Stanford



Khalid Osman

Assistant Professor of Civil and Environmental Engineering and Center Fellow, by courtesy, at the Woods Institute for the Environment

Bio

BIO

Khalid Osman joined the department as an Assistant Professor of Civil and Environmental Engineering in autumn of 2022. His research spans the use of mixed quantitative-qualitative methods to assess public perceptions of water infrastructure, water conservation efforts, and the management of existing infrastructure systems to meet the needs of those being served by the systems. He currently is focused on the operationalization of equity in water sector infrastructure, conceptualizing equity in decentralized water and sanitation systems, water affordability, and stakeholder-community engagement in sustainable civil infrastructure systems for achieving environmental justice.

Khalid was the holder of a Bill and Melinda Gates Millennium Scholars Graduate Fellowship and also a Ford Foundation Predoctoral Fellowship.

ACADEMIC APPOINTMENTS

- Assistant Professor, Civil and Environmental Engineering
- Center Fellow (By courtesy), Stanford Woods Institute for the Environment

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Affiliate, Stanford Center for Human and Planetary Health (2025 - present)

PROGRAM AFFILIATIONS

- Center for Comparative Studies in Race and Ethnicity (CCSRE)

PROFESSIONAL EDUCATION

- BS, University of Portland , Civil Engineering (2016)
- MS, University of Texas at Austin , Civil Engineering (2018)
- PhD, University of Texas at Austin , Civil Engineering (2022)

LINKS

- Osman Lab: https://www.osman.science/

Teaching

COURSES

2026-27

- Equitable Infrastructure Solutions: CEE 145E, CEE 245E (Win)

- Organization Design for Projects and Companies: CEE 242 (Spr)
- Sustainable Innovation for Disaster Resilience: SUSTAIN 101D (Aut)

2025-26

- Organization Design for Projects and Companies: CEE 242 (Spr)
- Sustainable Innovation for Disaster Resilience: SUSTAIN 101D (Aut)

2024-25

- Equitable Infrastructure Solutions: CEE 145E, CEE 245E (Win)
- Frontiers in Shaping the Future of Civil and Environmental Engineering: CEE 241F (Spr)
- Organization Design for Projects and Companies: CEE 242 (Spr)

2023-24

- Equitable Infrastructure Solutions: CEE 145E, CEE 245E (Win)
- Sustainable Innovation for Disaster Resilience: SUSTAIN 101D (Aut)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Zahra Heydari

Doctoral Dissertation Advisor (AC)

Shuojia Fu, Clara Medina, Aadhi Mohanavelu, Oluchi Obinegbo, Sam Shrivatsa

Master's Program Advisor

Brighton Brown, Mia Dominguez, Genevieve Gandara, Deep Gaudani, Eva Jones, Bhu Kongtaveelert, Emily Leung, Rashmika Manipati, Nicole Parker, Alister Sharp, Aakash Srivastava, Emily Wu, Christina Weiting Xie, Lydia Yilekal, Skyler Zou

Doctoral Dissertation Co-Advisor (AC)

Stephanie Fischer, Veda Sunkara

Doctoral (Program)

Shuojia Fu, Clara Medina, Aadhi Mohanavelu, Oluchi Obinegbo, Islam Osman, Brenda Rojas Cala, Sam Shrivatsa

Publications

PUBLICATIONS

- **The Bipartisan infrastructure law's impact on drinking water funding for disadvantaged communities.** *Nature communications*
  Shrivatsa, S., Ouyang, D., Ho, D. E., Osman, K. K.
  2026
- **Diverging Point-Source Pathogen Pollution Patterns across Urban-Rural Gradient and Pollutant Sources in Texas, United States** *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*
  Ma, Y., Wang, R., Chen, Y., Liu, X., Lieberknecht, K., Osman, K. K.
  2025
- **Understanding Water System Manager's Motivations for and Their Perceived Benefits of Consolidation** *JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION*
  Dobbin, K., Singhal, A., Pierce, G., Osman, K.
  2025; 61 (6)
- **A justice-informed approach to reframing energy assessments in Sub-Saharan Africa** *ENERGY RESEARCH & SOCIAL SCIENCE*
  Obinegbo, O. C., Benson, S. M., Osman, K. K.

2025; 129

- **Exploring state-level messaging toward US water reuse: a media analysis across time and space** *ENVIRONMENTAL RESEARCH: INFRASTRUCTURE AND SUSTAINABILITY*
  Fu, S., Moanga, D., Hacker, M. E., Scruggs, C., Osman, K. K.
  2025; 5 (3)
- **Evaluating perceptions of green stormwater infrastructure (GSI) through a community-based participatory research (CBPR) approach** *ENVIRONMENTAL RESEARCH LETTERS*
  Medina, C. Y., Shrivatsa, S., Stone, M., Moanga, D., White Jr, E., Awais, M., Cardenas, A., Revels, K., Nieto, Y., Osman, K. K.
  2025; 20 (5)
- **Exploring Demographic Disparities in Private Well Water Testing in North Carolina.** *Environmental science & technology*
  Hayes, W., Jones, C. N., Osman, K. K., Eaves, L. A., Mize, W., Fowlkes, J., Fry, R. C., Pieper, K. J.
  2025
- **AI4DE: The 1st InternationalWorkshop on AI for Data Editing**
  Fu, Y., Liu, K., Wang, D., Zhang, X., Osman, K., Aggarwal, C., Shontz, S. M., Liu, H., Pei, J., ACM
  ASSOC COMPUTING MACHINERY.2025: 6274-6275
- **Using Large Language Models for Systematic Failure Model Identification in Levee Infrastructure**
  Muhebwa, A., Osman, K. K.
  edited by Jafari, A., Zhu, Y.
  AMER SOC CIVIL ENGINEERS.2025: 518-528
- **Quantitatively Incorporating Social Equity in Water Network Maintenance and Rehabilitation Decision-Making** *JOURNAL OF WATER RESOURCES PLANNING AND MANAGEMENT*
  Mohanavelu, A., Osman, K. K., Kothari, C., France-Mensah, J.
  2024; 150 (10)
- **Ripples of injustice: unraveling water equity challenges on a global scale** *ENVIRONMENTAL RESEARCH LETTERS*
  Mohanavelu, A., Osman, K. K.
  2024; 19 (8)
- **Communities conditionally support deployment of direct air capture for carbon dioxide removal in the United States (vol 5, 175, 2024)** *COMMUNICATIONS EARTH & ENVIRONMENT*
  Scott-Buechler, C., Cain, B., Osman, K., Ardoin, N. M., Fraser, C., Adcox, G., Polk, E., Jackson, R. B.
  2024; 5 (1)
- **Communities conditionally support deployment of direct air capture for carbon dioxide removal in the United States** *COMMUNICATIONS EARTH & ENVIRONMENT*
  Scott-Buechler, C., Cain, B., Osman, K., Ardoin, N. M., Fraser, C., Adcox, G., Polk, E., Jackson, R. B.
  2024; 5 (1)
- **Diversity, Equity, and Inclusion in the Architecture, Engineering, and Construction Industry: A Subject Review**
  Vanderweyen, L., Dharmapalan, V., Kolegraff, S., Osman, K. K.
  edited by Shane, J. S., Madson, K. N., Mo, Y.
  AMER SOC CIVIL ENGINEERS.2024: 139-148
- **Promoting Equitable Access to Transboundary Hydrology Data: A Framework for Secure Sharing and Collaborative Machine Learning to Enhance River Discharge Prediction**
  Muhebwa, A., Osman, K. K.
  edited by Akinci, B., Berges, M., Jazizadeh, F., Menassa, C. C., Yeoh, J.
  AMER SOC CIVIL ENGINEERS.2024: 548-558
- **Disproportionate Effects of Flooding in Global Basins: Delineating Common Characteristics, Trends, and Impacts**
  Mohanavelu, A., Osman, K. K.
  edited by Desjardins, S., Poitras, G. J., Ng, K. T.
  SPRINGER INTERNATIONAL PUBLISHING AG.2024: 1-14

- **Environmental Science for the Betterment of All** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Gibson, J., Osman, K. K., Conroy-Ben, O., Giang, A.
  2023
- **Equity in Water Resources Planning: A Path Forward for Decision Support Modelers** *JOURNAL OF WATER RESOURCES PLANNING AND MANAGEMENT*
  Fletcher, S., Hadjimichael, A., Quinn, J., Osman, K., Giuliani, M., Gold, D., Figueroa, A., Gordon, B.
  2022; 148 (7)