Angeli Jayme

Contact Information

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LinkedIn
Google Scholar

Academic Position

Assistant Professor **Jan 2025–Present**
School of Sustainable Engineering and the Built Environment
Arizona State University Tempe, AZ, USA

Education

University of Illinois Urbana-Champaign

Ph.D., **Civil Engineering**, **Dec 2020**
Influence of Tire-Pavement Thermomechanical Interaction on Contact Stresses and Rolling Resistance
Advised by Professor Imad L. Al-Qadi

M.S., **Civil Engineering**, **Dec 2012**
Impact of Curing Time on Warm Mix Asphalt Short-Term Performance
Advised by Professor Imad L. Al-Qadi

University of Nevada, Reno

B.S., **Civil Engineering** *with Distinction* **May 2011**

Research Interests

Pavement mechanics, design and analysis, damage quantification, rehabilitation and maintenance planning, life cycle assessment, smart infrastructure, energy harvesting, and advanced mobility

Research Experience

Illinois Center for Transportation (ICT)
Research Scientist **Jun 2022–Dec 2023**

- Developed the Load Pass Approach to impose multi-axle / repetitive loading for the *Building Machine-learning-based Prediction Models for Computationally Efficient Airfield Pavement Analysis* project, funded by the Federal Aviation Administration
- Serve as Principal Investigator (PI) for the Illinois Department of Transportation (IDOT) project, *Impact of Commercial Electric Vehicles on Flexible Pavement Performance* (R27-252), in collaboration with Marquette University ($412,500)
- Serve in the core planning team of the Illinois Autonomous and Connected Track (I-ACT), a future hub for cross-cutting mobility technology development, testing and commercializing solutions for emerging sectors in mobility, electrification, clean energy, connectivity, autonomy, freight, first/last mile, quantum for mobility computing and security, and supply-chain logistics
- Serve as an I-ACT liaison to public, private, and academic stakeholders
- Collaborate in preparation of research proposals
- Served as PI for *Embedded Energy Harvesting Modules in Flexible Pavements* project to create an embedded electromagnetic energy harvester prototype (provisional patent application filed in July 2023) for the preparation of I-ACT, funded by the University of Illinois' Investment for Growth program ($50,000)
- Served as project coordinator for IDOT-funded project, *Planning for Emerging Mobility: Testing and Deployment in Illinois* to define technology framework plan on electrification, energy harvesting, and 5G connectivity for I-ACT, along with creating the I-ACT business plan ($812,500)

Postdoctoral Research Associate **Jan 2021–Jun 2022**

- Evaluated design options of 5G and energy harvesting systems for I-ACT
- Served as PI for the Illinois Department of Transportation (IDOT) project, *Illinois a Leader in Mobility 4.0 and Beyond* (R27-228), in collaboration with Northwestern University and Mobility IL ($399,745)
- Served as Co-PI for the *Building Machine-Learning-Based Prediction Models for Computationally Efficient Airfield Pavement Analysis* project that utilized the Expanse High-Performance Computing cluster through the Extreme Science and Engineering Discovery Environment (awarded 842,000 core hours)
- Served as a Technical Panel Member for the IDOT project, *Policy and Design Guidelines to Plan for Connected and Autonomous Vehicles* (R27-211)
- Collaborated in preparation of research proposals

Graduate Research Assistant, Ph.D. **Jan 2013–Dec 2020**

- Created a thermomechanical coupling model of a truck tire and pavement layer to quantify the impact on contact stresses, heat flow, and rolling loss
- Performed advanced finite element simulations of the tire-pavement interaction for highway and airfield pavements
- Generated and validated a tire-pavement contact model to create a contact stress database as load excitation input to pavement models
- Performed material characterization of asphalt materials
- Created Python scripts to prepare constitutive model inputs for viscoelastic asphalt concrete and stress-dependent granular and subgrade materials
- Spearheaded the study of aircraft turning maneuver effect on near-surface pavement responses, as part of the Airport Cooperative Research Program (ACRP) Graduate Research Award
- Created pavement rehabilitation and maintenance course training materials for IDOT
- Established the Domain Analysis scheme to describe volumetric responses of roadway and airfield flexible pavements
- Conducted comparative pavement life-cycle assessment and life-cycle cost analysis
- Assisted with annually awarded proposals for supercomputing resources through the Extreme Science and Engineering Discovery Environment (XSEDE)

Graduate Research Assistant, M.S. **Aug 2011–Dec 2012**

- Evaluated short-term performance characterization of warm stone mastic asphalt using chemical additives
- Conducted testing protocols, including asphalt concrete volumetric measurements, dynamic modulus, Hamburg wheel track, indirect tensile creep and strength, and semi-circular bending beam
- Analyzed the impact of warm-mix asphalt on life cycle assessment and life-cycle cost analysis

Research Grants

Impact of Commercial Electric Vehicles on Flexible Pavement Performance **2022–25**
IDOT, $280,000, (Total $412,500)
PI with Co-PIs Jaime Hernandez (Marquette University), Uthman Mohamed Ali (UIUC), and Imad L. Al-Qadi (UIUC)

Embedded Energy Harvesting Modules in Flexible Pavements **2022–23**
ICT, $50,000
Single PI

Illinois a Leader in Mobility 4.0 and Beyond **2021–23**
IDOT, $124,746, (Total $399,745)
PI with Co-PIs Imad L. Al-Qadi (UIUC), Hani Mahmassani (Northwestern University), and Jerry Quandt (Mobility IL)

Influence of Aircraft Tire Turning Maneuver on Near-Surface Airfield Pavement Responses **2017–18**
FAA Airport Cooperative Research Program Graduate Research Award, $12,000
PI with Co-PI Imad L. Al-Qadi (UIUC)

Awards

TRB ACP15 Committee on Intelligent Transportation Systems Best Paper Award (for *A Systematic Approach to Evaluate the State of Illinois' Preparedness for Smart Mobility*), 2024
K. B. Woods Award (TRB Outstanding Paper in Transportation Infrastructure for *Environmental and Economic Efficiency of Stone Matrix Asphalt with Surface Micro-milling*), 2023
APSE Associate Member Award, 2023
ASCE T&DI Outstanding Younger Member Award, 2023
MIT CEE Rising Star, 2021
APSE Outstanding Student Member Award, 2020
ASCE Journal of Transportation Engineering Part B: Pavements Editor's Choice Selection(*Featured Domain Analysis Paper*), 2018
Teacher Ranked as Excellent by their Students (CEE 508), 2017
1st Place Presentation, 6th Int'l Transportation PhD Student Symposium, 2017
FAA ACRP Graduate Research Award, 2017–18
1st Place in Graduate Poster Competition, SWE National Conference, 2016
ASSIST Travel Grant, 2016
Society of Women Engineers Region H Scholarship, 2015
Best Poster, 3rd International Transportation PhD Student Symposium, 2014
Illinois Asphalt Pavement Association Ernest L. Doctor Scholarship, 2014–15
WTS Helene M. Overly Memorial Graduate Scholarship, 2013
FHWA Dwight David Eisenhower Transportation Fellowship, 2012-13
ASCE Truckee Meadows Branch Scholarship, 2011
CalAPA Dennis McFadden Scholarship, 2011

Refereed Journal Publications

20. **Jayme, A.**, Cardenas-Huaman, J. J., Hernandez, J., and Al-Qadi, I. L. (Under Review). Flexible Pavement Damage Quantification due to Heavy-Duty Electric Trucks, *Transportation Research Record: Journal of the Transportation Research Board*.

19. Khan, A., **Jayme, A.**, and Al-Qadi, I. L. (Under Review). Pavement Electromagnetic Energy Harvesting System from Highway-Speed Vehicles, *Road Materials and Pavement Design*.

18. Hernandez, J., **Jayme, A.**, Cardenas-Huaman, J. J., and Al-Qadi, I. L. (Accepted). Effect of Heavy-Duty Electric Vehicles on Pavement Contact Forces, *ASCE Journal of Engineering Mechanics*.

17. Hernandez, J., **Jayme, A.**, Ozer, H., Levenberg, E., Khazanovich, L., and Kutay, E. M. (2024). Verification and Validation of Pavement Models. *ASCE Journal of Transportation Engineering, Part B: Pavements*, DOI: 10.1061/JPEODX.PVENG-1517

16. **Jayme, A.**, Usta, B., Hamad, N., Tahlyan, D., Johnson, B., Mahmassani, H., Al-Qadi, I. L., and Quandt, J. (2024). A Systematic Approach to Evaluate the State of Illinois' Preparedness for Smart Mobility, *Transportation Research Record: Journal of the Transportation Research Board*, DOI: 10.1177/03611981241242080.

15. Al-Qadi, I. L., **Jayme, A.**, and Okte, E. (2023). Environmental and Economic Efficiency of Stone Matrix Asphalt with Surface Micro-milling, *Transportation*

Research Record: Journal of the Transportation Research Board, DOI: 10.1177/ 03611981231170873.

14. Liu, X., **Jayme, A.**, and Al-Qadi, I. L. (2022). ContactGAN Development - Prediction of Tire-Pavement Contact Stresses Using a Generative and Transfer Learning Model, *International Journal of Pavement Engineering (GPAV)*, DOI: 10.1080/10298436.2022.2138876.

13. **Jayme, A.** and Al-Qadi, I. L. (2022). Contact Stress and Rolling Loss Estimation via Thermomechanical Interaction Modeling of a Truck Tire on a Pavement Layer, *ASCE Journal of Engineering Mechanics*, DOI: 10.1061/ (ASCE)EM.1943-7889.0002154.

12. **Jayme, A.** and Al-Qadi, I. L. (2021). Thermomechanical Coupling of a Hyper-viscoelastic Truck Tire and a Pavement Layer and its Impact on Three-dimensional Contact Stresses, *Transportation Research Record: Journal of the Transportation Research Board*, DOI: 10.1177/ 03611981211017140.

11. **Gamez, A.** and Al-Qadi, I. L. (2019). Turning Maneuver Effect on Near-Surface Airfield Pavement Responses, *Transportation Research Record: Journal of the Transportation Research Board*, 2673(8), 275-283, DOI: 10.1177/0361198119841861.

10. Castillo, D., **Gamez, A.**, and Al-Qadi, I. L. (2019). Homogeneous versus Heterogeneous Response of a Flexible Pavement: Strain and Domain Analyses, *Journal of Engineering Mechanics*, 145(9), DOI: 10.1061/ (ASCE)EM.1943-7889.0001639.

9. **Gamez, A.**, Hernandez, J. A., and Al-Qadi, I. L. (2018). Development of Domain Analysis to Predict Multi-axial Airfield Pavement Responses due to Gear and Environmental Loadings, *Transportation Research Record: Journal of the Transportation Research Board*, DOI: 10.1177/0361198118758025).

8. **Gamez, A.**, Hernandez, J. A., Ozer, H., and Al-Qadi, I. L. (2018). Development of Domain Analysis for Determining Potential Pavement Damage, *ASCE Journal of Transportation Engineering, Part B: Pavements*, 144(3), DOI: 10.1061/ JPEODX.0000059.

7. Al-Qadi, I. L., Hernandez, J. A., **Gamez, A.**, Ziyadi, M., Gungor, E. O., and Kang, S. (2018). Impact of Wide-Base Tires on Pavements – A National Study, *Transportation Research Record: Journal of the Transportation Research Board*, DOI: 10.1177/ 0361198118757969.

6. Gungor, E., Al-Qadi, I. L., **Gamez, A.**, and Hernandez, J. A. (2017). Development of Adjustment Factors for MEPDG Pavement Responses Utilizing Finite-Element Analysis, *ASCE Journal of Transportation Engineering, Part A: Systems, 143(7): 04017022, ISSN 2473-2907.*

5. Shakiba, M., **Gamez, A.**, Al-Qadi, I. L., and Little, D. N. (2017). Introducing Realistic Tire-Pavement Contact Stresses into Pavement Analysis using Nonlinear Damage Approach (PANDA). *International Journal of Pavement Engineering*, 18:11, 1027-1038, DOI: 10.1080/ 10298436.2016.1141412.

4. Gungor, O. E., Hernandez, J. A., **Gamez, A.**, and Al-Qadi, I. L. (2016). Quantitative Assessment of the Effect of Wide-Base Tires on Pavement Response by Finite Element Analysis. *Transportation Research Record: Journal of the Transportation Research Board*, (2590), 37-43, DOI: 10.3141/ 2590-05.

3. Hernandez, J. A., **Gamez, A.**, and Al-Qadi, I. L. (2016). Effect of Wide-Base Tires on Nationwide Flexible Pavement Systems – Numerical Modeling, *Transportation Research Record: Journal of Transportation Research Board*, DOI: 10.3141/2590-12.

2. Hernandez, J. A., **Gamez, A.**, Al-Qadi, I. L., and De Beer, M. (2014). Analytical Approach for Predicting Three-Dimensional Tire-Pavement Contact Load, *Transportation Research Record: Journal of Transportation Research Board.* 2471, 40-47, DOI: 10.3141/2456-08.

1. Leng, Z., **Gamez, A.**, and Al-Qadi, I. L. (2013). Mechanical Property Characterization of Warm-Mix Asphalt Prepared with Chemical Additives. *Journal of Materials in Civil Engineering*, 26(2), 304-311, DOI: 10.1061/(ASCE)MT.1943-5533.0000810.

Technical Reports

7. Zhou, Q., Diab, L., Cardenas-Huaman, J. J., **Jayme, A.**, Singh, A., Okte, E. and Al-Qadi, I. L. (Under Review). Building Machine-learning-based Prediction Models for Computationally Efficient Airfield Pavement Analysis, *Illinois Center for Transportation.*

6. **Jayme, A.**, Khan, A., Renshaw, G., and Al-Qadi, I. L. (Under Review). Embedded Energy Harvesting Modules in Flexible Pavements, *Illinois Center for Transportation.*

5. Al-Qadi, I. L., Chehab, G., Isserman, N., Kontou, E., Ouyang, Y., **Jayme, A.**, Jiang, Z., Khan, A., Price, G., Purba, D., Sayeh, W., and Yang, H. (2023). Planning for Emerging Mobility: Testing and Deployment in Illinois, *Illinois Center for Transportation Series No. ICT-23-006*, Urbana, Illinois.

4. **Jayme, A.**, Usta, B., Hamad, N., Tahlyan, D., Johnson, B., Mahmassani, H., Al-Qadi, I. L., and Quandt, J. (2023). Smart Mobility Blueprint for Illinois, *Illinois Center for Transportation Series No. ICT-23-006*, Urbana, Illinois.

3. Ozer, H., Al-Qadi, I. L., **Gamez, A.**, Kang, S., Roesler, J. R., Thompson, M. R., Murphy, T. R., and Butt, A. A. (2019). Pavement Rehabilitation Strategy Course Development, *Illinois Center for Transportation Report No. FHWA-ICT-19-004*, Urbana, Illinois.

2. Hernandez, J. A., **Gamez, A.**, Shakiba, M., and Al-Qadi, I. L. (2017). Numerical Prediction of Three-Dimensional Tire-Pavement Contact Stresses, *Illinois Center for Transportation Series No. ICT-17-004*, Urbana, Illinois.

1. Al-Qadi, I. L., Hernandez, J. A., **Gamez, A.**, Ziyadi, M., and Gungor, E. (2015). The Impact of Wide-Base Tires on Pavement Damage – A National Study. Federal Highway Administration Project No. DTFH61-11-C-00025.

Conference Proceedings

3. Ramakrishnan, A., **Jayme, A.**, and Al-Qadi, I. L. (2024). Impact of Hyper-Viscoelastic Tire Contact Stresses on Pavement Responses, *2024 International Society for Asphalt Pavements Symposium*, Montreal, Canada.

2. Hernandez, J. A., **Gamez, A.**, and Al-Qadi, I. L. (2017). Domain Analysis for Airfield Pavement: Moving Forward from Point Responses. *10th International Conference on the Bearing Capacity of Roads, Railways, and Airfields*, Athens, Greece.

1. Gungor, E., Al-Qadi, I. L., **Gamez, A.**, and Hernandez, J. A. (2016). In-Situ Validation of Three-Dimensional Pavement Finite Element Models, *Fifth Accelerating Pavement Testing Conference: The Roles of Accelerated Pavement Testing in Pavement Sustainability*, San Jose, Costa Rica.

Conference Presentation

12. **Jayme, A.**, Usta, B., Hamad, N., Tahlyan, D., Johnson, B., Mahmassani, H., Al-Qadi, I. L., and Quandt, J. A Systematic Approach to Evaluate the State of Illinois' Preparedness for Smart Mobility. Research on Smart Mobility and the Future of Intelligent Transportation Systems Session hosted by the Intelligent Transportation Systems Committee (ACP15), Transportation Research Board 2024 Annual Meeting, Washington, DC.

11. Hernandez, J., **Jayme, A.**, Cardenas-Huaman, J. J., and Al-Qadi, I. L. Effect of Heavy-Duty Electric Vehicles on Pavement Contact Forces. Asphalt Pavement Network Evaluation for Heavy Loads Session hosted by the Design and Rehabilitation of Asphalt Pavements Committee (AKP30), Transportation Research Board 2024 Annual Meeting, Washington, DC.

10. **Jayme, A.** and Al-Qadi, I. L. Contact Stress and Rolling Loss Estimation via Thermomechanical Interaction Modeling of a Truck Tire on a Pavement Layer. Contemporary Issues in Flexible Pavement Design Session hosted by the Design and Rehabilitation of Asphalt Pavements (AKP30) Committee, Transportation Research Board 2023 Annual Meeting, Washington, DC.

9. **Jayme, A.** and Al-Qadi, I. L. Thermomechanical Coupling of a Hyper-viscoelastic Truck Tire and a Pavement Layer and its Impact on Three-dimensional Contact Stresses. Pavement Texture and Friction Session hosted by the Pavement Surface Properties and Vehicle Interaction (AKP50) Committee, Transportation Research Board 2022 Annual Meeting, Washington, DC.

8. **Gamez, A.** and Al-Qadi, I. L. Influence of Aircraft Tire Turning Maneuver on Near-Surface Airfield Pavement Response. AV070 Aircraft – Airport Compatibility Committee, Transportation Research Board 2020 Annual Meeting, Washington, DC.

7. **Gamez, A.**, Hernandez, J. A., and Al-Qadi, I. L. Development of Domain Analysis to Predict Multi-axial Airfield Pavement Responses due to Gear and Environmental Loadings. AFD80 Pavement Structural Modeling & Evaluation Committee, Transportation Research Board 2019 Annual Meeting, Washington, DC.

6. **Gamez, A.**, Hernandez, J. A., Ozer, H., and Al-Qadi, I. L. Development of Domain Analysis for Determining Potential Pavement Damage. AFD80 Pavement Structural Modeling & Evaluation Committee, Transportation Research Board 2018 Annual Meeting, Washington, DC.

5. **Gamez, A.**, Hernandez, J. A., Ozer, H., and Al-Qadi, I. L. Three-Dimensional Stress and Strain Domain Analysis of Pavement Response to Tires. Advanced Models to Understand Behavior and Performance of Asphalt Mixtures Sub-Committee Meeting, Transportation Research Board 2017 Annual Meeting, Washington, DC.

4. **Gamez, A.**, Hernandez, J. A., and Al-Qadi, I. L. Effect of Tire Design Parameters on Pavement Responses. Advanced Models to Understand Behavior and Performance of Asphalt Mixtures Sub-Committee Meeting, Transportation Research Board 2016 Annual Meeting, Washington, DC.

3. **Gamez, A.**, Hernandez, J. A., and Al-Qadi, I. L. Effect of Load Input on Pavement Responses. Flexible Pavement Design - Young Professionals Sub-Committee Meeting, Transportation Research Board 2015 Annual Meeting, Washington, DC.

2. **Gamez, A.**, Hernandez, J. A., and Al-Qadi, I. L. Effect of Tire Parameters and Contact Stresses on Pavement Responses. 2014 Third International Transportation Ph.D. Student Symposium, Stockholm, Sweden.

1. Hernandez, J. A., **Gamez, A.**, Ziyadi, M., Coenen, A., and Al-Qadi, I. L. The Impact of Wide-Base Tires on Pavement Damage – A National Study. 2012 Second International Transportation Ph.D. Student Symposium, Champaign, IL.

Submitted Proposals

Participated as a main writer and/or proposal preparation coordinator for:

16. Federal Highway Administration (FHWA BAA 693JJ3-23-BAA-0002) proposal, "Assessment of Electric Road System Integration in Pavement Infrastructure to Prioritize Strategic Research and Implementation Directives." $350,000. June 2024 (Submitted, PI: I. L. Al-Qadi, UIUC).

15. Deparment of Energy (DOE) Energy and Emissions Intensive Industries DE-FOA-0003219 concept paper (pre-proposal), "Development of Bio-Based Emulsion for 100% Cold-in-Place Recycled Asphalt Concrete Pavements." $937,500. March 2024 (Submitted, PI: I. L. Al-Qadi, UIUC).

14. Federal Highway Administration (FHWA BAA 693JJ3-23-BAA-0002) concept paper (pre-proposal), "Assessment of Electric Road System Integration in Pavement Infrastructure to Prioritize Strategic Research and Implementation Directives." $350,000. October 2023 (Encouraged for full proposal, PI: I. L. Al-Qadi, UIUC).

13. IDOT Project proposal, "Pavement Electromagnetic Energy Harvesting System from Highway-Speed Vehicles." $479,724. August 2023 (Awarded, PI: I. L. Al-Qadi, UIUC; Co-PIs: **A. Jayme**, A. Banerjee).

12. National Science Foundation 23-570: Mid-scale Research Infrastructure 2 proposal, "Advancing Mobility Ecosystem through Interdisciplinary Full-scale Research Hub Arena." $69,682,152. June 2023 (Submitted, PI: I. L. Al-Qadi, UIUC).

11. DOE ARPA-E INcreasing Transportation Efficiency and Resiliency through MODeling Assets and Logistics (INTERMODAL) proposal, "Integrated Intermodal Freight Models and Tools for Efficiency and Resiliency." $1,500,000. April 2023 (Awarded, PI: Y. Ouyang, UIUC).

10. IDOT Project proposal, "Impact of Commercial Electric Vehicles on Flexible Pavement Performance." $412,500. September 2022 (Awarded, **PI: A. Jayme**, UIUC).

9. USDOT National University Transportation Center proposal, "Freight Research for Equitable, Efficient, and Disruption-Free On-Demand Mobility (FREEDOM)." $8,000,000. August 2022 (Submitted, PI: I. L. Al-Qadi, UIUC).

8. I-ACT Project proposal, "Embedded Energy Harvesting Modules in Flexible Pavements." $50,000. June 2022 (Awarded, **PI: A. Jayme**, UIUC).

7. USDOT Advanced Transportation and Congestion Management Technologies Deployment proposal, "Connected Freight and Infrastructure Technologies (C-FIT) for Secure, Safe, Equitable, and Sustainable Mobility." $15,696,910. August 2021 (Submitted, PI: I. L. Al-Qadi, UIUC).

6. IDOT Project proposal, "Illinois, a Leader in Mobility 4.0 and Beyond." $399,745. May 2021 (Awarded, **PI: A. Jayme**, UIUC).

5. National Asphalt Pavement Association, Airport Asphalt Pavement Technology Program proposal, "Cracking Performance Tests for Airfield Balanced Mix Design." $1,000,000. June 2021 (Awarded, PI: I. L. Al-Qadi, UIUC).

4. USDOT Advanced Transportation and Congestion Management Technologies Deployment proposal, "Safe and Secure Autonomous Transportation for 3D Mobility (SSAT-3DM)." $1,925,000. May 2020 (Submitted, PI: Y. Ouyang, UIUC).

3. Illinois Department of Transportation Statewide Planning and Research Program proposal, "Planning for Emerging Mobility." $737,500. March 2020 (Awarded, PI: I. L. Al-Qadi, UIUC).

2. USDOT Automated Driving System Demonstration Grants proposal, "Autonomous Mobility: Lab to Safe Roads with Mixed Traffic." $9,963,860. March 2019 (Submitted PI: I. L. Al-Qadi, UIUC).

1. UIUC Investment for Growth Program proposal, "Illinois Automated and Connected Track (I-ACT)." $4,400,000. February 2019 (Awarded PI: I. L. Al-Qadi, UIUC).

Professional Service

Academy of Pavement Science and Engineering (APSE, Member)
American Society of Civil Engineers (ASCE, Member)
ASCE Engineering Mechanics Institute (ASCE EMI, Member)
ASCE Transportation and Development Institute (ASCE T&DI, Member)
ASCE T&DI Highway Pavement Committee (HPC, Vice Chair)
ASCE T&DI HPC Subcommittee on Verification & Validation (Member)
TRB Pavement Structural Modeling & Evaluation Committee (AKP40, Comm. Coord.)
Invited participant in 2022 NSF Engineering Research Visioning Alliance (erVa) Event on Sustainable Transportation Networks
Reviewer for:

- ASCE Journal of Materials in Civil Engineering
- ASCE Journal of Transportation Engineering, Part B: Pavements
- ASCE Journal of Engineering Mechanics
- ASCE T&DI International Airfield and Highway Pavements Conference
- Construction and Building Materials
- International Journal of Pavement Engineering
- Transportation Research Record

Teaching Experience

Teaching Assistant
Civil & Environmental Engineering Department
University of Illinois Urbana-Champaign

- **CEE 508 Pavement Evaluation, Maintenance, & Rehabilitation** Fall 2017
  Instructor: Imad L. Al-Qadi
- **CEE 310 Transportation Engineering** Spring 2017
  Instructor: Hasan Ozer
- **CEE 598 ABM Advanced Bituminous Materials** Spring 2016
  Instructor: Hasan Ozer
- **CEE 508 Pavement Evaluation, Maintenance, & Rehabilitation** Fall 2015
  Instructor: Imad L. Al-Qadi

Mentoring

- Aditya Singh (PhD) 2023–Present
- Johann Cardenas (MS, PhD) 2022–Present
- Asad Khan (MS, PhD) 2021–Present
- Berkan Usta (MS) 2021–23
- Sarah Saadeh (High School Senior, ICT Intern) May–Aug 2023

Professional Experience

Nevada Department of Transportation

Public Service Intern, I-580 Extension Project **May–Aug 2011**
- Surveyed mechanically stabilized earth walls, bridge settlement, and pavement grading
- Inspected project sites to verify compliance with state specifications

Public Service Intern, I-580 Extension Project **May–Nov 2010**
- Co-inspected the building process of Galena Forest Bridge
- Collaborated iteratively with contractors to ensure adherence to state specifications

Public Service Intern, Environmental Division **May–Aug 2009**
- Analyzed the Washoe Valley wetland mitigation system and influence of the pumping system on fish and plant species
- Conducted environmental surveys of bird migration in the wetlands

Public Service Intern, Pavement Analysis & Materials **May–Aug 2008**
- Assisted pavement evaluation, including falling weight deflectometer, coring, and friction; created history reports for past roadway construction contracts

Leadership Experience

ASCE T&DI Graduate Student Organization

Founding President **2014–15**
- Facilitated weekly informal discussions with invited Kent seminar speakers to establish a professional network for graduate student members
- Collaborated with the university department head to establish the organization

Graduate Society of Women Engineers (GradSWE)

weSTEM Conference Director **2015–16**
- Developed and coordinated a daylong weSTEM conference to empower graduate women in STEM, serving 160 attendees with diverse backgrounds from across the country
- Wrote a letter of support on behalf of GradSWE for the ADVANCE ILLINOIS program, a campus-wide National Science Foundation ADVANCE Program proposal

Finance Director **2013–15**

Organized an annual budget of $50,000 and streamlined financial transactions

weSTEM Planning Committee **2012–13**
- Prepared an awarded proposal ($9,234) for the SWE Program Development Grant for the First Inaugural weSTEM Conference
- Participated as one of the founding committee members of the Women Empowered in STEM (weSTEM) Conference

Service & Outreach

Search Committee, UIUC **2014–Present**

Served as a search committee member for the following positions:
- Project Manager (2024)
- Research Projects Manager (2023)
- Outreach Specialist (2022)
- Program Coordinator (2021)
- Outreach Coordinator (2017, 2022)
- Research Project Coordinator (2014)
- Research Engineer (2014, 2017, 2021)

Engineering Open House (EOH), UIUC **2013–20**
- Participated as a T&DI student volunteer, 2017–20
- Organized collaboration between ASCE T&DI Graduate Student Organization (formerly Society of Pavement Engineers) and ICT to create interactive pavement engineering demonstrations to EOH visitors from local communities, 2013–16

Planning Committee, ENVISION **Jan–Aug 2018**

- Assisted middle-school students for an after-school program at the Champaign Public Library to learn about bone structures via 3D printing
- Spearheaded two of the Urbana Middle School Students Playing & Learning After School Hours (SPLASH) programs regarding origami structures and polymer science

Women Exploring Opportunities in CEE (We Go CEE), UIUC **2015, 2016**

- Invited speaker for "Life as a Grad Student" panel (junior, senior, and master's students); it is a program focused on exploring education and research opportunities within the UIUC CEE department

IDOT Career Fair in Granite City, IL **Sep 2014**

- Attended as a graduate student representative to promote transportation-related careers and interactive demonstration of the manufacturing process of asphalt concrete using household food items

Girl Engineers, Mathematicians, & Scientists Workshop (GEMS) Jun 2013

- Invited speaker for the Engineering and Design panel at Naperville Central High School