Park, Aug. 2013.

*Involved in international collaboration*

Juster, R. and Schonfeld, P. "An Assessment of Trip Times in Automated Guideway Transit Systems," TSC Report 2013-33, Univ. of Maryland, College Park, Aug. 2013.

Markovic, N., Ryzhov, I. and Schonfeld, P. "Evasive Flow Capture: Optimal Location of Weigh-in-Motion Systems," TSC Report 2013-34, Univ. of Maryland, College Park, Aug. 2013.

*Involved in international collaboration*

Kim, M. and Schonfeld, P. "Maximizing Net Benefits with Subsidy Constraints for Conventional and Flexible Services," TSC Report 2013-36, Univ. of Maryland, College Park, Nov. 2013.

## **SCHWARTZ**

Refereed Articles in Archival Journals

Karimi, S., Goulias, D. and Schwartz, C.W. (2012). "Evaluation of Superpave HMA Mixture Properties at the Plant versus Behind the Paver: Statistical Comparison of QC and QA Data." *Journal of Transportation Engineering, ASCE*, Vol. 138, No. 7, July, pp. 924-932.

Schwartz, C.W., Li, R., Ceylan, H., Gopalakrishnan, K., Kim, S. (2013). "Global Sensitivity Analysis of Mechanistic-Empirical Performance Predictions for Flexible Pavements." *Transportation Research Record: Journal of the Transportation Research Board*.

Ceylan, H., Gopalakrishnan, K., Kim, S., Schwartz, C.W., and Li, R. (2013). "Global Sensitivity Analysis of Jointed Plain Concrete Pavement Mechanistic-Empirical Performance Predictions." *Transportation Research Record: Journal of the Transportation Research Board*, No. 2367, pp. 113-122.

Liu, X., Cui, Q., and Schwartz, C.W. (2014). "Greenhouse Gas Emissions of Alternative Pavement Designs: Framework Development

and Illustrative Application.” Journal of Environmental Management. Vol. 132C, pp. 313-322. DOI 10.1016/j.jenvman.2013.11.016 (published online 10 December 2013)

Ceylan, H., Kim, S., Gopalakrishnan, K., Schwartz, C.W., and Li, Rui (2013). “Sensitivity Quantification of Jointed Plain Concrete Pavement Mechanistic-Empirical Performance Predictions.” Construction and Building Materials, Vol. 43, June, pp. 545-556.

Khosravifar, S., Schwartz, C.W., and Goulias, D.G. (2014). “Mechanistic Structural Properties of Foamed Asphalt Stabilized Base Materials.” International Journal of Pavement Engineering. (accepted)

Karimi, S.S., Goulias, D.G., and Schwartz, C.W. (2013). “Risk and Expected Pay Factor Analysis for Assessing Gap and Dense Graded Superpave Mixture Specifications.” International Journal of Pavement Engineering. (accepted)

#### Articles in Conf. Proceedings

Khosravifar, S., Goulias, D.G., and Schwartz, C.W. (2012). “Laboratory Evaluation of Foamed Asphalt Base Materials.” GeoCongress 2012, Oakland CA, February, pp. 1592-1601.

Li, R., Schwartz, C.W., Kim, S., and Ceylan, H. (2012). “Local Sensitivity of Mechanistic-Empirical Flexible Pavement Performance Predictions to Unbound Material Property Inputs.” GeoCongress 2012, Oakland CA, February, pp. 1495-1504

Ceylan, H., Kim, S., Schwartz, C.W., Li, R., and Gopalakrishnan, K. (2012). “Effect of PCC Material Properties on MEPDG Rigid Pavement Performance.” 10th International Conference on Concrete Pavements, Quebec, July.

Khosravifar, S., and Schwartz, C.W. (2013). “Time-Dependent Stiffness Increase of Foamed Asphalt Stabilized Base Material.” 9th International Conference on the Bearing Capacity of Roads, Railways, and Airfields, Trondheim, Norway, June, June, pp. 939-948.

Khosravifar, S., Asefzadeh, A., and Schwartz, C.W. (2013). “Increase of Resilient Modulus of Unsaturated Granular Materials During Drying after Compaction.” Geo-Congress 2013 Stability and Performance of Slopes and Embankments III, ASCE, San Diego CA, February, pp. 434-443.

Carvalho, R.L and Schwartz, C.W. (2013). “The Importance of Simulating Moving Wheel Loads in the Mechanistic Analysis of Permanent Deformations in Flexible Pavements.” ASCE Airfield and Highway Pavements Conference, Los Angeles, CA, June, pp. 1156-1166

Khosravifar, S. and Schwartz, C.W. (2013). “Foamed Asphalt Stabilized Base: A Case Study.” ASCE Airfield and Highway Pavements Conference, Los Angeles, CA, June, pp. 106-117.

Li, R., Schwartz, C.W., and Forman, B. (2013). “Sensitivity of Predicted Pavement Performance to Climate Characteristics.” ASCE Airfield and Highway Pavements Conference, Los Angeles, CA, June, pp. 760-771.

Schwartz, C.W., Forman, B.A., and Li, R. (2014). “Climate Data for Mechanistic-Empirical Pavement Design.” 12th International Conference on Asphalt Pavements, Raleigh, NC, June. (accepted).

Liu, X., Yujie, L., Cui, Q, and Schwartz, C. (2013). “Life Cycle Greenhouse Gas Analysis of Foam Stabilizing Base.” Second Conference on Green Streets, Highways and Development, Austin TX, November, pp. 295-305.

#### Other Presentations at conferences, seminars, symposia & outside institutions

Basics of Asphalt Modeling: Part 2.” Transportation Research Board webinar, December 11, 2012. (130+ attendees)

“NCHRP 09-51: Material Properties of Cold In-Place Recycled and Full-Depth Reclamation Asphalt Concrete for Pavement Design.” Northeast State Materials Engineers



Association (NESMEA) annual meeting, October 24, 2012, Philadelphia, PA

“LTPP Climate Analysis Project.” Transportation Research Board Expert Task Group on Long Term Pavement Performance Program Special Projects, October 18, 2012, Washington DC (w/ G. Elkins).

“User’s Experience with AMPT: Maryland.” National Pooled-Fund Workshop on the Asphalt Mixture Performance Tester, Atlanta GA, September 2012

“Calibration and Precision of Alternate Rutting Models for the Mechanistic-Empirical Pavement Design Guide.” Transportation Research Board webinar, August 30, 2012. (110+ attendees)

“Sensitivity Evaluation of the MEPDG for Flexible Pavements.” Transportation Research Board webinar, July 25, 2012. (330+ attendees)

“Sensitivity Evaluation of Mechanistic-Empirical Pavement Design.” AASHTO Joint Technical Committee on Pavements Annual Meeting, Louisville KY, May 2012.

“UMD, SHA, and MAA Relationship.” 50th Annual Maryland Asphalt Association Paving Conference, Baltimore MD, March 2012.

“Sensitivity Evaluation of MEPDG Flexible Pavement Performance Predictions.” Transportation Research Board Committee AFD60 Flexible Pavement Design, Washington DC, January 2012.

Khosravifar, S., Haider, S.I., and Schwartz, C.W. (2014). “Application of Time-Temperature Superposition Principle in Prediction of Cumulative Plastic Strain in Repeated Load Permanent Deformation Tests.” 2014 Annual Meetings of the Transportation Research Board. (accepted for poster presentation)

#### Other Publications/Presentations

Bashin, A., Masad, E., Kutay, M.E., Buttlar, W., Kim, Y.R., Marasteanu, M., Kim, Y.R., Schwartz,

C.W., and Carvalho, R.L. (2012). Applications of Advanced Models to Understand Behavior and Performance of Asphalt Mixtures, Circular E-C161, Transportation Research Board, Washington DC, January.

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Williamsburg, VA, February 5-7, 2013.

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“Implementing ‘Exotic’ Models into the MEPDG,” Annual Meetings of the Transportation Research Board, Washington DC, January 2013.

“NCHRP Project 09-51: Update,” Annual Meetings of the Transportation Research Board, Washington DC, January 2013. Also presented at committee meeting of AFD60 Flexible Pavement Design

“Modeling Plasticity in Asphalt Mixtures and Pavements.” Transportation Research Board AK50(1) Workshop, McLean, VA, October, 2013.

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### Refereed Articles in Archival Journals

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Hoa, B., Sawicki, M., Skibniewski, M. (2013): Benefits from the Use of Knowledge Maps in a Construction Enterprise, Proceedings of Creative Construction (CC2013) Conference, July 6-9, Budapest, Hungary, pp: 309-319, ISBN 978-963-269-366- 8

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Zhang, L-M., Wu, X., Ding, L-Y., Skibniewski, M. (2013): A BIM-based Risk Identification Expert System for Metro Construction. Proceedings of the 30th International Symposium on Automation and Robotics in Construction and Mining (ISARC), August 11-15, Montreal, Canada

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*Other Presentations at conferences, seminars, symposia & outside institutions*

"Critical Issues in Construction Sensing Systems," Invited Short Course sponsored by the European Union Program in Human Capital, Warsaw University of Technology, Warsaw, Poland, January 2012

"Advances in Project Management Research for Achieving Sustainability," Invited Short Course sponsored by the European Union Program on Best Practices in Government, Industry and Economy, Catholic University of Lublin, Poland, January 2012

"Engineering Economic Analysis for Heavy Construction Equipment Management," Short Course at the First International Conference on Dams and Hydropower, Tehran, Iran, February 2012

"Web-Based Technologies for Heavy Equipment Management in Large Infrastructure Construction Projects," Invited Keynote Presentation, First International Conference on Dams and Hydropower, Tehran, Iran, February 2012

"Information and Automation Technologies for International Construction Projects," Invited Keynote Presentation, Academia-Industry Seminar on Advances in International Construction, National University of Singapore, Singapore, April 14, 2012

"Successful Techniques for Preparing and Compiling Peer-Reviewed Journal Publications," Invited Guest Speaker, Malaysia Institute of Transport (MITRANS), Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia, June 2012

"Creativity and Construction Technology," Invited Keynote Presentation, Creative Construction Conference, Budapest, Hungary, June 30 - July 3, 2012 <http://cc2012.org>

"Construction Technology Progress: from Mechanization and Prefabrication to

Automation,” Invited Guest Speaker, Faculty of Civil Engineering and Construction Innovation Research Center, Universiti Teknologi Malaysia (UTM), Skudai, Johor, July 24, 2012

“Mechanization, Automation and Robotics in Construction,” Invited Seminar/ Short Course for Construction Engineers, Construction Research Institute of Malaysia and Construction Industry Development Board (Malaysia), Selangor, Malaysia, August 2012

“Crane Safety Standards – Current Research and Development,” Invited Short Course for Practicing Engineers, Institute of Engineers Malaysia, Putra Jaya – Kuala Lumpur, August 2012

“Current Issues in Knowledge Management Research for the Construction Industry,” Invited Keynote Presentation, EPPM-2012 - 3rd International Conference on Engineering, Project and Production Management, Brighton, UK, September 10-11, 2012

“State-Of-The-Art review of “Innovative Techniques and Methods in Construction Project Management,” Invited Plenary Keynote Speaker, 6th National Construction Management Convention, Israel Society of Civil and Infrastructure Engineers, Tel Aviv, Israel, October 22, 2012

“Construction Technology Development Continuum,” Invited Keynote Speaker, CRIOCM 212 - International Symposium on Advancement of Construction Management and Real Estate, Chinese (Hong Kong) Research Institute of Construction Management, Shenzhen, China, November 17-18, 2012

“Historical Perspective and Recent Developments in Construction Technologies,” Invited Distinguished Visiting Scholar/Professor Seminar, Faculty of Engineering and Information Technology, University of Technology Sydney, Australia, January 2013

*Involved in international collaboration*

“Impact of Building Information Modeling on Construction Productivity”: Invited Keynote

Speaker, Creative Construction 2013 Conference, Budapest Hungary, July 2013

*Involved in international collaboration*

“Effective Publication Strategies for Construction Engineering and Management Peer-Reviewed Journals,” Arizona State University, Tempe, AZ, August, 2013

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#### Other Publications/Presentations

#### **Torrents**

#### Refereed Articles in Archival Journals

Title: Fate of Triclosan and Methyltriclosan in soil from biosolids application Author(s): Lozano Nuria; Rice Clifford P.; Ramirez Mark; et al. Source: ENVIRONMENTAL POLLUTION Volume: 160 Pages: 103-108

Utilizing Raman Microscopy to Identify Sources of PM10 Downwind of Agricultural Operations  
Qiang Huanga, Laura L. McConnell\*b, Walter F. Schmidtb, Cathleen J. Hapemanb, Edna Razotec, Ronaldo Maghirangc, Bryan T. Vinyardb Alba Torrents, Steven Trabued, John H. Pruegerd, Kyoung Roe Journal of Atmospheric Sciences

Guzman, G. \*; Hapeman, C.; Prabhakara, K.; Codling, E.E.; Shelton, D.R.; Rice, C.; Hively, W.D.; McCarty, G.W. Lang. M.W.; Torrents, A. “Potential pollutant sources in a Choptank River (USA) subwatershed and the influence of land use and watershed characteristics” Science of the Total Environment , 430, 270-279 (2012)

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LOZANO, N., ANDRADE, N.A., DENG, D., TORRENTS, A., RICE, C.P., RAMIREZ, M., MCCONNELL, L.L., MILLNER, P.D. (2013). Fate of microconstituents in biosolids composted in an aerated silage bag. *Environmental Science and Health, Part A*. 49(6), 720-730

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ANDRADE, N.A., LOZANO, N., MCCONNELL, L.L., RICE, C.P., RAMIREZ, M., TORRENTS, A. (2014). PBDEs, Triclosan, and Triclocarban in Biosolids from a Large WWTP - Trend over a 6-yr Period. Under revision in *Environmental Monitoring*.

LOZANO, N., RICE, C.P., RAMIREZ, A., TORRENTS, A. (2014). Fate of Triclocarban in agricultural soils of commercial farms, after biosolids applications.

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"Biosolids as a Resource: Limitations and potential risks" Invited seminar at UMBC department of Chemical, Biochemical and

Environmental Engineering, November 11, 2013.

"Biosolids coma recurs: Limitacions i risks potencials" Invited seminar at: Catalan Institute for Water Research [www.icra.cat](http://www.icra.cat)

*Involved in international collaboration*

Utilizing electronic nose and GC-MS to examine critical factors influencing the formation of odorous VOC in biosolids to support an odor monitoring program. 3rd Annual BA-UMD Fall Symposium Trends in Agriculture. Climate Change: Food and Environmental Security. Beltsville.

"Sediment Microbial Fuel Cells for Wastewater Treatment" Chesapeake Potomac Regional Chapter of the Society for Environmental Toxicology and Chemistry (CPRC-SETAC) Annual Spring Meeting April 22, 2013

Fate of Triclosam and Methyltriclosan in soils form Biosolids applications" AquaConsoil, 12th International UFZ-Delatres Conference on Groundwater-Soil-Systems and Water Resource Management. Barcelona, Spain, 16-19 April, 2013

"The Configuration of Sediment Microbial Fuel Cells for Wastewater Treatment and Electricity Generation" AEESP annual conference, Colorado July 2013.

"Assessing bioavailability of POPs to native earthworms using traditional biological and TF-SPE methods" Chesapeake Potomac Regional Chapter of the Society for Environmental Toxicology and Chemistry (CPRC-SETAC) Annual Spring Meeting April 22, 2013.

Determining contaminate sources to the Chesapeake Bay to discern the effectiveness of conservation practices. ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Volume: 246 Meeting Abstract: 147-ENVR Published: SEP 8 2013

"Novel Approaches to Examine the Bioavailability of Persistent Organic Pollutants (POPs) to Earthworms in Soil Receiving Biosolids" Invited presentation at Mid Atlantic Biosolids Association (MABA) conference: The Science of Biosolids: Current Research and Implications for Management. November 19, 2013.

#### Other Publications/Presentations

#### **L. Zhang**

##### Full Books

Zhang, L., Wei, H., Li, Z., and Zhang, Y. (editors), *Intelligent and Integrated Sustainable Multimodal Transportation Systems*, Elsevier.

Involved in international collaboration

##### Chapters in Books

Zhang, L., and Yusufzyanova, D., 2014, Privatization of roadways. In Prokop, D. (ed.), *The Business of Transportation*, Praeger Publishers.

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miles traveled in U.S. cities. *Journal of Transport and Land Use* 5(3): 40-52.

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Zhang, L., Chang, L., Zhu, S., Xiong, C., Du, L., Mollanejad, M., Hopper, N., and Mahapatra, S.. 2013. Integrating an agent-based travel behavior model with large-scale microscopic traffic simulation for corridor-level and sub-area transportation operations and planning applications. *ASCE Journal of Urban Planning and Development* 139(2): 94-103.

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travel demand models based on transportation planning application needs, *Transportation Planning and Technology* 36(3): 244-266.

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Nasri, A., and Zhang, L., The analysis of transit-oriented development (TOD) in Washington, D.C. and Baltimore metropolitan areas, *Transport Policy* (Accepted for Publication).

Chen, X., Zhang, L., He, X., Xiong, C., and Li, Z., Surrogate-based optimization of expensive-to-evaluate objective for optimal highway toll charging in a large-scale transportation network, *Computer-Aided Civil and Infrastructure Engineering* (Accepted for Publication).

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Li, L., Chen, X., and Zhang, L., Multi-model ensemble for traffic state estimations, *IEEE Transactions on Intelligent Transportation Systems* (Accepted for Publication).

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Chen, X., Yin, M., Song, M., Zhang, L., and Li, M., Social welfare maximization of multimodal urban transportation systems using metamodel: A simulation study of Tianjin Eco-City in China, *Journal of the Transportation Research Board* (Accepted for Publication).

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Zamir, R., Nasri, A., Baghaei, B., Mahapatra, S., and Zhang, L., Comparative Analysis of the Effect of Transit-Oriented Development on Trip Generation, Distribution, and Mode Share in the Washington, D.C. and Baltimore Metropolitan Areas, *Journal of the Transportation Research Board* (Accepted for Publication).

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Zhu, S., Du, L., and Zhang, L. (2012). An economic model for vehicle ownership quota and usage restriction policy analysis, Paper presented at the 91st Transportation Research Board Annual Meeting, January 22-26, Washington, DC.

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environment on travel behavior. Paper presented at the 4th TRB Innovation in Travel Modeling Conference, April 30-May 2, Tampa, FL.

Zhang, L., and Xiong, C. (2012). Agent-based model of departure time and peak spreading dynamics. Paper presented at the 4th TRB Innovation in Travel Modeling Conference, April 30-May 2, Tampa, FL.

Zhang, L., Mollanejad M., Xiong, C., and Zhu, S. (2012). Agent-based approach for integrating departure time and dynamic traffic assignment models. Paper presented at the 4th International Symposium on Dynamic Traffic Assignment, June 4-6, Martha's Vineyard, MA.

He, X., and Zhang, L. (2012). Quantifying the self-selection effects in residential location choice with a structural equation model. Paper presented at the 13th International Conference on Travel Behavior Research, July 15-20, Toronto, Canada.

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Zhu, S., Du, L., and Zhang, L. (2013).

Rationing and Pricing Strategies for Congestion Mitigation: Behavioral Theory, Econometric Model, and Application in Beijing, Paper accepted for presentation at the 20th International Symposium on Transportation and Traffic Theory, July 19-20, Delft, Netherland.

Zhang, L., Ji, M., Ferrari, N., Mathews, R., Beckett, E., Silwick, J., Slater, G. (2013). MOSAIC: Comprehensive Tool for Sustainable Highway Corridor Planning, Paper presented at the 92nd Transportation Research Board Annual Meeting, January 13-17, Washington, DC.

Zhang, L., and Lu Y. (2013). Implementing Marginal-Cost Vehicle Mileage Fees on Maryland Statewide Road Network, Paper presented at the 92nd Transportation Research Board Annual Meeting, January 13-17, Washington, DC

Mollanejad, M., and Zhang, L. (2013). Incorporating Equity into Interurban Road Network Design, Paper presented at the 92nd Transportation Research Board Annual Meeting, January 13-17, Washington, DC

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## Y. ZHANG

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