

# Olufolajimi (Jimi) Oke

Department of Civil and Environmental Engineering  
University of Massachusetts Amherst  
USA

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## APPOINTMENTS

### University of Massachusetts Amherst, MA

2019 – date *Assistant Professor:* Civil and Environmental Engineering  
*Director:* Networks for Accessibility, Resilience & Sustainability Laboratory ([NARS Lab](#))

### Massachusetts Institute of Technology, Cambridge, MA

2016 – 2019 *Postdoctoral Associate:* Civil and Environmental Engineering (Advisor: Moshe Ben-Akiva)  
*Project Manager:* Future Urban Mobility, MIT Energy Initiative Mobility of the Future Study

### The Pennington School, Pennington, NJ

2011 – 2012 *Faculty:* Department of Mathematics; Center for Learning  
2010 – 2011 *Teaching Fellow:* Center for Learning

## EDUCATION

### Johns Hopkins University, Baltimore, MD

2016 *Doctor of Philosophy:* Civil Engineering (Advisor: Sauleh Siddiqui)  
2014 *Master of Science in Engineering:* Civil Engineering

### Williams College, Williamstown, MA

2010 *Bachelor of Arts:* Physics, Music  
Honors Thesis in Physics (Advisor: Jefferson Strait)  
Senior Recital, Classical Guitar (Teacher: Robert Phelps)

## GRANTS

2024 – 2025	<b>Connecticut South Central Regional Council of Governments</b> A predictive decision-making framework for robust and equitable climate action planning in the South Central Region of Connecticut	PI	\$179,986
2024 – 2029	<b>National Science Foundation</b> Expeditions in Computing for Computational Decarbonization of Societal Infrastructures at Mesoscales	Co-I	\$12,000,000
2024 – 2026	<b>Armstrong Fund for Science</b> Can schematic bicycle maps help reduce greenhouse gas emissions?	PI	\$40,000
2024	<b>National Science Foundation</b> Conference: CET: Accelerating integrated Seabed Characterization for clean ENergy Transition (ASCENT)	Co-PI	\$95,111

2024 – 2025	<b>New England University Transportation Center</b> Learning a spatial crash typology representation for analyzing and improving multimodal road safety in New England	PI	\$75,000
2023 – 2024	<b>Connecticut Metropolitan Council of Governments</b> Tracking regional emissions for climate action	Co-PI	\$61,717
2023 – 2024	<b>Connecticut South Central Regional Council of Governments</b> Tracking regional emissions for climate action	Co-PI	\$125,000
2023 – 2024	<b>Massachusetts Department of Transportation</b> Artificial intelligence framework for midblock crosswalk detection across Massachusetts	PI	\$99,998
2023 – 2026	<b>National Science Foundation</b> REU Site: Computing for an Equitable Energy Transition	Co-I	\$433,765
2023 – 2024	<b>Massachusetts Department of Transportation</b> Robust decision-making framework for sustainable operations and planning of MBTA rapid transit vehicles	PI	\$125,000
2023 – 2026	<b>Environmental Protection Agency</b> Community-engaged Co-Design of Residential Electrification for a Just and Sustainable Energy Transition	Co-I	\$1,111,421
2021 – 2023	<b>Pioneer Valley Transit Authority</b> Pioneer Valley Transit Review and Improvement Planning Study (PV-TRIPS)	Co-PI	\$137,719
2021 – 2022	<b>American Public Power Association</b> Cost-benefit analysis of co-deploying optical fiber and electric cabling underground	PI	\$191,197
2021 – 2023	<b>Pioneer Valley Transit Authority</b> Installation of On-Bus Mobile Ticket Validators and Development of an Innovative Origin-Destination-Transfer (ODX) Model	PI	\$103,952
2020	<b>National Science Foundation</b> America’s Water Risk: Water System Data Pooling for climate vulnerability assessment and warning system	Co-I	\$999,982
2020 – 2021	<b>Massachusetts Department of Transportation</b> Tracking and Reducing the Energy, Emissions and Costs of Rapid Transit Vehicles (TREEM)	PI	\$122,522

## AWARDS & FELLOWSHIPS

2024 2023 ASCE Outstanding Reviewer, *Journal of Infrastructure Systems*

### University of Massachusetts Amherst

2024 Armstrong Fund for Science  
 2021 Brack Endowment Award for Research, *Department of Civil and Environmental Engineering*

### Massachusetts Institute of Technology

2019 Kaufman Teaching Certificate, *Teaching & Learning Lab*  
 2017 Postdoctoral Teaching Fellowship, *Department of Civil and Environmental Engineering*  
 2013 Half-tuition Scholarship: “Modeling and Simulation of Transportation Networks”, *MIT Professional Education Short Programs*

### Johns Hopkins University

2015 Gordon Croft Fellowship, *Environment, Energy, Sustainability & Health Institute (E<sup>2</sup>SHI)*  
 2015 Article selected for Promotion, Elsevier, *Journal article “Tracking global bicycle ownership patterns”*  
 2015 Civil Engineering Graduate Service Award, *G.W.C. Whiting School of Engineering*

- 2015 Teaching-as-Research Fellowship, *Center for the Integration of Research, Teaching and Learning*  
 2013 Educational Training Core Traineeship, *Global Obesity Prevention Center*  
 2012 Whiting School of Engineering Research Fellowship

### Williams College

- 2010 Howard P. Stabler Prize in Physics  
 2010 William W. Kleinhandler Prize for Excellence in Music  
 2010 Sigma Xi Honors  
 2008, 09 Williams College Summer Science Research Fellowship

## PUBLICATIONS

### Journal Articles

- [J29] **M. Arabi**,\* A. Apostolov,\* A. Pattabhiraman, A. Goldstein, M. Bloomberg, J. Taneja, E. D. Baker, **J. Oke**, *Benefits of rapidly co-undergrounding electric and broadband lines outweigh costs* (Under review).
- [J28] **M. Abdalazeem**,\* T. Oke, **J. Oke**, *A novel origin-destination-transfer model using mobile ticketing activations with seasonal passenger typology and spatial error correction* (Under review).
- [J27] **M. Abdalazeem**,\* **J. Oke**, *A Spatial Typology Analysis of Crash Characteristics Across 2,480 Census Tracts in Two New England States* (Under review).
- [J26] **P. Zhao**,\* **J. Oke**, *A Novel Mobility Typology of 355 U.S. Metropolitan Areas and its Impacts on Greenhouse Gas Emissions* (Under review).
- [J25] **M. Arabi**,\* T. Oke, **J. Oke**, *Sustainable transition to zero-emissions fleet requires both electric and hybrid buses in the near-term* (Under 2nd review).
- [J24] **M. Abdalazeem**,\* **J. Oke**, *Enhanced seasonal typology-informed transit trip chaining via mobile boarding and survey data*, *Data Science for Transportation*, **6**(3), 1-24 (2024).
- [J23] **M. Arabi**,\* S. Gerasimidis, C. Barchers, **J. Oke**, *Resilience in multilayer transportation infrastructure networks: a review and conceptual framework for equity-based assessment*, *Sustainable and Resilient Infrastructure*, 1-24, doi:[10.1080/23789689.2024.2344909](https://doi.org/10.1080/23789689.2024.2344909) (2024).
- [J22] D. Sarigiannis, M. Atzemi, **J. Oke**, E. Christofa, S. Gerasimidis, *Feature Engineering and Decision Trees for Predicting High Crash-Risk Locations using Roadway Indicators*, *Transportation Research Record*, doi:[10.1177/03611981231217497](https://doi.org/10.1177/03611981231217497) (2024).
- [J21] **M. Arabi**,\* **J. Oke**, *Comprehensive energy modeling framework for multi-powertrain bus transit systems*, *Transportation Research Record* **2678**(1): 707-720 doi:[10.1177/03611981231172502](https://doi.org/10.1177/03611981231172502) (2024).
- [J20] **Z. Han**,\* E. Gonzales, E. Christofa, **J. Oke**, *Line-specific energy modeling framework for urban rail transit systems: A case study of Boston*, *Transportation Research Record* **2678**(1): 150-164 doi:[10.1177/03611981231170181](https://doi.org/10.1177/03611981231170181) (2024).
- [J19] **M. Abdalazeem**,\* **J. Oke**, *Extracting spatiotemporal bus passenger trip typologies from noisy mobile ticketing boarding data*, *Data Science for Transportation* **5**(3), 20 (2023).
- [J18] **A. Apostolov**,\* **J. Oke**, R. Suttle, S. Arwade, B. Kane, *Predicting tree failure likelihood for utility risk mitigation via a convolutional neural network*, *Sustainable and Resilient Infrastructure*, **8**(6), 572-588 doi:[10.1080/23789689.2023.2233759](https://doi.org/10.1080/23789689.2023.2233759) (2023).

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\* Graduate advisee/mentee

- [J17] **H. Chung**,\*\* E. Kumpel, **J. Oke**, *Drinking water accessibility typologies in low- and middle-income countries*, *Environmental Research Letters* **18** 025009 (2023).
- [J16] **S. Goodarzi**,\* H. F. Kashani, A. Saeedi, **J. Oke**, C. L. Ho, *Stochastic analysis for estimating track geometry degradation rates based on GPR and LiDAR data*, *Construction and Building Materials*, 369: 130591 (2023).
- [J15] **M. Mohammed**,\* **J. Oke**, *Origin-destination inference in public transportation systems: a comprehensive review*, *International Journal of Transportation Science and Technology*, 12 (1), 315-328 (2023).
- [J14] **Z. Han**,\* E. Gonzales, E. Christofa, **J. Oke**, *Modeling system-wide urban rail transit energy consumption: A case study of Boston*, *Transportation Research Record*, 2676(12): 627-640 (2022).
- [J13] **S. Goodarzi**,\* H. F. Kashani, **J. Oke**, C. L. Ho, *Data-driven methods to predict track degradation: a case study*, *Construction and Building Materials*, 344: 128166 (2022).
- [J12] N. Kumar, **J. Oke**, B. Nahmias-Biran, *Activity-based epidemic propagation and contact network scaling in auto-dependent metropolitan areas*, *Scientific Reports*, 11(1): 1-14 (2021).
- [J11] B. Nahmias-Biran, **J. B. Oke**, N. Kumar, *Who Benefits from AVs? Social Implications of Autonomous Vehicle Policies in Full-Scale Cities*, *Transportation Research Part A*, 154: 92-107 (2021).
- [J10] B. Nahmias-Biran, **J. B. Oke**, N. Kumar, C. L. Azevedo, M. Ben-Akiva, *Evaluating the impacts of shared automated mobility on-demand: an activity-based accessibility approach*, *Transportation*, 48: 1613–1638 (2021).
- [J9] **J. B. Oke**, A. P. Akkinepally, S. Chen, Y. Xie, **Y. M. Aboutaleb**,\* C. L. Azevedo, C. Zegras, J. Ferreira, M. Ben-Akiva, *Evaluating systemic effects of automated on-demand services through large-scale, agent-based simulation of auto-dependent, prototype cities*, *Transportation Research Part A*, 140: 98-126 (2020).
- [J8] D. A. Martinez, J. Cai, **J. B. Oke**, A. Jarrell, F. Feijoo, J. Appelbaum, E. Klein, S. Barnes, S. R. Levin, *Where is my Infusion Pump? Harnessing Network Dynamics for Improved Hospital Equipment Fleet Management*, *Journal of the American Medical Informatics Association*, 27(6): 884-892 (2020).
- [J7] **J. B. Oke**, **Y. M. Aboutaleb**,\* C. L. Azevedo, Y. Han, A. Akkinepally, P. C. Zegras, J. Ferreira, M. E. Ben-Akiva, *A novel global urban typology framework for sustainable mobility futures*, *Environmental Research Letters*, 14(9): 95006 (2019).
- [J6] B. Nahmias-Biran, **J. B. Oke**, C. L. Azevedo, N. Kumar, A. Araldo, K. Basak, R. Seshadri, M. Ben-Akiva, *From traditional to automated mobility on demand: a comprehensive framework for modeling mobility on demand services in SimMobility*, *Transportation Research Record*, 2673(12): 15-29 (2019).
- [J5] **O. Oke**, D. Huppmann, **M. Marshall**,\*\* **R. Poulton**,\* S. Siddiqui, *Multimodal transportation flows in energy networks with an application to crude oil markets*, *Networks and Spatial Economics*, 19(2): 521-555 (2019).
- [J4] **O. Oke**, K. Bhalla, D. C. Love, S. Siddiqui, *Spatial associations in global bicycle ownership*, *Annals of Operations Research*, 263: 529-549 (2018).
- [J3] **O. Oke**, K. Bhalla, D. C. Love, S. Siddiqui, *Tracking global bicycle ownership patterns*, *Journal of Transport and Health*, 2(4): 490-501 (2015).
- [J2] **O. Oke**, S. Siddiqui, *Efficient automated schematic map drawing using multiobjective mixed integer programming*, *Computers and Operations Research*, 61:1-17 (2015).
- [J1] C. Chudzicki, **O. Oke**, W. K. Wootters, *Entanglement and Composite Bosons*, *Physical Review Letters*, 104(7):070402 (2010).

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\*\*Undergraduate advisee/mentee

**Conference Papers & Extended Abstracts [Peer Reviewed]**

- [C11] **Z. Han**,\* E. Gonzales, E. Christofa, **J. Oke**, *Line-specific energy modeling framework for urban rail transit systems: A case study of Boston*, TRB Annual Meeting (2023).
- [C10] **M. Arabi**,\* **J. Oke**, *System-wide Energy Modeling of Bus Transit Systems: A Case Study of The Pioneer Valley*, TRB Annual Meeting (2023).
- [C9] **M. Mohammed**,\* **J. Oke**, *Spatiotemporal Trip Chaining Framework for Open Mobile Fare Collection Systems*, TRB Annual Meeting (2023).
- [C8] **N. Apostolov**,\* **J. Oke**, *Retrospective Investigation of Country Activity and Mobility Patterns and Their Interdependencies on Early-onset COVID-19 Outcomes*, TRB Annual Meeting (2023).
- [C7] **S. Goodarzi**,\* H. F. Kashani, **J. Oke**, C. L. Ho, *Stochastic Analysis for Estimating Track Geometry Degradation Rates Based on GPR and LiDAR Data*, TRB Annual Meeting (2023).
- [C6] **Z. Han**,\* E. Gonzales, E. Christofa, **J. Oke**, *Modeling system-wide urban rail transit energy consumption: A case study of Boston*, TRB Annual Meeting (2022).
- [C5] **M. Mohammed**,\* **J. Oke**, *Trip pattern typologies in the Pioneer Valley bus transit system*, TRB Annual Meeting (2022).
- [C4] B. Nahmias-Biran, **J. B. Oke**, N. Kumar, *Activity-based contact network scaling and epidemic propagation in metropolitan areas*, TRB Annual Meeting (2021).
- [C3] B. Nahmias-Biran, **J. B. Oke**, N. Kumar, A. P. Akkinapally, C. L. Azevedo, P. C. Zegras, J. Ferreira, M. Ben-Akiva, *Who Benefits from AVs? Equity Aspects of Autonomous Vehicles Policies in a Full-Scale Prototype Cities*, TRB Annual Meeting (2020).
- [C2] **E. Gross**,\* **J. Oke**, A. P. Akkinapally, B. Nahmias-Biran, C. L. Azevedo, C. Zegras, J. Ferreira, M. Ben-Akiva, *Accessibility and energy consumption evaluation under different strategies of mobility on-demand deployment*, TRB Annual Meeting (2019).
- [C1] Y. Han, **J. Oke**, **S. Hua**,\* **J. Zhou**,\* C. L. Azevedo, C. Zegras, J. Ferreira, M. Ben-Akiva, *Global urban typology discovery with a latent class choice model*, TRB Annual Meeting (2018).

**Theses and Reports**

- [R7] A. Apostolov, Y. Xie, C. Ai, F. Tainter, **J. Oke**, *Artificial Intelligence Framework for Crosswalk Detection Across Massachusetts*, 20-024, Massachusetts. Dept. of Transportation. Office of Transportation Planning, February 2024.
- [R6] **J. Oke**, E. Christofa, E. Gonzales, Z. Han, S. Donaghy, *Tracking the Energy and Emissions of MBTA Rapid Transit Vehicles*, 21-023, Massachusetts. Dept. of Transportation. Office of Transportation Planning, August 2021.
- [R5] W. H. Green et al., *Insights Into Future Mobility: A Report from the Mobility of the Future Study*, MIT Energy Initiative, Cambridge, MA, November 2019.
- [R4] **O. Oke**, *Network modeling and optimization for energy and sustainable transit*, Doctoral Dissertation in Civil Engineering, Johns Hopkins University, May 2016.
- [R3] **J. Oke**, S. Siddiqui, K. Bhalla, D.C. Love, J. De Vito, M. Van Doren, Max Marshall, *Making Baltimore More Bike Friendly*, Department of Civil Engineering, Johns Hopkins University, March 2014.
- [R2] **O. Oke**, *Bicycling in Baltimore: key concerns*, Report (submitted to Baltimore DOT), Department of Civil Engineering, Johns Hopkins University, January 2013.
- [R1] **O. Oke**, *A nonlinear optical loop mirror modelocked fiber laser*, Honors Thesis in Physics, Williams College, May 2010.

## COMMUNICATIONS

### Invited Presentations

- [IP18] *Typology-informed solutions for sustainable and accessible infrastructure networks*, 4th International Conference on Access Management, Boston, MA, June 2024.
- [IP17] *Machine learning-enhanced decision-making frameworks for sustainable mobility systems*, 2024 Emerging Technologies in Transportation Seminar, University of Florida Gainesville, FL, March 2024.
- [IP16] *Mobility and epidemics in urban typologies*, Diversity, Equity and Inclusion Seminar, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, MA, June 2020.
- [IP15] *Analysis of future mobility on-demand systems in global urban typologies*, INFORMS Annual Meeting, Seattle, WA, October 2019.
- [IP14] *New urban typologies for sustainable mobility*, Department of Civil and Environmental Engineering, University of Illinois Urbana-Champaign, IL, February 2019.
- [IP13] *New urban typologies for sustainable mobility*, Department of Civil and Environmental Engineering, University of Massachusetts Amherst, MA, February 2019.
- [IP12] *Discovering new urban typologies*, Department of Civil and Environmental Engineering, University of Pittsburgh, PA, January 2019.
- [IP11] *Discovering sustainable future urban mobility policies via simulation of prototype cities from global urban typologies*, Systematizing and upscaling urban solutions for climate change mitigation, Berlin, Germany, September 2018.
- [IP10] *Discovering Robust Urban Mobility Futures via Agent Based Simulation in Prototype Cities*, 7th TRB Innovations in Travel Modeling Conference, Atlanta, GA, June 2018.
- [IP9] *Need for and Uses of Risk Analysis: Technical approaches from the university perspective*, Risk Analysis Workshop, 7th TRB Innovations in Travel Modeling Conference, Atlanta, GA, June 2018.
- [IP8] *Urban mobility simulation for scenario discovery in globally representative prototypes*, Physics Colloquium, Department of Physics, Williams College, MA, October 2017.
- [IP7] *Exploring sustainable mobility strategies in future cities*, Log Lunch Series, Center for Environmental Studies, Williams College, MA, October 2017.
- [IP6] *A Crude Oil Market Model for the United States*, INFORMS Annual Meeting, Philadelphia, PA, November 2015.
- [IP5] *An Equilibrium Model of the US Crude Oil Market*, the 22nd International Symposium on Mathematical Programming, Pittsburgh, PA, July 2015.
- [IP4] *Redefining Infrastructural Space*, Environment, Energy, Sustainability & Health Institute Art/Science Roundtable, Maryland Institute College of Art, Baltimore, May 2015.
- [IP3] *Tracking Global Bicycle Ownership Patterns*, INFORMS Data Mining and Analytics Workshop, San Francisco, CA, November 2014.
- [IP2] *An efficient automated multiobjective programming approach to map schematization*, Systems/Policy/Energy Seminar, Johns Hopkins University, March 2014.
- [IP1] *A Mixed-integer Programming Tool for Creating Effective Schematic Urban Transit Maps*, INFORMS Annual Meeting, Minneapolis, MN, October 2013.

### Contributed Presentations

- [CP9] *Metropolitan Area Road Network Typologies and Their Implications for Sustainable Mobility*, INFORMS Annual Meeting, Phoenix, AZ, October 2023.

- [CP8] *Assessing the energy impacts of automated on-demand service deployment strategies in sprawling, auto-dependent cities*, Transatlantic Infraday Conference, Federal Energy Research Commission, Washington, DC, November 2018.
- [CP7] *Discovering Urban Typologies For Future Mobility Scenarios In Prototype Cities*, INFORMS Annual Meeting, Houston, TX, October 2017.
- [CP6] *Analyzing United States Crude Oil Flows*, Transatlantic Infraday Conference, Federal Energy Research Commission, Washington, DC, October 2015.
- [CP5] *An Oil Market Model for the United States*, Modeling and Optimization: Theory and Applications, Lehigh University Department of Industrial and Systems Engineering, Bethlehem, PA, July 2015.
- [CP4] *Solving the Crude on Rail Problem using an Equilibrium Model of the US Crude Oil Market*, Critical Infrastructure Symposium, Linthicum, MD, April 2015.
- [CP3] *Global Bicycle Availability*, INFORMS Annual Meeting, San Francisco, CA, November 2014.
- [CP2] *Multiobjective optimization for automatic schematic map drawing*, Modeling and Optimization: Theory and Applications, Lehigh University Department of Industrial and Systems Engineering, Bethlehem, PA, August 2014.
- [CP1] *Schematic map automation and optimization*, Civil Engineering Graduate Seminar, Johns Hopkins University, November 2013.

## TEACHING

### University of Massachusetts Amherst, MA

**Instructor**, Department of Civil and Environmental Engineering

- Fall 2024 Probability & Statistics in Civil Engineering (Undergraduate)  
*126 students*
- Spring 2024 Advanced Probabilistic Machine Learning (Graduate)  
*Newly developed course; 9 students*
- Fall 2023 Machine Learning Foundations and Applications (Graduate/Undergraduate)  
*Newly developed course; 12 students*
- Spring 2023 Probabilistic Machine Learning (Graduate)  
*18 students*
- Spring 2022 Big Data and Machine Learning for Engineers (Graduate)  
*15 students*
- Fall 2021 Probability & Statistics in Civil Engineering (Undergraduate)  
*116 students*
- Spring 2021 Big Data and Machine Learning for Engineers (Graduate)  
*9 students*
- Fall 2020 Probability & Statistics in Civil Engineering (Undergraduate)  
*60 students*
- Spring 2020 Data Mining and Machine Learning for Engineers (Graduate)  
*16 students; created new course*
- Fall 2019 Probability & Statistics in Civil Engineering (Undergraduate)  
*127 students; introduced MATLAB programming assignments*

### Massachusetts Institute of Technology, MA

**Teaching Assistant**, Department of Civil and Environmental Engineering

- Fall 2018 Transportation Systems Analysis: Demand and Economics (Graduate)

- 15 students, recitations, content development
- Summer 2018 Modeling and Simulation of Transportation Networks (Professional)  
*content development*
- Fall 2017 Transportation Systems Analysis: Demand and Economics (Graduate)  
*25 students, recitations, content development, assessments*
- Teaching Fellow**, Department of Civil and Environmental Engineering
- Spring 2016 Multivariate Data Analysis (Undergraduate)  
*16 students, recitations, lectures, Jupyter notebook development, innovative assessments, project*
- Johns Hopkins University, MD**
- Instructor**, Hopkins Engineering Applications & Research Tutorials Program
- Fall 2015 Reality Distortion: The Impact and Automation of Schematic Maps (Undergraduate)  
*3 students, content development: GAMS, Python, optimization, visualization*
- Teaching-as-Research Fellow**, Department of Civil Engineering
- Spring 2015 Probability and Statistics in Civil Engineering (Undergraduate)  
*97 students, designed 12 applied MATLAB projects, surveys & focus group to measure impact*
- Teaching Assistant**, Department of Civil Engineering
- Oct 2013 Optimization and Equilibrium Modeling in Systems Engineering (Graduate, day-long)  
*11 students, GAMS installation and programming help*
- Spring 2013 Probability and Statistics in Civil Engineering (Undergraduate)  
*55 students, office hours, wrote and graded quizzes & exam problems*
- Fall 2012 Statics and Mechanics of Materials (Undergraduate)  
*110 students, taught 10 of 12 lab sections, assessed lab reports, course grade manager*
- The Pennington School, NJ**
- 2011 – 2012 **Faculty Member**, Mathematics Department  
Algebra II Honors, Precalculus (Course Leader)  
*developed innovative assessments, redesigned Precalculus curriculum*
- 2010 – 2012 **Teaching Fellow – Faculty Member**, Center for Learning  
Algebra II, Math Skills Tutorial, Writing Skills Tutorial, Communication Skills  
*small classes, students with learning differences, focused mentorship*
- Williams College, MA**
- Physics Tutor**, Office of Academic Resources
- 2008 – 2010 Peer Tutor Program  
*one-on-one appointments several times a week*
- 2007 – 2010 Math and Science Resource Center  
*walk-in/group sessions, 2-hour shifts, 2 – 4 times a week*
- Teaching Assistant**, Department of Physics
- Spring 2009 “Waves and Optics”  
*grading, homework assistance*
- Fall 2008 “Particles and Waves, Enriched”



*grading, homework assistance*

**Teaching Assistant**, Department of Art

Fall 2007

Drawing

*studio manager, curated student work, occasional modeling*

**SERVICE**

**Graduate Research Mentorship**

2023–date	Peiyao Zhao (PhD, UMass Amherst)
2021–date	Mahsa Arabi (PhD, UMass Amherst)
2021–date	Mohammed Abdalazeem Mohammed (MSCE*/PhD, UMass Amherst)
2020–date	Atanas Apostolov (MSCE*, UMass Amherst)
2020–date	Zhuo Han (MSCE*/PhD, UMass Amherst)
2018–19	Yifei Xie (MST <sup>†</sup> , MIT)
2018–19	Siyu Chen (MST <sup>†</sup> , MIT)
2017–18	Eytan Gross (MST <sup>†</sup> , MIT)
2017–19	Youssef Medhat (MST <sup>†</sup> , MIT)
2017–18	Iveel Tsogsuren (MEng, MIT)
Summer 2017	Jin (Jasmine) Zhou (MA, Columbia University)
Spring 2017	Scott Foster (Leaders for Global Operations Fellow, MIT)
Fall 2016	Akshay Padmanabha (MEng, MIT)
2016–17	Sean Hua (MEng, MIT)
2016–17	Michael Choi (MEng, MIT)

**Undergraduate Research Mentorship**

Summer 2024	Geehan Altayb (BS, Computer Science, Howard University)
Summer 2023	Vivian Rost-Nasshan (BS, Industrial and Management Engineering, Rensselaer Polytechnic Institute)
2022–2023	Alexa Weinman (BSE 2023, Civil and Environmental Engineering, UMass Amherst)
2020–2021	Hichul Chung (BSE 2021, Mechanical Engineering, UMass Amherst)
Summer 2020	Adegbola Fayemi (College of Wooster)
2017–18	Sharlene Chiu (Super UROP <sup>‡</sup> , MIT)
Spring 2017	Joseph Noszek (UROP <sup>‡</sup> , MIT)
Spring 2017	Abenezer Samuel (UROP <sup>‡</sup> , MIT)
Winter 2017	Gabriel Madonna (Mini UROP <sup>‡</sup> , MIT)
2013–16	Max Marshall (JHU)
2014–15	Ricky Poulton (JHU)
2013–14	Molly Van Doren (JHU)

\* Masters of Science in Civil Engineering

† Masters of Science in Transportation

‡ Undergraduate Research Opportunities Program

**Internal Service, Department and School/College**

## University of Massachusetts Amherst

Fall 2023	Transportation Engineering Program Seminar Coordinator
2023–date	Search Committee Member, Department of Mechanical and Industrial Engineering
2021–date	College of Engineering ECS-IT Advisory Committee Member (CEE representative)
2021–22	Thesis Committee Member: Brent Scott (PhD, Kinesiology, 2022)
2021	Thesis Committee Member: Peetak Mitra (PhD, Mechanical Engineering, 2021)
2019–20	Thesis Committee Member: Haralampos Sipetas (PhD, Civil Engineering, 2020)

Civil & Environmental Engineering Postdoc Committee, Massachusetts Institute of Technology  
Member

2016–17

## Johns Hopkins University

2015–16	Graduate Representative, Homewood Graduate Board, Whiting School of Engineering
2015–16	President, Civil Engineering Graduate Association
2014–15	Social Coordinator, Civil Engineering Graduate Association
2014	Founded the Civil Engineering Graduate Association
2014–15	Graduate Seminar (Systems) Cochair, Department of Civil Engineering
2013–14	Graduate Seminar Committee Member, Department of Civil Engineering

**External Advising**

2022–2024 Secondary Advisor and Thesis Committee Member: Nishant Kumar, PhD candidate (ETH Zurich)

**Manuscript Review**

2024	Transportmetrica A: Transport Science; Applied Network Science; Transportation Planning and Technology; Transportation; Journal of Urban Planning and Development; Urban Forestry & Urban Greening; Measurement Science & Technology; Transportation Research Board
2023	Transportation Research: Part A, Part D; Journal of Infrastructure Systems; Transportation Research Board; Simulation Modelling Practice and Theory; Data Science for Transportation; Open Research Europe; Cogent Social Sciences; Scientia Iranica
2022	Transportation Research: Part A, Part C, Part D; Transportation Research Board; Energy Journal; Journal of the American Medical Informatics Association; Energy Research & Social Science
2021	Energy Research & Social Science; Transportation Research: Part C; Journal of Urban Planning and Development
2020	Transportation Research Record
2019	Transportation Research Board
2018	Transportation Research: Part A; International Journal of Geographical Information Science; Journal of Transport & Health
2017	International Journal of Sustainable Transportation; Computational Optimization and Applications
2016	Optimization and Engineering
2015	IEEE Transactions on Power Systems
2014	INFORMS Data Mining & Analytics Workshop

**Conference Organization**

- 2023 Session Chair, INFORMS Annual Meeting
- 2017 Session Chair, INFORMS Annual Meeting

**Proposal Review**

- Dec 2023 Fastlane Reviewer, Environmental Sustainability Program, National Science Foundation
- Oct 2023 Peer Reviewer, New England University Transportation Center Year 1 Proposals
- Nov 2022 Panelist, LEAP HI Infrastructural Systems Preliminary Panel, National Science Foundation

**Other Outreach**

- Fall 2023 Reviewer, Council of University Transportation Centers Pikarsky Masters Student Award
- 2014 – 16 Graduate Student Mentor, STEM Achievement in Baltimore Elementary Schools (SABES)
- 2015 Contributor, Baltimore City Bicycle Master Plan 2015
- 2013 Project co-coordinator, “Making Baltimore More Bicycle Friendly”

**Academic Affiliations**

- American Society of Civil Engineers (ASCE)
- Institute for Operations Research and Management Sciences (INFORMS)
- Network Science Society
- Transportation Research Board
  - Member, Transportation Energy Committee (since 2023)
  - Member, Critical Infrastructure Protection Committee (since 2023)