**Joshua A. Auld**

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## EDUCATION

**Ph.D. University of Illinois at Chicago** (August 2011) GPA: 4.0/4.0
Department of Civil and Materials Engineering
*Major:* Transportation Engineering
*Thesis:* "Agent-based Dynamic Activity Planning and Travel Scheduling Model: Data Collection and Model Development"
*Advisor:* Prof. Abolfazl (Kouros) Mohammadian

**M.S. University of Illinois at Chicago** (January 2007) GPA: 4.0/4.0
Department of Civil and Materials Engineering
*Major:* Transportation Engineering
*Thesis:* "Analysis of National County-Level Heavy-Duty Freight Truck Emissions."
*Advisor:* Prof. Jane Lin

**B.S. University of Illinois at Urbana-Champaign** (December 2002) GPA: 3.5/4.0
Department of Civil and Environmental Engineering
*Major:* Structural Engineering, *Minor:* Construction Materials

## RESEARCH INTERESTS AND FOCUS AREAS

- Travel Demand Analysis
- Activity-Based Modeling
- Discrete Choice Modeling
- Travel Survey Methods
- Travel Demand Management
- Intelligent Transportation Systems
- Data Simulation and Transferability
- Microsimulation
- Emergency and Evacuation Modeling
- Freight Modeling

## RESEARCH EXPERIENCE

**Principal Computational Transportation Scientist, Argonne National Laboratory** (5/17-Present)
*Principal Investigator for projects:* "Impact of CAVs on Energy, GHG and Mobility in a Metropolitan Area" and "Travel Behavior Simulation Modeling in POLARIS"
*Funding Agency*: Department of Energy Vehicle Technologies Office
- Behavioral and simulation model improvement in POLARIS framework to represent CAV
- Analysis of future mobility cases across the SMART Mobility research consortium

**Computational Transportation Scientist, Argonne National Laboratory** (12/14-5/17)
*Principal Investigator for project:* "Transportation System Modeling"
*Funding Agency:* Department of Energy Vehicle Technologies Office
- Development of integrated transportation and energy use model for Detroit using POLARIS
- Analysis of smart mobility case study using connected, multi-modal corridors

*Project*: "Coordinated Transit Response Planning and Operations Support Tools for Mitigating Impacts of All-Hazard Emergency Events"
*Funding Agency*: Federal Transit Administration
- Updating agent-based travel simulation with real-time data feeds
- Emergency response survey and behavioral model development
- Application of POLARIS model to emergency response forecasts

*Project*: "Illinois Long Distance Travel Model"
*Funding Agency*: Illinois Department of Transportation
- Primary model developer
- Applied POLARIS simulation framework to model statewide long-distance travel by all modes
- Designed household survey and supervised data collection and analysis efforts
- Developed tool for analyzing statewide transportation policies for planning and forecasting

**Postdoctoral Researcher, Argonne National Laboratory/University of Illinois Chicago** (1/12-12/14)
*Project*: "Planning and Operations Language for Agent-based Regional Integrated Simulations"
*Funding Agency*: Federal Highway Administration
- Primary travel demand modeler
- Applied new simulation framework to regional travel demand models
- Integrated modeling of travel demand, network assignment and network operations

*Project*: "IDOT220 High-Speed Rail Preliminary Feasibility Study"
*Funding Agency*: Illinois Department of Transportation
- Primary long-distance travel demand model developer
- Developed long-distance travel demand simulation model framework
- Estimated and calibrated travel demand model components
- Designed and implemented mode choice and personal travel surveys

**Transportation Engineer, Argonne National Laboratory** (1/11-1/12)
*Project*: "Regional Transportation Simulation Tool for Evacuation Planning"
*Funding Agency*: Department of Homeland Security
- Designed and implemented online evacuation behavior survey
- Developed evacuation behavior models under no-notice emergency scenarios
- Extended TRANSIMS model components to account for evacuation behavior
- Designed user interface for TRANSIMS evacuation model workflow

## TEACHING EXPERIENCE

**Graduate Teaching Assistant, University of Illinois at Chicago**
- CME 402: Geometric Design of Highway Facilities (01/07 – 05/07)
- CME 408: Traffic Engineering and Design (08/10 – 08/11)

**Guest Lecturer, University of Illinois at Chicago** (01/09 – 11/12)
- CME 503: Advanced Transportation Demand Analysis
- CME 508: Urban Travel Forecasting
- CME 408: Traffic Engineering and Design

**Graduate and Undergraduate Student Supervisor** (05/07 – Present)
- Dissertation committee for: Nima Golshani (2018), Takanori Sakai (2016) and Sanghyeon Ko (2015)
- Supervised Martina Frignani in the completion of Master's Thesis (2010)
- Supervised undergraduate students conducting GPS household travel survey

## PEER-REVIEWED PUBLICATIONS

Auld, J., Verbas, O., Javanmardi, M., & Rousseau, A. (2018). Impact of Privately-Owned Level 4 CAV Technologies on Travel Demand and Energy. Procedia Computer Science, 130, 914–919.

Golshani, N., Shabanpour, R., Auld, J., & Mohammadian, A. (2018). Activity start time and duration: incorporating regret theory into joint discrete–continuous models. Transportmetrica A: Transport Science, 1–19.

Shabanpour, R., Golshani, N., Stephens, T. S., Auld, J., & Mohammadian, A. (2019). Developing a Spatial Transferability Platform to Analyze National-Level Impacts of Connected Automated Vehicles. In The Practice of Spatial Analysis (pp. 253–272). Springer, Cham.

Shabanpour, R., Golshani, N., Tayarani, M., Auld, J., & Mohammadian, A. K. (2018). Analysis of telecommuting behavior and impacts on travel demand and the environment. Transportation Research Part D: Transport and Environment, 62, 563–576.

Auld, J., V. Sokolov, T. Stephens (2017). Analysis of the impacts of CAV technologies on travel demand. *Transportation Research Record: Journal of the Transportation Research Board*, 2625, 1-8.

Shabanpour, R., N. Golshani, J. A. Auld, A. Mohammadian (2017). Dynamics of Activity Time-of-Day Choice, *Transportation Research Record: Journal of the Transportation Research Board*, 2665, 51-59.

Sokolov, V., J. Larson, T. Munson, J. Auld, D. Karbowski (2017). Assessing the Mobility Benefit of Coordinated Platooning. *Transportation Research Record: Journal of the Transportation Research Board*, 2667, 10-16.

Auld, J.A., M. Hope, H. Ley, V. Sokolov, B. Xu and K. Zhang (2016). POLARIS: Agent-Based Modeling Framework Development and Implementation for Integrated Travel Demand and Network and Operations Simulations. *Transportation Research Part C: Emerging Technologies*, 64, 101-116.

Karbowski, D., N. Kim, J. Auld, V. Sokolov (2016). Assessing the energy impact of traffic management and vehicle hybridization. *International Journal of Complexity in Applied Science and Technology*, 1 (1), 107-124.

Auld, J.A., A. Mohammadian, M.S. Oliveira, J.Wolf and W. Bachman (2015). Demographic Characterization of Anonymous Trace Travel Data. *Transportation Research Record: Journal of the Transportation Research Board*, 2526, 19-28.

Bergerson, J., R.T. Muehleisen, W.B. Rodda, J.A. Auld, L.B. Guzowski, J. Ozik and N. Collier (2015). Designing Future Cities: LakeSIM Integrated Design Tool for Assessing Short And Long Term Impacts Of Urban Scale Conceptual Designs. *ISOCARP Review*, vol. 11.

Auld, J.A. and A. Mohammadian (2014). Collecting Activity-Travel Planning Data Using GPS-Based Prompted Recall Surveys: Recent Experience and Future Directions, *Mobile Technologies for Activity-Travel Data Collection and Analysis*, H.J.P. Timmermans and S. Rasouli (editors), IGI Publishing.

Rashidi, T.H., J.Auld, and A. Mohammadian (2013). Effectiveness of Bayesian Updating Attributes in Data Transferability Applications, in *Transportation Research Record: Journal of the Transportation Research Board*, 2344, 1-9.

Auld, J.A, and A. Mohammadian (2013). Development and Implementation of the ADAPTS Integrated Activity-Travel Model, in *Travel Behaviour Research: Current Foundations, Future Prospect*, M. Roorda and E. Miller (ed), Lulu Publishers, USA.

Sokolov, V., J.A. Auld and M. Hope (2012). A flexible framework for developing integrated models of transportation systems using an agent-based approach. *Procedia Computer Science*, 10, 854-859.

Auld, J.A., V. Sokolov, A. Fontes and R. Bautista (2012). Internet-Based Stated Response Survey for No-Notice Emergency Evacuations. *Transportation Letters, International Journal of Transportation Research*, 4 (1), 41-53.

Auld, J.A. and A. Mohammadian (2012).Activity Planning Processes in the Agent-based Dynamic Activity Planning and Travel Scheduling (ADAPTS) Model, in *Transportation Research Part A: Policy and Practice*, 46 (8), 1386 - 1403.

Rashidi, T.H., J. Auld, and A. Mohammadian (2012), A behavioral housing search model: Two-stage hazard-based and multinomial logit approach to choice-set formation and location selection, in Transportation Research Part A: Policy and Practice, volume 46, issue 7, pp. 1097 - 1107.

Auld, J., T.H. Rashidi, M. Javanmardi, and A. Mohammadian (2011). Dynamic Activity Generation Model Using a Competing Hazard Formulation, in Transportation Research Record: Journal of the Transportation Research Board, No. 2254, pp 28-35.

Frignani, M., J. Auld, and A. Mohammadian (2011). Empirical Analysis of the Decision-Making and Tour Formation Process: Comparison between Seniors and Younger Individuals", in Transportation Research Record: Journal of the Transportation Research Board, No. 2231, 2011, pp. 27-34.

Auld, J., and A. Mohammadian (2011). Planning-Constrained Destination Choice in Activity-Based Model: Agent-based Dynamic Activity Planning and Travel Scheduling". Transportation Research Record: Journal of the Transportation Research Board, No. 2254, 2011, pp. 170-179.

Auld, J., A. Mohammadian, and P. Nelson (2011). Empirical Analysis of the Activity Planning Process", in Transportation Research Record: Journal of the Transportation Research Board, No. 2231, 2011, pp. 76-84.

Auld, J.A. and A. Mohammadian (2010). An Efficient Methodology for Generating Synthetic Populations with Multiple Control Levels. *Transportation Research Record: Journal of the Transportation Research Board*, 2175, 138-147.

Frignani, M., J.A. Auld, A. Mohammadian, C. Williams and P. Nelson (2010). Urban Travel Route and Activity Choice Survey (UTRACS): An Internet-Based Prompted Recall Activity Travel Survey using GPS Data. *Transportation Research Record: Journal of the Transportation Research Board*, 2183, 19-28.

Auld, J.A., A. Mohammadian and M.J. Roorda (2009). Implementation of a Scheduling Conflict Resolution Model in an Activity Scheduling System. *Transportation Research Record: Journal of the Transportation Research Board*. 2135, 96-105.

Auld, J.A. and A. Mohammadian (2009). Framework for the Development of the Agent-based Dynamic Activity Planning and Travel Scheduling (ADAPTS) Model. *Transportation Letters, International Journal of Transportation Research*, 1 (3), 245-255.

Auld, J.A., A. Mohammadian and K. Wies (2009). Population Synthesis with Region-Level Control Variable Aggregation. *Journal of Transportation Engineering*, 135 (9), 632-639.

Auld, J.A., A. Mohammadian and S.T. Doherty (2009). Modeling Activity Conflict Resolution Strategies Using Scheduling Process Data. *Transportation Research Part A: Policy and Practice*, 43 (4), 386-400.

Auld, J. A., C. Williams, A. Mohammadian and P. Nelson (2009). An Automated GPS-Based Prompted Recall Survey with Learning Algorithms. *Transportation Letters, International Journal of Transportation Research*, 1 (1), 59-79.

Auld, J.A., A. Mohammadian and S.T. Doherty (2008). Analysis of Activity Conflict Resolution Strategies. *Transportation Research Record: Journal of the Transportation Research Board*. 2054, 10-19.

## BOOK CHAPTERS

Auld, J.A. and A. Mohammadian (2014). Collecting Activity-Travel Planning Data Using GPS-Based Prompted Recall Surveys: Recent Experience and Future Directions, *Mobile Technologies for Activity-Travel Data Collection and Analysis*, H.J.P. Timmermans and S. Rasouli (editors), IGI Publishing.

Auld, J.A, M. Hope and A. Mohammadian (2013). Simulation Frameworks for Integrated Modeling, in *Travel Behaviour Research: Current Foundations, Future Prospect*, M. Roorda and E. Miller (ed), Lulu Publishers, USA.

Auld, J.A, and A. Mohammadian (2013). Development and Implementation of the ADAPTS Integrated Activity-Travel Model, in *Travel Behaviour Research: Current Foundations, Future Prospect*, M. Roorda and E. Miller (ed), Lulu Publishers, USA.

Mohammadian, A., J. Auld, and S. Yagi (2009). Recent Progress on Activity-Based Microsimulation Models of Travel Demand and Future Prospects, Chapter 7, *Transportation Statistics*, Brian W. Sloboda (editor), J. Ross Publishing.

## EDITORIALS

Auld, J.A. (2013). Advances in Agent-based Microsimulation in Travel Demand Modeling. *Transportation Letters: the International Journal of Transportation Research*, 5(4), 165-166.

Auld, J.A. and L. Zhang (2013). Inter-personal interactions and constraints in travel behavior within households and social networks. *Transportation,* 40 (4), 751-754.

## CONFERENCE PROCEEDINGS (PEER-REVIEWED)

Auld, J., E. Islam, T. Stephens, S. Driscoll, M. Javanmardi (2018). Modeling the Transportation Energy Impact of Future Population Scenarios for the Detroit Region using POLARIS and Autonomie. Transportation Research Board 97th Annual Meeting, Transportation Research Board, 2018

Shabanpour, Ramin; Golshani, Nima; Tayarani, Mohammad; Auld, Joshua; Mohammadian, Abolfazl (Kouros). Developing an Integrated Framework for Assessing Potential Impacts of Telecommuting. Transportation Research Board 97th Annual Meeting, Transportation Research Board, 2018, 6p

Golshani, Nima; Shabanpour, Ramin; Auld, Joshua; Mohammadian, Abolfazl (Kouros). A Joint Model of Activity Start Time and Duration: Incorporating Regret Theory into Joint Discrete-Continuous Copula Models. Transportation Research Board 97th Annual Meeting, Transportation Research Board, 2018, 5p

Golshani, Nima; Shabanpour, Ramin; Auld, Joshua; Mohammadian, Abolfazl (Kouros); Ley, Hubert. Investigating Evacuation Decision Making Behavior for No-Notice Emergency Events. Transportation Research Board 97th Annual Meeting, Transportation Research Board, 2018, 5p

Golshani, Nima; Shabanpour, Ramin; Auld, Joshua; Mohammadian, Abolfazl (Kouros); Ley, Hubert. Modeling Evacuation Destination and Departure Time Choices for No-Notice Emergency Events. Transportation Research Board 97th Annual Meeting, Transportation Research Board, 2018, 5p

Shabanpour, Ramin; Mousavi, Seyedeh Niloufar Dousti; Golshani, Nima; Auld, Joshua; Mohammadian, Abolfazl; (2017). Consumer preferences of electric and automated vehicles. Models and Technologies for Intelligent Transportation Systems (MT-ITS), 2017 5th IEEE International Conference.

Golshani, Nima; Shabanpour, Ramin; Mohammadian, Abolfazl; Auld, Joshua; (2017). Activity start time and duration: Incorporating hybrid utility-regret decision rules in joint models. International Choice Modelling Conference 2017.

Shabanpour, Ramin; Golshani, Nima; Auld, Joshua; Mohammadian, Abolfazl; (2017). Willingness-to-pay for automated vehicles: A random parameters and random thresholds HOPIT model. International Choice Modelling Conference 2017.

Auld, Joshua; Sokolov, Vadim; Stephens, Thomas (2016). Analysis of the impacts of CAV technologies on travel demand. 23rd World ITS Congress, Melbourne.

Shabanpour, Ramin; Auld, Joshua; Mohammadian, Abolfazl Kouros; Stephens, Thomas S; (2017). Developing a Platform to Analyze Behavioral Impacts of Connected Automated Vehicles at the National Level.

Shabanpour, Ramin; Golshani, Nima; Auld, Joshua; Mohammadian, Abolfazl Kouros; (2017). Dynamics of Time-of-Day Choices in Agent-Based Dynamic Activity Planning and Travel Simulation (ADAPTS) Framework.

Auld, Joshua; Karbowskia, Dominik; Sokolova, Vadim; (2017). Assessing the regional energy impact of connected vehicle deployment. Transportation Research ProcediaAuld, J.A., D. Karbowski and V. Sokolov (2016). Assessing the regional energy impact of connected vehicle deployment. Proceedings of the 14th World Conference on Transport Research, Shanghai, July 10-15, 2016.

Auld, J.A., V. Sokolov and T. Stephens (2016). Analysis of the impacts of CAV technologies on travel demand. 23rd ITS World Congress, Melbourne, Australia, 10–14 October 2016.

Auld, J.A., D. Karbowski, V. Sokolov, N. Kim (2016). A Disaggregate Model System for Assessing the Energy Impact of Transportation at the Regional Level. Transportation Research Board 95th Annual Meeting, Washington, D.C., Jan 2016.

Auld, J.A., B. Karimi, Z. Pourabdollahi, A. Mohammadian, K. Kawamura (2016). Long-Distance Trips and Mode Choice in Illinois. Transportation Research Board 95th Annual Meeting, Washington, D.C., Jan 2016.

Luo, Q., J.A. Auld, V. Sokolov (2016). Addressing Some Issues of Map-Matching for Large-Scale, High-Frequency GPS Data Sets. Transportation Research Board 95th Annual Meeting, Washington, D.C., Jan 2016.

Auld, J.A., D. Karbowski, V. Sokolov, N. Kim (2015). A Disaggregate Model System for Assessing the Energy Impact of Traffic Management and ITS Technologies. 14th International Conference on Travel Behavior Research, Windsor, UK, July 2015.

Auld, J.A., M. Hope, H. Ley, V. Sokolov, B. Xu and K. Zhang (2015). POLARIS: Agent-Based Modeling Framework Development and Implementation for Integrated Travel Demand and Network and Operations Simulations. Proceedings of the 94th Annual Meeting of the Transportation Research Board, Washington, D.C, Jan 2015.

Auld, J.A., M. Hope, H. Ley, V. Sokolov, B. Xu, K. Zhang (2014). POLARIS: A fully integrated agent-based simulation model of activity travel behavior and network operations. Paper presented at the 5th Conference on Innovations in Travel Modeling, April 27-30, 2014, Baltimore, Maryland.

Sokolov, V., J.A. Auld, M. Hope, H. Ley, B. Xu (2013). Modeling framework for regional integrated simulation of transportation network and activity-based demand (POLARIS). Presented at International Symposium for Next Generation Infrastructure, October 1-4, 2013, Wollongong, Australia.

Auld, J.A., M. Hope, H. Ley, V. Sokolov, B. Xu, K. Zhang (2013). POLARIS: Planning- and Operations-modeling Language for Agent-based Regional Integrated Simulations. Paper presented at the Conference on Agent-Based Modeling in Transportation Planning and Operations, September 30 - October 2, 2014, Blacksburg, Virginia.

Auld, J.A. and A. Mohammadian (2012). Development and Implementation of the ADAPTS integrated activity-travel model. Paper presented at the 13th International Conference on Travel Behaviour Research, July 2012, Toronto.

Auld, J.A., M. Javanmardi and A. Mohammadian (2012). Integration of Activity Scheduling and Traffic Assignment in ADAPTS Activity-Based Model. Proceedings of the 91st Annual Meeting of the Transportation Research Board, Washington, D.C.

Rashidi, T.H., J.A. Auld and A. Mohammadian (2012). Effectiveness of Bayesian Updating Attributes in Data Transferability Applications. Proceedings of the 91st Annual Meeting of the Transportation Research Board, Washington, D.C.

Auld, J.A. and A. Mohammadian (2010). Planning Constrained Destination Choice in the ADAPTS Activity-Based Model. Proceedings of the 12th World Conference on Transport Research, Lisbon, July 11-15, 2010.

Auld, J.A., M. Frignani, A. Mohammadian and C. Williams (2010). Results of the UTRACS Internet-Based Prompted Recall GPS Travel Survey: Empirical Analysis of the Activity Planning Process. Proceedings of the 12th World Conference on Transport Research, Lisbon, July 11-15, 2010.

Auld, J.A., A. Mohammadian and K. Wies (2010). An Efficient Methodology for Generating Synthetic Populations with Multiple Control Levels. Proceedings of the 89th Annual Meeting of the Transportation Research Board (DVD), Washington, D.C., Jan. 11-15, 2010.

Auld, J.A., T.H. Rashidi and A. Mohammadian (2010). Evaluating Transportation Impacts of Forecast Demographic Scenarios Using Population Synthesis and Data Transferability. Proceedings of the 89th Annual Meeting of the Transportation Research Board (DVD), Washington, D.C., January 11-15, 2010.

Auld, J.A., A. Mohammadian, P. Nelson (2009). Activity Planning Processes in the ADAPTS Activity-Based Modeling Framework. Proceedings of the 12th International Conference on Travel Behavior Research, Jaipur, India, December 13-18, 2009.

Auld, J.A., T.H. Rashidi and J. Lin (2009). Analysis of National County-Level Heavy Duty Freight Truck Emissions. Proceedings of the Transportation, Planning, Land Use and Air Quality Conference 2009, Denver, CO, July 28-29, 2009. ASCE Proceedings 371, 1

Auld, J.A., A. Mohammadian, T. Rashidi and K. Wies (2009). Evaluating Transportation Impacts of Forecast Demographic Scenarios Using Population Synthesis and Data Transferability. Proceedings of the 12th TRB National Transportation Planning Applications Conference, Houston, May 18-22, 2009.

Auld, J.A., A. Mohammadian and M.J. Roorda (2009). Implementation of a Scheduling Conflict Resolution Model in an Activity Scheduling System. Proceedings of the 88th Annual Meeting of the Transportation Research Board (DVD), Washington, D.C., Jan. 11-15, 2009.

Auld, J.A., A. Mohammadian and M.J. Roorda (2009). ADAPTS: Agent-based Dynamic Activity Planning and Travel Scheduling Model – A Framework. Proceedings of the 88th Annual Meeting of the Transportation Research Board (DVD), Washington, D.C., January 11-15, 2009.

Auld, J.A., A. Mohammadian and S.T. Doherty (2008). Modeling Activity Scheduling Conflict Resolution Strategies. Proceedings of the 10th International Conference on Application of Advanced Technologies in Transportation, Athens, Greece, May 27-31, 2008.

Auld, J.A., A. Mohammadian and K. Wies (2008). Population Synthesis with Control Category Optimization. Proceedings of the 10th International Conference on Application of Advanced Technologies in Transportation, Athens, Greece, May 27-31, 2008.

Auld, J.A., A. Mohammadian and S.T. Doherty (2008). Analysis of Activity Conflict Resolution Strategies. Proceedings of the 87th Annual Meeting of the Transportation Research Board, Washington, D.C., January 13-17, 2008.

Auld, J.A., A. Mohammadian and K. Wies (2008). Population Synthesis with Region-Level Control Variable Aggregation. Proceedings of the 87th Annual Meeting of the Transportation Research Board, Washington, D.C., Jan. 13-17, 2008.

Auld, J.A., J. Lin, K. Kawamura and T.H. Rashidi (2007). Analysis of National County-Level Heavy-Duty Freight Truck Emissions. Proceedings of the 2007 Transport Chicago Conference, Chicago, IL, June 1, 2007.

## TECHNICAL REPORTS AND THESES

Wolf, J. W. Bachman, M.S. Oliveira, J. Auld, A. Mohammadian and P. Vovsha (2014). *Applying GPS Data to Understand Travel Behavior, Volume I: Background, Methods, and Tests*. NCHRP Report no. 775, Transportation Research Board.

Wolf, J. W. Bachman, M.S. Oliveira, J. Auld, A. Mohammadian and P. Vovsha (2014). *Applying GPS Data to Understand Travel Behavior, Volume I: Guidelines*. NCHRP Report no. 775, Transportation Research Board.

Kawamura, K., A. Mohammadian, P. Metaxatos, J. Auld and B. Karimi (2012). Ridership Estimation Study for the IDOT220 High-Speed Rail Preliminary Feasibility Study, prepared for Illinois Department of Transportation.

Ley, H., V. Sokolov, M. Hope, J. Auld, K. Zhang, X. Kang (2011). RTSTEP regional transportation simulation tool for emergency planning - final report. Prepared for City of Chicago, Office of Emergency Management and Communications.

Auld, J.A. (2011). *Agent-based Dynamic Activity Planning and Travel Scheduling (ADAPTS), Model Development and Data Collection*, Ph.D. Thesis. University of Illinois at Chicago, August, 2011.

Mohammadian, A., M. Frignani, J.A. Auld (2011). *Senior Travelers' Trip Chaining Behavior: Survey Results and Data Analysis*. Technical Report FHWA-ICT-11-086, prepared for Illinois Center for Transportation.

Auld, J.A. and A. Mohammadian (2009). *Population Synthesis – Phase II: Joint Household- and Person-Level Control Methodology*. Technical Report prepared for Chicago Metropolitan Agency for Planning. University of Illinois at Chicago.

Auld, J.A. and A. Mohammadian (2009). *Population Synthesis – Phase II: Forecasting and Scenario Methodology and Evaluation*. Technical Report prepared for Chicago Metropolitan Agency for Planning. University of Illinois at Chicago.

Auld, J.A. and A. Mohammadian (2008). *PopSYN-WIN Version 4.1: Methodology and Program Documentation*. Technical Report prepared for Chicago Metropolitan Agency for Planning. University of Illinois at Chicago.

Auld, J.A. and A. Mohammadian (2007*). Population Synthesis: Input and Output Dataset Development*. Technical Report prepared for Chicago Metropolitan Agency for Planning. University of Illinois at Chicago.

Auld, J.A. (2007). *Analysis of National County-Level Heavy-Duty Freight Truck Emissions*. Master's Thesis. University of Illinois at Chicago, December, 2007.

## PROPOSALS

Mohammadian, A., J.A. Auld, K. Kawamura (2014). *National Agent-Based Freight Demand Simulation Model*. Proposal submitted to Federal Highway Administration, funding opportunity DTFH61-14-R-00017. *Under review.*

Ley, H. , J.A. Auld, M. Hope, V. Sokolov, Z.Li, N.Moini, P.S. Sriraj, K. Zhang (2013). *Coordinated Transit Response Planning and Operations Support Tools for Mitigating Impacts of All-Hazard Emergency Events*. Proposal submitted to Federal Transit Administration, funding opportunity FTA-2013-005-TRI. Funded

Auld, J.A. and A. Mohammadian (2010). *Long-Distance and Rural Travel Demand Forecasting*. Proposal submitted to National Cooperative Highway Research Program RFP 8-84.

Auld, J.A., A. Mohammadian, R. Pendyala and K. Goulias (2010). *Implementation of the Agent-Based Dynamic Activity Planning and Travel Scheduling Model (ADAPTS) for Pricing and Policy Analysis in the Chicago Region*. Proposal submitted to Chicago Metropolitan Agency for Planning RFP 047 – Task D.

A. Mohammadian and Auld, J.A. (2009). Modeling Seniors Activity-Travel Data, Proposal submitted to Illinois Center for Transportation (ICT). Funded.

A. Mohammadian and Auld, J.A. (2009). Phase II: Population Synthesis in Support of Regional Travel Demand Modeling, Submitted to Chicago Metropolitan Agency for Planning. Funded.

## PEER REVIEWER

- Transportation Research, Part A and Part C
- Transportation
- Transportation Letters: International Journal of Transportation Research
- Transportation Research Record and TRB committees ADB10, ADB40 and ABJ40
- Paper Review Coordinator for TRB ADB40 Committee

## PROFESSIONAL AFFILIATIONS

- Member, Travel Demand Forecasting Committee (ADB40), Transportation Research Board
- Member, Travel Forecasting Resource Committee (ADB45), Transportation Research Board
- Member, International Association of Travel Behavior Researchers
- Member, World Conference on Transport Research Society
- Friend of Transportation Research Board, Traveler Behavior and Values Committee
- Friend of Transportation Research Board, Survey Methods Committee

## SELECTED AWARDS

- Best Paper Award at the 7$^{th}$ International Workshop on Agent-based Mobility, Traffic and Transportation Models, Methodologies and Applications (ABMTRANS), 2018

- Best Paper Award at IEEE Vehicle Technology Society VPPC 2017 Conference, 2017
- Winner of the Ryuichi Kitamura Paper Award, TRB Travel Analysis Methods Section, 2011
- National Science Foundation, IGERT Fellow, 2008-2011
- 1st Place, Student Paper Competition at Transport Chicago Conference, 2008
- 2nd Place, Student Paper Competition at Transport Chicago Conference, 2007
- University Fellow, University of Illinois at Urbana-Champaign, 2002
- James Scholar, University of Illinois at Urbana-Champaign, 1998