

Javier J. García Mainieri

(217) 402-4345

jjg5@illinois.edu

Civil engineer dedicated to research in transportation infrastructure and pavement materials engineering. Knowledgeable and professional presence with the ability to work independently or leading a team.

Education

12-2024	PhD Civil Engineering: University of Illinois, Urbana-Champaign (UIUC). <ul style="list-style-type: none">Research Assistant for Imad Al-Qadi Ph.D.
12-2020	MS Civil Engineering: University of Illinois, Urbana-Champaign (UIUC). GPA: 3.89 <ul style="list-style-type: none">Research Assistant for Imad Al-Qadi Ph.D.
08-2016	Licentiate in Civil Engineering: University of Costa Rica (UCR). GPA 8.92/10 <ul style="list-style-type: none">Electives: Geotech, Structures, Hydrology/Hydraulics & Transportation.Thesis: Residual Strength of Fine-grained Soils (9.5/10).
II Sem. 2014	Pontificia Universidad Católica de Chile (PUC)

Experience

03/2012 - 08/2016	Teaching Assistant (UCR)
03/2015 - 06/2015	Engineering Assistant, Road Conservation. Cartago, Costa Rica (CACISA)
08/2015 - 09/2015	Freelance: Elaboration of geotechnical material competence reports for dam in container terminal construction in Limón, Costa Rica, for CACISA
09/2016 - 03/2017	Resident-Construction Engineer. Costa Rica (Constructora Gonzalo Delgado) Project management of building & infrastructure construction and finishing
06/2017 - 06/2018	Road Conservation Supervisor. Cartago, Costa Rica (CACISA) On site supervision of structural concrete, asphalt pavement repair, and road water management works, coordination and supervision of routine maintenance works and response coordination for road slope failure emergencies
09/2018 - present	Research/Teaching Assistant. Rantoul, Illinois (Illinois Center for Transportation) Hot-mix asphalt (HMA) and asphalt binder characterization and modification. HMA quality control assessment. SMA aggregate optimization. Enabling plastic as binder additive.

Honors & awards

2019 60th Illinois Bituminous Paving Conference Marshall Thompson Student Research Award
2020 Illinois Asphalt Pavement Association Scholarship
2020–2021 Graduate Research Award on Public Sector Aviation Issues from the Airport Cooperative Research Program
2023–2024 Mavis Future Faculty Fellows (MF3) Program Award

Mentees

Braden Moore	Undergraduate	Chemical Engineering	01/2022-05/2024
Emir Faisal	Undergraduate	Materials Science and Engineering	01/2023-05/2023
Effie Gong	Undergraduate	Materials Science and Engineering	01/2023-05/2023
Desi Nainar	Undergraduate	Compute Science and Statistics	08/2022-12/2022
Tara Reddy	Undergraduate	Civil and Environmental Engineering	08/2022-12/2022
Hayley Kieu	Undergraduate	Civil and Environmental Engineering	08/2022-12/2022
Shiraz Baxamusa	Undergraduate	Civil and Environmental Engineering	08/2022-12/2022
Abdulgafar Sulaiman	PhD	Civil and Environmental Engineering	08/2020-Present

Publications

- Singhvi, P., **García Mainieri, J.J.**, Ozer, H., Sharma, B.K., Al-Qadi, I.L. (2020). Effect of Chemical Composition of Bio- and Petroleum-Based Modifiers on Asphalt Binder Rheology. Appl. Sci 2020, 10, 3249. DOI:10.3390/app10093249

2. **García Mainieri, J. J.**, Singhvi, P., Ozer, H., Sharma, B. K., & Al-Qadi, I. L. (2021). Fatigue Tolerance of Aged Asphalt Binders Modified with Softeners. *Transportation Research Record*, 2675(11), 1229–1244. DOI: 10.1177/03611981211025510
3. Rivera-Perez, J. J., Kang, S., Sayeh, W., **García Mainieri, J. J.**, Al-Qadi, I. L., & Ozer, H. (2022). Statistical Analysis of Hot-Mix Asphalt Pay for Performance versus Quality Control for Performance. *Journal of Transportation Engineering, Part B: Pavements*, 148(2), DOI: 04022016. 10.1061/JPEODX.0000365.
4. **García Mainieri, J. J.**, Sen, S., Roesler, J., & Al-Qadi, I. L. (2022). Albedo Change Mechanism of Asphalt Concrete Surfaces. *Transportation Research Record*. DOI: 10.1177/03611981221082567
5. Singhvi, P., **García Mainieri, J. J.**, Ozer, H., Sharma, B. K., Al-Qadi, I. L., & Morse, K. L. (2022). Impacts of Field and Laboratory Long-Term Aging on Asphalt Binders. *Transportation Research Record*, 2676(8), 336–353. DOI: 10.1177/03611981221083614
6. **García Mainieri, J. J.**, Singhvi, P., Ozer, H., Sharma, B. K., & Al-Qadi, I. L. (2022) Linear and nonlinear viscoelastic parameters of asphalt binders modified with softening agents, *Road Materials and Pavement Design*, DOI: 10.1080/14680629.2022.2131603
7. **García Mainieri, J.J.** and Al-Qadi, I.L. Potential Use of Waste Plastics in Flexible Airfield Pavements: High-Density Polyethylene (HDPE) Impact on Asphalt Binder and Mix. In Progress

Technical Reports

- 1.
2. Singhvi, P., **García Mainieri, J. J.**, Ozer, H., & Sharma, B. (2021). Rheology-Chemical Based Procedure to Evaluate Additives/Modifiers Used in Asphalt Binders for Performance Enhancements: Phase 2. Illinois Center for Transportation/Illinois Department of Transportation.
3. Al-Qadi, I. L., Rivera-Perez, J. J., **García Mainieri, J. J.**, & Sayeh, W. (2021). Illinois' Experience Using Quality Control for Performance and Pay for Performance to Determine Pay for Hot-mix Asphalt. FHWA-ICT-21-018.
4. Al-Qadi, I. L., J. J. Rivera-Perez, W. Sayeh, **J. J. García Mainieri**, H. Meidani, H. Ozer, J. Huang, and A. Hand. Evaluation of Data Trends and Variability in Quality Control for Performance (QCP) and Pay for Performance (PFP) Specifications. Publication FHWA-ICT-20-005. Illinois Center for Transportation, 2020
5. Al-Qadi I. L., J.J. Rivera-Perez, **J. J. García Mainieri**, H. Meidani, H. Ozer, J. Huang, and A. Hand. Evaluation of Case Studies Using Quality Control for Performance (QCP) and Pay for Performance (PFP) Specifications. Publication FHWA-ICT-20-006. Illinois Center for Transportation; 2020.
6. Al-Qadi, I L., H. Ozer, Z. Zhu, P. Singhvi, U. Mohamed Ali, M. Sawalha, A. F. Espinoza Luque, **J.J. García Mainieri**, T. G. Zehr, Development of Long-Term Aging Protocol for Implementation of the Illinois Flexibility Index Test (I-FIT). Publication FHWA-ICT-19-009. Illinois Center for Transportation, 2019

Presentations

1. **García Mainieri, J.J.**, and Cordero Sandí, M. Resistencia de suelos finos. XIII Congreso Nacional de Geotecnia, 2018, San José, Costa Rica
 2. **García Mainieri, J.J.**, P. Singhvi, J. J., H. Ozer, B.K. Sharma, and I.L. Al-Qadi. Fatigue Tolerance of Aged Softener-Modified Asphalt Binders Using Linear Amplitude Sweep. *Transportation Research Board*, 2021, Online, US
 3. **García Mainieri, J.J.**, and I.L. Al-Qadi. Ultra-violet (UV) Aging for Asphalt Binder under Controlled Moisture and Temperature Conditions. *ASCE Highway and Airfield Pavements*. June 8-10, 2021
 4. **García Mainieri, J.J.**, P. Singhvi, J. J., H. Ozer, B.K. Sharma, and I.L. Al-Qadi. Fatigue Cracking Parameters of Asphalt Binders with Softener Modifiers. *Petersen Asphalt Research Conference*. July 13-16, 2021, Online, US
 5. **García Mainieri, J.J.**, and I.L. Al-Qadi. Optimizing the Use of Local Aggregates in Stone-Mastic Asphalt. *Illinois Association of Aggregate Producers Meeting*. December 14, 2021, Springfield, IL, US
 6. **García Mainieri, J.J.**, and I.L. Al-Qadi. Optimizing the Use of Local Aggregates in Stone-Mastic Asphalt. *Illinois Asphalt Paving Association Meeting*. March 14-15, 2022, Springfield, IL, US
 7. **García Mainieri, J.J.**, and I.L. Al-Qadi. *International Society for Asphalt Pavements Symposium* . October 25-27, 2022, San José, Costa Rica
-

8. **García Mainieri, J.J.**, and I.L. Al-Qadi. Illinois Bituminous Paving Conference. December 6-7, 2022, Champaign, IL, US
9. **García Mainieri, J.J.**, and I.L. Al-Qadi. Illinois Bituminous Paving Conference. December 6-7, 2022, Champaign, IL, US
10. **García Mainieri, J.J.**, and I.L. Al-Qadi. Transportation Research Board AKM30 committee meeting January 10, 2023, Washington DC, US
11. **García Mainieri, J.J.**, and I.L. Al-Qadi. Illinois Bituminous Paving Conference. December 6-7, 2022, Champaign, IL, US
12. **García Mainieri, J.J.**, and I.L. Al-Qadi. Accelerated Pavement Testing Webinar of the standing committee on pavement structural testing and evaluation of the Transportation Research Board. November 9th, 2023.
13. **García Mainieri, J.J.**, and I.L. Al-Qadi. Illinois Bituminous Paving Conference. December 5-6, 2023, Champaign, IL, US

Conference Proceedings

1. **García Mainieri, J. J.**, & Al-Qadi, I. L. (2021). Ultra-Violet (UV) Aging for Asphalt Binder under Controlled Moisture and Temperature Conditions. In Airfield and Highway Pavements 2021 (pp. 11-22). DOI: 10.1061/9780784483510.002
2. Alhadidi, Y. I., Al-Qadi, I. L., **García Mainieri, J. J.**, Sharma, B. K., & Rajagopalan, N. Stability of Repurposed Plastics in Asphalt Binder. In Airfield and Highway Pavements 2023 (pp. 60-70)

Student Affiliations (current)

UIUC Men's Water Polo Club – Co-captain(2020-2022), Member (2018-)

UIUC ASCE T&DI Graduate Student Chapter – President (2019-2021), Social Chair (2021-2022), Board Member (2022-)
GSAC

Professional Memberships

Colegio Federado de Ingenieros y Arquitectos de Costa Rica, member: IC-29731

Languages

Spanish (native)

English (proficient)

Italian (basic)

German (basic)

Hobbies & Interests

My love towards water sports includes swimming and water polo. I have competed in international meets in both disciplines and was part of the pre-Olympic national water polo team for Costa Rica (2016-2018). I also enjoy visiting lakes, rivers and beaches and find a very positive outlet in reading and writing.