

## Professional Portfolio

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**John N. Ivan, Ph.D., P.E.**

Professor

Civil & Environmental Engineering  
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Dr. Ivan is a Professor in the Department of Civil and Environmental Engineering at the University of Connecticut. He was Associate Head of the Department from 2006 to 2008 and from 2009 to 2015. He spent the spring semester 2016 as a Research Civil Engineer at the Turner Fairbank Highway Research Center of Federal Highway Administration in the Office of Safety Research and Development. He spent the spring semester 2009 as a visiting researcher at Lund University, Sweden, and the academic year 2002-2003 as a Fulbright Senior Scholar at the Institute for Transport Studies at the University of Karlsruhe in Germany, and as a Research Engineer at the Texas Transportation Institute at Texas A&M University. He has earned B.S, M.S. and Ph.D. degrees in Civil Engineering at Carnegie Mellon University, Massachusetts Institute of Technology and Northwestern University, respectively. He teaches courses in traffic engineering, transportation planning and road safety analysis and conducts research in the application of statistical forecasting techniques for measuring the sustainability of transportation systems and engineering, especially highway safety and operations. He has been an investigator on 51 funded research projects at a total of over \$8.5 million in funding, and published as author or co-author 57 peer-refereed journal articles and 57 peer-reviewed conference papers. He has coordinated preparation for the academic accreditation of the Civil Engineering Program at the University of Connecticut for four visits over twenty years and is an associate editor of *Accident Analysis and Prevention*. In 2011 he was elected to the Connecticut Academy of Science and Engineering and has been a Program Evaluator for ABET, Inc., since 2012.

Last updated: September 15, 2023

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## Biographical Sketch

### Education

#### Ph.D. Jun. 1994 - Northwestern University

**Field of Study:** Civil Engineering (Transportation); **Advisor:** Joseph L. Schofer

**Dissertation:** *Real-Time Data Fusion for Arterial Street Incident Detection Using Neural Networks*

#### M.S. Feb. 1987 - Massachusetts Institute of Technology

**Field of Study:** Civil Engineering (Construction Engineering and Management) **Advisor:** Robert D. Logcher

**Thesis:** *CAPEs: A Cafeteria Architectural Planning Expert System*

#### B.S. May 1985 - Carnegie Mellon University

**Field of Study:** Civil Engineering / Engineering and Public Policy (dual major)

### Academic and Professional Experience

<b>University of Connecticut</b>	Professor, Civil & Environmental Engineering, 2007-present Associate Professor, Civil & Environmental Engineering, 2000-2007 Assistant Professor, Civil & Environmental Engineering, 1994-2000 Lecturer, Civil and Environmental Engineering, 1994
<b>Federal Highway Administration (USDOT)</b>	Research Civil Engineer, Turner Fairbank Highway Research Center, Office of Safety Research and Development, 2016
<b>Lund University, Sweden</b>	Visiting Researcher, Department of Technology and Society, 2009
<b>University of Karlsruhe, Germany</b>	Visiting Lecturer, Institute for Transport Studies, 2002-2003, 2004
<b>Texas Transportation Institute</b>	Research Engineer, 2003
<b>Northwestern University</b>	Research Assistant, Transportation Center, 1991-1993
<b>Garmen Associates (now AECOM)</b>	Transportation Engineer, 1987-1990 (Montville, New Jersey)

### Academic Administration

<b>University of Connecticut</b>	Associate Head of Department, Civil & Environmental Engineering, 2006-2008, 2009-2015 Associate Director, Connecticut Transportation Institute, 1996-2005
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### Honors or Distinctions

- Advisor to Kai Wang, winner of Best Paper by Young Researcher Award, Transportation Research Board, Committee on Safety Data, Analysis and Evaluation, 2015 Annual Meeting
- Best Paper Award, Transportation Research Board, Committee on Safety Data, Analysis and Evaluation, 2011 Annual Meeting (with A. Borsos, C. Koren and N. Ravishanker)
- Connecticut Academy of Science and Engineering, elected 2011
- Top 10 Cited Papers, 2005-2009, *Accident Analysis and Prevention* (with D. Lord and S. Washington)
- Best Paper Award, Transportation Research Board, Committee on Operational Effects of Geometrics, 2007 Annual Meeting (with S. Ranade and A. Sadek)
- J. William Fulbright Senior Scholar – Germany, 2002-2003

### Other Qualifications

- Registered Professional Engineer (State of New York, No. 067877)

### Research Focus

- |                            |  |
|----------------------------|--|
| • Highway crash prediction | • Representing exposure to highway crashes       |
| • Pedestrian safety        | • Statistical modeling of transportation systems |

### Courses Taught

- |                                       |  |
|---------------------------------------|--|
| • Traffic Engineering I               | • Civil Engineering Projects I and II                      |
| • Traffic Engineering Characteristics | • Case Studies in Transportation Engineering               |
| • Traffic Engineering Operations      | • Transportation Engineering and Planning                  |
| • Transportation Planning             | • Decision Analysis in Civil & Environmental Engineering   |
| • Travel Demand Forecasting           | • Operations Research in Civil & Environmental Engineering |
| • Transportation Safety               | • Statistical and Econometric Methods in Transportation    |

## Summary of Notable Career Accomplishments

### ***Research and Scholarship***

#### **Research Grants**

- 51 Total Research Grants: \$8,508,167
- Sole PI for 8 grants: \$476,514
- Co-PI for 43 grants: share = \$3,462,079

#### **Publications (details in CV)**

- Refereed Journal Articles: 57
- Conference Proceedings (peer reviewed): 19
- Conference Papers (peer reviewed): 57
- Conference Presentations without Papers: 27
- Invited Academic Seminars: 8
- Technical Reports: 48

### ***Teaching and Curriculum***

#### **Graduate Students Supervised (with thesis)**

- Current: 4 Ph.D.
- Completed: 11 Ph.D., 23 M.S.

#### **Curriculum Accomplishments**

- Developed new courses in Statistical and Econometric Methods in Transportation, Transportation Safety, Travel Demand Forecasting, Case Studies in Transportation Engineering (with N. Garrick), and Decision Analysis in Civil & Environmental Engineering
- Developed new yearlong senior design sequence
- Chair, Civil Engineering Curriculum Review and Revision Committee, 1997-1998, 2006-2008

### ***Professional Activities and Service***

#### **Invited Review Panels**

- Independent Review Group for Chapter 8 of AASHTO Highway Safety Manual, final report Jul. 2006, Transportation Research Board, National Academy of Sciences
- Safety Data Project, steering committee, 2001–2002, Bureau of Transportation Statistics, United States Department of Transportation

#### **Professional Organizations**

##### *Transportation Research Board*

- Committee on Highway Safety Performance, member 2007-2020, Chair, Subcommittee on Predictive Methods.
- Committee on Safety Data Analysis and Evaluation, member 2008-2022, Co-chair, Subcommittee on Future Directions in Road Safety Analysis, 2008-2018.

##### *ABET, Inc.*

- Program Evaluator, Engineering Accreditation Commission, 2012-present.

##### *Connecticut Academy of Science and Engineering*

- Chair, Transportation Systems Technical Board, May 2014 to June 2018.

#### **Administrative Appointments**

- Accreditation Coordinator, Civil Engineering Program, 2000-present; Environmental Engineering Program, 2020-present
- Associate Head of Department, Civil & Environmental Engineering, 2006-2008, 2009-2015
- Associate Director, Connecticut Transportation Institute, 1996-2005

#### **Associate Editorships**

- Associate Editor, *Accident Analysis & Prevention*, 2013-present
- Associate Editor, *Journal of Transportation Safety and Security*, 2009-2013

## Research and Scholarship

### Personal Statement

Since beginning my academic career at the University of Connecticut, I have developed a research program focused on the statistical and mathematical modeling of transportation systems, with an emphasis on road crash prediction. My research has been funded by a diversity of national and regional sources, including the National Academy of Sciences (National Cooperative Highway Research Program), the United States Department of Transportation (through the New England University Transportation Center, the Center for Livable Transportation Systems and the Bureau of Transportation Statistics), the New England Transportation Consortium (a joint program of the six New England States) and the Connecticut Department of Transportation (through the Connecticut Cooperative Transportation Research Program). In 2011, in recognition of my scholarly achievements, I was elected to the Connecticut Academy of Science and Engineering.

This focus for my research program is a natural outgrowth of my dissertation research, which focused on using neural networks to combine input from multiple data sources for detecting traffic incidents on signalized street networks. The findings from this research were well received in the traffic engineering research community; I was invited to give a plenary talk at a symposium organized by Oak Ridge National Laboratory in 1996 on surface street incident detection. Fewer than a dozen researchers anywhere have published findings in this area and every published paper on this topic I have run across has cited at least one source authored by my former colleagues at Northwestern University and/or me.

My research in motor vehicle crash prediction stands apart from that of other researchers in two ways: (1) my consideration of how to most appropriately account for the effect of traffic volume on crash incidence on rural two-lane road segments and (2) my estimation of crash prediction models by collision type rather than in total. The idea that the relationship between the crash count and the traffic volume on a road segment is not linear was established in the late 1990's by several researchers, including myself. My research has investigated how this relationship varies from one collision type to another as a function of the opportunities for crashes of each type to occur, that is, meetings of vehicles in the same, opposite, or intersecting directions, or for crashes of single vehicles. This research has been sponsored by the New England University Transportation Center and the Bureau of Transportation Statistics. Findings from this research were applied to my work on the team that developed a chapter of the *AASHTO Highway Safety Manual (HSM)*, addressing crash prediction models for multilane rural highway segments and intersections. In this research we further refined the separation of crashes by collision type to account not only for differences in the exposure phenomenon but also contributing factors to each cluster of collision types. This research was sponsored by the National Cooperative Highway Research Program (NCHRP). I am currently leading a team on another NCHRP project to estimate new models for the existing chapters in the HSM for crash type and severity. The research we are conducting on this project is expected to replace most of the material in Part B of the HSM.

This research into learning how to use traffic volumes to uniquely represent opportunities for various types of crashes to occur has led to a unique research focus. Certain types of collision types, *i.e.*, those involving vehicles crossing paths or turning from the roadway, can only occur at intersections or driveways. In order to effectively account for exposure to such collisions on road segments, it is necessary to know how many vehicles turn on and off or cross the road segment at minor road intersections or driveways – information that is not available in most state databases. With funding from the New England Transportation Consortium, I investigated the use of land use inventories archived in geographic information systems (GIS) databases to both characterize the land use surrounding a road and estimate the volume of traffic entering and exiting the road via driveways and minor intersections. This goes beyond evaluating whether or not land use is related to crash incidence; we determined that we could in fact use the land use inventories to actually estimate the exposure to intersection-related collisions along the road segment, and thus, better predict the occurrence of such collisions. With funding from the Connecticut Cooperative Transportation Research Program (CCTRP) I have extended that research to estimate crash prediction models using this same kind of data for local jurisdiction roads that have no traffic count information available to use as exposure.

Another unique focus of my research is learning about the role of the roadside environment and land use type and density in influencing vehicle speeds and safety. This research, conducted with Dr. Norman Garrick, investigated how drivers take cues from the roadside environment to decide how fast to drive. In this research we have confirmed long-held beliefs about what influences driver speed, but also uncovered some surprising findings that suggest new approaches to land development and street design. This research was sponsored by the Connecticut Cooperative Transportation Research Program. I have continued this research on projects funded by the Center for Transportation and Livable Systems (CTLIS), a USDOT Tier II University Transportation Center (UTC) and the New England University Transportation Center, the Region 1 UTC. These projects are investigating roadway and roadside characteristics associated with pedestrian / motor vehicle crashes and conflicts.

I have also investigated the applicability of crash surrogates, such as vehicle interactions at different severity levels, for characterizing the safety of an intersection or road segment. Using vehicle conflicts and interactions to study safety was first investigated in the United States in the 60's and 70's, and this approach is used widely in northern Europe, but it is not commonly used in North America due to concerns about whether or not conflicts or interactions are actually correlated with crash incidence. My research team carried out a trial investigation of this to study the safety of left turn lanes. The pedestrian safety projects funded by CTLS and NEUTC described above have investigated the use of interactions and conflicts between pedestrians and motor vehicles for predicting crashes. One goal of this research has been to learn how to better account for exposure to crashes and thus isolate the effect of traffic and pedestrian volumes from the risk introduced by roadway and roadside elements. We have also identified ways in which pedestrian safety is associated with driver and pedestrian behavior, and how both respond to elements of the road environment, in particular traffic signal phasing options (such as exclusive pedestrian phasing). I expanded upon this research with an interdisciplinary team involving Dr. Nalini Ravishanker in Statistics at Connecticut and Dr. Rebecca Townsend in Communication at Manchester Community College. In this research, funded by NEUTC, we investigated pedestrian attitudes and stated behavior choices regarding crossing streets at pedestrian signals to learn more about how to both educate pedestrians about safe crossing choices and to help traffic safety professionals to design pedestrian crossing facilities to improve safety.

My research has focused on identifying limitations in existing motor vehicle crash modeling and road design and operational practice, and investigating potential improvements aimed at overcoming those limitations. Some of the improvements I have investigated—such as using hourly traffic volume instead of annual average daily traffic for traffic exposure—while shown to be more effective, are not being implemented due to practical limitations in acquiring the data required. On the other hand, I was one of very few safety prediction modelers estimating crash prediction models by collision type twenty years ago, but today it has become expected practice as it is recognized that various collision types occur under much different road conditions and have different severity outcomes. My goal is for my current research to result in findings that will make their way into road engineering practice and influence the next generation of motor vehicle crash prediction models and traffic operation guides.

## **Research Grants**

### **Current Funded Projects**

1. Evaluating the Impacts of Real-Time Warnings and Variable Speed Limits on Safety and Travel Reliability during Weather Events (w. M. Shaon, N. Eluru, M. Shirazi), National Cooperative Highway Research Program, Project 03-142, National Academy of Sciences, Aug. 4, 2022 – Aug 3, 2025, \$400,000.
2. Development and Application of a Disaggregate Artificial Realistic Data Generator for Computationally Testing Safety Analysis Methods (w. S. Zhao, K. Wang, N. Eluru, M. Abdel-Aty), Federal Highway Administration, Exploratory Advanced Research Program, US Department of Transportation, Aug. 23, 2019 – Nov. 21, 2023, \$999,999.
3. The Effect of Vehicle Mix on Crash Frequency and Crash Severity (w. N. Eluru, M. Abdel-Aty, S. Zhao, K. Wang), National Cooperative Highway Research Program, Project 22-49, National Academy of Sciences, Sep. 4, 2020 – Sep. 3, 2023, \$400,000.

### **Past Funded Projects**

4. Safety Evaluation of Alternatives for Installing Pedestrian Signals Under Side Street Green Operation, Connecticut Department of Transportation and US DOT, May 1, 2021 – June 30, 2023, \$200,000.
5. Development of Crash Prediction Models for Short-Term Durations (w. M. Abdel-Aty, N. Eluru, S. Zhao, K. Wang), National Cooperative Highway Research Program, Project 22-48, National Academy of Sciences, July 15, 2020 – Jan. 16, 2023, \$650,000.
6. Estimation of Pedestrian Compliance at Signalized Intersections Considering Demographic and Geographic Factors (w. A. Burnicki), Center for Advanced Multimodal Mobility Solutions and Education, US DOT University Transportation Center Program, Oct. 2020 – Sep. 2022, \$68,099.
7. Safety Assessment of New England Roadways during the Covid-19 Pandemic (w. M. Shirazi), Transportation Infrastructure Durability Center, US DOT University Transportation Center Program, Nov. 2020 – Sep. 2022, \$10,000.
8. Development and Application of Crash Severity Models for the Highway Safety Manual (w. S. Zhao, N. Eluru, M. Abdel-Aty), National Cooperative Highway Research Program, Project 17-85, National Academy of Sciences, Jan. 10, 2019 – Jun. 30, 2022, \$600,000.

9. Evaluating Potential for Improving Road Safety Through Behavioral Interventions (w. A. Paxton and K. Marsh), Connecticut Cooperative Transportation Research Program (CTDOT), Project CCTRP 20-1, Sep. 2020 – June 2022, \$60,000.
10. Estimation of Pedestrian Volume Using Geospatial and Traffic Conflict Data (w. A. Burnicki), Center for Advanced Multimodal Mobility Solutions and Education, US DOT University Transportation Center Program, 2020 Project 12, Oct. 2019 – May 2021, \$55,000.
11. Improved Prediction Models for Crash Types and Crash Severities (w. N. Ravishanker, B. Persaud, R. Srinivasan, M. Abdel-Aty), National Cooperative Highway Research Program, Project 17-62, National Academy of Sciences, Aug. 1, 2013 – Sep. 30, 2018, \$800,000.
12. Social Network Effects on Attitudes about Pedestrian Street Crossing Behavior (w. N. Ravishanker and R. Townsend), New England University Transportation Center (USDOT), Aug. 23, 2014 – Dec. 31, 2017, \$264,025.
13. Improvements to Road Safety Improvement Selection Procedures for Connecticut (w. A. Burnicki), Connecticut Cooperative Transportation Research Program (ConnDOT), Project JHR 14-1, Jan. 2014 – Jun. 2016, \$50,000.
14. Effectiveness of Interventions at Midblock Crossings for Improving Senior and Other Pedestrian Safety (w. N. Ravishanker), New England University Transportation Center (USDOT), Aug. 23, 2013 – May 31, 2015, \$112,400.
15. Development of the ConnDOT Safety Analysis Strategic Plan (w. E. Jackson), Connecticut Department of Transportation, May 2014 – Jan. 2015, \$207,064.
16. Statistical Modeling of Highway Crash Severity: a Multi-stage Hierarchical Bayesian Multiple-Response Framework (w. N. Ravishanker), University of Connecticut Research Foundation, Jul. 1, 2013 – Jun. 30, 2014, \$27,182.
17. Investigation of Road and Roadside Design Elements Associated with Elderly Pedestrian Safety (w. N. Ravishanker), New England University Transportation Center (USDOT), Aug. 23, 2012 – May 31, 2014, \$63,038.
18. State Motor Vehicle Crash Data Repository, Phase 3 (w. E. Jackson, S. Demurjian, D. Shin), State of Connecticut, Office of Highway Safety, Oct. 2012 – Sep. 2013, \$199,387.
19. Risk, Resilience and Response Models with Applications to High-Speed Rail Transportation Corridors (w. N. Lownes, R. Ammar and S. Rajasekaran), Center for Resilient Transportation Infrastructure (Department of Homeland Security Center of Excellence), Sep. 2010 – Dec. 2012, \$92,164.
20. State Motor Vehicle Crash Data Repository, Phase 2 (w. E. Jackson, S. Demurjian, D. Shin), State of Connecticut, Office of Highway Safety, Oct. 2011 – Sep. 2012, \$168,251.
21. Evaluation of Surrogate Measures for Pedestrian Safety in Various Road and Roadside Environments (w. N. Ravishanker), Center for Transportation and Livable Systems, University of Connecticut University Transportation Center (USDOT), Aug. 23, 2011 – Aug. 22, 2012, \$99,450.
22. Temporal Modeling of Highway Crash Severity by Involved Person Age (w. N. Ravishanker), New England University Transportation Center (USDOT), Sep. 2010 – Aug. 2012, \$70,000.
23. State Motor Vehicle Crash Data Repository (w. E. Jackson, S. Demurjian, D. Shin), State of Connecticut, Office of Highway Safety, Oct. 2010 – Sep. 2011, \$222,714.
24. Incorporating Wet Pavement Friction into Traffic Safety Analysis (w. N. Ravishanker), Connecticut Cooperative Transportation Research Program (ConnDOT), May 2007 – Nov. 2010, \$88,500.
25. Designing Roads that Guide Drivers to Choose Safer Speeds (w. N. Garrick), Connecticut Cooperative Transportation Research Program (ConnDOT), May 2004 – Dec. 2009, \$100,000.
26. Differences in Gap Acceptance of Elderly Drivers and the Impact on Traffic Simulation Modeling (w. A. Sadek and P. Gårder), New England University Transportation Center (USDOT), Sep. 2006 – Aug. 2009, \$94,922.
27. Warrants for Exclusive Left Turn Lanes at Unsignalized Intersections and Driveways (w. A. Sadek), New England Transportation Consortium, May 2006 – July 2008, \$100,000.
28. Identification of Crash-Prone Traffic Flow States on Freeways Using Real-Time Surveillance Data (w. A. Sadek), New England University Transportation Center (USDOT), Sep. 2005 – Aug. 2008, \$64,244.
29. Feasibility Study: Connecticut Transportation Planning Data (w. L. Aultman-Hall), Connecticut Cooperative Transportation Research Program (ConnDOT), May 2005 – May. 2008, \$67,500.
30. Network-Based Highway Crash Prediction Using Geographic Information Systems (w. Per Gårder), New England Transportation Consortium, Sep. 2004 - Mar. 2007, \$130,000.
31. Methodology to Predict the Safety Performance of Rural Multilane Highways (w. D. Lord, S. Miaou, B. Persaud, S. Washington), National Cooperative Highway Research Program (National Research Council), July 2004 - June 2007, \$750,000.

32. Investigation of a New Approach for Representing Traffic Volumes in Highway Crash Analysis and Forecasting, New England University Transportation Center (USDOT), Sep. 2004 - Jan. 2006, \$54,772.
33. The Effect of Segment Characteristics on the Severity of Head-on Crashes on Two-Lane Rural Highways (w. P. Gårder), New England University Transportation Center (USDOT), Sep. 2002 - August 2004, \$76,250.
34. A Real-Time Risk-Based Highway Accident Prevention System (RiskHAPS): A Proactive Safety Approach (w. W. ElDessouki, E. Anagnostou, A. Sadek), New England University Transportation Center (USDOT), Sep. 2001 - Aug. 2003, \$63,390.
35. Using Multiple Response Hierarchical Bayesian Modeling to Select Exposure Measures for More Accurate Highway Crash Prediction (w. N. Ravishanker, D. Tepas), Bureau of Transportation Statistics (USDOT), Aug. 2000 - Jan. 2002, \$99,900.
36. Traffic Calming of State Highways (w. P. Gårder, U. Maine), New England University Transportation Center (USDOT), Sep. 2000 - Jan. 2002, \$69,000.
37. Deriving Land-Use Limits as a Function of Infrastructure Capacity (w. A. Sadek, U. Vermont), New England University Transportation Center (USDOT), Sep. 2000 - Jan. 2002, \$65,000.
38. Estimating Link Traffic Volumes by Month, Day of Week and Time of Day, Connecticut Cooperative Transportation Research Program (ConnDOT), Jun. 1999 - Aug. 2001, \$75,000.
39. Optimizing Campus Shuttle Bus Routes to Better Serve the Student Community, Office of the Chancellor, University of Connecticut, Dec. 1999 - Jun. 2001, \$40,000.
40. Incorporating Intelligent Transportation Systems Deployment in Strategic Planning, (w. A. Sadek, U. Vermont), U.S. Department of Transportation (New England University Transportation Center), Sep. 1999 - Feb. 2001, \$50,000.
41. Finding Strategies to Improve Pedestrian Safety in Rural Areas (w. P. Gårder, U. Maine), U.S. Department of Transportation (New England University Transportation Center), Sep. 1999 - Aug. 2000, \$60,000.
42. Estimating Benefits from Specific Highway Improvements - Phase 3 (w. N. Garrick), Connecticut Cooperative Transportation Research Program (ConnDOT), Jun. 1999 - May 2002, \$120,000.
43. Estimating Benefits from Specific Highway Improvements - Phases 1 and 2 (w. C. Davis and N. Garrick), Connecticut Cooperative Transportation Research Program (ConnDOT), Jun. 1997 - May 1999, \$72,764.
44. Rural Pedestrian Crash Rates: Alternative Measures of Exposure (w. P. Ossenbruggen, U. New Hampshire), U.S. Department of Transportation (New England University Transportation Center), Sep. 1998 - Aug. 1999, \$67,500.
45. Estimating Benefits from Specific Highway Improvements, (w. P. Ossenbruggen, U. New Hampshire), U.S. Department of Transportation (New England University Transportation Center), Sep. 1997 - Aug. 1999, \$65,000.
46. Estimating the Temporal Distribution of Traffic within the Peak Period, Connecticut Cooperative Transportation Research Program (ConnDOT), Jun. 1997 - May 1999, \$47,059.
47. Risk-Based Management Methods for Evaluating Roadway Safety (w. P. Ossenbruggen, U. New Hampshire), U.S. Department of Transportation (New England University Transportation Center), Sep. 1996 - May 1998, \$60,000.
48. Peak Period Trip Estimation Considering Level of Service and Socio-Economic Characteristics, Connecticut Cooperative Transportation Research Program (ConnDOT), Jun. 1996 - May 1997, \$38,284.
49. Real-Time Corridor Traffic Control during Freeway Incidents, University of Connecticut Research Foundation, Sep. 1995 - Aug. 1996, \$11,399.
50. A Unifying Collection of Models and Techniques for ISTEA Management Systems, (w. G. Campbell, C. Davis, and P. Ossenbruggen), U.S. Department of Transportation (New England University Transportation Center), Sep. 1995 - May. 1997, \$94,500.
51. Decision and Risk Analysis Applications for Congestion Management, (w. C. Davis and G. Campbell), Connecticut Cooperative Transportation Research Program (ConnDOT), Jun. 1995 - Aug. 1996, \$64,410.

### **Edited Monographs**

1. J. Ivan, "Head-on crashes" In: Vickerman, Roger (eds.) *International Encyclopedia of Transportation*, Vol. 2, pp. 311-315. UK: Elsevier Ltd., 2021, DOI: <http://dx.doi.org/10.1016/B978-0-08-102671-7.10144-7>.
2. J. Ivan, K. Konduri, "Crash Severity Methods", in *Transport and Sustainability Book Series - Safe Mobility: Methodology and Crash Data Analysis*, D. Lord and S. Washington, eds., Emerald publishing, Apr. 2018.
3. J. Bonneson, J. Ivan, *Theory, Explanation, and Prediction in Road Safety: Promising Directions*, Transportation Research E-Circular E-C179, Transportation Research Board, Washington DC, Nov. 2013.



## Refereed Journals

1. E. Marshall, M. Shirazi, J. Ivan, "COVID-19 and Transport Safety", *Transport Reviews*, in press, DOI: <https://doi.org/10.1080/01441647.2023.2251684>.
2. E. Marshall, M. Shirazi, A. Shahlaee, J. Ivan, "Leveraging Probe Data to Model Speeding on Urban Limited Access Highway Segments: Examining the Impact of Operational Performance, Roadway Characteristics, and COVID-19 Pandemic", *Accident Analysis & Prevention*, in press.
3. O. Olufowobi, J. Ivan, S. Zhao, K. Wang, "Application of Realistic Artificial Data for Testing Various Crash Safety Analysis: A case Study for Rural Two-Lane Undivided Highways", *Transportation Research Record*, in press.
4. O. Green, J. Ivan, M. Filipovska, M. Auguste, K. Wang, "Using Logistic Regression to Evaluate Pedestrian-Vehicle Interaction Severity at Side Street Green and Exclusive Phase Signals", *Transportation Research Record*, online, Mar. 28, 2023, DOI: <https://doi.org/10.1177/03611981231159120>.
5. A. Shahlaeegilan, M. Shirazi, E. Marshall, J. Ivan, "Modeling the impact of the COVID-19 Pandemic on Speeding at Rural Roadway Facilities in Maine using Short-Term Speed and Traffic Count Data", *Accident Analysis & Prevention*, in press.
6. M. Hossain, J. Ivan, S. Zhao, K. Wang, S. Sharmin, N. Ravishanker, E. Jackson, "Considering Demographics of Other Involved Drivers in Predicting the Highest Driver Injury Severity in Multi-Vehicle Crashes on Rural Two-Lane Roads in California", *Journal of Transportation Safety and Security*, 15(1):43-58, 2023, DOI: <https://doi.org/10.1080/19439962.2022.2033899>.
7. S. Sharmin, J. Ivan, K. Marsh, A. Paxton, and A. Tucker, "Driver Psychology Latent Classes as Predictors of Traffic Incident Occurrence in Naturalistic Driving Study (NDS) Data", *Transportation Research Record*, Online, 2022, DOI: <https://doi.org/10.1177%2F03611981221108985>.
8. S. Sharmin, J. Ivan, S. Zhao, K. Wang, M. Hossain, N. Ravishanker, E. Jackson, "Incorporating Demographic Proportions into Crash Count Models by Quasi-Induced-Exposure Method", *Transportation Research Record*, 2674(9), Jun. 2020, DOI: <https://doi.org/10.1177/0361198120930230>.
9. K. Wang, S. Zhao, J. Ivan, I. Ahmed, E. Jackson, "Evaluation of Hot Spot Identification Methods for Municipal Roads", *Journal of Transportation Safety and Security*, 20(4):463-481, 2020, DOI: <http://dx.doi.org/10.1080/19439962.2018.1504262>.
10. S. Mamun, F. Caraballo, J. Ivan, N. Ravishanker, R. Townsend, Y. Zhang, "Identifying Association Between Pedestrian Safety Interventions and Street Crossing Behavior Considering Demographics and Traffic Context", *Journal of Transportation Safety and Security*, 12(3):441-462, Mar. 2020, DOI: <http://dx.doi.org/10.1080/19439962.2018.1490369>.
11. Y. Zhang, N. Ravishanker, J. Ivan, S. Mamun, "An Application of the tau-path Method in Highway Safety", *Journal of the Indian Society for Probability and Statistics*, 20(1):117-139, 2019, DOI: <https://doi.org/10.1007/s41096-018-0059-7>.
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2. L. Hoover, M. Jahan, T. Bhowmik, S. Tirtha, K. Konduri, J. Ivan, K. Wang, S. Zhao, J. Auld, N. Eluru, “Implementation of a Realistic Artificial Data Generator for Crash Data Generation”, Transportation Research Board Annual Meeting, Paper No. TRBAM-23-03722, Washington, DC, Jan. 2023.
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55. S. Braun and J. Ivan, "Estimating Intersection Approach Delay Using 1985 and 1994 Highway Capacity Manual Procedures," Transportation Research Board Annual Meeting, Washington DC, Jan. 1996.
56. J. Ivan, J. Schofer, F. Koppelman and L. Massone, "Real-Time Data Fusion for Arterial Street Incident Detection Using Neural Networks," Transportation Research Board Annual Meeting, Washington DC, Jan. 1995.
57. N. Bhandari, F. Koppelman, J. Schofer, V. Sethi and J. Ivan, "Arterial Incident Detection Integrating Data from Multiple Sources," Transportation Research Board Annual Meeting, Washington DC, Jan. 1995.

## Presentations

### Conference Presentations

1. J. Ivan, A. Burnicki, Q. Packer, "Estimation of Pedestrian Compliance at Signalized Intersections Considering Demographic and Geographic Factors", Fourth Annual CAMMSE Research Symposium, virtual, Nov. 2021.
2. P. Joshi, J. Ivan, A. Burnicki, "Effects of Traffic Conflicts on Pedestrian Crossing Volume Considering Geospatial & Other Location Data", presented at Bridging Transportation Researchers 4, virtual, Aug. 2021.
3. J. Ivan, A. Burnicki, P. Joshi, "Estimation of Pedestrian Volume Using Geospatial and Traffic Conflict Data", Third Annual CAMMSE Research Symposium, virtual, Nov. 2020.
4. K. Wang, S. Zhao, J. Ivan, I. Ahmed, E. Jackson, "Evaluation of Hot Spot Identification Methods for Municipal Roads", presented at Transportation Research Board Annual Meeting, Washington, DC, Jan. 2018.
5. J. Ivan, "Counterintuitive Results and Research for the Highway Safety Manual", presented at Transportation Research Board Annual Meeting, Washington, DC, Jan. 2018.
6. J. Ivan, "Statistical Challenges for Advances in Estimation of Traffic Exposure and Crash Prediction", presented at Summer Program on Transportation Statistics, Statistical and Applied Mathematical Sciences Institute, NSF, Durham, NC, Aug. 2017.
7. K. Wang, J. Ivan, A. Burnicki, S. Mamun, "Predicting Local Road Crashes Using Socio-economic and Land Cover Data", presented at Road Safety on 5 Continents, Rio de Janeiro, Brazil, May 2016.
8. Y. Zhang, S. Mamun, J. Ivan, N. Ravishanker, K. Haque, "Safety Effects of Exclusive and Concurrent Signal Phasing for Pedestrian Crossing", presented at Road Safety on 5 Continents, Rio de Janeiro, Brazil, May 2016.
9. J. Ivan "How Are Roadway and Roadside Characteristics Related to Vehicle Speeds and Pedestrian Safety?" Oregon Transportation Summit, Portland Oregon, Sep. 16, 2013.
10. J. Ivan, "Information Sharing Challenges for Road Safety Research", Better Safety Results through Information Sharing: A TRB Workshop, Transportation Research Board, Irvine, CA, July 2012.
11. J. Ivan, "Effect of Roadway and Roadside Design Features on Observed Vehicle Speeds", Transportation for Livable Communities, The Keck Center of the National Academies, Washington, D.C., Oct. 2010.
12. J. Ivan, "First Things First: The Do's and Don'ts of Study Design and Hypothesis Testing", Transportation Research Board Annual Meeting, Washington, DC, Jan. 2009.
13. T. Jonsson, J. Ivan and C. Zhang, "Using Land Use Data to Estimate Exposure for Improving Road Accident Prediction," 32nd International Traffic Records Forum, Palm Desert, CA, Aug. 2006.
14. C. Zhang, J. Ivan and T. Jonsson, "Exposure to Highway Crashes: Definition of a New Measure and Data Needed," 32nd International Traffic Records Forum, Palm Desert, CA, Aug. 2006.
15. J. Ivan, "FHWA Validation of the Segment Model," invited presentation to the Highway Safety Manual Task Force midyear meeting, Chicago, Illinois, June 2005.
16. C. Zhang, W. ElDessouki, J. Ivan and E. Anagnostou, "Relative Risk Analysis for Studying the Impact of Adverse Weather Condition on Traffic Accidents," ITE District One Annual Meeting, Burlington, VT, May 2004.
17. Z. Deng, J. Ivan, C. Zhang, "The Effect of Segment Characteristics on the Severity of Head-on Crashes on Two-lane Rural Highways", ITE District One Annual Meeting, Burlington, VT, May 2004
18. J. Ivan, "A New Paradigm for Including Traffic Volumes in Crash Rate Analysis and Forecasting," 29th International Traffic Records Forum, Denver, CO, Jul. 2003.
19. J. Ivan, "USDOT Region 1 (New England) University Transportation Center," 2002 Transportation Research Showcase, Connecticut Department of Transportation / Connecticut Transportation Institute, Mar. 2002.



20. J. Ivan, "An Empirical Bayesian Analysis of the Safety Benefits of Adding Left Turn Lanes," 27<sup>th</sup> International Traffic Records Forum, Jul.-Aug. 2001.
21. X. Qin and J. Ivan, "Crash Prediction Accuracy, Traffic Volumes, and Crash Type Definitions," 27<sup>th</sup> International Traffic Records Forum, Jul.-Aug. 2001.
22. J. Ivan and P. Ossenbruggen, "Rural Pedestrian Crash Rates: Alternative Measures of Exposure," 25<sup>th</sup> International Forum on Traffic Records & Highway Information Systems, Jul. 1999.
23. J. Ivan and C. Wang, "Representing Traffic Exposure for Multi-Vehicle Crash Prediction on Two-Lane Highways," 25<sup>th</sup> International Forum on Traffic Records & Highway Information Systems, Jul. 1999.
24. J. Ivan and P. Ossenbruggen, "Safety and the Highway Design Process," Risk Assessment and Policy Association, 2<sup>nd</sup> Biennial meeting, Alexandria, VA, Mar.25-26, 1999.
25. J. Ivan, "Predicting Two-Lane Highway Crash Rates Using Land Use and Hourly Exposure," 24<sup>th</sup> International Forum on Traffic Records & Highway Information Systems, Jul. 1998.
26. J. Ivan, R. Pasupathy and P. Ossenbruggen, "Evaluating Two-Lane Highway Safety Using Risk Management," 23<sup>rd</sup> International Forum on Traffic Records & Highway Information Systems, Jul. 1997.
27. J. Ivan and M. Daskin, "Routing Hazardous Material Shipments to Equalize Population Exposure and Minimize Transportation Costs," Transportation Research Board Annual Meeting, Washington DC, Jan. 1992.

### **Invited Academic Seminars**

1. "What Goes Around Comes Around: Would Early 20th Century Street Discipline Be Safer for Connected and Automated Vehicles?" invited presentation at University of Central Florida, Feb. 2023.
2. "Pedestrian Behavior and Safety at Signalized Intersections with Exclusive and Concurrent Pedestrian Phasing", invited presentation at University at Buffalo, Jun. 2017.
3. "The Highway Safety Manual: Vision and Implementation", invited webinar at University of Vermont, Feb. 2014.
4. "Statistical Associations among Roadway and Roadside Characteristics, Vehicle Speeds and Pedestrian Safety with Implications for Road Design", invited presentation at Florida Atlantic University, Feb. 2013.
5. "Speed and Safety: International Research Findings", invited presentation at University of Rhode Island, Mar. 2010.
6. "Defining Exposure to Highway Crashes: An International Investigation", invited presentation at Texas Transportation Institute, May 2003.
7. "Representing Traffic Exposure for Multi-Vehicle Crash Prediction on Two-Lane Highways", invited presentation at University of Massachusetts Transportation Center, Jul. 1999.
8. "Need and Purpose of the Route 6 Expressway", panel speaker; Institute of Water Resources 1996-1997 Seminar Series, University of Connecticut, Oct. 9, 1996.

### **Other Publications**

#### **Technical Reports**

1. M. Shirazi, J. Ivan, E. Marshall, A. Shahlaee, "Safety Assessment of New England Roadways During the COVID-19 Pandemic", Final Report, Transportation Infrastructure Durability Center (Tier 1 UTC, US DOT), University of Maine, July 2023.
2. J. Ivan; K. Wang; M. Auguste; O. Green; "Safety Evaluation of Alternatives for Installing Pedestrian Signals Under Side Street Green Operation", Final Report, Connecticut Department of Transportation and Federal Highway Administration, CT Study Number SPR-2321, Report No. CT-2321-F-23-1, June 2023.
3. J. Ivan; S. Zhao; K. Wang; Md. J. Hossain; N. Eluru; M. Abdel-Aty; T. Bhowmik; D. Parvez; L. Hoover; "Development and Application of Crash Severity Models for Highway Safety: Conduct of Research Report", National Cooperative Highway Research Program, Transportation Research Board, National Research Council, Project NCHRP 17-85, Web-only Document 351, May 2023, DOI: <https://doi.org/10.17226/27036>.
4. J. Ivan; S. Zhao; K. Wang; Md. J. Hossain; N. Eluru; M. Abdel-Aty; T. Bhowmik; D. Parvez; L. Hoover; "Development and Application of Crash Severity Models for Highway Safety: User Guidelines", National Cooperative Highway Research Program, Transportation Research Board, National Research Council, Project NCHRP 17-85, NCHRP Research Report 1047, May 2023, DOI: <https://doi.org/10.17226/27038>.
5. J. Ivan, A. Burnicki, Q. Packer, "Estimation of Pedestrian Compliance at Signalized Intersections Considering Demographic and Geographic Factors", Center for Advanced Multimodal Mobility Solutions and Education (Tier 1 UTC, US DOT), Year 2021 Project 04 & 2022 Project 11, University of North Carolina – Charlotte, Jun. 2022, <https://cammse.charlotte.edu/sites/cammse.charlotte.edu/files/media/CAMMSE-UNCC-2021-UTC-Project-Information-04-Ivan-Burnicki.pdf>.



6. J. Ivan, A. Burnicki, P. Joshi, "Estimation of Pedestrian Volume Using Geospatial and Traffic Conflict Data", Center for Advanced Multimodal Mobility Solutions and Education (Tier 1 UTC, US DOT), Year 2020 Project 12, University of North Carolina – Charlotte, Sep. 2021, <https://cammse.charlotte.edu/sites/cammse.charlotte.edu/files/media/CAMMSE-UNCC-2020-UTC-Project-Information-12-Ivan-Burnicki.pdf>.
7. J. Ivan, S. Mamun, N. Ravishanker, B. Persaud, C. Lyon, R. Srinivasan, B. Lan, S. Smith, T. Saleem, M. Abdel-Aty, J. Lee, A. Farid, J. Wang, "Improved Prediction Models for Crash Types and Crash Severities: Final Report", National Cooperative Highway Research Program, Transportation Research Board, National Research Council, Project NCHRP 17-62, Final Report, Apr. 2021, <https://doi.org/10.17226/26164>.
8. J. Ivan, N. Ravishanker, R. Townsend, "Social Network Effects on Attitudes about Pedestrian Street Crossing Behavior", Region 1 University Transportation Center, Final Report, Project UCN25-33, Mar. 2018.
9. J. Ivan, A. Burnicki, K. Wang, S. Mamun, "Improvements to Road Safety Improvement Selection Procedures For Connecticut", Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report JHR 16-328, Project 14-1, June. 2016.
10. J. Ivan, N. Ravishanker, "Effectiveness of Interventions at Midblock Crossings for Improving Senior and Other Pedestrian Safety", Region 1 University Transportation Center, Final Report, Project UCN24-30A, Dec. 2015.
11. J. Ivan, N. Ravishanker, "Investigation of Road and Roadside Design Elements Associated with Elderly Pedestrian Safety", Region 1 University Transportation Center, Final Report, Project UCN24-30, July 2015.
12. N. Ravishanker, J. Ivan, "Project Report: Statistical Modeling of Highway Crash Severity: a Multi-stage Hierarchical Bayesian Multiple-Response Framework", Final Report, Large Grant, University of Connecticut Research Foundation, April 2015.
13. J. Ivan, N. Ravishanker, M. Islam, V. Serhiyenko, "Evaluation of Surrogate Measures for Pedestrian Safety in Various Road and Roadside Environments", Center for Transportation and Livable Systems, Final Report, Project CTLS 11-04, University of Connecticut, Oct. 2012.
14. J. Ivan, N. Ravishanker, "Temporal Modeling of Highway Crash Severity by Involved Person Age", USDOT Region 1 University Transportation Center, Final Report, Project UCN23-2, July 2012.
15. J. Ivan, N. Ravishanker, E. Jackson, B. Aronov, S. Guo, "Incorporating Wet Pavement Friction into Traffic Safety Analysis", Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report JHR 10-324, Project 07-5, Nov. 2010.
16. J. Ivan, N. Garrick, G. Hanson, "Designing Roads that Guide Drivers to Choose Safer Speeds", Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report JHR 09-321, Project 04-6, Nov. 2009.
17. J. Ivan, P. Gårder, "Differences in Gap Acceptance of Elderly Drivers and the Impact on Traffic Simulation Modeling", USDOT Region 1 University Transportation Center, Final Report, Project UCN19-10, Nov. 2009.
18. J. Ivan, A. Sadek, "Identification of Crash-Prone Traffic Flow States on Freeways Using Real-Time Surveillance Data", USDOT Region 1 University Transportation Center, Project UCN18-6, Nov. 2009.
19. J. Ivan, A. Sadek, H. Zhou, S. Ranade, "Warrants for Exclusive Left Turn Lanes at Unsignalized Intersections and Driveways", The New England Transportation Consortium, Final Report, NETCR72 Project No. 05-7, Feb. 2009.
20. L. Aultman-Hall, S. Mather, E. Jackson, H. Shin, J. Ivan, "Design and Feasibility Study: Connecticut Transportation Planning Data", Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report JHR 08-315, Project 05-7, Oct. 2008.
21. J. Ivan, C. Zhang, "Investigation of A New Approach for Representing Traffic Volumes In Highway Crash Analysis And Forecasting", USDOT Region 1 UTC, Project UCN17-7, Final Report, Jul. 2008.
22. D. Lord, B. Persaud, S. Washington, J. Ivan, I. van Schalkwyk, C. Lyon, T. Jonsson, S. Geedipally, "Methodology to Predict the Safety Performance of Rural Multilane Highways: Final Report", National Cooperative Highway Research Program, Transportation Research Board, National Research Council, Project NCHRP 17-29, Final Report, Feb. 2008.
23. J. Ivan, P. Gårder, S. Bindra, T. Jonsson, H. Shin, Z. Deng, "Network-Based Highway Crash Prediction Using Geographic Information Systems", The New England Transportation Consortium, Final Report, NETCR67 Project No. 04-5, June 2007.
24. J. Ivan, P. Gårder, C. Zhang, Z. Deng, "The Effect of Segment Characteristics on The Severity of Head-On Crashes on Two-Lane Rural Highways," USDOT Region 1 UTC, Project UCN15-5, Final Report, Jan. 2006.
25. W. ElDessouki, J. Ivan, E. Anagnostou, A. Sadek, C. Zhang, "Using Relative Risk Analysis to Improve Connecticut Freeway Traffic Safety Under Adverse Weather Conditions," USDOT Region 1 UTC, Project UCN14-5, Final Report, Oct. 2004.

26. J. Rimiller, J. Ivan and N. Garrick, "Estimating Benefits from Specific Highway Safety Improvements: Phase III, Safety Benefits from Left Turn Treatment," Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report, JHR 03-290, Project 97-1(3), Feb. 2003.
27. J. Ivan, W. ElDessouki, M. Zhao, and F. Guo, "Estimating Link Traffic Volumes by Month, Day of Week and Time of Day," Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report JHR 02-285, Project 99-3, Sep. 2002.
28. J. Ivan, N. Ravishanker, D. Tepas, X. Qin, J. Liu, "Selecting Exposure Measures for Predicting Crash Rates on Two-lane Rural Highways," Bureau of Transportation Statistics, Transportation Statistics Research Grant Program, USDOT, Grant No. DTTS-00-G-B002-CT, Final Report, Jul. 2002.
29. A. Sadek, W. ElDessouki, J. Ivan, "Incorporating Intelligent Transportation Systems Deployment in Strategic Planning," USDOT Region 1 UTC, Project UCNR12-8, Final Report, Jul. 2002.
30. A. Sadek, W. ElDessouki, J. Ivan, "Deriving Land-use Limits as a Function of Infrastructure Capacity," USDOT Region 1 UTC, Project UVMR13-7, Final Report, Jul. 2002.
31. P. Gårder, J. Ivan and J. Du, "Traffic Calming of State Highways: Application New England," USDOT Region 1 UTC, Project UCNR13-5, Final Report, Jun. 2002.
32. J. Ivan, P. Gårder, S. Zajac, "Finding Strategies to Improve Pedestrian Safety in Rural Areas," USDOT Region I UTC, Project UCNR12-7, Final Report, Oct. 2001.
33. F. Yuan, J. Ivan, N. Garrick, C. Davis, "Estimating Benefits from Specific Highway Safety Improvements: Phase II Safety Benefits of Intersection Approach Realignment," Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report, JHR 00-281, Project 97-1(2), Dec. 2000.
34. J. Ivan, P. Ossenbruggen, X. Qin and J. Pendarkar, "Rural Pedestrian Crash Rates: Alternative Measures of Exposure," USDOT Region I UTC, Project UCNR11-10, Final Report, Jun. 2000.
35. J. Ivan, P. Ossenbruggen, C. Wang and N. Bernardo, "Estimating Benefits from Specific Highway Safety Improvements," USDOT Region I UTC, Project UCNR10-7, Final Report, Apr. 2000.
36. R. Pasupathy, J. Ivan and P. Ossenbruggen, "Single and Multi-Vehicle Crash Prediction Models for Two-Lane Roadways," USDOT Region I UTC, Project UCNR9-8, Final Report, Feb. 2000.
37. J. Ivan and S. Allaire, "Estimating the Temporal Distribution of Traffic Within the Peak Period," Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report, JHR 99-273, Project 97-2, Jan. 2000.
38. F. Yuan, J. Ivan, C. Davis and N. Garrick, "Estimating Benefits from Specific Highway Safety Improvements: Phase I – Feasibility Study," Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report, JHR 99-268, Project 97-1, May 1999.
39. U. Jha and J. Ivan, "Predicting Peak Period Trips Within the Four-Step Transportation Planning Process," Connecticut Cooperative Highway Research Program, Connecticut Department of Transportation and University of Connecticut, Final Report, JHR 97-258, Project 96-3, Sep 1997.
40. C. Davis, J. Ivan and G. Campbell, "Application of Multi-Criteria Decision-Making and Risk Analysis to Congestion Management," Connecticut Cooperative Highway Research Program, Final Report, JHR 96-252, Project 95-1, Sep. 1996.
41. F. Koppelman, V. Sethi and J. Ivan, "Calibration of Data Fusion Algorithm Parameters with Simulated Data," ADVANCE Project Technical Report TRF-ID-152, The Transportation Center, Northwestern University, Evanston, Illinois, Mar. 1994.
42. F. Koppelman, J. Schofer, N. Bhandari, V. Sethi and J. Ivan, "Calibration of Probe and Fixed Detector Algorithm Parameters with Simulated Data," ADVANCE Project Technical Report TRF-ID-151, The Transportation Center, Northwestern University, Evanston, Illinois, Feb. 1994.
43. J. Ivan and C. Bhat, "The ADVANCE Demonstration Incident Detection System: Data Fusion Process Structure and Plans for Calibration," ADVANCE Project Technical Report, Task TRF-ID-10, Northwestern University Transportation Center, May 1993.
44. P. Liu, J. Schofer and J. Ivan, "Anecdotal Incident Detection Algorithm Northwest Central Dispatch Preprocessor," Northwestern University Transportation Center, May 1993.
45. J. Schofer, J. Ivan and C. Bhat, "Plans for Collecting Incident Detection Development Data," ADVANCE Program Technical Report, Northwestern University Transportation Center, Jan. 1993.
46. J. Ivan, J. Schofer, C. Bhat, N. Rouphail and N. Thomas, "Data Needs for Incident Detection," ADVANCE Program Technical Report, Northwestern University Transportation Center, Jun. 1992.

47. J. Ivan, C. Bhat and J. Schofer, "Automatic Incident Detection on Urban Arterials: A System Conceptualization," ADVANCE Program Technical Report, Northwestern University Transportation Center, May 1992.
48. J. Ivan, "Automatic Incident Detection on Urban Arterials: a Literature Review," ADVANCE Program Technical Report, Northwestern University Transportation Center, Dec. 1991.

**Ph.D. Dissertation and M.S. Thesis**

1. J. Ivan, *Real-Time Data Fusion for Arterial Street Incident Detection Using Neural Networks*, Ph.D. Dissertation, Northwestern University, Jun. 1994.
2. J. Ivan, *CAPEX: A Cafeteria Architectural Planning Expert System*, M.S.C.E. Thesis, Massachusetts Institute of Technology, Feb. 1987.

## Teaching and Curriculum

### **Personal Statement**

Since joining the University of Connecticut faculty I have constantly sought to be an outstanding teacher. I continue to seek opportunities to learn how to do even better, through workshops given by the University's Institute for Teaching and Learning and regional or national conferences, such as the Felder Effective Teaching Workshop. One of my primary objectives is to engage students in the classroom setting by relating abstract theory to real-world examples that students can easily appreciate. By doing so, I hope to inspire and challenge students to learn and achieve beyond their expectations.

Shortly after beginning my teaching career at the University, I began to incorporate active-learning into the courses I teach. I stress critical thinking in all of my courses using group discussions, in which students attack a problem and discuss how to use various analytical tools, or read a collection of articles and individually identify important engineering and planning issues raised in them. Improving students' oral and written communication skills has also been a high priority for my teaching. A new course I created with Dr. N. Garrick, "Case Studies in Transportation Engineering," focuses almost entirely on active learning, with traditional lecturing comprising at most a few classes during the semester. In this course the students are assigned project topics in which they search library and internet sources to learn about some aspect of the contexts in which transportation engineers must operate, and then present their findings to the entire class. Many students shared in course evaluations that it was their favorite class ever, but that they also worked harder than in any other class they had taken. We consider it high praise that students value the time spent in the course and what they learned from it.

I have worked with input from the other transportation engineering faculty to solidify, strengthen and enhance our graduate program and course offerings. I introduced a new course, "Travel Demand Forecasting," established a set of core and background preparation courses, and defined a regular format for the Ph.D. General Examination, none of which existed before I came to the University. Solidifying the structure of the program has borne fruit both in a dramatic improvement in the quality of applicants to the graduate program and in the placement of graduates with highly respected transportation engineering and logistics firms and in university research positions.

Another teaching challenge I tackled was creating a new course, "Decision Analysis in Civil & Environmental Engineering", from two existing courses, "Engineering Economics" and "Analysis of Civil Engineering Systems". This new course was for awhile required of all Civil Engineering and Environmental Engineering majors, and covers engineering economics, probability and statistics, and some operations research. I considered it a challenge to present the material so that the students would learn about probability and statistics without realizing it, as this was a topic they generally did not enjoy. The approach I took is to present the material in terms of real problems that they will need to solve as engineers, and then introduce the various tools they can use to solve these problems. This approach was successful in motivating the students to spend time learning the material and caring about it. The course has now been discontinued, and the CE and ENVE majors both require two new courses in engineering economics and probability and statistics.

I also worked with H. Epstein to transform the Civil Engineering senior design course from a one semester to a yearlong program. We integrated the professional issues seminar into this new course sequence. Our approach was to run the course as if the students were working in an engineering design firm. The students are required to write job applications and interview for positions on design projects. The first year resulted in much stronger and viable products and a richer experience for the students, preparing them much more effectively for careers in professional practice.

I have advised 8 Ph.D. and 19 M.S. thesis students to graduation, and am currently advising one MS thesis student. These students collectively have published more than sixty refereed journal articles and conference papers under my direction. Two of my PhD graduates (Qin and Zhou) are in tenure track positions at research universities (University of Wisconsin at Milwaukee and Dalian Institute of Technology), and two others work in research positions, at Federal Highway Administration (Chen) and the Connecticut Transportation Safety Research Center (Wang).

### **Student Research Supervision**

#### **Ph.D. students graduated**

1. Sadia Sharmin, 2022, "Consideration of Driver Demographics, Behavior and Psychological Attributes in Traffic Safety Analysis"
2. Md Julfiker Hossain, 2022, "Improving Crash Severity Modeling Using Quasi-Induced Exposure (QIE) Technique and Multilevel Modeling Method"
3. Md. Ashrafur Rahman, 2021, "Developing Optimization Models for Hazardous Materials Routing and Emergency Shelter Location Problems"

4. Kai Wang, 2016, "Exploration of Advances in Statistical Methodologies for Crash Count and Severity Prediction Models"
5. Md. Saidul Islam, 2015, "Explaining Pedestrian and Vehicular Crashes in Conjunction with Exposure Measures"
6. Hongmei (Jennifer) Zhou, 2009, "Study on Left Turn Safety and Gap Acceptance at Unsignalized Intersections"
7. Chen Zhang, 2007, "Defining New Exposure Measurements for Crash Prediction Models by Collision Type"
8. Xiao Qin, 2002, "Selecting Exposure Measures for Predicting Crash Rates on Two-Lane Rural Highways"
9. Ming Zhao, 2001, "Investigating Hourly Volume Proportions on Freeways Considering Temporal Factors"
10. Markus Kusuma, 1999, "The Effects of Transportation System Characteristics on the Success of Congestion Mitigation Strategies for Reducing Traffic Congestion and Air Pollution"
11. Shyuan-Ren (Clayton) Chen, 1997, "An Integrated Traffic Control Policy for Incidents in Freeway-Arterial Corridors"

### **MS students (with thesis) graduated**

1. Quinn Packer, 2022, "Pedestrian Signal Compliance under Concurrent and Exclusive Phasing at Traffic Signals Considering Geo-Spatial Factors"
2. Pankaj Joshi, 2021, "Effects of Traffic Conflicts on Pedestrian Crossing Volume Considering Geospatial and Other Location Data"
3. Unica Khadka, 2019, "Performance Comparison of Alternative Representations of Traffic Volume in Safety Performance Functions for Rural Road Intersections"
4. Ishraq Ahmed, 2018, "Development of Zonal Safety Performance Functions for Local Road Intersections and Segments in Connecticut"
5. Franklin J. Caraballo, 2016, "Identifying Association Between Pedestrian Safety Interventions and Street Crossing Behavior Considering Demographics and Traffic Context"
6. Kevin McKernan, 2015, "Pedestrian Compliance with Concurrent and Exclusive Phasing at Traffic Signals"
7. Khademul Haque, 2015, "Safety Effects of Exclusive and Concurrent Signal Phasing for Pedestrian Crossing"
8. James Mooradian, 2012, "Investigation in Trends and Effectiveness of Crash Severity Models"
9. Sizhen Guo, 2010, "Incorporating Wet Pavement Friction into Traffic Safety Analysis"
10. Sumit Bindra, 2007, "Modeling Segment-Intersection Crashes using Land Development Data"
11. Zuxuan Deng, 2005, "Analysis of Factors Affecting the Severity of Head-on Crashes on Two-lane Rural Highways"
12. Erika Lindeberg (Smith), 2004, "Evaluation of Safety Benefits and Potential Crash Migration Due to Shoulder Rumble Strip Installation on Connecticut Freeways"
13. Joseph H. Rimiller, 2003, "Safety Benefits of Adding Left Turn Lanes on Suburban and Rural Highways in Connecticut"
14. Phanikiran Allu, 2001, "Incorporating Intelligent Transportation Systems Deployment in Strategic Planning"
15. Stephan F. Kellner, 2000, "Evacuation Analysis: Comparison of Different Street Network Layouts"
16. Sylvia S. Zajac, 2000, "Factors Influencing Injury Severity of Motor Vehicle – Crossing Pedestrian Crashes in Rural Connecticut"
17. Fei Yuan, 2000, "Safety Benefits of Intersection Approach Realignment"
18. Nelson R. Bernardo, 1999, "Modeling Single Vehicle Crashes on Two-Lane Rural Highways in Connecticut"
19. Chunyan Wang, 1999, "Representing Traffic Exposure in Multi-Vehicle Crash Prediction"
20. Scott A. Allaire, 1999, "Factors Influencing Peak Spreading on Connecticut Freeways"
21. Raghubbhushan K. Pasupathy, 1998, "Single and Multi-Vehicle Crash Prediction Models for Two-Lane Roadways"
22. Udes Jha, 1997, "Predicting Peak Period Trips within the Four-Step Transportation Planning Process"
23. Patrick J. O'Mara, 1996, "Prediction of Traffic Accident Rates Using Poisson Regression"

### **Course Development (old numbers in parentheses)**

#### **CE 4710/5710 (255/302) Case Studies in Transportation Engineering**

- New course developed with N. Garrick
- Co-listed as senior elective for Civil Engineering majors and entry-level graduate required core course for transportation engineering graduate students
- Nearly 100% active learning, with emphasis on critical thinking and communications

#### **CE 6730 (380) Travel Demand Forecasting**

- New course developed to expand offerings in transportation planning

- Graduate elective covering trip generation and discrete choice modeling and solving for user equilibrium

**CE 2710 (254) Transportation Engineering and Planning**

- Existing course renamed and revamped to include traffic engineering and transportation planning content
- Required for all Civil Engineering majors

**CE 2210 (201) Decision Analysis in Civil & Environmental Engineering**

- New course developed to replace courses in engineering economics and probability and statistics
- Required for all Civil Engineering and Environmental Engineering majors
- Emphasis is on learning analysis methods to support decision making in civil and environmental engineering

**CE 5725 Transportation Safety**

- New course developed solo
- Built around the AASHTO *Highway Safety Manual*
- Graduate elective designed to prepare students for quantitative road safety analysis

**CE 6725 Statistical and Econometric Methods in Transportation**

- New course developed solo
- Focus on application of modeling techniques in transportation data contexts and interpretation of results

**CE 4900W-4920W Civil Engineering Projects I and II**

- Led team to develop new course to replace existing one semester capstone design course
- Includes coverage of professional issues preparing students for careers

## Professional Activities and Service

### Personal Statement

Service to the community and profession is an important responsibility of any University faculty member. My intention is to serve the community and profession in ways that exercise my personal and scholarly strengths and develop valuable partnerships for enhancing educational and research opportunities for me and my students. I thus focus on three types of external service: (1) service to the profession supporting peer review and dissemination of scholarly research, (2) forensic engineering work in matters offering experience to enhance my teaching and research, and (3) service to governmental commissions offering guidance and feedback for improving the value of public expenditures.

For example, related to the first category I serve as an Associate Editor of the journal *Accident Analysis and Prevention* and on the National Research Council's Committees on Highway Safety Performance (formerly the Task Force for the Creation of a Highway Safety Manual) and Safety Data Analysis and Evaluation. My primary role on the Highway Safety Performance Committee and Task Force has been to provide detailed technical review of the information to be presented in the first edition of the Manual, which was published in 2010. I continue to serve now as the Chair of the Subcommittee on Predictive Methods, which is charged with charting the course for the framework of the 2<sup>nd</sup> edition of the Manual. Related to the second category, I have offered gratis and reduced fee consulting services on behalf of community groups where road improvement and land development plans failed to account for legitimate community concerns. Related to the third category, I serve on two state-level advisory committees that coordinate and organize the collection and archiving of data for analysis and reporting of road safety, helping to enhance the availability of appropriate data for learning how to most effectively improve road safety in Connecticut. As well, I was elected to the Connecticut Academy of Science and Engineering in February 2011, for which I have served on several project review panels.

I engage in all of this service with an intention to achieve the best possible outcome for the individuals and organizations involved. This section itemizes my external service to the community and the profession.

### Associate Editorships

- *Accident Analysis & Prevention*, associate editor, Oct. 2013 – present.
- *Journal of Transportation Safety and Security*, associate editor, Mar. 2008 – Oct. 2013.

### Advisory Boards and Committees

#### International

- *Accident Analysis & Prevention*, editorial advisory board, Jan. 2006 – present.
- *Journal of Transportation Safety and Security*, editorial advisory board, Mar. 2008 – present.

#### National

- Southeastern Transportation Center, research advisory committee, Mar. 2008 – 2012.

#### Regional

- New England University Transportation Center, policy committee, 1996 – 2008, 2010 – 2012.
- New England Transportation Consortium, advisory committee, Jan. 2006 – Dec. 2007.

#### State

- Connecticut Cooperative Transportation Research Program, Joint Highway Research Advisory Committee, July 1999 - June 2002, July 2007 - June 2008, July 1, 2009 – present.
- Traffic Records Coordinating Committee, Jan. 2004 – present.
- Advisory Board, Crash Outcome Data Evaluation System, Aug. 2006 – present.
- Connecticut Transportation Safety Research Center, Nov. 2012 – present.

### Review Panels

#### ABET, Inc.

- Program Evaluator, Engineering Accreditation Commission, 2012 – present.

#### Connecticut Academy of Science and Engineering

- CVISN E-Screening and overweight Screening Pilot Project, study reviewer, final report Nov. 2017.
- Sustainability Strategies to Minimize the Carbon Footprint for Connecticut Bus Operations, study reviewer, final report Feb. 2018.

- Strategies to Improve Project Deliverability, study reviewer, final report, Sep. 2016.
- Winter Highway Maintenance Operations, study reviewer, final report, Sep. 2015.
- Economic Impact of Transportation Projects, project advisory panel, final report, Sep. 2013.
- Benchmarking Connecticut's Transportation Infrastructure Capital Program with Other States, project advisory panel, final report, June 2012.
- Alternative Methods for Safety Analysis and Intervention for Contracting Commercial Vehicles and Drivers in Connecticut, project advisory panel, final report, June 2012.
- Information Technology Systems for Use in Incident Management and Work Zone Safety, project advisory panel, final report, Dec. 2005.

#### **Bureau of Transportation Statistics (USDOT)**

- Safety Data Project, steering committee, Aug. 2001 – May 2002.

#### **Transportation Research Board (National Academy of Engineering)**

- Independent Review Group, Highway Safety Manual, Chapter 8, Jun. 2006.
- NCHRP Synthesis 33-06, Roadway Safety Tools for Local Agencies, Nov. 2001 – May 2003.
- NCHRP Synthesis 33-07, Safety Management Systems in Practice, Nov. 2001 - May 2003.

#### **Roadway Safety Institute (USDOT/University of Minnesota)**

- Project monitor, Apr. 2014 – Nov. 2018.

#### **ATLAS (USDOT/Texas A&M University)**

- Project monitor, Aug. 2014 – Dec. 2015.

#### **Centers for Disease Control and Prevention**

- Proposal review panel, May 2014.

### **Professional Societies**

#### **Connecticut Academy of Science and Engineering**

- Member, elected 2011.
- Chair, Transportation Systems Technical Board, May 2014 to June 2018.

#### **Transportation Research Board**

- Committee on Highway Safety Performance (member, Apr. 2007 – 2020)
  - Chair, Sub-committee on Future Research Directions, Jan. 2013 – 2020.
  - Chair, Sub-committee on Predictive Methods, Jan. 2011 – 2020.
  - Chair, Sub-committee on Paper Reviewing, Aug. 2010 – Feb. 2013.
  - Chair, Chapter 14 review group, Jan. 2007 – Dec. 2009.
- Committee on Safety Data, Analysis and Evaluation (member, Apr. 2008 – Apr. 2022)
- Committee on Statistical Methodology (member, Aug. 2001 – Jan. 2011)
  - Chair, sub-committee on Outreach, Jan. 2008 – Jan. 2011.
  - Chair, sub-committee on Research, Jan. 2004 – Jan. 2008.
  - Committee representative, section committee on Research, Dec. 2004 – Jan. 2008.
- Committee on Bicycle Transportation (member, Jul. 1997 – Jun. 2006)
  - Chair, sub-committee on Safety Data and Measurement, Jan. 2002 – Jun. 2006.
  - Chair, sub-committee on Research Needs, Jul. 1997 – Jun. 2000.
- Committee on Artificial Intelligence (member, Jul. 1995 – Dec. 1999)

#### **American Society of Civil Engineers**

- Urban Transportation Division, Committee on Advanced Technologies, paper reviewing, Jun. 1995 – Sep. 2013.

#### **American Society for Engineering Education**

- Member, 1994 – present.

#### **Institute of Transportation Engineers**

- Council on Intelligent Transportation Systems, Jun. 1994 – Dec. 1997.

#### **Intelligent Transportation Society of Connecticut**

- Member, Board of Directors, May 1999 - Oct. 2000, Sep. 2004 – Sep. 2007.



## **Technical Workshop Presentations**

### **Connecticut Transportation Institute**

- Fundamentals of Analyzing & Solving Local Traffic Problems, Connecticut Transportation Institute, Technology Transfer Center, Nov. 4, 6 and 18, 1998.
- Traffic Signal Progression and Synchronization for Arterial Street Networks: Passer IV-94 Software Training, Connecticut Transportation Institute, Technology Transfer Center, Feb. 27 and Mar. 5, 1996.
- Traffic Signal Systems Software Training, Connecticut Transportation Institute, Technology Transfer Center, Oct. 11 and 18, 1994.

## **Expert Services**

### **Paid Consulting**

- Nevas, Capasse & Gerard, LLC, Attorneys at Law, forensic engineering services for litigation matter, April – May 2013.
- Smith and Bishop, LLC, Attorneys at Law, forensic engineering services for litigation matter, Dec. 2009 – 2011.
- CES Engineering (Andover, Conn.), forensic engineering services for developer, Jul. – Aug. 2006.
- Save our Neighborhoods (Orange, Conn.), forensic engineering services for citizen group, Feb. – Mar. 2005.
- Lambert Road (Orange, Conn.) intersection widening, forensic engineering services for citizen group, Nov. 2000.
- *Blitzer v. University of Hartford, et al.*, forensic engineering services for University of Hartford, Apr. 1998.

### **Media and Community**

- “Pedestrian Fatalities: How Can We Stop the Carnage?” presentation at public forum on pedestrian safety, City of Stamford, March 14, 2018.
- Interviewed for news segment on driver distraction by interactive dashboard displays, NBC Connecticut Channel 30, May 2013.
- “What’s the Real Danger on Route 44?” *The Hartford Courant*, Sunday Sep. 23, 2007, p. C1, C6 (op-ed).
- Live Radio Interview, WTIC-AM 1080 (Hartford) Morning show, Feb. 2, 2006.
- Interviewed for “Main Street,” originally broadcast on Connecticut Public Television (CPTV), Nov. 21, 2003.
- “Why I Can’t Have a Stop Sign on My Street,” invited presentation, Police Commissioners Association of Connecticut, Feb. 24, 1999.
- Concerned Citizens of Tolland, Pro-bono consulting services, Sep. 1995.
- Interviewed for “Drivers & Highways = Backups” by A. Katz, *New Haven Register*, Feb. 9, 1995, p. C1, C3.

## Academic Service and Administration

### Personal Statement

Since I joined the University of Connecticut, I have been given opportunities to serve the University in roles with increasing responsibility and influence. I have found that I have the personal traits and abilities to serve well in administration. I started on this road almost immediately as I initiated an overhaul of the doctoral general exam procedures in the transportation systems group that were later adopted by the Civil Engineering field of study as well. Following is a chronology of significant academic service and administrative roles that I have accepted, indicating the progressive increase in responsibility and influence:

1995	led the Transportation Systems Group in forming a technical core and formalized doctoral general exam procedure
1996	appointed Associate Director of the Connecticut Transportation Institute, with responsibility for promoting research programs and graduate education activities
1997	appointed chair of committee of young faculty charged with reviewing the Civil Engineering curriculum and recommending revisions for efficiency and improvement
1998	appointed group coordinator of Transportation Systems
2000	appointed coordinator for preparing for accreditation of the Civil Engineering program under ABET 2000 criteria, with responsibilities for writing the self-studies for all subsequent accreditation visits
2000	appointed chair of search committee for hiring a faculty member in transportation systems
2002-03	while on sabbatical leave in Germany, asked by Dean of Engineering to promote international exchange of graduate students with European institutions
2006	appointed Associate Head of the Department of Civil & Environmental Engineering, with responsibilities for administering the undergraduate and graduate programs in Civil Engineering, including coordination with the Environmental Engineering program
2006	appointed chair of committee charged with again reviewing the Civil Engineering curriculum and recommending revisions to the faculty
2006	appointed chair of search committee for hiring a faculty member in sustainable transportation systems
2009	reappointed Associate Head of the Department of Civil & Environmental Engineering following return from sabbatical leave
2016	re-appointed group coordinator of Transportation Systems
2017	re-appointed coordinator for preparing for accreditation of the Civil Engineering program
2018	appointed accreditation coordinator, School of Engineering
2020	appointed coordinator for preparing for accreditation of the Environmental Engineering program

The rest of this section gives details about my academic service and administration experience.

### Administrative Appointments

#### School of Engineering, University of Connecticut

- **Accreditation Coordinator, 2018 – present.** Responsibilities include supporting all of the Programs in the School with preparation for accreditation and coordinating overall preparations for the School.

#### Department of Civil & Environmental Engineering, University of Connecticut

- **Associate Head of Department, May 2006 – Aug. 2008, Aug. 2009 – Aug. 2015.** Responsibilities included administering the undergraduate and graduate programs in Civil Engineering, coordinating the academic advising of undergraduate majors, scheduling classes, assigning teaching assistants and coordinating student recruitment activities.
- **Graduate Program Director, Civil Engineering, May 2006 – Aug. 2008, Aug. 2009 – Aug. 2015.** Responsibilities included oversight of the student admission process and administration of the graduate program.
- **Accreditation Coordinator, 2000 – present.** Responsibilities include writing the self-study and developing curriculum and assessment procedures to meet accreditation requirements for the Civil Engineering Program (since 2000) and the Environmental Engineering Program (since 2020).
- **Group Coordinator, Transportation and Urban Planning (formerly Transportation Systems), Sep. 1998 – May 2002, Sep. 2003 – Aug. 2008, Sep. 2009 – Aug. 2015, Aug. 2016 - present.** Responsibilities include planning graduate courses to be offered, assignment of faculty to courses and managing the review of graduate student applications.

### **Connecticut Transportation Institute**

- Associate Director, Research and Graduate Education, Sep. 1996 – June 2005.

### **Committee Service**

#### **University of Connecticut**

- Provost's Library Advisory Committee, School of Engineering representative, Sep. 2010 – May 2012.
- Parking Advisory Committee, University Senate representative, Sep. 1997 – Jun. 1999.

#### **School of Engineering**

- Curriculum and Courses Committee, Aug. 2009 – Aug. 2015.
- Dean's Council on Promotion, Tenure and Reappointment (elected), Aug. 2007 – May 2008.
- Library Committee, representing the Department on library issues, Sep. 1994 – Aug. 1995.
- Secretary of the Faculty, recording minutes of faculty meetings, Sep. 1994 – Dec. 1995.
- Computer, Information and Communications Advisory Committee, representing Department on related issues, Sep. 1995 – May 1997.

### **Connecticut Transportation Institute**

- Internal Faculty Advisory Committee, Sep. 2003 – 2007.

### **Department of Civil and Environmental Engineering**

- Member, Faculty Search Committee, Construction Engineering and Management, 2016-2017.
- Member, Faculty Search Committee, Transportation Systems, 2012.
- Curriculum and Courses Committee, Sep. 1998 – May 2002 (chair), Sep. 2003 – Aug. 2008, Sep. 2009 – Aug. 2015 (chair), Sep. 2016 – present.
- Promotion, Tenure and Reappointment Committee (elected), Aug. 2001 – May 2002, Aug. 2003 – May 2006, Aug. 2009 – May 2012, Aug. 2017 – May 2020.
- Undergraduate Education Committee, Sep. 2009 – May 2011.
- Chair, Civil Engineering Curriculum Review and Revision Committee, Sep. 1997 – May 1998, Sep. 2006 – May 2008.
- Chair, Faculty Search Committee, Sustainable Transportation Systems, 2006-2007.
- Member, Faculty Search Committee, Advanced Transportation Materials, 2006-2007.
- Student Chapter Advisor, Institute of Transportation Engineers, Sep. 1994 – Aug. 1996, Sep. 2004 – 2007.
- Graduate Affairs Committee, Sep. 1995 - May 1997, Jan. – May 1999, Jan. 2004 – May 2005.
- Chair, Faculty Search Committee, Transportation Systems, 2000 – 2001.
- Undergraduate Affairs Committee, Sep. 1997 – May 1998.
- External Affairs Committee, Sep. 1996 - May 1997.

### **Student Recruitment**

#### **New England Region University Transportation Center (USDOT)**

- Presentation of Univ. of Conn. transportation program at Graduate Education Opportunities in Transportation Open House, Nov. 1994, Dec. 1995, Nov. 1996, Sep. 1997.

#### **University of Connecticut**

- Connecticut Invention Convention, assisted at departmental booth, May 2004.
- Engineering Visitation Day (University Open House):
  - Faculty guide, Apr. 1994, Apr. 1995, Apr. 2000, Apr. 2001, Apr. 2002, Sep. 2004, Apr. 2015.
  - Departmental coordinator, Apr. 1996, Sep. 2006, Apr. 2007, Sep. 2007, Apr. 2008, Sep. 2009, Apr. 2010, Sep. 2010, Apr. 2011, Sep. 2011, Apr. 2012, Sep. 2012, April 2013, Oct. 2013, Apr. 2014, Sep. 2014, Oct. 2014.
  - Laboratory demonstration, Apr. 1997, Apr. 1998, Apr. 1999, Apr. 2006, Apr. 2017.
- Pre-Engineering Program, presentation on Urban Planning to seventh grade students, Feb. 1994.