

## **EARL E. LEE, II**

Department of Civil and Environmental Engineering  
University of Delaware  
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### **EDUCATION**

**Rensselaer Polytechnic Institute, Troy, New York** August, 2006  
Doctor of Philosophy, Decision Sciences and Engineering Systems  
School of Engineering. Dissertation: "Assessing Vulnerability and Managing Disruptions  
To Interdependent Infrastructure Systems: A Network Flows Approach"

**Rensselaer Polytechnic Institute, Troy, New York** May, 2004  
Master of Science, Management (focus in Environmental Management),  
Lally School of Management and Technology

**Rensselaer Polytechnic Institute, Troy, New York** May, 1978  
Bachelor of Science, Nuclear Engineering

### **PROFESSIONAL HONORS**

Fellowship from the Public Entity Risk Institute, Natural Hazards Research and Applications Center, University of Colorado and the National Science Foundation, 2004. The PERIShip awards are to support work in all aspects of natural and human-made hazards, risks and disasters in all disciplines.

Del and Ruth Karger Doctoral Dissertation Prize, 2007, for the outstanding thesis in the Department of Decision Sciences and Engineering Systems, Rensselaer Polytechnic Institute.

Summer Faculty Institute Fellow, University of Delaware, 2008.

University of Delaware Police Department Foundation Award, April, 2015.

Federal Highway Administration Office of Safety Recognition Coin, April, 2017

College of Engineering Dean's Award for Excellence in Service and Community Engagement, June, 2020

## **APPOINTMENTS AND PROFESSIONAL EXPERIENCE**

### **2020 – Present**

University of Delaware, Department of Civil and Environmental Engineering, Associate Professor.

### **2007 – 2020**

University of Delaware, Department of Civil and Environmental Engineering, Assistant Professor.

Appointed as a Continuing Track Faculty. Responsibilities have included teaching 2-3 courses per year; advising undergraduate students, overseeing graduate student research as well as developing a research program through a variety of funding agencies (details of all research projects are included). Participates on department and college level committees and a variety of teaching seminars.

Program Coordinator, Delaware Technology Transfer (T<sup>2</sup>) / Local Technical Assistance Program (LTAP) Center (2010 – present)

The center coordinates about 50 training events per year, representing over 15,000 contact hours with state, county and local transportation agency members. As director, I am responsible for identifying, prioritizing and arranging training for the Delaware Department of Transportation (DELDOT) and Delaware municipalities in any transportation related topic. I have developed and delivered courses including the Delaware Manual on Uniform Traffic Control Devices, Math Skills for Inspectors (Basic and Advanced) and the DELDOT Project Development Manual. I oversee an annual budget varying between \$400,000 and \$550,000. The center publishes several newsletters per year as well as conducting other outreach efforts.

I have had an active role over the past six years in state safety programs. I have worked closely with DELDOT to develop the statewide crash calendar; served as a member of the statewide Bike and Pedestrian Work Group and have worked closely with the Newark and University of Delaware Police Departments to improve bike and pedestrian safety. I have attended training on the Highway Safety Manual and Systemic Safety System. I also served as a member of the National Data Driven Safety Analysis Implementation Team.

As director, I have also provided oversight and training of many student interns working for local communities in topics including sign and pavement management, ADA compliance and small bridge structure inspections. I serve on the State Transportation Innovation Council (STIC) and am active in all FHWA Every Day Counts (EDC) initiatives.

Interim Director, Delaware Center for Transportation, 2021-present.

Disaster Research Center Core Faculty, 2008 - present.

Deputy Director, University of Delaware Honors Program, September, 2018 – August, 2019

Interim Director, University of Delaware Honors Program, February, 2019 – June, 2019

**2001 – 2007**

Rensselaer Polytechnic Institute, Department of Decision Sciences and Engineering Systems, Staff Research Associate.

Responsible for the day to day management of three FHWA projects totaling nearly \$4.4 million. For the Advanced Traveler Information System project, I oversaw the RPI research team as well as coordinating the efforts of three other academic partners and three corporate partners. Oversaw product development and testing as well as field trials.

For the Electronic Toll and Traffic Management system, I managed the RPI research team and oversaw development and testing with two corporate partners as well as field trials.

For the Incident Management for Safe, Secure and Productive Transportation System, I again managed the RPI research team and managed the expectations and efforts of several law enforcement agencies and two corporate partners.

**1978- 2002**

Commissioned Officer, United States Navy and Navy Reserve.

## PUBLICATIONS

### Book Chapters

\*\*“Logic-based Multi-Objective Optimization for Restoration Planning” (J. Gong, E. Lee, J. Mitchell and W. Wallace). In Optimization and Logistics Challenges in the Enterprise (W. Chaovalitwongse, K.C. Furman, and P.M. Pardalos, Eds.) Springer Book Series on Optimization and Its Applications (SOIA), Vol. 30. Springer Publishing Company, New York, NY. 2009.

“Network Flow Approaches for Analyzing and Managing Disruptions to Interdependent Infrastructure Systems” (E. Lee, J. Mitchell and W. Wallace). In Wiley Handbook of Science and Technology for Homeland Security (J. G. Voeller, Ed.) Vol 2. John Wiley & Sons, Inc., Hoboken, NJ. pp. 1419-1428, 2009.

“Managing Disruptions to Critical Infrastructure Interdependencies in the Context of the 2001 World Trade Center Attack”, (W.A. Wallace, D.M. Mendonca, E. Lee, J.E. Mitchell, and J.H. Chow) In Beyond September 11<sup>th</sup>: An Account of Post-Disaster Research ( J. L. Monday, Ed.), University of Colorado, Boulder, CO, pp. 165-198, 2003.

### Refereed Journal Publications

Zhong, Zijia, Earl E. Lee, Mark Nejad, and Joyoung Lee. "Influence of CAV clustering strategies on mixed traffic flow characteristics: An analysis of vehicle trajectory data." *Transportation Research Part C: Emerging Technologies* 115 (2020): 102611

Zhong, Zijia, Mark Nejad, and Earl E. Lee. "Autonomous and Semi-Autonomous Intersection Management: A Survey." *IEEE Intelligent Transportation Systems Magazine* 12 (2020)

Amiri, Shideh Shams, Nariman Mostafavi, Earl E. Lee,II, Simi Hoque, “Machine Learning Approaches for Predicting Household Transportation Energy Use" *City and Environment Interactions*, Volume 7, August 2020

Zhong, Zijia, Mark M. Nejad, and Earl E. Lee II. "Unconventional Arterial Intersection Designs under Connected and Automated Vehicle Environment: A Survey." arXiv preprint arXiv:1811.03074 (2018).

\*\*“Modeling Pedestrian Crossing Behavior Using Bayesian Network” (R. Bedeley\*, E. Lee, and N. Attoh-Okine). *Transport – Proceedings of the Institution of Civil Engineer*, Vol. 166, No. 5, pp. 282-288, 2013.

\*\*\*“Marine Vessels as Substitutes for Heavy-Duty Trucks in Great Lakes Freight Transportation” (B. Comer, J. Corbett, S. Hawker, K. Korfmacher, E. Lee, C. Prokop, and J. Winebrake). *Journal of the Air & Waste Management Association*, Vol. 6, No. 7, 2010.

\*\*“Urban Bus Transit Network Modeling Using Ant Algorithms” (S. Eshragh, S.A. Zargari, A. Faghri and E. Lee). *Journal of Systemics, Cybernetics and Informatics*, Vol. 8, No. 1, pp. 80-83, 2010.

\*\*“Near-Term Travel Time Prediction Utilizing Hilbert-Huang Transform” (K. Hamad, M. T. Shourijeh\*, E. Lee and A. Faghri). *Computer-Aided Civil and Infrastructure Engineering*, Vol. 24, pp. 551-576, 2009.

“Restoration of Services in Interdependent Infrastructure Systems: A Network Flows Approach” (E. Lee, W.A. Wallace and J. E. Mitchell) *IEEE Transactions on Systems, Man and Cybernetics – Part C*, Vol. 37, No. 6, pp. 1303 – 1317, 2007.

\*“Probes as Path Seekers: A New Paradigm” (A. Demers, G. F. List, W. Wallace, E. Lee and J. Wojtowicz) *Transportation Research Record: Journal of the Transportation Research Board*, No. 1944, TRB, National Research Council, Washington, DC, pp. 107-114, 2006.

\*“A Systems View of Data Integration for Emergency Response” (P. Salaszyk\*, E. Lee, G. F. List, and W. A. Wallace). *International Journal of Emergency Management*, Vol. 3, No. 4, 2006.

\* Joint with graduate student, Rensselaer Polytechnic Institute

\*\* Joint with graduate student, University of Delaware

\*\*\* Joint with graduate student, Rochester Institute of Technology

### **Publications in Draft or Submitted**

\*\*\*\*“Predictive Modeling for Household Transportation Energy Use: A Comparison of Regression Elastic Net Regularization Analysis, Decision Trees, Random Forest and Neural Networks” (Shideh Shams Amiri, Nariman Mostafavi, E. Lee and Simi Hoque), submitted to *Applied Energy*.

\*\*A conceptual design of a GIS App: Supporting First Responders with Situational Awareness of Traffic Impacts and Re-routing Solutions in Highway Emergency Closures” (Shen-Chang Lin, E. Lee and S. McNeil), being revised for re-submission.

\*\*\*“GIS Tools for Improving Police Highway Emergency Response” (Shen-Chang Lin, E. Lee and S. McNeil) being revised for re-submission.

\*\*“Application of GIS in Highway Emergency Response: Situational Awareness of Traffic Impacts and Rerouting Solutions” (Shen-Chang Lin, E. Lee and S. McNeil), being revised for re-submission.

\*\*“The Contradiction Between Anticipated and Estimated Demand at Emergency Points of Dispensing” (R.M Chiquoine, S. McNeil and E. Lee) Being revised for submission.

\*\* “Modeling Traffic Impacts of Points of Dispensing: Challenges, Insights, and Recommendations” (R. Chiquoine, S. McNeil, E. Lee, S. Thomson-Graves, L. Li, A. Tracy, M. DuRoss). Being revised for re-submission.

\* Joint with graduate student, Rensselaer Polytechnic Institute

\*\* Joint with graduate student, University of Delaware

\*\*\* Joint with graduate student, Rochester Institute of Technology

\*\*\*\*Joint with graduate student, Drexel University

### **Conference Proceedings**

\*\*\*\*“Peeking Inside the Black-Box: Explainable machine learning applied to household transportation energy consumption in an urban region” ((S. Amiri, E. Lee, S. Hoque). 16th Conference of the International Society of Indoor Air Quality & Climate (Indoor Air 2020), Seoul, Korea, July, 2020.

“Clustering Strategies of Cooperative Adaptive Cruise Control: Impacts on Human-Driven Vehicles” (Z. Zhong, M. Nejad, E. Lee, J. Lee), 2019 IEEE 2nd Connected and Automated Vehicles Symposium (CAVS), Honolulu, HI. September, 2019. Received Best Paper Prize.

“Alternative Intersection Design under Connected and Automated Vehicle Environment” (Z. Zhong, E. Lee), 2019 IEEE 2nd Connected and Automated Vehicles Symposium (CAVS), Honolulu, HI. September, 2019.

\*\*\*\*“Using Artificial Neural Network to predict a household transportation energy consumption in the urban region within the Urban Metabolism Analysis Tool (IUMAT)” (S. Amiri, E. Lee, S. Hoque), 2019 International Conference on Smart Infrastructure and Construction (ICSIC). Cambridge, UK. July, 2019.

\*\*\*\*“Urban residential transportation energy consumption modeling for estimating household energy consumption in the Urban Metabolism Analysis Tool (IUMAT)” (S. Amiri, N. Mostafavi, E. Lee, S. Hoque). Third International Graduate Student Symposium of the PhD Program, IIT College of Architecture, Chicago, IL. November, 2018

\*\*\*\*“Investigating the Relationship between Transportation and Building Energy Use in Philadelphia Households” S. Amiri, N. Mostafavi, E. Lee, S. Hoque. 15<sup>th</sup> Conference of the International Society of Indoor Air Quality and Climate, Philadelphia, PA, July 2018.

\*\*\*“Making a Case for Better Models and Information Sharing: Transportation Impacts around Points of Dispensing during a Biological Event” (R. Chiquoine, S. McNeil, E. Lee, S. Thompson-Graves, A. Tracy and L. Li) 2018 ASCE International Conference on Transportation and Development, Pittsburgh, PA, July 2018.

\*\*“Enhancing Situational Awareness in Highway Emergency Response: A Conceptual Design” (Shen-Chang Lin\*, E. Lee and S. McNeil) (2017) ITS World Congress, Montreal, Canada, 2017.

\*\*\*“Operationalizing the Concept of Resilience: A Case Study of Flooding in North Carolina,” (Y. Liu\*, E. Lee and S. McNeil) MAIREINFRA, Seoul, South Korea, 2017.

\*\*\*“Linking Land Form and Development Location to Multimodal Travel Demand: Case Studies of Transportation and Land Use Studies in Delaware” (S. Thompson-Graves, M. DuRoss, E. Lee, S. Patterson\*, E. Sundquist and B. Holloway) Proceedings of the 2014 Annual Meeting of the Transportation Research Board. National Research Council, Washington, DC, 2014.

\*\*“Complete Streets and their Impact on Delay” (S. Patterson\* and E. Lee) Proceedings of the 2013 Annual Meeting of the Institute of Transportation Engineers, Boston, MA, August, 2013.

\*\*\*\*“An Integrated Model to Study Environmental, Economic, and Energy Trade-Offs in Intermodal Freight Transportation” (J. Hawker, J. Corbett, B. Comer, A. Ghosh, K. Korfmacher, E. Lee, B. Li, C. Prokop, J. Winebrake). Proceedings of the 2010 International Congress on Environmental Modeling and Software. International Environmental Modelling and Software Society (iEMSs), Ottawa, Canada. 2010.

\*\*\*“Analysis of Off-Peak Traffic Signal Operations” (A. Amanzholov, A. Faghri, R. Taromi, E. Lee) Proceedings of the 12th IFAC Symposium on Control in Transportation Systems (CTS’09), International Federation on Automatic Control, Redondo Beach, CA, September 2009.

\*\*“Applications of Integrated GPS / GIS Technologies to Intelligent Transportation Systems and Data Collection for Freeway Operations” (A. Faghri, R. Taromi, E. Lee). Proceedings of the Second International Symposium on Freeway and Tollway Operations, Transportation Research Board, Honolulu, HI, June, 2009.

\*\*\*“Optimizing Configuration of Urban Streets Using Genetic Algorithms” (R. Taromi, S.A. Zargari, A. Faghri, E. Lee). Proceedings of the 7<sup>th</sup> International Conference on Computing, Communications and Control Technologies, International Institute of Informatics and Systematics, Orlando, FL, July, 2009.

\*\*“Bus Transit Network Modeling Using Ant Algorithms” (S. Eshragh, S.A. Zargari, A. Faghri, E. Lee). Proceedings of the 7<sup>th</sup> International Conference on Computing, Communications and Control Technologies International Institute of Informatics and Systematics, Orlando, FL July, 2009. Selected as the Best Paper, Computing / Information Systems and Technologies Session.

“Current Research in Modeling California and National Freight Corridors – Fastest, Cheapest, Cleanest” (S. Hawker, J. Corbett E. Lee and J. Winebrake). Proceedings of the 2009 Transportation Research Board Workshop Data and Tools for Linking Goods Movement, Air Quality and Transportation Infrastructure Decisions. Transportation Research Board, Irvine, CA, June, 2009.

\*“Experimenting with Real-Time ATIS: Stepping Forward from ADVANCE” (A. Demers, E. Lee, G. F. List, J. Wojtowicz, A. Kornhauser, W. Wallace and P. Salaszyk). Proceedings of the Ninth International Conference on Applications of Advanced Technologies in Transportation, American Society of Civil Engineers, Chicago, IL, August, 2006.

\*“Data Integration for Traffic Incident Management” (P. Salaszyk, E. Lee, W.A. Wallace and G.F. List) Proceedings of the 2005 Annual Meeting of the Portland International Center for Management of Engineering and Technology (PICMET) Portland, OR, August, 2005 and presented at the 2005 Institute for Operations Research and the Management Sciences Annual Meeting, San Francisco, CA, November, 2005.

“Decision Technologies for Protection of Critical Infrastructures” (E. Lee, W.A. Wallace and J. E. Mitchell) Proceedings of the 2005 Department of Homeland Security Science and Technology Directorate Conference - Working Together: R&D Partnerships in Homeland Security, Institute of Electrical and Electronic Engineers (IEEE), Boston, MA and presented at the 2005 Natural Hazards Workshop, Boulder, CO, July, 2005.

“Extreme Events and the Sustainability of Civil Infrastructure Systems” (E. Lee, W.A. Wallace and J. E. Mitchell) Proceedings of the 2005 International Workshop on Integrated Life Cycle Management of Infrastructures, The Hong Kong University of Science and Technology, Hong Kong, China, December, 2004.

“Impact of the 2001 World Trade Center Attack on Critical Interdependent Infrastructures” (D. M. Mendonca, E. Lee, and W.A. Wallace). Proceedings of the 2004 International Conference on Systems, Man and Cybernetics, Institute of Electrical and Electronic Engineers (IEEE), The Hague, Netherlands, October, 2004.

“Assessing Vulnerability of Proposed Designs for Interdependent Infrastructure Systems” (E. Lee, J.E. Mitchell and W.A. Wallace) Proceedings of the 37th Hawaii International Conference on System Science, University of Hawaii, Manoa, Waikoloa, Hawaii, January, 2004.

“Disruptions in Interdependent Infrastructure Systems: A Network Flows Approach” (E. Lee, J.E. Mitchell and W.A. Wallace) Proceedings of the 2004 NSF Design, Service and Manufacturing Grantees and Research Conference, National Science Foundation, Dallas, TX. January, 2004.

\* Joint with graduate student, Rensselaer Polytechnic Institute

\*\* Joint with graduate student, University of Delaware

\*\*\* Joint with graduate student, Rochester Institute of Technology

\*\*\*\*Joint with graduate student, Drexel University

## Invited Lectures

“The Delaware Manual on Uniform Traffic Control Devices – Parts 1 Introduction, Part 2 Signs, Part 3 Pavement Markings and Parts 6 Temporary Traffic Control and Incident Management” – Delaware LTAP Center Training, May, 2018 and November, 2018 (with M. Carter)

“Citilabs’ Sugar Analyst – Measuring Accessibility” – Invited Presentation at the University of Delaware GIS Day, Newark, DE, November, 2017.

“The Delaware Manual on Uniform Traffic Control Devices – Parts 6 Temporary Traffic Control and Incident Management” – Delaware LTAP Center Training, June, 2017 (with M. Carter).

“The Delaware Manual on Uniform Traffic Control Devices – Parts 1 Introduction, Part 2 Signs, Part 3 Pavement Markings and Parts 6 Temporary Traffic Control and Incident Management” – Delaware LTAP Center Training, May 2017 and October 2017 (with M. Carter)

“MUTCD Experimentation with Countdown Pedestrian Signals and Change Intervals” – 10<sup>th</sup> University Transportation Center Spotlight Conference: Pedestrian and Bicycle Safety, Washington, DC., December, 2016.

“GIS and Decision Making” – Invited Presentation at the University of Delaware GIS Day, Newark, DE, November, 2016.

“The Delaware Manual on Uniform Traffic Control Devices – Parts 1 Introduction, Part 2 Signs, Part 3 Pavement Markings and Parts 6 Temporary Traffic Control and Incident Management” – Delaware LTAP Center Training, May, 2014 (with M. Carter).

“Cornerstone Papers – Rinaldi, Peerenboom and Kelly Paper Identifying, understanding, and analyzing critical infrastructure interdependencies” – Invited presentation for UD Chapter of International Association of Emergency Managers, Newark, DE, April, 2013.

“Delaware Efforts and Progress with the FHWA Program – Every Day Counts” – Invited presentation at the FHWA Every Day Counts Summit, Baltimore, MD, October, 2012 .

“The Delaware Manual on Uniform Traffic Control Devices – Parts 1 Introduction and Part 3 Pavement Markings” – Delaware LTAP Center Training, December, 2011, January 2012 and March, 2012 (with M. Carter).

“The Delaware Manual on Uniform Traffic Control Devices – Parts 2 Signs” – Delaware LTAP Center Training, December, 2011, January 2012 and March, 2012 (with M. Carter).

“The Delaware Manual on Uniform Traffic Control Devices – Parts 6 Temporary Traffic Control and Incident Management” – Delaware LTAP Center Training, December, 2011, January 2012 and March, 2012 (with M. Carter).

“Delaware Efforts and Progress with the FHWA Program – Every Day Counts” – Invited presentation at the NLTAPA Annual Meeting, Boston, MA, July, 2011.

“Assessing the Impact of the Panama Canal Widening on East Coast Freight Traffic” – Invited presentation at the University of Delaware University Transportation Center Brown Bag Seminar Series, Newark, DE, March, 2011 (with C. Mitchell\*).



“Public, Private and Academic Cooperation: How Research at the University of Delaware Supports Transportation Operations and Planning” – Invited presentation at the Seventh Mid-Atlantic Regional Planning Roundtable, Wilmington Area Planning Council, Wilmington, DE, October, 2010.

“Evaluating the Impact on Driver Delay and Vehicle Emissions for Closures on Interstate 95 in Delaware”. – Invited presentation at the University of Delaware University Transportation Center Brown Bag Seminar Series, Newark, DE, September, 2010.

“Restoration of Services in Interdependent Infrastructure Systems” – Invited presentation at “Protecting New York from Terrorism and Disaster: Taking Stock, Setting Directions, Looking Forward,” Protect New York, New York City, NY January, 2008.

“Disruptions in Interdependent Infrastructures: A Network Flows Approach” – Invited presentation and panelist at the 2007 Homeland Security Symposium “Cascading Infrastructure Failures: Avoidance and Response” The Federal Facilities Council of the National Academies and the Institute for Infrastructure and Information Assurance at James Madison University. Washington, DC, June, 2007.

“Assessing Vulnerability Due to Interdependencies among Critical Infrastructure System” – Invited presentation at the 2007 Risk Symposium “Risk Analysis for Homeland Security and Defense Theory and Application” sponsored by Los Alamos National Laboratory. Albuquerque, NM, March, 2007.

“Decision Support Models for Interdependent Infrastructure Systems” – Presentation to the Infrastructure Assurance Center, Argonne National Lab, Argonne, IL, August 2006.

### **Conference Presentations**

Partnerships between State DOT’s and LTAP Centers: The Delaware Experience. Presented at the 2019 National LTAP Association Annual Meeting, Stowe, VT. August, 2019

From Chaos to Order: Using GIS to Better Understand Delaware’s Municipal Agreements, K. Knopp, M. Carter and E. Lee. Presented at the University of Delaware GIS Day, Newark, DE. November, 2018.

Asset Management with GIS for UD Pavements (J. Andruzzi, M. Carter, E. Lee. Presented at the University of Delaware GIS Day, Newark, DE, November, 2018.

\*\*Measuring Accessibility with Citilab’s Sugar Analyst (A. Slane and E. Lee) Presented at the University of Delaware GIS Day, Newark, DE, November, 2017.

\*\*“GIS Model of Queuing Traffic in Highway Emergency” (Shen-Chang Lin, E. Lee and S. McNeil), University of Delaware GIS Day, Newark, DE, 2017.

\*\*“First Responders’ GIS-Based Information Demands in Highway Emergency Response” (Shen-Chang Lin, E. Lee and S. McNeil), Natural Hazards Workshop, Broomfield, CO, 2017.

\*\*“Point of Dispensing (POD) Model” (A. Tracy, S. Thompson-Graves, L. Li, M. DuRoss, R. Chiquoine, E. Lee and S. McNeil), Proceedings of the 15th TRB National Transportation Planning Conference, Raleigh, NC, 2017.

“GIS and Asset Management,” Presented at the University of Delaware GIS Day, Newark, DE, November, 2016.

“Models to Assess and Improve Community Resilience,” Presented at Mathematics of Planet Earth 2013+ Workshop on Natural Disasters, Center for Discrete Mathematics and Theoretical Computer Science, Atlanta, GA May, 2015

“Data Analysis Methods for Safety Programs,” Presented at the 2013 Annual Meeting of the Mid-Colonial District of the Institute of Transportation Engineers, Annapolis, MD April, 2013.

\*“Field experience with a wireless GPS-based ATIS system” (G. List, W. Wallace, E. Lee, A. Demers, P. Salaszyk, and J. Wojtowicz), Presented at the 12<sup>th</sup> World Congress on Intelligent Transportation Systems, San Francisco, CA November, 2005.

“The Interdependent Layered Network Model for Protection of Critical Infrastructures” (E. Lee, W.A. Wallace and J. E. Mitchell), Presented at the 2005 Institute for Operations Research and the Management Sciences Annual Meeting, November, 2005.

“Decision Support Models for Interdependent Infrastructure Systems” (E. Lee, J. E. Mitchell and W. A. Wallace), Presented at the 2004 Institute for Operations Research and the Management Sciences Annual Meeting, Denver, CO, October, 2004.

\*“Determining the Number of Probe Vehicles Required to Estimate Travel Times in a Network” (M. Cetin, G. F. List, E. Lee and W.A. Wallace), Presented at the 2004 Institute for Operations Research and the Management Sciences Annual Meeting, Denver, CO, October, 2004.

\* Joint with graduate student, Rensselaer Polytechnic Institute

\*\* Joint with graduate student, University of Delaware

### **Magazine Articles**

“Bridge Inspection Course Goes to College” (with I. Lester). *Public Roads Magazine*, Federal Highway Administration, U.S. Department of Transportation, Vol. 78. No. 3., November, December, 2014.

### **Technical Reports**

\*\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 8 – (E. Lee and A. Duryea). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, August, 2014.

\*\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 7 – (E. Lee and A. Duryea). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, February, 2014.

\*\*“Report of Current Status and Open Items for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 2-6” (E. Lee and M. Laybourne). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, December, 2013.

\*\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 6 – Kirkwood Highway and South Main St.” (E. Lee and M. Laybourne). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, August, 2013.

\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 5 – SR 4 Phase 2” (H. Rybinski, E. Lee and M. Laybourne). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, January, 2013.

\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 4 – SR 273” (H. Rybinski, E. Lee and M. Laybourne). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, September, 2012.

\*\*“MUTCD Experimentation with Countdown Pedestrian Signals and Change Intervals,” Technical Report #211 (R. Bedeley, E. Lee and M. Luszcz). Delaware Center for Transportation, University of Delaware, Newark, DE. October, 2011.

\*\*“New Castle County Transportation Operations Management Plan (TOMP) 2010” (H. Rybinski, C. Wang, D. Racca, E. Lee and D. Brown). Final report for DelDOT project of the same name. September, 2011.

\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 3 – SR 4” (H. Rybinski, E. Lee and M. Laybourne). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, August, 2011.

\*\*“Corridor Signal Coordination Study, Cleveland Ave, Newark DE” (H. Rybinski E. Lee and L. Black). Final report for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 1. Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, June 2011.

\*\*“Report of Preliminary Findings and Recommendations for Delaware Signal Timing Enhancement Partnership (DSTEP) Corridor 2 – SR 72” (H. Rybinski, E. Lee and T. Booz). Delaware Department of Transportation, Delaware Center for Transportation, University of Delaware, Newark, DE, April, 2011.

“2011 Infrastructure Inventory and Assessment, Town of Bethany Beach, DE” (M. Carter and E. Lee). Delaware T<sup>2</sup>/LTAP Center Report, Delaware Center for Transportation, University of Delaware, Newark, DE. February, 2012

“Case Study Memorandum for the Development of a California Geospatial Intermodal Freight Transport Model with Cargo Flow Analysis” (Task 5 Deliverable) (J. Corbett, S. Hawker, K. Korfmacher, E. Lee, J. Winebrake). California Air Resources Board Contract No. 07-314, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, November, 2010.

\*\*\*“Infrastructure Performance Improvement to Reduce Corridor Delays for Freight Flows: Application of the Geospatial Intermodal Freight Transportation Model,” Task 5 Deliverable (J. Corbett, S. Hawker, K. Korfmacher, A. Ghosh, B. Comer, E. Lee, J. Winebrake). Prepared for the Maritime Administration, U.S Department of Transportation Agreement DTMA1H05003-0002B Task Order 5, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, July, 2010.

“Evaluation Technical Memorandum for the Development of a California Geospatial Intermodal Freight Transport Model with Cargo Flow Analysis,” Task 4 Deliverable (J. Corbett, S. Hawker, K. Korfmacher, E. Lee, J. Winebrake). California Air Resources Board Contract No. 07-314, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, July, 2010.

“Model Selection and Modification Technical Memorandum for the Development of a California Geospatial Intermodal Freight Transport Model with Cargo Flow Analysis,” Task 3 Deliverable (J. Corbett, S. Hawker, K. Korfmacher, E. Lee, J. Winebrake). California Air Resources Board Contract No. 07-314, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, December, 2009.

\*\*\*“Assessment of System Performance Design Memorandum for Measures for Infrastructure Performance Improvement to Reduce Corridor Delays for Freight Flows: Application of Geospatial Intermodal Freight,” Task 1 Deliverable (J. Corbett, A. Ghosh, S. Hawker, B. Comer, K. Korfmacher, E. Lee, J. Silberman, J. Winebrake). Prepared for the Maritime Administration, U.S Department of Transportation Agreement DTMA1H05003-0002B Task Order 5, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, November, 2009.

“Data Compilation Technical Memorandum for the Development of a California Geospatial Intermodal Freight Transport Model with Cargo Flow Analysis,” Task 2 Deliverable (J. Corbett, S. Hawker, K. Korfmacher, E. Lee, J. Winebrake). California Air Resources Board Contract No. 07-314, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, November, 2009.

\*\*“Intermodal Freight Transport Along the East Coast: Development and Application of the Geographic Intermodal Freight Transport Model” (D. Briggs, S. Dalton, E. Lee, J. Corbett). Prepared for the Maritime Administration, U.S Department of Transportation Agreement DTMA1H05003-0002B Task Order 3, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, October, 2009.

“Refined Research Plan for the Development of a California Geospatial Intermodal Freight Transport Model with Cargo Flow Analysis,” Task 1 Deliverable (J. Corbett, S. Hawker, K. Korfmacher, E. Lee, J. Winebrake). California Air Resources Board Contract No. 07-314, Laboratory for Environmental Computing and Decision Making (LECDM), Rochester Institute of Technology, Rochester, NY, October, 2009.

\*“Advanced Traveler Information System (ATIS) Implementation and Integration: Final Report” (A. Demers, J. Wojtowicz, E. Lee, W. Wallace and G. List). ITS Library Number 14456, ITS Joint Program Office, Federal Highway Administration, U.S. Department of Transportation, Washington, DC. March, 2009 (available at [http://www.itsdocs.fhwa.dot.gov/jpodocs/repts\\_te/14456.htm](http://www.itsdocs.fhwa.dot.gov/jpodocs/repts_te/14456.htm))

\*“Data Collection in Support of Developing a Traffic Management Plan for the 2008 New York State Fair” (B. Bertoli, W. Wallace, E. Lee and J. Wojtowicz). Technical Report 07-03, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, July, 2007.

“A Regional Deployment Plan for ATIS” (E. Lee, G. List and W. Wallace). Technical Report 06-03, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, August, 2006.

\*“Identification of Information Gaps” (P. Salaszyk, E. Lee and W. Wallace). Technical Report 06-02, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, July, 2006.

\*“Assessment of Incident Management Systems” (P. Salaszyk, E. Lee and W. Wallace). Technical Report 06-01, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, March, 2006.

\*“Needs Assessment for Capital Region Traffic Control Centers” (P. Salaszyk, E. Lee and W. Wallace). Technical Report 05-07, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, October, 2005.

\*“Preliminary Design of the Experiments for the ETTM Device” (J. Wojtowicz and E. Lee). Technical Report 05-06, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, August, 2005.

\*“Advanced Traveler Information System: Organization of the Experiment” (A. Demers, M. Cetin, E. Lee, G. List, W. Wallace, J. Wojtowicz, Y. Zhou). Technical Report 05-04, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, June, 2005.

\*“Information Dissemination Methods for Highway Users” (P.P. Salaszyk, J. Wojtowicz, E. Lee, G. F. List, W. A. Wallace). Technical Report 04-07, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, December, 2004.

\*“Advanced Traveler Information System Traffic Surveillance Technologies” (M. Cetin, A. Demers, E. Lee, G. F. List, W. A. Wallace, J. Wojtowicz). Technical Report 04-02, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, November, 2004.

\*“Capital District Advanced Traveler Information System: Determination of Data Needs” (C. Benjamin, D. Mullen, E. Lee, W. A. Wallace, G.F. List). Technical Report 04-03, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, November, 2004.

“Advanced Traveler Information System Traffic System Implementation” (E. Lee, G. F. List, W. A. Wallace). Technical Report 04-04, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, November, 2004.

\*“Information Dissemination Methods for Highway Users” (P.P. Salaszyk, J. Wojtowicz, E. Lee, G. F. List, W. A. Wallace). Technical Report 04-07, Center for Infrastructure and Transportation Studies, Rensselaer Polytechnic Institute, Troy, NY, December, 2004.

\* Joint with graduate student, Rensselaer Polytechnic Institute

\*\* Joint with graduate student, University of Delaware

\*\*\* Joint with graduate student, Rochester Institute of Technology

## **RESEARCH GRANTS**

### **Current**

#### **FY 20 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$149,371  
Period of Performance – July, 2019 – June, 2021  
PI – Rusty Lee

#### **FY 20 ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$101,946  
Period of Performance – July, 2019 – June, 2021  
PI – Rusty Lee

#### **Statewide Traffic Data and Analysis FY 20**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$125,923  
Period of Performance – Awaiting NTP July, 2019 – June, 2021  
PI – Rusty Lee

#### **FY 20 New Data Sources**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$177,250  
Period of Performance – July, 2019 – June, 2021  
PI – Rusty Lee

#### **Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$532,997  
Period of Performance – July, 2019 – June, 2020  
PI – Rusty Lee

### **Completed – University of Delaware**

#### **FY19 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$148,290  
Period of Performance – September, 2018 – August, 2019  
PI – Rusty Lee

#### **FY 19 ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$80,433  
Period of Performance – September, 2018 – August, 2020  
PI – Rusty Lee

#### **Statewide Traffic Data and Analysis FY 19**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$120,189 (partial NTP)  
Period of Performance – July, 2018 – June, 2019  
PI – Rusty Lee

**FY 19 New Data Sources**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$84,735 (partial NTP)  
Period of Performance – September, 2018 – August, 2020  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$518,834  
Period of Performance – July, 2018 – June, 2019  
PI – Rusty Lee

**FY18 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$130,470  
Period of Performance – September, 2017 – August, 2018  
PI – Rusty Lee

**FY 18 ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$79,888  
Period of Performance – September, 2017 – August, 2018  
PI – Rusty Lee

**FY 18 New Data Sources**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$70,260  
Period of Performance – September, 2017 – August, 2018  
PI – Rusty Lee

**Municipal Agreements Project (T2 Center)**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$61,106  
Period of Performance – September, 2016 – June, 2019  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$445,368  
Period of Performance – September, 2017 – December, 2018  
PI – Rusty Lee

**Construction Manual and 301 Project Interns (T2 Center)**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$18,114  
Period of Performance – February, 2017 – December, 2018

PI – Rusty Lee

**Statewide Traffic Data and Analysis FY 17**

Funding Organization – Delaware Dept. of Transportation

Funding Request – \$88,924

Period of Performance – January, 2017 – December, 2018

PI – Rusty Lee

**FY 17 New Data Sources**

Funding Organization – Delaware Department of Transportation

Funding Request – \$63,005

Period of Performance – August, 2016 – August, 2018

PI – Rusty Lee

**FY 17 ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation

Funding Request – \$45,986

Period of Performance – August, 2016 – August, 2018

PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA

Funding Request – \$435,399

Period of Performance – November, 2016 – December, 2017

PI – Rusty Lee

**ITS Support for Bike and Pedestrian Applications**

Funding Organization – Delaware Dept. of Transportation / FHWA

Funding Request – \$51,322

Period of Performance – October, 2016 – August, 2017

PI – Rusty Lee

**FY17 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation

Funding Request – \$111,680

Period of Performance – August, 2016 – August, 2017

PI – Rusty Lee

**FY 16 New Data Sources**

Funding Organization – Delaware Department of Transportation

Funding Request – \$62,496

Period of Performance – May, 2016 – August, 2017

PI – Rusty Lee

**Planning Level Estimates of Municipal Assets**

Funding Organization – Delaware Department of Transportation

Funding Request – \$61,202

Period of Performance – April, 2016 – August, 2017

PI – Rusty Lee

**FY 15-16 ITS Lab Baseline Service**



Funding Organization – Delaware Department of Transportation  
Funding Request – \$38,291  
Period of Performance – February, 2016 – August, 2017  
PI – Rusty Lee

**Development of Capacity Adjustments for Adaptive Control Systems, System Models and Traffic Incident Management**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$55,303  
Period of Performance – December, 2013 – August, 2015  
PI – Rusty Lee

**Statewide Traffic Data and Analysis FY 16**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$61,202  
Period of Performance – January, 2016 – August, 2016  
PI – Rusty Lee

**FY'16 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$94,602  
Period of Performance – August, 2015 – December, 2016  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$388,876  
Period of Performance – July, 2015 – June, 2016  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$383,737  
Period of Performance – November, 2014 – December, 2015  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$360,000  
Period of Performance – November, 2013 – December, 2014  
PI – Rusty Lee

**Delaware Signal Timing Enhancement Partnership (Corridors 9 and 10)**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$82,525  
Period of Performance – September, 2014 – August, 2015  
PI – Rusty Lee

**FY'15 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$111,243

Period of Performance – September, 2014 – August, 2015  
PI – Rusty Lee

**FY'14 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$46,109  
Period of Performance – October, 2013 – August, 2015  
PI – Rusty Lee

**FY 14 ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$38,291  
Period of Performance – October, 2013 – August, 2015  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$360,000  
Period of Performance – September, 2013 – December, 2014  
PI – Rusty Lee

**Delaware Signal Timing Enhancement Partnership (Corridors 7 and 8)**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$82,525  
Period of Performance – December, 2013 – August, 2015  
PI – Rusty Lee

**Pavement Markings and Signing to Support Senate Bill 120**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$58,312  
Period of Performance – September, 2012 – August, 2015  
PI – Rusty Lee

**Evaluation of Smart Growth Development Patterns and Effects on Transportation**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$54,862  
Period of Performance – September, 2012 – August, 2015  
PI – Rusty Lee

**DELMARVA Freight Study**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$34,642  
Period of Performance – September, 2012 – August, 2015  
PI – Rusty Lee

**FY'13 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$48,206  
Period of Performance – September, 2012 – August, 2013  
PI – Rusty Lee

**ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$38,962  
Period of Performance – September 2012 – August 2013  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept. of Transportation / FHWA  
Funding Request – \$461,697  
Period of Performance – July, 2012 – June, 2013  
PI – Rusty Lee

**Delaware Signal Timing Enhancement Partnership (Corridors 5 and 6)**

Funding Organization – Delaware Dept. of Transportation  
Funding Request – \$67,957  
Period of Performance – January, 2012 – August, 2013  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept of Transportation / FHWA  
Funding Request – \$395,856  
Period of Performance – July, 2011 – June, 2012  
PI – Rusty Lee

**MARAD DTMA Task 1**

Funding Organization – US Department of Transportation, Maritime Administration  
Funding Request – \$222,000  
Period of Performance – September, 2010 – September, 2015  
PI – Jim Corbett  
Co-PI – Rusty Lee

**FY'12 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept of Transportation  
Funding Request – \$47,138  
Period of Performance – September, 2011 – August, 2012  
PI – Rusty Lee

**Delaware Signal Timing Enhancement Partnership (Corridors 3 and 4)**

Funding Organization – Delaware Dept of Transportation  
Funding Request – \$67,957  
Period of Performance – January, 2011 – August, 2012  
PI – Rusty Lee

**The Impact of Disruptions along the I-95 Corridor on Congestion and Air Quality Phase 2**

Funding Organization – University Transportation Center (UTC)  
Funding Request – \$37,200  
Period of Performance – July 2010 – June 2012  
PI – Rusty Lee

**ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation

Funding Request – \$40,292  
Period of Performance – September 2011 – June 2012  
PI – Rusty Lee

**ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$48,500  
Period of Performance – July 2010 – June 2011  
PI – Rusty Lee

**Delaware T<sup>2</sup> / LTAP Center Operations**

Funding Organization – Delaware Dept of Transportation / FHWA  
Funding Request – \$393,616  
Period of Performance – July, 2010 – June, 2011  
PI – Rusty Lee

**FY'11 Regional Travel Demand Modeling Support**

Funding Organization – Delaware Dept of Transportation  
Funding Request – \$49,901  
Period of Performance – September, 2010 – August, 2011  
PI – Rusty Lee

**Development of a Web-based Energy and Emissions Calculator for MARAD**

Funding Organization – US Department of Transportation, Maritime Administration  
Funding Request – \$89,605  
Period of Performance – January, 2010 – January, 2011  
PI – Jim Corbett  
Co-PI – Rusty Lee

**Delaware Signal Timing Enhancement Partnership (Corridors 1 and 2)**

Funding Organization – Delaware Dept of Transportation  
Funding Request – \$70,368  
Period of Performance – January, 2010 – December, 2010  
PI – Rusty Lee

**The Impact of Disruptions along the I-95 Corridor on Congestion and Air Quality**

Funding Organization – University Transportation Center (UTC)  
Funding Request – \$35,160  
Period of Performance – July 2009 – June 2010  
PI – Rusty Lee  
Co-PI – Jim Corbett

**An Engineering Evaluation of the Panama Canal Widening on East Coast Freight Corridors**

Funding Organization – University Transportation Center (UTC)  
Funding Request – \$24,000  
Period of Performance – September, 2010 – September, 2011  
PI – Rusty Lee, Jim Corbett

**Enhanced Pedestrian Crossings – Experimenting with Alternatives to MUTCD Standards for Crossing Signals**

Funding Organization – Delaware Department of Transportation

Funding Request – \$47,213  
Period of Performance – July 2009 – June 2010  
PI – Rusty Lee

**ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$38,975  
Period of Performance – July 2008 – June 2010  
PI – Rusty Lee

**ITS Lab Baseline Service**

Funding Organization – Delaware Department of Transportation  
Funding Request – \$44,655  
Period of Performance – July 2009 – June 2010  
PI – Rusty Lee

**Development of a California Geospatial Intermodal Freight Transport Model with Cargo Flow Analysis**

Funding Organization – State of California Air Resources Board  
Funding Request – \$199,937  
Period of Performance – January, 2009 – June, 2010  
PI – Jim Corbett  
Senior Personnel – Rusty Lee

**Application of freight transportation and decision models to scope and compare freight infrastructure investment**

Funding Organization – University Transportation Center (UTC)  
Funding Request – \$36,360  
Period of Performance – September, 2008 – September, 2010  
PI – Jim Corbett  
Co-PI – Rusty Lee

**Development of Delaware regional freight data for Geospatial Intermodal Freight Transportation Model (GIFT)**

Funding Organization – University Transportation Center (UTC)  
Funding Request – \$40,000  
Period of Performance – September, 2007 – September, 2010  
PI – Jim Corbett  
Investigator – Rusty Lee

**Environmental Benchmarks**

Funding Organization – US Department of Transportation, Maritime Administration  
Funding Request – \$98,362  
Period of Performance – September 2008 – June, 2010  
PI – Jim Corbett  
Co-PI – Rusty Lee

**Infrastructure Performance Improvement to Reduce Corridor Delays for Freight Flows:  
Application of Geospatial Intermodal Freight Transportation Model**

Funding Organization - US Department of Transportation, Maritime Administration  
Funding Request – \$299,998

Period of Performance – February, 2009 – July, 2010

PI – Jim Corbett

Co-PI – Rusty Lee, James Winebrake

**Delaware Transportation Operations Management Plan – Newcastle County**

Funding Organization – Delaware Dept. of Transportation

Funding Request – \$65,578

Period of Performance – September 2009 – August 2012

PI – Rusty Lee

**Development of Geospatial Intermodal Freight Transport Model for East Coast Freight Movement**

Funding Organization – US Department of Transportation, Maritime Administration

Funding Request – \$139,661

Period of Performance – September, 2008 – November, 2009

PI – Jim Corbett

Senior Personnel – Rusty Lee

**Infrastructure Security and Emergency Preparedness**

Funding Organization – Delaware Department of Transportation and University Transportation Center (UTC)

Funding Request – \$76,436

Period of Performance – July 2008 – June 2010

PI – Sue McNeil

Co-PI Rachel Davidson, Tricia Wachtendorf and Rusty Lee

**Commercial Freight and the Resilience of the BOSFOLK Corridor**

Funding Organization – University Transportation Center (UTC)

Funding Request – \$13,330

Period of Performance – July 2008 – June 2009

PI – Rusty Lee

Co-PI – Jim Corbett

**RPI Data Collection in Support of Developing a Traffic Management Plan for the 2008 New York State Fair**

Funding Organization – New York State Department of Transportation

Funding Request – \$69,999

Period of Performance – March 2007 – August 2008

PI – Rusty Lee

**Completed Previous**

**Impact of the World Trade Center Attack on Critical Infrastructure Interdependencies**

Funding Organization – National Science Foundation

Funding Request – \$70,000

Period of Performance – September, 2001 – September, 2003

PI – William Wallace

Co-PI – Joe Chow, John Mitchell

Investigator – Rusty Lee

**Disruptions in Interdependent Infrastructures: A Network Flows Approach**

Funding Organization – National Science Foundation

Funding Request – \$105,303  
Period of Performance – November, 2002 – October,2005  
PI – William Wallace  
Co-PI –John Mitchell  
Investigator – Rusty Lee

**Decision Technologies for Managing Critical Infrastructure Interdependencies**

Funding Organization – National Science Foundation  
Funding Request – \$414,742  
Period of Performance – July, 2003 – January,2007  
PI – William Wallace  
Co-PI –John Mitchell  
Investigator – Rusty Lee

**Advanced Traveler Information Systems Implementation and Integration (ATIS)**

Funding Organization – New York State Department of Transportation  
Funding Request – \$1,639,249  
Period of Performance – March 2003 – August, 2008  
PIs – George List, William Wallace  
Project Manager – Rusty Lee

**Incident Management for Safe, Secure and Productive Transportation Systems (TIM)**

Funding Organization – New York State Department of Transportation  
Funding Request – \$1,824,268  
Period of Performance – June 2004 – Present  
PIs – George List, William Wallace  
Project Manager – Rusty Lee

**Electronic Toll and Traffic Monitoring (ETTM)**

Funding Organization – New York State Department of Transportation  
Funding Request – \$1,023,654  
Period of Performance – June, 2005 – Present  
PIs – George List, William Wallace  
Project Manager – Rusty Lee

## **Declined**

### **CRISP Type 2: Impacts of Human Behaviors on Medical Countermeasure Dispensing during a Biological Outbreak: Interdependencies of Public Health, Emergency Management, and Transportation Response (I-PHEMTR) Systems (submitted Feb 2017, amount: \$2,304,564)**

Funding Organization – National Science Foundation

Funding Request – \$2,304,564

Submitted – Feb, 2017

PI – Sue McNeil

Investigators –Rusty Lee, Mark Nejad, Kimberly Gill, Lena Mashayekhy

### **Engineering Research Center Proposal - Center for Complex Critical Infrastructure Systems under Stress (C2IS2)**

Funding Organization – National Science Foundation

Funding Request – \$14,000,000

Period of Performance – 5 years

PI – Priscilla Nelson, NJIT

Investigators – Sue McNeil, Rusty Lee, Rachel Davidson (UD) as well as teams from CMU, NJIT, MSU

### **Partnership to Develop an Integrated, Advanced Travel Demand Model and Fine-Grained, Time-Sensitive Network**

Funding Organization – Strategic Highway Research Program (SHRP-2), Transportation Research Board of the National Academies

Funding Request – \$1,400,000

Submitted – April, 2009

Period of Performance – September, 2009 – May, 2011

Co-PI – Rusty Lee, Wolfgang Scherr, Scott Thompson-Graves, Ed Ratledge

### **Design of Resilient Interdependent Civil and Cyber – Infrastructure Systems**

Funding Organization – National Science Foundation

Funding Request – \$362,182

Period of Performance – January, 2008 – January, 2011

PI s– William Wallace, John Mitchell, Rusty Lee

## **RESEARCH ADVISING**

Senior Thesis

Scott Hartnett – Community Resilience and the Transition Town Model

Sarah Doggett – Characteristics of Transit-Friendly Cities

TingChi Ren - Operationalizing the Concept of Resilience: A Case study of Flooding in North Carolina

### **Undergraduate Students**

Scott Stables, Evaluating the Impacts of Closures of Interstates along the Boston to Norfolk Corridor, UTC Undergraduate Research, Winter, 2008.



Sarah Dalton, Hurricane Evacuation in Delaware, DRC REU 2008 and 2008 University Scholars Program.

Charles Mitchell, Delaware Emergency Evacuation for the Salem/Hope Creek Nuclear Power Generators, DRC REU 2008.

Kelly Ambrose, Emissions of Commercial Trucks under Varying Operating and Road Conditions, 2009 UTC Summer Fellowship.

Andrea Slane, Development of a Work Zone Planning and Traffic Diversion Model for Delaware, Summer, 2013.

### **Masters' Students (with thesis)**

Roy Wang, "Simulation Based Evaluation on the Effects of Jaywalking," August, 2009.

Chuoran Wang, "The Study of Supply Chain Facilities and Their Interconnection with Critical Civil Infrastructure Systems," August, 2009.

Dzung Ngo, "The Impact of Disruptions along the I-95 Corridor on Congestion and Air Quality," December, 2010.

Yi Lou, "Environmental Justice and Intermodal Freight," August, 2010.

Rudolph Bedeley, "Evaluation of Pedestrian Behavior to Alternative Operations of Pedestrian Crossing Signals," December, 2010.

Charles Mitchell, "An Engineering Evaluation of the Impact of Widening the Panama Canal on Freight and the East Coast Transportation Corridors," May, 2011.

Trevor Booz, "Making Bike-able Cities: Developing Alternative Corridors for Philadelphia," May, 2011.

Sara Patterson, "The Effects of Complete Streets on Mobility at the Arterial Level," May, 2012.

Elisa Kropat, "The Impact of Disruptions at Interchanges along the I-95 Corridor on Congestion and Air Quality," May, 2013.

Mindy Laybourne, "Developing Hybrid Measures of Performance for Evaluating Level of Service at Signalized Intersections," August, 2013.

Tucker Smith, "Experimentation with Countdown Pedestrian Signal Timing and the Effect on Intersection Safety," May, 2014.

Anna Duryea, "Alternative Methods for Identifying High Risk Crash Corridors," December, 2015.

Megan Rosica, "A "Genomic" Evaluation Technique for Evaluating Pedestrian Crash Data," May 2017

Ben Fisher, "Utilizing Student Schedule Data to Develop Transit and Pedestrian Travel Demand Models," May, 2017

Steven Pondo-Voigt, "Optimization of Toll Plaza Operations and Workforce Scheduling," August, 2017.

Andrea Slane, "Measuring the Unmeasurable: A Quantitative Approach to Measuring Accessibility," May 2019.

Yun Tang – "Development and Evaluation of a Personal Rapid Transit System for UD" Expected, August 2019.

#### **Masters' Students (non-thesis option)**

Lauren Lobo

Bradley Sandhaus

#### **Ph.D. Students (Thesis Advisor)**

Sara Patterson, "Evaluating the Effects of Complete Streets on Congestion and Air Quality at the Network Level," Summer, 2013.

Chuoran Wang, "An Evaluation of Data Inputs, Data Assumptions and Sensitivity Analysis of the MOVES Model and their Impact on Mobile Emissions Inventories," Fall, 2013.

Laura Black, "Collaborative Assessment of Interdependent Infrastructure in Support of Community Resiliency," Fall, 2013.

#### **Ph.D. Committee Member**

Olufikayo Oluwaseun Aderinlewo, "Assessment of a Transportation Infrastructure System and its Component Interaction," Spring, 2008.

Michelle Oswald, "Development of A Decision Support Tool For Transportation Adaptation Practices In Response To Climate Change," Spring, 2011.

Mosi London, "Developing a Framework for the Impact Evaluation of Different Types of Transportation Projects," Spring, 2014.

Sekine Rahimian, "Transportation System Demand and Performance Immediately after an Earthquake," Fall 2014.

Ryan Burke, "The Dual Status Commander and Hurricane Sandy: Maturing Military Response with Process Improvement," Spring, 2015.

Juan Camilo Sanchez Gil, "Food Aid Distribution during Disaster Response and Short-Term Recovery: Enhancing Performance of Heterogeneous Humanitarian Logistics Structures," Spring, 2016.

Shen-Chang Lin, "Application of GIS in Highway Emergency Response," Spring, 2018.

Rachel Chiquoine, "Travel Behaviors During a Public Health Biological Emergency Requiring Points of Dispensing," Spring 2019.

## **COURSES TAUGHT**

Fall, 2007 –

CIEG 650 - Urban Transportation Systems (co-taught with Sue McNeil)

Spring, 2008 –

CIEG 161 – Freshman Design, co-taught with Jack Puleo and Allen Jayne

CIEG 351 – Transportation Engineering (co-taught with Sue McNeil)

Fall, 2008 –

CIEG 486– Engineering Project Management

CIEG 650 - Urban Transportation Systems (co-taught with Sue McNeil)

Spring, 2009 –

CIEG 161 – Freshman Design, co-taught with Jack Puleo and Allen Jayne

CIEG 467 / 667 – Modeling Engineering Systems

Fall, 2009

CIEG 486 / 686 – Engineering Project Management

CIEG 650 - Urban Transportation Systems (co-taught with Sue McNeil)

Spring, 2010 –

CIEG 161 – Freshman Design, co-taught with Jack Puleo and Allen Jayne

CIEG 467 / 667 – Modeling Engineering Systems

Fall, 2010

CIEG 486 / 686 – Engineering Project Management

CIEG 650 - Urban Transportation Systems (co-taught with Sue McNeil)

Spring, 2011 –

CIEG 161 – Freshman Design, co-taught with Jack Puleo and Allen Jayne

CIEG 467 / 667 – Modeling Engineering Systems

Fall, 2011

CIEG 486 / 686 – Engineering Project Management

Spring, 2012 –

CIEG 161 – Freshman Design, co-taught with Jack Puleo and Allen Jayne, course coordinator

CIEG 467 / 667 – Modeling Engineering Systems

Fall, 2012

CIEG 486 / 686 – Engineering Project Management

CIEG 650 - Urban Transportation Systems (co-taught with Sue McNeil)

Spring, 2013 –

CIEG 161 – Freshman Design, co-taught with Jack Puleo and Allen Jayne, course coordinator

CIEG 467 / 667 – Optimal Design – Spring 13-17

Fall, 2013

CIEG 486 / 686 – Engineering Project Management

Winter, 2014

CIEG 486 – Engineering Project Management

Spring, 2014 –

CIEG 467 / 667 – Optimal Design – Spring 13-17

Fall, 2014

CIEG 486 / 686 – Engineering Project Management

Winter, 2015

CIEG 351 – Transportation Engineering (Study Abroad, Australia)

CIEG 486 – Engineering Project Management

Spring, 2015 –

CIEG 467 / 667 – Optimal Design – Spring 13-17

Fall, 2015

CIEG 486 / 686 – Engineering Project Management

Winter, 2016

CIEG 486 – Engineering Project Management

Spring, 2016 –

CIEG 467 / 667 – Optimal Design – Spring 13-17

Fall, 2016

CIEG 486 / 686 – Engineering Project Management

Winter, 2017

CIEG 486 – Engineering Project Management

Spring, 2017 –  
CIEG 467 / 667 – Optimal Design – Spring 13-17

Fall, 2017  
CIEG 486 / 686 – Engineering Project Management

Winter, 2018  
CIEG 486 – Engineering Project Management

Spring, 2018 –  
CIEG 459 / 659 – Optimization in Design and Construction

Fall, 2018  
CIEG 486 / 686 – Engineering Project Management

Winter, 2019  
CIEG 486 – Engineering Project Management

Spring, 2019 –

Fall, 2019  
CIEG 486 / 686 – Engineering Project Management

Winter, 2020  
CIEG 486 – Engineering Project Management

## **PROFESSIONAL MEMBERSHIPS AND SERVICE**

Member, ASCE

Member, IEEE

Member, PMI

Member, ITE

Member, ASEE

Member, APWA

Reviewer in 2008 - 2019

IEEE Systems Journal

OR Spectrum

IEEE Transactions on Systems, Man and Cybernetics – Part A

International Journal of Emergency Management

Journal of Homeland Security and Emergency Management  
 Natural Hazards Review  
 Computer-Aided Civil and Infrastructure Engineering  
 Annals of Operations Research  
 Earthquake Spectra  
 Responsible Editor, Earthquake Spectra

## **DEPARTMENT COLLEGE AND UNIVERSITY SERVICE**

Member of the Middle States Accreditation Committee  
 Member, University Master Plan Sub-Committee for Student Experience  
 Member of Deputy Provost's Re-Imagining Advising Task Force  
 Director, T<sup>2</sup> / LTAP Center, Delaware Center for Transportation 2010- present  
 National LTAP Association Executive Committee member – 2011 – 2017  
 National LTAP Association Secretary – 2012 – 2013, 2016- 2017  
 National LTAP Association Professional Development Work Group Co-chair – 2012 – 2017  
 University Faculty Senate Committee on Undergraduate Studies – 2014 – 2015, Chairman, 2016 – 2018  
 University Faculty Senate Committee on General Education – 2015 – 2018  
 University Faculty Senate Coordinating Committee on Education – 2016 - 2018  
 College of Engineering Election Committee – 2007-2009  
 Department of Civil and Environmental Engineering Graduate Committee – 2007-2014  
 Department of Civil and Environmental Engineering Undergraduate Committee – 2017- Present  
 Faculty Advisor, Student Chapter of ITE – 2008 – present  
 Faculty Advisor, 2009 ASCE Concrete Canoe and Steel Bridge Regional Competition  
 Coordinator, Advanced Traffic Operations, Delaware Center for Transportation – 2007-2009  
 Member, Disaster Research Center Strategic Planning Committee – 2007-present  
 Judge (Academic Representative), Bentley Systems Awards of Excellence Student Competition - 2008  
 Friend of the Committee, ITS Committee, Transportation Research Board - – 2007, 2008  
 Friend of the Committee, Regional Transportation Systems Management and Operations Committee,  
 Transportation Research Board - – 2009, 2010  
 Member, Energy and Environment Sub-Committee, Regional Transportation Systems Management and  
 Operations Committee, Transportation Research Board. – 2009,2010

### NLTAPA Conference Service

2013 Boise ID – Moderator, Managing Center Success  
 2014 St. Louis, MO – Session Planner and Moderator – LTAP U  
     Presenter – The ABC's of LTAP and TTAP  
 2015 Savannah, GA – LTAP U  
 2016 Madison, WI – LTAP U  
     Moderator – Interactive Exercises with a Purpose  
 2017 Portsmouth, VA – Conference Planning committee  
     LTAP U  
 2018 New Orleans, LA – LTAP U  
     Presenter – Bringing Innovation and EDC to Locals.