Stephen D. Boyles

Professor *(Effective September 1, 2022.)*
Civil Engineering
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Current and Previous Academic Positions

The University of Texas at Austin	Professor	Fall 2022–present
The University of Texas at Austin	Associate Professor	Fall 2016–Summer 2022
The University of Texas at Austin	Assistant Professor	Fall 2011–Summer 2016
University of Wyoming	Assistant Professor	Fall 2009–Summer 2011

Education

The University of Texas at Austin	Civil Engineering	PhD	Summer 2009
The University of Texas at Austin	Civil Engineering	MSE	Summer 2006
University of Washington	Mathematics	BS	Spring 2004
University of Washington	Civil Engineering	BSCE	Spring 2004

Other Professional Experience

Washington State Department of Transportation FLOW Operator Fall 2003–Summer 2004

Honors and Awards

- Meritorious Service Award, *Transportation Science* journal, 2021
- Charles Elmer Rowe Fellowship in Engineering, UT Austin, 2019–present
- Dads Association Centennial Teaching Fellowship, UT Austin, 2018–19
- Department Teaching Award, Civil, Architectural & Environmental Engineering, UT Austin, 2017
- Outstanding Reviewer Award, American Society of Civil Engineers, 2017
- Dean's Award for Oustanding Teaching by an Assistant Professor, UT Austin, 2016
- New Faculty Award, Council of University Transportation Centers, 2015
- Fred Burggraf Award, Transportation Research Board, 2015
- Finalist, Stella Dafermos Paper Award, Transportation Research Board, 2014, 2016, 2017, 2019
- NSF Faculty Early Career Development Award (CAREER), 2013
- Dwight D. Eisenhower Graduate Fellow, 2006–2009
- Sue McNeil Outstanding Presentation Award, AISIM4 Symposium, 2008
- Daniel B. Fambro Paper Award, Institute of Transportation Engineers, 2007
- Milton Pikarsky Award, Council of University Transportation Centers, 2006

Honors and Awards for Supervised Students

- NSF Graduate Fellowship: Rachel James, 2014
- NSF Graduate Honorable Mention: Michael Levin, 2014
- Dwight D. Eisenhower Graduate Fellow: Promothes Saha, 2010; Christopher Melson, 2011; Michael Levin, 2014–2016; John Helsel, 2015,2016; William Alexander, 2018, 2019; Rahul Patel, 2018; Carlin Liao, 2019
- Daniel B. Fambro Award: Christopher Melson, 2013
- Milton Pikarsky Award: Tarun Rambha, 2013; Michael Levin, 2016; Venktesh Pandey, 2017
- Charlie Wootan Award: John Helsel, 2018
- Neville Parker Award: Manoj Gedela, 2020
- DSTOP Outstanding Student of the Year: Michael Levin, 2015; Rahul Patel, 2018; William Alexander, 2019
- Transportation Technology Tournament winners: Rachel James, Venktesh Pandey, and Cesar Yahia, 2018

Courses Taught, The University of Texas at Austin

Course	Semester	Level	Enrollment	Instructor rating (*)
Probability & Statistics	Spring 2022	Sophomore	126	4.6
Civil Engineering Systems	Fall 2021	Freshman	94	4.6
Transportation Network Analysis	Fall 2021	Graduate	18	4.9
Probability & Statistics	Spring 2021	Sophomore	138	4.5
Intro to Optimization	Spring 2021	Senior	41	4.6
Civil Engineering Systems	Fall 2020	Freshman	95	4.8
Probability & Statistics	Spring 2020	Sophomore	60	4.7
Civil Engineering Systems	Fall 2019	Freshman	92	4.7
Transportation Network Analysis	Fall 2019	Graduate	23	4.9
Probability & Statistics	Spring 2019	Sophomore	60	4.7
Intro to Optimization	Spring 2019	Senior	40	4.6
Civil Engineering Systems	Fall 2018	Freshman	96	4.6
Transportation Network Analysis	Fall 2018	Graduate	18	4.9
Probability & Statistics	Spring 2018	Sophomore	31	4.7
Dynamic Traffic Assignment	Spring 2018	Graduate	21	4.9
Transportation Network Analysis	Fall 2017	Graduate	22	4.9
Probability & Statistics	Fall 2017	Sophomore	44	4.8
Intro to Optimization	Spring 2017	Senior	32	4.9
Transportation Network Analysis	Fall 2016	Graduate	22	5.0
Civil Engineering Systems	Fall 2016	Freshman	115	4.8
Dynamic Traffic Assignment	Spring 2016	Graduate	18	5.0
Civil Engineering Systems	Spring 2016	Freshman	32	4.5
Transportation Network Analysis	Fall 2015	Graduate	29	4.8
Probability & Statistics	Fall 2015	Sophomore	45	4.8
Intro to Optimization	Spring 2015	Senior	21	4.9
Probability & Statistics	Spring 2015	Sophomore	48	4.7
Transportation Network Analysis	Fall 2014	Graduate	24	4.9
Dynamic Traffic Assignment	Spring 2014	Graduate	11	4.8
Probability & Statistics	Spring 2014	Sophomore	48	4.7
Transportation Network Analysis	Fall 2013	Graduate	19	4.6
Traffic Flow Theory	Spring 2013	Graduate	8	4.4
Probability & Statistics	Spring 2013	Sophomore	46	4.7
Dynamic Traffic Assignment	Fall 2012	Graduate	24	4.7
Probability & Statistics	Spring 2012	Sophomore	46	4.7
Transportation Network Analysis	Fall 2011	Graduate	14	4.7

(*) Instructor ratings on 1–5 scale, 5 best.

Courses Taught, University of Wyoming

Course	Semester	Level	Enrollment	Instructor rating (*)
Transportation Engineering	Spring 2011	Junior	34	4.7
Transportation Network Modeling	Fall 2010	Graduate	7	4.9
Transportation Seminar	Fall 2010	Graduate	11	4.9
Orientation to Engineering	Fall 2010	Freshman	22	4.2
Contemporary Issues in Transp.	Summer 2010	Senior	7	N/A
Transportation Engineering	Spring 2010	Junior	31	4.4
Introduction to Optimization	Fall 2009	Graduate	7	4.7

(*) Ratings scaled to conform to the 1–5 evaluation scale used at The University of Texas at Austin.

Ph.D. Supervisions Completed

- Carlin Liao. *Modular Autonomous Intersection Management Simulation for Stochastic and Priority Auction Paradigms*, Fall 2021.

- Cesar Yahia. *Management and Operation of Emerging Mobility Services*, Fall 2021.
- Can Gokalp. *Three Nonlinear Network Flow Problems*, Spring 2021.
- Patrick Mannon. *Partitioning Methods for NP-Hard Routing Problems*, Spring 2020.
- Venktesh Pandey. *Dynamic Pricing and Long-Term Planning Models for Managed Lanes with Multiple Entrances and Exits*, Spring 2020.
- Rachel James. *The Development of a Holistic Approach to Modeling Driver Behavior: Accounting for Driver Heterogeneity in Car-Following Models*, Spring 2019.
- Ehsan Jafari. *Network Modeling and Design: A Distributed Problem Solving Approach*, Summer 2017.
- Michael Levin. *Modeling and Optimizing Network Infrastructure for Autonomous Vehicles*, Spring 2017.
- Tarun Rambha. *Dynamic Congestion Pricing in Within-Day and Day-to-Day Network Equilibrium Models*, Summer 2016.
- Shoupeng Tang. *Network Routing and Equilibrium Models for Urban Parking Search*, Fall 2014.

M.S. Supervisions Completed

- William Alexander. *Now on TAP: Accelerated Solutions to the Traffic Assignment Problem*, Summer 2019.
- Manoj Gedela. *Deep Learning Framework for Crash Detection using Twitter Data*, Spring 2019.
- Rahul Patel. *Planning for Autonomous Vehicles: Effects and Optimal Placement of Reservation-Based Intersections in Urban Networks*, Spring 2019.
- Cesar Yahia. *Unmanned Aerial Vehicle Path Planning for Traffic Estimation and Detection of Non-Recurrent Congestion*, Summer 2018.
- Dongxu (Henry) He. *Information Sharing for Connected and Autonomous Vehicles*, Spring 2018.
- Prashanth Venkatraman. *Planning for Autonomous Vehicles: Ridesharing and Traffic Control*, Spring 2018.
- John Helsel. *Getting to Work on Time: A Proposed Time-Equitable Tolling Scheme*, Spring 2017.
- Rachel James. *Data-Driven Placement of Centroid Connectors in Dynamic Traffic Assignment*, Summer 2016.
- Venktesh Pandey. *Optimal Dynamic Pricing for Managed Lanes with Multiple Entrances and Exits*, Summer 2016.
- Sudesh Agrawal. *Network Models for Battery Electric Vehicles*, Summer 2015.
- Michael Levin. *Integrating Autonomous Vehicle Behavior into Planning Models*, Spring 2015.
- Tyler Beduhn. *Reliable Routing in Schedule Based Transit Networks*, Fall 2014.
- Rohan Shah. *Dynamic Traffic Assignment-Based Modeling Paradigms for Sustainable Transportation Planning and Urban Development*, Summer 2014.
- Mallory Necessary. *Developing an Infrastructure Informed Walkshed and Bikeshed*, Fall 2013.
- Ruoyu Liu. *Modeling Disrupted Networks with Dynamic Traffic Assignment*, Summer 2013.
- Ravi Venkatraman. *Adaptive Routing Behavior with Real Time Information under Multiple Travel Objectives*, Spring 2013.
- Christopher Melson. *Improvements and Extensions of Dynamic Traffic Assignment in Transportation Planning*, Spring 2013.
- C. Matthew Pool. *Enhancing the Practical Usability of Dynamic Traffic Assignment*, Fall 2012.
- Tarun Rambha. *Adaptive Routing in Schedule Based Stochastic Time-Dependent Networks*, Spring 2012.

- Promothes Saha. *A Strategy on Roadway Pricing for Rural Freeways*, Summer 2011.

Ph.D. In Progress

Tengkuo Zhu, Priyadarshan Patil, William Alexander, Abigail Crocker

M.S. In Progress

None

Postdoctoral Supervisions

Alireza Khani

Undergraduates Supervised

Christian Douglas, Rishabh Thakkar, Karthik Velayutham, Kris Holder, Mohammed Zaidi, James Lentz, Shannon Scott, Christine Cheng, Anthony Battista, Mathias Hanssen, Diego Neri, Jesus Osorio, Tejas Chaudhary, Hagen Fritz, Mark Stahl, Rebecca Hutchinson, Rahul Patel, Rachel Allensworth, Reese Hatridge, Peter Kozey, Kimberly Selph, Alexandra Dukeman, Hannah Olsen, Christopher Melson, Rebecca Franke

Books

- Boyles, S. D., N. E. Lownes, and A. Unnikrishnan. (2020) *Transportation Network Analysis, Volume I: Static and Dynamic Traffic Assignment*. Currently in public beta, `https://sboyles.github.io/blubook.html`
- Kockelman, K., and S. D. Boyles. (2018) *Smart Transport for Cities & Nations: The Rise of Self-Driving & Connected Vehicles*.

Refereed Journal Publications

- Chauhan, D. R., A. Unnikrishnan, M. A. Figliozzi, and S. D. Boyles. Robust multi-period maximum coverage facility location problem considering coverage reliability. Accepted for publication in *Transportation Research Record*.
- Patil, P. N., Walthall, R., and S. D. Boyles. Budget-constrained rail electrification modeling using symmetric traffic assignment — a North American case study. Accepted for publication in *Journal of Infrastructure Systems*.
- Yahia, C. N., S. Scott, S. D. Boyles, and C. Claudel. Unmanned aerial vehicle path planning for traffic estimation and detection of non-recurrent congestion. Accepted for publication in *Transportation Letters*.
- Zhu, T., S. D. Boyles, and A. Unnikrishnan. (2022) Two-stage robust facility location problem with drones. *Transportation Research Part C* 137, 103563.
- Shao, Y., M. W. Levin, S. D. Boyles, and C. Claudel. (2022) Semi-analytical computation of solutions to the Lighthill-Whitham-Richards equation with switched triangular diagrams: application to variable speed limit control. *IEEE Transactions on Automation Science and Engineering* 19, 473–485.
- Gokalp, C., P. N. Patil, and S. D. Boyles. (2021) Post-disaster recovery sequencing strategy for road networks. *Transportation Research Part B* 153, 228–245.
- Patil, P. N., K. Ross, and S. D. Boyles. (2021) Convergence behavior for traffic assignment characterization metrics. *Transportmetrica Part A* 17, 1244–1271.
- Yahia, C. N., G. de Veciana, S. D. Boyles, J. A. Rahal, and M. Stecklein. (2021) Book-ahead and supply management for ridesourcing platforms. *Transportation Research Part C* 130, 103266.

- Venkatraman, R., S. D. Boyles, R. James, A. Unnikrishnan, and P. Patil. (2021) Adaptive routing behavior with real-time information under multiple travel objectives. *Transportation Research Interdisciplinary Perspectives* 10, 100395.
- Chauhan, D. R., A. Unnikrishnan, M. Figliozzi, and S. D. Boyles. (2021) Robust maximum coverage facility problem with drones considering uncertainties in battery availability and consumption. *Transportation Research Record* 2675, 25–39.
- Pandey, V., E. Wang, and S. D. Boyles. (2020) Deep reinforcement learning algorithm for dynamic pricing of express lanes with multiple access locations. *Transportation Research Part C* 119, 102715.
- Levin, M. W., and S. D. Boyles. (2020) Optimal guidance algorithms for parking search with reservations. *Networks and Spatial Economics* 20, 19–45.
- Patel, R., P. Venkatraman, and S. D. Boyles. (2019) Optimal placement of reservation-based intersections in urban networks. *Transportation Research Record* 2673, 781–792.
- Pandey, V., and S. D. Boyles. (2019) Comparing route choice models for managed lane networks with multiple entrances and exits. *Transportation Research Record* 2673, 381–393.
- James, R., B. E. Hammit, and S. D. Boyles. (2019) Methods to obtain representative car-following model parameters from trajectory-level data for use in microsimulation. *Transportation Research Record* 2673, 62–73.
- Levin, M. W., H. Smith, and S. D. Boyles. (2019) A dynamic four-step planning model of empty repositioning trips for personal autonomous vehicles. *Journal of Transportation Engineering* 145.
- Boyles, S. D., and N. Ruiz Juri. (2019) Queue spillback and demand uncertainty in dynamic network loading. *Transportation Research Record* 2673, 38–48.
- Perrine, K., M. W. Levin, C. N. Yahia, M. Duell, and S. D. Boyles. (2019) Implications of traffic signal security on potential deliberate traffic disruptions. *Transportation Research Part A* 120, 58–70.
- Lukose, E., M. W. Levin, and S. D. Boyles. (2019) Incorporating insights from signal optimization into reservation-based intersection controls. *Journal of Intelligent Transportation Systems* 23, 250–264.
- Xie, C., X. Wu, and S. D. Boyles. (2019) Traffic equilibrium with a continuously distributed bound on travel weights: the rise of range anxiety and mental account. *Annals of Operations Research* 273, 279–310.
- Pandey, V., and S. D. Boyles. (2018) Dynamic pricing for managed lanes with multiple entrances and exits. *Transportation Research Part C* 96, 304–320.
- Yahia, C. N., V. Pandey, and S. D. Boyles. (2018) Network partitioning algorithms for solving the traffic assignment problem using a decomposition approach. *Transportation Research Record* 2672, 116–126.
- Bansal, P., R. Shah, and S. D. Boyles. (2018) Robust network pricing and system optimization under combined stochasticity and elasticity of long-term travel demand. *Transportation* 45, 1389–1418.
- Melson, C., M. W. Levin, B. Hammit, and S. D. Boyles. (2018) Dynamic traffic assignment of cooperative adaptive cruise control. *Transportation Research Part C* 90, 114–133.
- Marshall, J., A. Bhasin, S. D. Boyles, B. David, R. James, and A. Patrick. (2018) A project based cornerstone course in civil engineering: student perceptions and identity development. *Advances in Engineering Education* 6, 1-23.
- Shahabi, M., A. Tafreshian, A. Unnikrishnan, and S. D. Boyles. (2018) Joint production-inventory-location problem with multi-variate normal demand. *Transportation Research Part B* 110 60–78.
- Rambha, T., S. D. Boyles, A. Unnikrishnan, and P. Stone. (2018) Marginal cost pricing for system optimal traffic assignment with recourse under supply-side uncertainty. *Transportation Research Part B* 110, 104–121.

- Simoni, M., P. Bujanovic, S. D. Boyles, and E. Kutanoglu. (2018) An evaluation of urban consolidation center solutions considering location, fleet and route choice. *Case Studies on Transport Policy* 6, 112–124.
- Jafari, E., and S. D. Boyles. (2017) On-line charging and routing of electric vehicles in stochastic time-varying networks. *Transportation Research Record* 2667, 61–70.
- Levin, M. W., E. Jafari, R. Shah, and S. D. Boyles. (2017) Network-based model for predicting the effect of fuel price on transit ridership and greenhouse gas emissions. *Journal of Advanced Transportation* 6, 272–286.
- Jafari, E., V. Pandey, and S. D. Boyles. (2017) A decomposition approach to the static traffic assignment problem. *Transportation Research Part B* 105, 270–296.
- Jafari, E., and S. D. Boyles. (2017) Multicriteria stochastic shortest path problem for electric vehicles. *Networks and Spatial Economics* 17, 1043–1070.
- Sharon, G., M. W. Levin, J. P. Hanna, T. Rambha, S. D. Boyles, and P. Stone. (2017) Network-wide adaptive tolling for connected and automated vehicles. *Transportation Research Part C* 84, 142–157.
- Levin, M. W., T. Li, S. D. Boyles, and K. M. Kockelman. (2017) A general framework for modeling shared autonomous vehicles, with dynamic ride-sharing and dynamic traffic assignment application. *Computers, Environment and Urban Systems* 64, 373–383.
- Rambha, T., and S. D. Boyles. (2016) Dynamic pricing in discrete time stochastic day-to-day route choice models. *Transportation Research Part B* 92A, 104–118.
- Duell, M., M. W. Levin, and S. D. Boyles. (2016) The impact of autonomous vehicles on traffic management: the case of dynamic lane reversal. *Transportation Research Record* 2567, 87–94.
- Patel, R., Levin, M. W., and S. D. Boyles. (2016) Effects of autonomous vehicle behavior on arterial and freeway networks. *Transportation Research Record* 2561, 9–17.
- Levin, M. W., H. Fritz, and S. D. Boyles. (2016) On optimizing reservation-based intersection controls. *IEEE Transactions on Intelligent Transportation Systems* 99, 1–11.
- Rambha, T., S. D. Boyles, and S. T. Waller. (2016) Adaptive transit routing in stochastic time-dependent networks. *Transportation Science* 50, 1043–1059.
- Levin, M. W., R. Patel, and S. D. Boyles. (2016) Paradoxes of reservation-based intersection controls in traffic networks. *Transportation Research Part A* 90, 14–25.
- Boyles, S. D., and T. Rambha. (2016) A note on detecting unbounded instances of the online shortest path problem. *Networks* 31, 86–99.
- Levin, M. W., and S. D. Boyles. (2016) A cell transmission model for dynamic lane reversal with autonomous vehicles. *Transportation Research Part C* 68, 126–143.
- Levin, M. W., and S. D. Boyles. (2016) A multiclass cell transmission model for shared human and autonomous vehicle roads. *Transportation Research Part C* 62, 103–116.
- Levin, M. W., and S. D. Boyles. (2016) Improving bus routing for KIPP charter schools. *Interfaces* 46, 196–199.
- Levin, M., S. D. Boyles, J. Duthie, and C. Matthew Pool. (2016) Demand profiling for dynamic traffic assignment by integrating departure time choice and trip distribution. *Computer–Aided Civil and Infrastructure Engineering* 31, 86-99.
- Jafari, E., and S. D. Boyles. (2016) Improved bush-based methods for network contraction. *Transportation Research Part B* 83, 298–313.
- Levin, M. W. and S. D. Boyles. (2015) Intersection auctions and reservation-based control in dynamic traffic assignment. *Transportation Research Record* 2497, 35–44.
- Levin, M. W. and S. D. Boyles. (2015) Effects of autonomous vehicle ownership on trip, mode, and route choice. *Transportation Research Record* 2493, 29–38.

- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2015) Parking search equilibrium on a network. *Transportation Research Part B* 81, 390–409.
- Khani, A. and S. D. Boyles. (2015) An exact algorithm for the mean-standard deviation shortest path problem. *Transportation Research Part B* 81, 252–266.
- Nezamuddin and S. D. Boyles. (2015) A continuous DUE algorithm using the link transmission model. *Networks and Spatial Economics* 15, 465–483.
- Stephens, K, J. Ford, E. Jafari, and S. D. Boyles. (2015) Increasing evacuation communication through ICTs: an agent-based model demonstrating evacuation practices and the resulting traffic congestion in the rush to the road. *Journal of Homeland Security and Emergency Management* 12, 497–528.
- Shahabi, M., A. Unnikrishnan, and S. D. Boyles. (2015) Robust optimization strategy for the shortest path problem under uncertain link travel cost distribution. *Computer-Aided Civil and Infrastructure Engineering* 30, 433–448.
- Agrawal, S. K., S. D. Boyles, N. Jiang, M. Shahabi, and A. Unnikrishnan. (2015) Network route choice model for battery electric vehicle drivers with different risk attitudes. *Transportation Research Record* 2498, 75–83.
- Levin, M., S. D. Boyles, and Nezamuddin. (2015) Warm-starting dynamic traffic assignment with static solutions. *Transportmetrica Part B* 3, 99–113.
- Tang, S., S. D. Boyles, and N. Jiang. (2015) High speed rail cost recovery time based on an integer optimization model. *Journal of Advanced Transportation* 49, 634–647.
- Mishra, S., M. Golias, S. Sharma, and S. D. Boyles. (2015) Optimal funding allocation strategies for safety improvements on urban intersections. *Transportation Research Part A* 75, 113–133.
- Gardner, L. M., S. D. Boyles, H. Bar-Gera, and K. Tang. (2015) Robust tolling schemes for high-occupancy/toll (HOT) facilities under variable demand *Transportation Research Record* 2450, 152–162.
- Boyles, S. D., T. Rambha, and C. Xie. (2015) Equilibrium analysis of low-conflict network designs. *Transportation Research Record* 2467, 129–139.
- Tang, S., T. Rambha, R. Hatridge, S. D. Boyles, and A. Unnikrishnan. (2015) Modeling parking search on a network using stochastic shortest paths with history dependence. *Transportation Research Record* 2467, 73–79.
- Gemar, M., J. Bringardner, S. D. Boyles, and R. Machemehl. (2015) Subnetwork analysis for dynamic traffic assignment models: a strategy for estimating demand at subnetwork boundaries. *Transportation Research Record* 2466, 153–161.
- Boyles, S. D. (2015) Equity and network-level maintenance scheduling. *EURO Journal on Transportation and Logistics*, 4(1), 175–193.
- Shahabi, M., A. Unnikrishnan, E. J. Shirazi, and S. D. Boyles. (2014) A three-level location-inventory problem with correlated demand. *Transportation Research Part B* 69, 1–18.
- Saha, P., R. Liu, C. Melson, and S. D. Boyles. (2014) Network model for rural roadway tolling with pavement deterioration and repair. *Computer–Aided Civil and Infrastructure Engineering*, 29(5), 315–329.
- Melson, C., J. Duthie, and S. D. Boyles. (2014) Influence of bridge facility attributes on bicycle travel behavior. *Transportation Letters* 6(1), 46–54.
- Shahabi, M., A. Unnikrishnan, and S. D. Boyles. (2013) An outer approximation algorithm for the robust shortest path problem. *Transportation Research Part E* 58, 52–66.
- Gardner, L. M., H. Bar-Gera, and S. D. Boyles. (2013) Development and comparison of choice models and tolling schemes for high–occupancy/toll (HOT) facilities. *Transportation Research Part B* 55, 142–153.

- Lin, D.-Y., S. D. Boyles, V. Valsaraj, and S. T. Waller. (2012) Reliability assessment for traffic data. *Journal of the Chinese Institute of Engineers* 35, 285–297.
- Boyles, S. D. (2012) Bush-based sensitivity analysis for approximating subnetwork diversion. *Transportation Research Part B* 46, 139–155.
- Boyles, S. D. and S. T. Waller. (2011) Optimal information location for adaptive routing. *Networks and Spatial Economics* 11, 233–254.
- Boyles, S. D., A. Voruganti, and S. T. Waller. (2011) Quantifying distributions of freeway operational metrics. *Transportation Letters* 2, 21–36.
- Gardner, L. M., S. D. Boyles, and S. T. Waller. (2011) Quantifying the benefit of responsive pricing and travel information in the stochastic congestion pricing problem. *Transportation Research Part A* 45, 204–218.
- Boyles, S. D., K. Kockelman, and S. T. Waller. (2010) Congestion pricing under operational, supply-side uncertainty. *Transportation Research Part C* 10, 519–535.
- Boyles, S. D., S. T. Waller. (2010) A mean-variance model for the minimum cost flow problem with stochastic arc costs. *Networks* 56, 215–227.
- Boyles, S. D., Z. Zhang, and S. T. Waller. (2010) Optimal maintenance and repair policies under nonlinear preferences. *Journal of Infrastructure Systems* 16, 11–20.
- Boyles, S. D., A. Karoonsoontawong, D. Fajardo, and S. T. Waller. (2008) Two-phase model of ramp closure for incident management, *Transportation Research Record* 2047, 83–90.
- Boyles, S. D., S. T. Waller. (2007) A stochastic delay prediction model for real-time incident management, *ITE Journal* 77, 18–24.

Currently under review:

- Gokalp, C., S. D. Boyles, and A. Unnikrishnan. Mean-standard deviation model for minimum cost flow problem. Submitted to *Networks*.
- Zhu, T., and S. D. Boyles. Capacitated vehicle routing problem with drones considering stochastic demands and restricted return trip. Submitted to *Transportation Research Part E*.
- Zhu, T., S. D. Boyles, and A. Unnikrishnan. Electric vehicle travelling salesman problem with drone. Submitted to *Transportation Research Part E*.

Refereed Conference Proceedings

- Patil, P. R. Walthall, and S. D. Boyles. (2022) Budget-constrained rail network electrification problem. 101st Annual Meeting of the Transportation Research Board, Washington, DC.
- Chauhan, D. R., A. Unnikrishnan, M. Figliozzi, and S. D. Boyles. (2022) Robust multi-period maximum coverage facility location problem considering coverage reliability. 101st Annual Meeting of the Transportation Research Board, Washington, DC.
- Chauhan, D. R., A. Unnikrishnan, and S. D. Boyles. (2022) Maximum profit facility location and dynamic resource allocation for instant delivery logistics. 101st Annual Meeting of the Transportation Research Board, Washington, DC.
- Patil, P., and S. D. Boyles. (2022) A fresh look at symmetric traffic assignment and algorithm convergence. 101st Annual Meeting of the Transportation Research Board, Washington, DC.
- Yahia, C. N., N. Zuniga Garcia, R. B. Machemehl, and S. D. Boyles. (2021) CapRemap: equity analysis and impact on scooter ridership. 18th Conference on Transportation Planning Applications, Transportation Research Board.
- Yahia, C. N., and S. D. Boyles. (2021) Peak-load pricing and demand management for ridesharing platforms. Accepted for presentation at the 8th International Symposium on Dynamic Traffic Assignment (DTA2020), deferred to Summer 2021 due to COVID-19.

- Himpe, W., Boyles, S. D., and C. Tampère. (2021) Ensemble-based dynamic traffic modeling with empirical traffic data. Accepted for presentation at the 8th International Symposium on Dynamic Traffic Assignment (DTA2020), deferred to Summer 2021 due to COVID-19.
- Alexander, W., C. Liao, R. Thakkar, K. Velayutham, and S. D. Boyles. (2021) Network assignment-based estimation of origin-destination matrices with a full travel demand model. 100th Annual Meeting of the Transportation Research Board.
- Gokalp, C., P. Patil, and S. D. Boyles. (2021) Post-disaster recovering sequencing strategy for road networks. 100th Annual Meeting of the Transportation Research Board.
- Patil, P., C. Liao, and S. D. Boyles. (2021) Effects of origin-destination matrix errors on user equilibrium in networks. 100th Annual Meeting of the Transportation Research Board.
- Yahia, C. N., and S. D. Boyles. (2021) Peak-load pricing and demand management for ridesourcing platforms. 100th Annual Meeting of the Transportation Research Board.
- Zhu, T., and S. D. Boyles. (2021) The capacitated vehicle routing problem with drones considering stochastic demands and restricted return trip. 100th Annual Meeting of the Transportation Research Board.
- Pandey, V., E. Wang, and S. D. Boyles. (2020) Deep reinforcement learning algorithm for dynamic pricing of express lanes with multiple access locations. 99th Annual Meeting of the Transportation Research Board, Washington, DC.
- Yahia, C. N., G. de Veciana, M. Stecklein, J. A. Rahal, and S. D. Boyles. (2020) Book ahead and performance management for ridesharing platforms. 99th Annual Meeting of the Transportation Research Board, Washington, DC.
- Zhu, T., S. D. Boyles, and A. Unnikrishnan. (2020) Electric vehicle traveling salesman problem with drone. 99th Annual Meeting of the Transportation Research Board, Washington, DC.
- Patil, P., K. Ross, and S. D. Boyles. (2020) Convergence behavior for traffic assignment characterization metrics. 99th Annual Meeting of the Transportation Research Board, Washington, DC.
- Chauhan, D. R., A. Unnikrishnan, M. Figliozzi, and S. D. Boyles. (2020) Robust maximum coverage facility location problem with drones considering uncertainties in battery availability and consumption. 99th Annual Meeting of the Transportation Research Board, Washington, DC.
- Sharon, G., S. Alkoby, S. D. Boyles, and P. Stone. (2019) Marginal cost pricing with a fixed error factor in traffic networks. 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019), Montreal, Canada.
- Hanna, J. P., G. Sharon, S. D. Boyles, and P. Stone. (2019) Selecting compliant agents for opt-in micro-tolling. 33rd AAAI Conference on Artificial Intelligence (AAAI-19), Honolulu, HI.
- Boyles, S. D., and N. Ruiz Juri. (2019) Queue spillback and demand uncertainty in dynamic network loading. 98th Annual Meeting of the Transportation Research Board, Washington, DC.
- Pandey, V., and S. D. Boyles. (2019) Comparing route choice models for managed lane networks with multiple entrances and exits. 98th Annual Meeting of the Transportation Research Board, Washington, DC.
- Yahia, C. N., S. Scott, S. D. Boyles, and C. Claudel. (2019) Unmanned aerial vehicle path planning for traffic estimation and detection of non-recurrent congestion. 98th Annual Meeting of the Transportation Research Board, Washington, DC.
- Patel, R., P. Venkatraman, and S. D. Boyles. (2019) Optimal placement of reservation-based intersections in urban networks. 98th Annual Meeting of the Transportation Research Board, Washington, DC.
- Zhu, T., N. Ruiz Juri, S. D. Boyles, K. Perrine, A. Chen, and Y. Li. (2019) An efficient simulation framework for estimating work-zone impacts. 98th Annual Meeting of the Transportation Research Board, Washington, DC.

- Gokalp, C., and S. D. Boyles. (2019) Mean-standard deviation model for minimum cost flow problem. 98th Annual Meeting of the Transportation Research Board, Washington, DC.
- Pandey, V., and S. D. Boyles. (2018) Multiagent reinforcement learning algorithm for distributed dynamic pricing of managed lanes. 21st International IEEE Conference on Intelligent Transportation Systems (ITSC18), Lahaina, HI.
- Mirzaei, H., G. Sharon, S. D. Boyles, T. Givargis, and P. Stone. (2018) Enhanced delta-tolling: traffic optimization via policy gradient reinforcement learning. 21st International IEEE Conference on Intelligent Transportation Systems (ITSC18), Lahaina, HI.
- Mirzaei, H., G. Sharon, S. D. Boyles, T. Givargis, and P. Stone. (2018) Link-based parameterized micro-tolling scheme for optimal traffic management. 17th Annual Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018), Stockholm, Sweden.
- Boyles, S., and N. Ruiz Juri. (2018) Understanding the tradeoffs between DTA models' realism and robustness: the impact of spillback modeling. 7th International Symposium on Dynamic Traffic Assignment (DTA2018), Hong Kong, China.
- Sharon, G., M. Albert, T. Rambha, S. D. Boyles, and P. Stone. (2018) Traffic optimization for a mixture of self-interested and compliant agents. 32nd AAAI Conference on Artificial Intelligence (AAAI-18), New Orleans, LA.
- Yahia, C., V. Pandey, and S. D. Boyles. (2018) Network partitioning algorithms for solving the traffic assignment problem using a decomposition approach. 97th Annual Meeting of the Transportation Research Board, Washington, DC.
- Xie, C., X. Wu, and S. D. Boyles. (2018) Path-constrained traffic assignment: continuously distributed bounds on travel weights. 97th Annual Meeting of the Transportation Research Board, Washington, DC.
- Pandey, V., and S. D. Boyles. (2018) Dynamic pricing for managed lanes with multiple entrances and exits. 97th Annual Meeting of the Transportation Research Board, Washington, DC.
- Pandey, V., J. Li, C. Yahia, and S. D. Boyles. (2018) Evaluation of active traffic management (ATM) strategies under recurring and non-recurring congestion: an IH-35 corridor case study. 97th Annual Meeting of the Transportation Research Board, Washington, DC.
- Sharon, G., J. P. Hanna, T. Rambha, M. W. Levin, M. Albert, S. D. Boyles, and P. Stone. (2017) Real-time adaptive tolling scheme for optimized social welfare in traffic networks. 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2017), São Paulo, Brazil.
- Jafari, E., and S. D. Boyles. (2017) Online charging and routing of electric vehicles in stochastic time-varying networks. 96th Annual Meeting of the Transportation Research Board, Washington, DC.
- Levin, M., and S. D. Boyles. (2017) Pressure-based policies for reservation-based intersection control. 96th Annual Meeting of the Transportation Research Board, Washington, DC.
- Melson, C., M. Levin, and S. D. Boyles. (2017) Modeling cooperative adaptive cruise control in dynamic traffic assignment. 96th Annual Meeting of the Transportation Research Board, Washington, DC.
- Rambha, T., S. D. Boyles, and A. Unnikrishnan. (2017) Minimum expected revenue system optimum tolls under supply-side uncertainty. 96th Annual Meeting of the Transportation Research Board, Washington, DC.
- Levin, M., S. D. Boyles, and T. Rambha. (2016) Pressure-based policies for reservation-based intersection control. 6th International Symposium on Dynamic Traffic Assignment (DTA2016), Sydney, Australia.
- Sharon, G., J. Hanna, T. Rambha, M. Albert, P. Stone, and S. D. Boyles. (2016) Delta-tolling: adaptive tolling for optimizing traffic throughput. 9th International Workshop on Agents in Traffic and Transportation (ATT 2016), New York, NY.

- Rambha, T., and S. D. Boyles. (2016) Reinforcement learning approaches for dynamic congestion pricing in day-to-day network models. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Jafari, E., T. Rambha, A. Khani, and S. D. Boyles. (2016) The for-profit dial-a-ride problem on dynamic networks. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Patel, R., M. W. Levin, and S. D. Boyles. (2016) Effects of autonomous vehicle behavior on arterial and freeway networks. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Duell, M., M. W. Levin, S. D. Boyles, and S. T. Waller. (2016) The impact of autonomous vehicles on traffic management: the case of dynamic lane reversal. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Levin, M. W., T. Li, S. D. Boyles, and K. Kockelman. (2016) General framework for modeling shared autonomous vehicles. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Perrine, K., M. W. Levin, M. Duell, and S. D. Boyles. (2016) Implications of traffic signal security on potential deliberate traffic disruptions. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Shahabi, M., A. Tafreshian, A. Unnikrishnan, and S. D. Boyles. (2016) Joint production-inventory-location problem with correlated demand. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Jafari, E., V. Pandey, and S. D. Boyles. (2016) Static traffic assignment: a decentralized approach. 95th Annual Meeting of the Transportation Research Board, Washington, DC.
- Simoni, M., P. Bujanovic, S. D. Boyles, and C. M. Walton. (2015) Heuristic toolbox for the optimal location, routing, and fleet choice of urban consolidation centers. 2015 Urban Freight and Behavior Change Conference (URBE 2015), Rome, Italy.
- Duell, M., M. W. Levin, S. D. Boyles, and S. T. Waller. (2015) System optimal dynamic lane reversal for autonomous vehicles. 2015 IEEE Intelligent Transportation Systems Conference (ITSC 2015), Las Palmas de Gran Canaria, Spain.
- Boyles, S. D., L. M. Gardner, and H. Bar-Gera. (2015) Incorporating departure time choice into high-occupancy/toll (HOT) algorithm evaluation. 21st International Symposium on Transportation and Traffic Theory (ISTTT21), Kobe, Japan.
- Mousa, M., M. Abdulaal, S. D. Boyles, and C. Claudel. (2015) Inertial measurement unit-based traffic monitoring using short range wireless sensor networks. International Conference on Distributed Computing in Sensor Systems (DCOSS 2015), Fortaleza, Brazil.
- Agrawal, S., S. D. Boyles, N. Jiang, M. Shahabi, and A. Unnikrishnan. (2015) A network route choice model for BEV drivers with different risk attitudes. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Beduhn, T., A. Khani, and S. D. Boyles. (2015) Reliable routing in a schedule-based transit network. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Levin, M. W., and S. D. Boyles. (2015) Effects of autonomous vehicle ownership on trip, mode, and route choice. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Levin, M. W., E. Jafari, and S. D. Boyles. (2015) Network-based model for predicting transit elasticity with fuel price. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Rambha, T., and S. D. Boyles. (2015) Applications of dynamic pricing in day-to-day equilibrium models. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Mousa, M., M. Abdulaal, S. D. Boyles, and C. Claudel. (2015) Inertial measurement unit-based traffic monitoring using short-range wireless network sensors. 94th Annual Meeting of the Transportation Research Board, Washington, DC.

- Bansal, P., R. Shah, and S. D. Boyles. (2015) Robust network pricing and system optimization under combined long-term stochasticity and elasticity of travel demand. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2015) Parking search equilibrium on a network. 94th Annual Meeting of the Transportation Research Board, Washington, DC.
- Levin, M. W., and S. D. Boyles. (2015) Intersection auctions and reservation-based control in dynamic traffic assignment. 94th Annual Meeting of the Transportation Research Board, Washington, DC, January 2015.
- Xie, C., X. Wu, and S. D. Boyles. (2014) Network equilibrium of electric vehicles with stochastic range anxiety. 17th International IEEE Conference on Intelligent Transportation Systems (ITSC14), Qingdao, China.
- Boyles, S. D., T. Rambha, and J. Duthie. (2014) Demand uncertainty and optimism in planning forecasts. INFORMS Transportation Science and Logistics Workshop, Chicago, IL.
- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2014) Dynamic traffic assignment and the parking search process. 5th International Symposium on Dynamic Traffic Assignment (DTA2014), Salerno, Italy.
- Jin, J. and S. D. Boyles. (2014) Travel time transmission model for dynamic network loading. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Tang, S., T. Rambha, R. Hatridge, S. D. Boyles, and A. Unnikrishnan. (2014) Modeling parking search on a network using stochastic shortest paths with history dependence. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Venkatraman, R., S. D. Boyles, R. James, and A. Unnikrishnan. (2014) Adaptive routing behavior with real-time information under multiple travel objectives. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., T. Rambha, and C. Xie. (2014) Equilibrium analysis of low-conflict network designs. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Shahabi, M., A. Unnikrishnan, and S. D. Boyles. (2014) New algorithm for nonadditive shortest-path problem. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Mishra, S., S. Sharma, M. Golias, and S. D. Boyles. (2014) Optimal investment decision-making strategies for safety improvements to urban intersections. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Mishra, S., S. Sharma, M. Golias, and S. D. Boyles. (2014) Economic competitiveness and equity-based safety improvement allocation model for urban intersections. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Bringardner, J., M. Gemar, S. D. Boyles, and R. B. Machemehl. (2014) Establishing the variation of dynamic traffic assignment results using subnetwork origin-destination matrices. Proceedings of the 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Gemar, M., J. Bringardner, S. D. Boyles, and R. B. Machemehl. (2014) Subnetwork analysis for dynamic traffic assignment models: strategy for estimating demand at subnetwork boundaries. Proceedings of the 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Gardner, L. M., S. D. Boyles, H. Bar-Gera, and K. Tang. (2014) Robust tolling schemes for high-occupancy-toll facilities under variable demand. 93rd Annual Meeting of the Transportation Research Board, Washington, DC.
- Duthie, J. C., S. D. Boyles, R. Shah, and M. Necessary. (2013) Impacts of network connectivity on multimodal travel metrics. ASCE Conference on T&DI's 2nd Green Streets, Highways and Development, Austin, TX, 262–283.

- Carlino, D., S. D. Boyles, and P. Stone. (2013) Auction-based autonomous intersection management. 16th International IEEE Conference on Intelligent Transportation Systems (ITSC13), The Hague, Netherlands.
- Melson, C., R. B. Machemehl, and S. D. Boyles. (2013) Modeling the traffic impacts of transit facilities using dynamic traffic assignment. 92nd Annual Meeting of the Transportation Research Board, Washington, DC.
- Zhang, T., and S. D. Boyles. (2013) Modeling combined travel choices of electric vehicle drivers with a variational inequality network formulation. 92nd Annual Meeting of the Transportation Research Board, Washington, DC.
- Melson, C., J. Duthie, and S. D. Boyles. (2013) The influence of bridge facility attributes on bicycle travel behavior. 92nd Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D. (2013) Improved bush-based sensitivity analysis in network equilibrium. 92nd Annual Meeting of the Transportation Research Board, Washington, DC.
- Gardner, L. M., H. Bar-Gera, and S. D. Boyles. (2013) An evaluation framework for high-occupancy-toll lanes. 92nd Annual Meeting of the Transportation Research Board, Washington, DC.
- Tang, S., S. D. Boyles, and N. Jiang. (2013) The combined distribution and stochastic assignment problem with distance constraint. 92nd Annual Meeting of the Transportation Research Board, Washington, DC.
- Rambha, T., and S. D. Boyles. (2013) Adaptive transit routing in stochastic time-dependent networks. 92nd Annual Meeting of the Transportation Research Board, Washington, DC, January 2013.
- Nezamuddin and S. D. Boyles. (2012) A continuous DUE algorithm using the link transmission model. 4th International Symposium on Dynamic Traffic Assignment (DTA2012), Martha's Vineyard, MA.
- Boyles, S. D. (2012) An exact label-correcting method for the online shortest path problem in cyclic networks. 91st Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D. (2011) Subnetwork trip table generation with bush-based sensitivity analysis. 90th Annual Meeting of the Transportation Research Board, Washington, DC, January 2011.
- Saha, P., R. Liu, and S. D. Boyles. (2011) Pricing model for rural roadway networks incorporating pavement deterioration and repair. 90th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D. (2011) A comparison of interpolation methods for missing traffic volume data. 90th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D. (2010) Network contraction for rapid equilibrium assessment. 7th Triennial Symposium on Transportation Analysis (TRISTAN VII), Tromsø, Norway.
- Gardner, L. M., S. D. Boyles, and S. T. Waller. (2010) Congestion pricing for transportation networks under supply and demand uncertainty. 89th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., K. Kockelman, and S. T. Waller. (2009) Congestion pricing under operational, supply-side uncertainty. 88th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., A. Voruganti, and S. T. Waller. (2009) The impact of roadway capacity and travel demand variation on freeway travel speed distributions. 88th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., and S. T. Waller. (2008) The impact of utility function choice in online shortest paths. 87th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., A. Karoonsoontawong, D. Fajardo, and S. T. Waller. (2008) A two-phase model of ramp closure for incident management. 87th Annual Meeting of the Transportation Research Board, Washington, DC.

- Boyles, S. D., and S. T. Waller. (2007) Online routing with nonlinear disutility functions with arc cost dependencies. 6th Triennial Symposium on Transportation Analysis (TRISTAN VI), Phuket, Thailand.
- Boyles, S. D., D. Fajardo, and S. T. Waller. (2007) A naïve Bayesian classifier for incident duration prediction. 86th Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., S. Ukkusuri, S. T. Waller, and K. Kockelman. (2006) A comparison of static and dynamic traffic assignment in the Dallas-Fort Worth region. Innovations in Travel Demand Modeling Conference, Transportation Research Board, Austin, TX.
- Boyles, S. D., S. Ukkusuri, S. T. Waller, and K. Kockelman. (2006) A comparison of static and dynamic traffic assignment in the Dallas-Fort Worth region. Proceedings of the Annual Meeting of the 85th Transportation Research Board, Washington, DC.

Book Chapters

- Boyles, S. D. (2020) Advanced traveler information systems. In *Encyclopedia of Transportation*, R. Vickerman, ed.
- Rambha, T., E. Jafari, and S. D. Boyles. (2019) Transportation network issues in evacuations. In *New Media in Times of Crisis*, K. K. Stephens, ed., Routledge, New York, NY.
- Boyles, S. D., and S. T. Waller. (2011) Traffic network analysis and design. In *Wiley Encyclopedia of Operations Research*, J. J. Cochran, ed.

Technical Reports

- Boyles, S., P. Patil, V. Pandey, and C. Yahia. (2018) *Beyond Political Boundaries: Constructing Network Models for Megaregion Planning.* Cooperative Mobilities for Competitive Megaregions Center report CM2-11.
- Kockelman, K., S. D. Boyles, P. Sturgeon, C. Claudel, L. Loftus-Otway, W. Wagner, D. Stewart, G. Sharon, M. Albert, P. Stone, J. Hanna, Y. Huang, K. M. Gurumurthy, D. He, A. Mohamed, R. Patel, T. Lei, M. Simoni, and S. Yarmohammadisatri. (2018) *Bringing Smart Transport to Texans: Ensuring the Benefits of a Connected and Autonomous Transport System in Texas (Phase 2) — Final Report.* Texas Department of Transportation Report FHWA/TX-18/0-6838-3.
- Boyles, S. D., C. Bhat, J. Duthie, N. Jiang, F. Dias, E. Jafari, V. Pandey, A. Singh, and C. Yahia. (2017) *Methods for Improving Consistency between Statewide and Regional Planning Models.* Texas Department of Transportation Report FHWA/TX-17/0-6900-1.
- Boyles, S. D., C. M. Walton, J. Duthie, E. Jafari, N. Jiang, A. Khani, J. Li, J. Osorio, V. Pandey, T. Rambha, and C. Yahia. (2017) *A Planning Tool for Active Traffic Management Combining Microsimulation and Dynamic Traffic Assignment.* Texas Department of Transportation Report FHWA/TX-17/0-6859-1.
- Kockelman, K., S. D. Boyles, P. Stone, D. Fagnant, R. Patel, M. W. Levin, G. Sharon, M. Simoni, M. Albert, H. Fritz, R. Hutchinson, P. Bansal, G. Domnenko, P. Bujanovic, B. Kim, E. Pourrahmani, S. Agrawal, T. Li, J. Hanna, A. Nichols, and J. Li. (2017) *An Assessment of Autonomous Vehicles: Traffic Impacts and Infrastructure Needs — Final Report.* Texas Department of Transportation report FHWA/TX-17/0-6847-1.
- Kockelman, K., L. Loftus-Otway, D. Stewart, A. Nichols, W. Wagner, S. D. Boyles, M. W. Levin, J. Liu, K. Perrine, S. Kilgore, and K. M. Gurumurthy. (2017) *Best Practices for Modifying Transportation Design, Planning, and Project Evaluation in Texas.* Texas Department of Transportation report FHWA/TX-17/0-6847-P1.
- Kockelman, K., S. D. Boyles, P. Avery, C. Claudel, L. Loftus-Otway, D. Fagnant, P. Bansal, M. W. Levin, Y. Zhao, J. Liu, L. Clements, W. Wagner, D. Stewart, G. Sharon, M. Albert, P. Stone, J. Hanna, R. Patel, H. Fritz, T. Choudhary, T. Li, A. Nichols, K. Sharma, and M. Simoni. (2016) *Bringing Smart Transport to Texans: Ensuring the Benefits of a Connected and Autonomous Transport*

System in Texas — Final Report. Texas Department of Transportation report FHWA/TX-16/0-6838-2.

- Boyles, S. D., and M. W. Levin. (2016) *Improved Traffic Operations through Real-Time Data Collection and Control.* Center for Transportation Research report D-STOP/2016/108.
- Kockelman, K., P. Avery, P. Bansal, S. D. Boyles, P. Bujanovic, T. Choudhary, L. Clements, G. Domnenko, D. Fagnant, J. Helsel, R. Hutchinson, M. W. Levin, J. Li, T. Li, L. Loftus-Otway, A. Nichols, M. Simoni, and D. Stewart. (2016) *Implications of Connected and Automated Vehicles on the Safety and Operations of Roadway Networks: A Final Report.* Texas Department of Transportation report FHWA/TX-16/0-6849-1.
- Kockelman, K., L. Loftus-Otway, D. Stewart, A. Nichols, W. Wagner, J. Li, S. D. Boyles, M. W. Levin, and J. Liu. (2016) *Best Practices Guidebook for Preparing Texas for Connected and Automated Vehicles.* Texas Department of Transportation report FHWA/TX/0-6849-P1.
- Boyles, S. D. (2015) *Transit Demand and Routing after Autonomous Vehicle Availability.* Center for Transportation Research report D-STOP/2016/104.
- Hall, K., K. Kockelman, A. Mullins, T. D. Chen, D. Fagnant, and S. D. Boyles. (2014) *Developing Tolled-Route Demand Estimation Capabilities for Texas: Opportunities for Enhancement of Existing Models.* Texas Department of Transportation report FHWA/TX-14/0-6754-1.
- Boyles, S. D., C. Melson, T. Rambha, and J. Duthie. (2014) *Game-Theoretic Analysis of Dynamic Traffic Equilibria.* Southwest Region University Transportation Center report SWUTC/14/600451-00079-1.
- Boyles, S. D. (2013) *Statewide Mesoscopic Simulation for Wyoming.* Wyoming Department of Transportation report FHWA-WY-13/05F.
- Rambha, T., and S. D. Boyles. (2013) *Game Theory and Traffic Assignment.* Southwest Region University Transportation Center report SWUTC/13/600451-00065-1.
- Duthie, J. C,. Nezamuddin, N. Ruiz-Juri, T. Rambha, C. Melson, C. M. Pool, S. D. Boyles, S. T. Waller, and R. Kumar. (2013) *Investigating Regional Dynamic Traffic Assignment Modeling for Improved Bottleneck Analysis.* Texas Department of Transportation report FHWA/TX-13/0-6657-1.
- Kockelman, K. D. Fagnant, B. Nichols, and S. D. Boyles. (2012) *A Project Evaluation Toolkit (PET) for Abstracted Networks.* Texas Department of Transportation report 0-6487-1.
- Boyles, S. D., and P. Saha. (2012) *An Optimization Model for Roadway Pricing on Rural Freeways.* Mountain-Plains Consortium report MPC-12-246.
- Boyles, S. D., L. M. Gardner, and S. T. Waller. (2010) *Robust Pricing of Transportation Networks Under Uncertainty.* Southwest University Transportation Center report SWUTC/10/169206-1.
- Boyles, S. D., A. Voruganti, and S. T. Waller. (2010) *Quantifying Travel Time Variability in Transportation Networks.* Southwest University Transportation Center report SWUTC/10/167275-1.
- Waller, S. T., Kockelman, K., D. Sun, S. D. Boyles, D.-Y. Lin, M. Ng, S. Seraj, M. Tassabehji, V. Valsaraj, and X. Wang. (2008) *Archiving, Sharing, and Quantifying Reliability of Traffic Data.* Texas Department of Transportation report FHWA/TX-08/0-5686-1.
- Waller, S. T., S. D. Boyles, D. Fajardo, and A. Karoonsoontawong. (2007) *Ramp Closure Strategies for Incident Management.* Texas Department of Transportation report FHWA/TX-07/0-5422-1.
- Kockelman, K. K. Persad, S. T. Waller, S. Bansal, S. Boyles, P. Gulipalli, S. Kalmanje, and S. Ukkusuri. (2005) *Toll Road Project Selection and Evaluation of Impacts.* Texas Department of Transportation report FHWA/TX-05/0-4637-1.

Technical Presentations

- Boyles, S. D. (2022) Introduction to dynamic traffic assignment. Invited lecture, Workshop on Transportation Supply and Demand-Supply Interactions, Scheme for Promotion of Academic and Research Collaboration, Chennai, India.
- Liao, C., and S. D. Boyles. (2022) Stochastic reservations for autonomous intersection management. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Anaheim, CA.
- Boyles, S. D. (2021) Post-disaster recovery sequencing strategy for road networks. Invited lecture, Next-Generation Transportation Systems Seminar, University of Michigan, Ann Arbor, MI.
- Boyles, S. D. (2021) Post-disaster recovery sequencing strategy for road networks. Invited lecture, CEE@UCI Seminar Series, University of California Irvine, CA.
- Zhu, T., and S. D. Boyles. (2020) Electric vehicle travelling salesman problem with drone. Presented at the Third Annual CAMMSE Research Symposium (Virtual).
- Gokalp, C., F. Khosravikia, P. N. Patil, and S. D. Boyles. (2020) Post-disaster recovery sequencing strategy for road networks. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Washington, DC.
- Liao, C., and S. D. Boyles. (2020) Intersection priority auctions with vehicle sequencing. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Washington, DC.
- Patil, P. N., C. Liao, and S. D. Boyles. (2020) Effects of origin-destination matrix errors on user equilibrium. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Washington, DC.
- Zhu, T., and S. D. Boyles. (2020) Research on the EV-UAV coordinated routing problem using constraint programming-based metaheuristic methods. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Washington, DC.
- Boyles, S. D. (2020) Post-disaster recovery sequencing strategy for road networks. Invited lecture, Operations Research Seminar Series, The University of Texas, Austin, TX.
- Liao, C., and S. D. Boyles. (2019) VCG-inspired value-of-time auctions for road intersection priority. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Seattle, WA.
- Alexander, W., and S. D. Boyles. (2019) Ramp meters as control variates for freeway simulations. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Seattle, WA.
- Pandey, V., and S. D. Boyles. (2019) Sensitivity analysis for user equilibrium models with recourse. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Seattle, WA.
- Zhu, T., and S. D. Boyles. (2019) Computational performance of constraint programming for routing problems. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Seattle, WA.
- Chauhan, D. R., A. Unnikrishnan, and S. D. Boyles. (2019) Robust network interdiction considering capacity and resource consumption uncertainties. Presented at the Annual Meeting of the Institute for Operations Research and the Management Sciences, Seattle, WA.
- Boyles, S. D. (2019) Current trends in transportation. Presented at University United Methodist Church, Austin, TX.
- Boyles, S. D. (2019) Network models for transportation. Invited lecture, Transport-Mobility Leuven, Belgium.
- Boyles, S. D. (2019) Research trends in transportation network modeling. Invited lecture, Katholieke Universiteit Leuven, Belgium.

- Yahia, C. N., I. Deo, S. D. Boyles, and P. Passalacqua. (2018) Modeling flood dynamics: interacting processes between transportation and water networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Yahia, C. N., S. D. Boyles, and C. G. Claudel. (2018) Unmanned aerial vehicle path planning for network state estimation. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Yahia, C. N., C. Gokalp, P. Venkatraman, and S. D. Boyles. (2018) Information based drone assisted parcel delivery in urban environments. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Albert, M., G. Sharon, P. Stone, S. D. Boyles, and T. Rambha. (2018) Traffic optimization for a mixture of self-interested and compliant agents. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Boyles, S. D., P. Patil, and W. Alexander. (2018) Quantifying disruption impact across transportation networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Gokalp, C., and S. D. Boyles. (2018) Mean-standard deviation model for capturing reliability in the minimum cost flow problem. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Pandey, V., P. Patil, and S. D. Boyles. (2018) Online routing of heterogeneous vehicles on stochastic time-varying managed lane networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Boyles, S. D. (2018) Transportation, networks, and paradoxes. Presented to University Transportation Center Undergraduate Internship Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2018) Preparing for a world of connected and automated vehicles. Keynote address, Center for Transportation Research Symposium, Austin, TX.
- Boyles, S. D. (2018) Parking search equilibrium and its implications for parking management. Presented at the International Symposium on Artificial Intelligence and Mathematics (ISAIM 2018), Ft. Lauderdale, FL.
- Buini, H. M., G. Sharon, S. D. Boyles, T. Givargis, and P. Stone. (2018) Enhanced delta-tolling: traffic optimization via policy gradient reinforcement learning. Presented at the International Symposium on Artificial Intelligence and Mathematics (ISAIM 2018), Ft. Lauderdale, FL.
- Sharon, G., M. Albert, T. Rambha, S. D. Boyles, and P. Stone. (2018) Traffic optimization for a mixture of self-interested and compliant agents. Presented at the International Symposium on Artificial Intelligence and Mathematics (ISAIM 2018), Ft. Lauderdale, FL.
- Pandey, V., and S. D. Boyles. (2017) Optimal pricing for priced managed lanes with multiple entrances and exits. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Houston, TX.
- Pandey, V., and S. D. Boyles. (2017) Real-time estimation of value of time distribution using measurements on managed lane networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Houston, TX.
- Jafari, E., C. Yahia, and S. D. Boyles. (2017) Network design problem: a decentralized approach. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Houston, TX.
- Yahia, C., V. Pandey, and S. D. Boyles. (2017) Network partitioning algorithms to reduce computation time for parallel traffic assignment problems. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Houston, TX.
- Boyles, S. D. (2017) Transportation, networks, and paradoxes. Presented to University Transportation Center Undergraduate Internship Seminar Series, The University of Texas, Austin, TX.

- Rambha, T., E. Jafari, and S. D. Boyles. (2017) Transportation network issues in evacuation management. Presented at the New Agendas in Communication: Crisis Communication and New Media Conference, Austin, TX.
- Rambha, T., S. D. Boyles, and A. Unnikrishnan. (2016) A destination-based algorithm for user equilibrium with recourse using split proportions. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Nashville, TN.
- Jafari, E., and S. D. Boyles. (2016) Multicriteria shortest path problem for electric vehicles in stochastic networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Nashville, TN.
- Pandey, V., and S. D. Boyles. (2016) Optimal pricing for managed lanes with multiple entrances and exits. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Nashville, TN.
- Boyles, S. D. (2016) Modeling for a world of automated vehicles. Invited lecture, University of Connecticut, Storrs, CT.
- Levin, M. W., H. Smith, and S. D. Boyles. (2016) An assessment of autonomous vehicles: traffic impacts and infrastructure needs. Presented at the Smart Transport Symposium, The University of Texas, Austin, TX.
- Boyles, S. D. (2016) An overview of autonomous vehicle modeling. Presented to University Transportation Center Undergraduate Internship Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2016) Looking to the future: predictions of automated vehicle impacts. Presented at the D-STOP Symposium, The University of Texas, Austin, TX.
- Jin, P. J., S. D. Boyles, and W. Hu. (2015) Travel time transmission model for network loading at merging, diverging segments, and intersections. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Philadelphia, PA.
- Khani, A., and S. D. Boyles. (2015) Reliable routing in schedule-based transit networks with stochastic travel times. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Philadelphia, PA.
- Rambha, T., and S. D. Boyles. (2015) Mechanism design for route assignment in traffic networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Philadelphia, PA.
- Jafari, E., and S. D. Boyles. (2015) Decentralized traffic assignment for multi-level modeling. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Philadelphia, PA.
- Khani, A., and S. D. Boyles. (2015) Auction-based ridesharing with pick-up and drop-off time window. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Philadelphia, PA.
- Levin, M. W., and S. D. Boyles. (2015) Optimizing reservation-based intersections for system efficiency. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Philadelphia, PA.
- Levin, M. W., R. Patel, and S. D. Boyles. (2015) An assessment of autonomous vehicles: traffic impacts and infrastructure needs. Presented at the Smart Transport Symposium, The University of Texas, Austin, TX.
- Boyles, S. D. (2015) An overview of transportation network modeling. Presented to University Transportation Center Undergraduate Internship Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2015) Transportation, networks, and paradoxes. Short course, Honors Colloquium, The University of Texas, Austin, TX.

- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2015) Parking search equilibrium on a network. Invited lecture, Wireless Networking and Communications Group Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2015) Parking search equilibrium on a network. Invited lecture, Network Modeling Center Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2015) Modeling for an automated vehicle world. Presented at the D-STOP Symposium, The University of Texas, Austin, TX.
- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2014) Parking search equilibrium on a network. Invited lecture, University of Queensland, Brisbane, Australia.
- Boyles, S. D., S. Tang, and A. Unnikrishnan. (2014) Parking search equilibrium on a network. Invited lecture, University of New South Wales, Sydney, Australia.
- Jafari, E., and S. D. Boyles. (2014) Integrated multiresolution transportation and power networks. Presented at Electric Vehicle: Transportation/Electricity Convergence workshop, Austin, TX.
- Boyles, S. D. (2014) Developing research ideas. Presented at the ITS Professional Development Workshop, Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Jafari, E., and S. D. Boyles. (2014) Network contraction methods for dynamic pricing at charging stations. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Tang, S., and S. D. Boyles. (2014) Parking search equilibrium on a network. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Levin, M. W., and S. D. Boyles. (2014) Autonomous vehicle intersection modeling in dynamic traffic assignment. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Shahabi, M., A. Unnikrishnan, and S. D. Boyles. (2014) An algorithm for non-additive shortest path problem. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Khani, A., and S. D. Boyles. (2014) An efficient algorithm for solving reliable shortest path problem. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Rambha, T., and S. D. Boyles. (2014) Dynamic pricing and learning in network equilibrium models. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Shahabi, M., A. Unnikrishnan, and S. D. Boyles. (2014) A three level location-inventory problem with correlated demand. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.
- Boyles, S. D. (2014) Equity considerations in transportation decision making. Invited plenary lecture, t-Hub Workshop on Equity and Transit System Performance Measurement, Hartford, CT.
- Boyles, S. D. (2014) An overview of transportation network modeling. Presented to University Transportation Center Undergraduate Internship Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2014) Transportation, networks, and paradoxes. Short course, Honors Colloquium, The University of Texas, Austin, TX.
- Boyles, S. D. (2014) Planning and managing transportation systems in the face of uncertainty. Invited lecture, IBM Research, Dublin, Ireland.
- Boyles, S. D. (2014) Forecasting error in transportation planning and project selection. Invited lecture, University of Washington, Seattle, WA.

- Jafari, E., and S. D. Boyles. (2014) Integrated multiresolution transportation and power networks. Presented at Electric Vehicle: Transportation/Electricity Convergence workshop, Austin, TX.
- Boyles, S. D. (2014) Dynamic traffic modeling: applications and frontiers. Invited lecture, Center for Transportation Research Symposium, Austin, TX.
- Jafari, E., and S. D. Boyles. (2013) Integrated multiresolution transportation and power networks. Presented at Electric Vehicle: Transportation/Electricity Convergence workshop, Austin, TX.
- Jin, J. and S. D. Boyles. (2013) Travel time transmission model: a new dynamic traffic assignment model for connected vehicle data. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Shah, R., S. D. Boyles, J. Duthie, and R. B. Machemehl. (2013) Social equity and the transit scheduling problem. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Tang, S., S. D. Boyles, T. Rambha, and A. Unnikrishnan. (2013) Parking search, information, and online routing problems. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Boyles, S. D. (2013) Tips on conference presentations. Presented at the ITS Professional Development Workshop, Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Boyles, S. D., H. Bar-Gera, and L. M. Gardner. (2013) High occupancy/toll lane pricing under stochastic demand. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Rambha, T., S. D. Boyles, and K. Yin. (2013) Game-theoretic learning models in traffic assignment. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Boyles, S. D., J. Duthie, C. Melson, and T. Rambha. (2013) Diverge models and dynamic traffic equilibria. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Levin, M. W., D. Carlino, S. D. Boyles, and P. Stone. (2013) Autonomous vehicles and intersection auctions: efficiency and equity. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Minneapolis, MN.
- Boyles, S. D. (2013) An overview of transportation network modeling. Presented to Undergraduate Summer Institute in Transportation Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2013) Transportation, networks, and paradoxes. Short course, UT Honors Colloquium, Austin, TX.
- Boyles, S. D. (2013) Multiscale models and soft boundaries: examples and ideas. Invited lecture, Network Modeling Center Seminar Series, Austin, TX.
- Jin, J. and S. D. Boyles. (2012) Lagrangian traffic flow models in dynamic traffic assignment. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Liu, R. and S. D. Boyles. (2012) Determining locations for variable message signs in urban networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Safaripoor, S. and S. D. Boyles. (2012) Searching for parking on a network: a stochastic shortest path approach. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Tang, S., N. Jiang, and S. D. Boyles. (2012) The combined distribution and stochastic assignment problem with distance constraints. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.

- Venkatraman, R., S. D. Boyles, A. Unnikrishnan, and R. James. (2012) Hyperpath equilibrium models to simulate adaptive routing behavior. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Rambha, T., S. D. Boyles, and S. T. Waller. (2012) Adaptive transit routing under uncertainty. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Pool, C. M., and S. D. Boyles. (2012) Stability and convergence in large-scale dynamic traffic assignment. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Melson, C. and S. D. Boyles. (2012) A game-theoretic perspective on dynamic network equilibrium. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Boyles, S. D. (2012) Accounting for equity in infrastructure maintenance. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Phoenix, AZ.
- Boyles, S. D. (2012) New sensitivity analysis methods for the traffic assignment problem. Invited lecture, Operations Research Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. (2012) Routing, information, and uncertain travel times. Invited lecture, Texas A&M University, College Station, TX.
- Boyles, S. D. (2012) Transportation networks and optimization. Presented to Undergraduate Summer Institute in Transportation Seminar Series, The University of Texas, Austin, TX.
- Boyles, S. D. and A. Unnikrishnan. (2012) Stochastic and dynamic hyperpath equilibrium models. Presented at the National Science Foundation CMMI Engineering Research and Innovation Conference, Boston, MA.
- Zhang, T. and S. D. Boyles. (2012) Quantifying destination-based incentives on travel activities and PHEV/BEV usage. Presented at Electric Vehicle: Transportation/Electricity Convergence workshop, Austin, TX.
- Boyles, S. D. (2012) An exact label-correcting method for the online shortest path problem in cyclic networks. Presented at the Annual Meeting of the Transportation Research Board, Washington, DC.
- Zhang, T. and S. D. Boyles. (2011) Quantifying destination-based incentives on travel activities and PHEV/BEV usage. Presented at Electric Vehicle: Transportation/Electricity Convergence workshop, Houston, TX.
- Sui, Y., and S. D. Boyles. (2011) Robust route selection for transit networks. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Charlotte, NC.
- Safaripoor, S., and S. D. Boyles. (2011) Searching for parking on a network: a stochastic shortest path approach. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Charlotte, NC.
- R. Liu, and S. D. Boyles. (2011) A Newton-type algorithm for dynamic traffic assignment. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Charlotte, NC.
- Boyles, S. D. (2011) Application of network contraction methods for subnetwork analysis. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Charlotte, NC.
- Boyles, S. D. (2011) Equilibrium subnetwork analysis through network simplification. Invited lecture, The University of Texas at Austin, Austin, TX.

- Boyles, S. D. (2010) Two bush-based methods for equilibrium sensitivity analysis. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Austin, TX.
- P. Saha, R. Liu, and S. D. Boyles. (2010) Roadway pricing strategies for rural freeways accounting for freeway deterioration and maintenance. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Austin, TX.
- Boyles, S. D., and S. T. Waller. (2009) Optimal information location for adaptive routing. Invited lecture, Indian Institute of Technology – Madras, Chennai, India.
- Boyles, S. D., and S. T. Waller. (2009) Optimal information location for adaptive routing. Invited lecture, Chulalongkorn University, Bangkok, Thailand.
- Boyles, S. D. (2009) An introduction to online shortest paths. Invited lecture, National Cheng Kung University, Tainan, Taiwan.
- Boyles, S. D., and S. T. Waller. (2009) Optimal information location for adaptive routing. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Diego, CA.
- Boyles, S. D. (2009) Transportation network analysis and ITS. Invited lecture, University of Wyoming chapter of Institute of Transportation Engineers, Laramie, WY.
- Boyles, S. D. (2009) Information location for adaptive routing. Invited lecture, University of Wyoming, Laramie, WY.
- Boyles, S. D., Z. Zhang, and S. T. Waller. (2009) Optimal maintenance and repair policies under nonlinear preferences. Presented at the Annual Meeting of the Transportation Research Board, Washington, DC.
- Boyles, S. D., and S. T. Waller. (2008) Network equilibrium under information and nonlinear route choice behavior. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Washington, DC.
- Boyles, S. D., Nezamuddin, and S. T. Waller. (2008) The contingent routing problem: exact algorithms and heuristics. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Washington, DC.
- Boyles, S. D., Z. Zhang, and S. T. Waller. (2008) Optimal maintenance and repair policies under nonlinear preferences. Presented at the Fourth Annual Inter-University Symposium on Infrastructure Management, Austin, TX.
- Boyles, S. D., and S. Travis Waller. (2007) Online routing with nonlinear disutility functions: extensions and examples. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Seattle, WA.
- Unnikrishnan, A., S. D. Boyles, and S. T. Waller. (2007) User equilibrium with operational, demand-side uncertainty. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Seattle, WA.
- Boyles, S. D., and S. T. Waller. (2007) A stochastic delay prediction model for real-time incident management. Presented at the Summer Meeting of the Texas Institute for Transportation Engineers, Amarillo, TX.
- Boyles, S. D., and S. T. Waller. (2006) Online routing with nonlinear disutility functions. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, Pittsburgh, PA.
- Boyles, S. D., and S. T. Waller. (2005) Most reliable paths with recourse in networks with Markovian arc costs. Presented at the Annual Meeting of The Institute for Operations Research and the Management Sciences, San Francisco, CA.

- Boyles, S. D. (2005) Demand profiling for dynamic traffic assignment: a computationally simple approach. Presented at the Winter Meeting of the Texas Institute for Transportation Engineers, Waco, TX.

Grants and Contracts

- *Define a Statewide Plan for a Sustainable Real-Time Travel Time Network for Texas Hurricane Evacuations and Safe Citizen Return*, Texas Department of Transportation. Z. Zhang, R. B. Machemehl, M. Murphy, Z. Han., S. D. Boyles, 9/1/21–8/31/23.
- *Improved Behavioral Estimation of Origin-Destination Matrices*, North Central Texas Council of Governments. S. D. Boyles, 2/1/20–9/30/20.
- *Exploring the Use of Artificial Intelligence to Leverage TxDOT Data for Enhanced Corridor Management and Operations*, Texas Department of Transportation. N. Ruiz Juri, S. D. Boyles, C. M. Walton, 8/1/19–8/31/23.
- *Behavioral Estimation of Origin-Destination Matrices*, North Central Texas Council of Governments. S. D. Boyles, 11/1/18–9/30/19.
- *Augmented Reality for Control of Reservation-Based Intersections with Mixed Autonomous-Non Autonomous Flows*, National Science Foundation. C. Claudel, P. Stone, S. D. Boyles, L. N. Boyle, 10/1/18–9/30/22.
- *Real-Time Stochastic Matching Models for Freight Electronic Marketplace*, National Science Foundation. S. D. Boyles, S. Shakkottai, A. Unnikrishnan, 9/1/18–8/31/22.
- *Beyond Political Boundaries: Constructing Network Models for Megaregion Planning*, Cooperative Mobility for Competitive Megaregions Center. S. D. Boyles, 11/1/17–10/31/18.
- *Assessment of Parcel Delivery Systems using Unmanned Aerial Vehicles*, Center for Advanced Multimodal Mobility Solutions and Education. S. D. Boyles, 10/1/17–9/30/19.
- *Long-Range Planning Implications of Managed Lane Facilities*, North Central Texas Council of Governments. S. D. Boyles, 10/1/17–9/30/18.
- *Optimal Control of a Swarm of Unmanned Aerial Vehicles for Traffic Flow Monitoring in Post-disaster Conditions*, National Science Foundation. C. Claudel, S. D. Boyles, 1/1/17–12/31/20.
- *Non-Additive Network Routing and Assignment Models*, National Science Foundation. A. Unnikrishnan, S. D. Boyles, 9/1/16–8/31/20.
- *Coordinating Consistency between Statewide and Regional Planning Models*, Texas Department of Transportation. S. D. Boyles, C. Bhat, J. Duthie, K. Kam, 9/1/15–8/31/17.
- *Freshman Cornerstone Project*, The University of Texas at Austin Curriculum Innovation Grant. A. Bhasin, J. Marshall, S. D. Boyles, 6/1/15–5/31/16.
- *Operational Analysis of Active Traffic Management Strategies*, Texas Department of Transportation. S. D. Boyles, C. M. Walton, J. Duthie, 1/1/15–4/30/16.
- *Implications of Autonomous Vehicles on Safety, Design, and Operation of the Texas Highway System*, Texas Department of Transportation. K. Kockelman, S. D. Boyles, C. Claudel, 1/1/15–6/30/16.
- *An Assessment of Autonomous Vehicles: Traffic Safety and Infrastructure Needs*, Texas Department of Transportation. K. Kockelman, S. D. Boyles, C. Claudel, P. Stone, 1/1/15–12/31/16.
- *Bringing Smart Transport to Texans: Ensuring the Benefits of a Connected and Automated Transport System in Texas*, Texas Department of Transportation. K. Kockelman, S. D. Boyles, C. M. Walton, P. Stone, J. Andrews, W. Wagner, L. Loftus-Otway, 1/1/15–6/30/18
- *Data-Supported Transportation Operations and Planning* (Tier I UTC), United States Department of Transportation. C. Bhat, S. D. Boyles, J. Duthie, S. Shakkottai, R. Heath, 9/30/13–9/30/18.
- *Integrated Multiresolution Network Charging and Pricing*, EV-TEC National Science Foundation I/UCRC. S. D. Boyles, 8/1/13–8/31/15.

- *CAREER: Integrated Multiresolution Network Models*, National Science Foundation. S. D. Boyles, 8/1/13–7/31/18.
- *Improved Network Models for Electric Vehicles*, EV-TEC National Science Foundation I/UCRC. J. Duthie, S. D. Boyles, 5/1/13–8/31/15.
- *Game-Theoretic Analysis of Dynamic Traffic Equilibria*, Southwest University Transportation Center. S. D. Boyles, 1/1/13–12/31/13.
- *Review of Tolling Approaches for Implementation within TxDOT's Travel Demand Models*, Texas Department of Transportation. K. Hall, A. Mullins, K. Kockelman, S. D. Boyles, 9/1/12-11/30/13.
- *Game Theory and Traffic Assignment: Refinement, Stability, and Tractability*, Southwest University Transportation Center. S. D. Boyles, 4/1/12–8/31/13.
- *Center for Transportation and Electricity Convergence* (CTEC), Texas Department of Transportation. S. D. Boyles, C. M. Walton, 9/1/11–8/31/14.
- *Stochastic and Dynamic Hyperpath Equilibrium*, National Science Foundation. S. D. Boyles, A. Unnikrishnan, 8/1/11–7/31/14.
- *Quantifying Destination-Based Incentives on Travel Activities and PHEV Usage*, EV-TEC National Science Foundation I/UCRC. S. D. Boyles, 1/1/11–12/31/12.
- *Quantifying the Impact of Very High Heavy Vehicle Proportion on Rural Freeways*, Mountain-Plains Consortium. R. K. Young, S. D. Boyles, 6/1/10–12/31/11.
- *Statewide Mesoscopic Traffic Simulation for Wyoming*, Wyoming Department of Transportation. S. D. Boyles, 5/1/10–7/31/13.
- *Development of a Performance Measurement Based Methodology to Objectively Compare Operational Improvements with Capacity Additions*, Texas Department of Transportation. K. Kockelman, S. D. Boyles, 9/1/09–8/31/11.
- *Safety Implications for Using Active Traffic Strategies on TxDOT Freeways*, Texas Department of Transportation. S. T. Waller, S. D. Boyles, 9/1/09–8/31/11.
- *Pricing Strategies for Rural Freeways*, Mountain-Plains Consortium. S. D. Boyles, 8/1/09–7/31/11.

University Committee Assignments

The University of Texas at Austin

• Faculty Search Committees, Civil Engineering: chair 2021-2022; member 2013–2014; 2016–2017; 2019-2020; 2020-2021
• Faculty Council: member, 2019–2020
• Information Technology Committee, Civil Engineering: chair, 2019–2021; member, 2017–2019
• Transportation Policies Committee, UT Austin: member, 2019–2020
• Committee on Financial Aid to Students, UT Austin: member, 2019
• Computational Thinking Task Force, Civil Engineering: chair, 2017–2019
• Curriculum Committee, Civil Engineering: member, 2015–present
• Undergraduate Recruiting and Retention Committee, Civil Engineering: member, 2016–2017
• Distinguished Lecture Committee, Civil Engineering: member 2011–2014; chair 2014–2015
• Strategic Planning Committee, Civil Engineering: member 2012–2013
• Strategic Vision Implementation Committee, Civil Engineering: member 2014–2016, "cities" co-chair, 2014–2015
• Research Initiatives Committee, Center for Transportation Research: member 2012–2018
• Distinguished Lecture Committee, Center for Transportation Research: chair 2013–2018

University of Wyoming

• Technology Committee, College of Engineering and Applied Science: member, 2010–2011
• Graduate Committee, Civil Engineering, member, 2009–2011

Professional Societies

Institute for Operations Research and Management Sciences

- Cluster Chair, Transportation Science & Logistics Society, 2016
- Vice-Cluster Chair, Transportation Science & Logistics Society, 2015
- Chair, Intelligent Transportation Systems SIG, 2013–2015
- Vice-Chair, Intelligent Transportation Systems SIG, 2011–2013

Transportation Research Board

- Chair, Transit, Freight, and Logistics Subcommittee, 2016–present
- Member, Transportation Network Modeling Committee, 2015–present
- Affiliate, Transportation Network Modeling Committee, 2005–2015
- Affiliate, Managed Lanes Committee, 2012–2014

Institute of Transportation Engineers

- Affiliate, Transportation Planning Council, 2007–2009

Editorial Positions

- *Transportation Research Part B*, editorial board member, 2017–present
- *Transportation Research Part C*, editorial board member, 2015–present
- *Journal of Infrastructure Systems*, editorial board member, 2015–present
- TRB Transportation Network Modeling Committee, editorial board member, 2013–present
- Guest editor, *Journal of Advanced Transportation*, special issue on Travel Behavior and Transportation Systems Analysis of Electric Vehicles, 2017

Referee Service

Proposal Referee: National Science Foundation; Israeli Ministry of Science, Technology, & Space; Kuwait Foundation for the Advancement of Sciences; New Zealand Ministry of Business, Innovation & Employment; Research Foundation Flanders; NCTSPM Center; NEXTRANS Center; PacTrans Center; UCCONNECT Center; West Virginia University Senate

Conference Referee: Transportation Research Board; International Symposium on Transportation & Traffic Theory; IEEE Conference on Intelligent Transportation Systems; Australasian Transport Research Forum

Journal Referee: *Transportation Science; Transportation Research Parts A, B, C, D, E; Transportation Research Record; Journal of Infrastructure Systems; Networks; Journal of Transportation Engineering; Applied Energy; Computer-Aided Civil & Infrastructure Engineering; Dynamic Route Guidance & Traffic Control; Environment Systems & Decisions; European Journal of Transport & Logistics; Journal of Advanced Transportation; Journal of Homeland Security & Emergency Management; Journal of the Transportation Research Forum; Journal of Urban Planning & Development; NETNOMICS; Networks & Spatial Economics; Optimization Letters; Technological Forecasting & Social Change; IEEE Transactions on Intelligent Transportation Systems; Transportation; Transportmetrica Part B; Transportation Letters; Transport Policy.*

Other Service

- Area coordinator (Transportation), Civil Engineering, UT Austin, 2017–present
- Director, University Transportation Center-Undergraduate Internship (UTC-UI) program, 2014–present
- Founder and director, Wyoming Summer Undergraduate Internship in Transportation Engineering (WyoSUITE), 2009–11
- Panelist, New Faculty Orientation, The University of Texas at Austin, 2016
- Judge, Commitment to Excellence Competition, Alliance Transportation Group, 2018
- Regional judge, Siemens Competition, 2012

Community Activities

- Substitute organist and accompanist, Fall 2011–present
- Interim organist, University Baptist Church, Spring 2018
- Service-playing cerficiate, American Guild of Organists
- American Guild of Organists, Austin chapter, at-large board member, 2019–2020