

EDUCATION

University of North Carolina at Charlotte | Charlotte, NC

- Ph.D. in Civil Engineering (Concentration: Environmental and Water Resources Engineering) 12/2021

Sharif University of Technology | Tehran, Iran

- M.Sc. in Chemical Engineering (Concentration: Environmental Engineering) 08/2017

University of Isfahan | Isfahan, Iran

- B.Sc. in Chemical Engineering 08/2015

APPOINTMENTS

- **Assistant Professor** | Civil and Environmental Engineering, Department, Howard University 2024 – Present
- **Senior Research Associate** | Florida State University (PI: Nasrin Alamdari) 2023 – 2024
- **Postdoctoral Research Associate** | Florida State University (PI: Nasrin Alamdari) 2022 – 2023
- **Postdoctoral Research Associate** | Smith College (PI: Niveen Ismail) 01/2022 – 09/2022
- **WRI and Sea Grant Graduate Research Fellow** | North Carolina State University 2021 – 2022
- **Graduate Research Assistant** | UNC at Charlotte (Advisor: Jacelyn Rice-Boayue) 2018 – 2021

EXTERNAL RESEARCH GRANTS

- (1) “Howard Center for Resilient Water Systems”. Department of Energy (DOE). Biological and Environmental Research (BER). 2025. **Role: PI.** (under review). \$1,000,000.
- (2) “NASA MUREP ESSR Institute for Advancing Coastal Resilience and Environmental Justice through AI-driven Integrated Watershed Modeling”. National Aeronautics and Space Administration (NASA). 2024. **Role: Co-PI** (under review). \$1,200,000.
- (3) “Assessing Agricultural Impact on Cyanobacteria Concentrations in Florida's Lakes: Enhancing Existing Online Tools for Algal Bloom Management”. Florida Department of Environmental Protection. 2023. **Role Co-PI.** \$253,402.
- (4) “iJuST-Green. Interactive Justice based Decision Support Tool for Green Infrastructure Planning and Nutrient Reduction”. Environmental Protection Agency. 2023. **Role: Co-PI.** \$411,337.
- (5) “Stormwater BMP Explorer: An Interactive Tool for Managing Nutrient and Sediment Pollution in Florida Watersheds”. Florida Department of Environmental Protection. 2023. **Role Co-PI.** \$201,625.
- (6) “Green Infrastructure Planning for Sustainable, Resilient, and Equitable Communities in the Face of Climate Change”. Environmental Protection Agency. 2022. **Role: Co-PI.** \$653,001.
- (7) “An Integrative Assessment of Antibiotic Resistance in North Carolina Watersheds”, Graduate School Summer Fellowship Program (GSSF), UNC at Charlotte. 2021. \$6,000 (Funded).
- (8) “Targeted Field Study of Antibiotics and Antibiotic Resistance Genes in North Carolina Wastewater-Impacted Watersheds”. Water Resources Research Institute (WRI) and Sea Grant of UNC System. 2021. \$10,000 (Funded).

JOURNAL PUBLICATIONS

Published

- (1) Kamanmalek, S., & Alamdari, N. (2024). Advancing equitable stormwater management: A decision support tool integrating best practices for nutrient removal and environmental justice. *Ecological Informatics*, 80, 102496.
- (2) Hoque, S. M., Kamanmalek, S., & Alamdari, N. (2024). Large-Scale Geospatial Analysis of Suitable Siting for Green Stormwater Infrastructure: An Open-Source Tool for Promoting Sustainability and Environmental Justice in Urban Communities. *Journal of Environmental Engineering*, 150(12), 04024059. Selected as Editor's Choice.

- (3) Yan, Z., [Kamanmalek, S.](#), Alamdari, N., & Nikoo, M. R. (2024). Comprehensive Insights into Harmful Algal Blooms: A Review of Chemical, Physical, Biological, and Climatological Influencers with Predictive Modeling Approaches. *Journal of Environmental Engineering*, 150(4), 03124002.
- (4) Yan, Z., [Kamanmalek, S.](#), & Alamdari, N. (2024). Predicting coastal harmful algal blooms using integrated data-driven analysis of environmental factors. *Science of The Total Environment*, 912, 169253.
- (5) [Kamanmalek, S.](#), & Rice-Boayue, J. (2023). Development of a national antibiotic multimetric index for identifying watersheds vulnerable to antibiotic pollution. *Environmental Pollution*, 122670.
- (6) [Kamanmalek, S.](#), Brooks, B. W., & Rice-Boayue, J. (2022). Spatial Hazards of Antibiotic Resistance in Wastewater-Impacted Streams during Low Instream Flow Conditions. *ACS ES&T Water*, 2(3), 457-464.

In Review

- (1) [Kamanmalek, S.](#), Sheikh, N. R., Croteau, M., Baalousha, M., & Ismail, N. Assessing the Impact of Microplastics on the Bioaccumulation of Silver Nanoparticles in *Daphnia magna*.
- (2) Adjidjonu, D., [Kamanmalek, S.](#), & Rice-Boayue, J. Assessing the concentrations and risks of toxicity of Pesticides from Municipal Wastewater Discharges in California.
- (3) [Kamanmalek, S.](#) & Rice-Boayue, J. Environmental Justice Analysis of Community Exposure to Animal Agriculture Across the U.S.

AWARDS AND HONORS

- **Editor's Choice Selection**, *Journal of Environmental Engineering* (ASCE), Hoque, S. M., [Kamanmalek, S.](#), & Alamdari, N. (2024). Large-Scale Geospatial Analysis of Suitable Siting for Green Stormwater Infrastructure. 12/2024
- **3rd place**, Five Minute Research (5MR) Postdoc Competition. Fall 2023
- **Postdoc Travel Awards**, FSU Office of Postdoctoral Affairs: \$800 Fall 2023
- **Awardee**, North Carolina Sea Grant and the Water Resources Research Institute (WRI) : (\$10,000) 2021-2022
- **Awardee**, Graduate Student Research Funding (GSSF): \$6,000 2021

CONFERENCE PROCEEDINGS

- (1) [Kamanmalek, S.*](#), Mushfiqul Hoque, S., M. & Alamdari, M. (2024, Feb). IPLANGREENS2 : Integrated Planning Tool For Green Infrastructure Siting and Selection in Florida. Gainesville, FL.
- (2) [Kamanmalek, S.*](#), & Alamdari, M. (2024, Feb). Predicting Harmful Algal Blooms in Freshwater Lakes: A Remote Sensing Approach to Water Quality and Cyanobacteria Analysis. Poster session at Chapman Conference on Remote Sensing of the Water Cycle. Honolulu, HI.
- (3) [Kamanmalek, S.*](#), & Alamdari, M. (2023, Dec). Advancing Equitable Watershed Management in Florida: A Decision Support Tool for Integrating Stormwater Best Management Practices and Nutrient Reduction Strategies. Poster session at AGU Fall Meeting. San Francisco, CA.
- (4) [Kamanmalek, S.*](#), & Alamdari, M. (2023, Dec). Bridging the Gap in Stormwater BMP Planning: An Equity Index for Socioeconomic and Environmental Metrics Across the US. Oral presentation AGU Fall Meeting. San Francisco, CA.
- (5) [Kamanmalek, S.*](#), Piper MacDonald, Hannah Hutton, N., Baalousha, M., & Ismail, N., (2023, June). Assessing the Impact of Microplastic Presence on the Bioaccumulation of Silver Nanoparticles in *Daphnia magna*. Poster session at Association of Environmental Engineering and Science Professors (AEESP). Northeastern University, Boston, MA.
- (6) [Kamanmalek, S.*](#), Sheishk, N., Croteau, M., Baalousha, M., & Ismail, N., (2022, June). Assessing the Impact of Microplastic Presence on the Bioaccumulation of Silver Nanoparticles in *Daphnia magna*. Poster session at Gordon Research Conferences (GRC) Environmental Science: Water Plymouth, NH.
- (7) [Kamanmalek, S.](#), & Rice-Boayue*, J. (2022, June). Steps Toward Evaluating the Role of WWTP Discharges on Antibiotic Resistance in U.S. Streams. Platform session presented at Association of Environmental Engineering and Science Professors (AEESP) Environmental Engineering at the Confluence, St. Louis, MO.
- (8) [Kamanmalek, S.*](#), & Rice-Boayue, J. (2022, March). Geospatial analysis of antibiotic pollution across North Carolina to Inform a Targeted Field Study. Platform session presented at 2022 Water Resources Research

Institute (WRII) Annual Conference, Raleigh, NC.

- (9) Kamanmalek, S.*, & Rice-Boayue, J. (2020, November). Exposure Assessment of Antibiotics in Wastewater Impacted Streams During Low Instream Flows Across the U.S. Platform session presented at North America 41st Annual Meeting of Society of Environmental Toxicology and Chemistry (SETAC).
- (10) Kamanmalek, S.*, & Rice-Boayue, J. (2019, September). An Integrative Approach to Identify and Assess Streams susceptible to Antibiotic Discharges. Poster session presented at Annual Public Forum of The Cape Fear River Assembly (CFRA), Elon, NC
- (11) Kamanmalek, S.*, & Rice-Boayue, J. (2019, March). An Integrative Approach to Identify and Assess Streams susceptible to Antibiotic Discharges. Poster session presented at 19th Annual Graduate Research Symposium, the University of North Carolina at Charlotte, Charlotte, NC.

TEACHING

Instructor | Howard University, Department of Civil and Environmental Engineering 2024-Present

- Environmental Engineering (CIEG 207, undergraduate junior Level)
- Unit Operations in Environmental Engineering (CIEG 328, undergraduate senior Level)
- Undergraduate Research in Environmental Engineering (CIEG 445, undergraduate senior Level)

Co-Instructor | FAMU-FSU College of Engineering

- Urban Stormwater Runoff (CWR 5308, graduate Level) Fall 2023

Teaching Assistant | UNC Charlotte

- Hydraulics and Hydrology (undergraduate Level) Spring 2019
- Critical Thinking & Communication; Sustainable Water (undergraduate Level) Fall 2018

Teaching Assistant | Sharif University of Technology

- Microbiology Laboratory (graduate Level) Fall 2016

MENTORING

Graduate Student Mentoring

- Ali Salou Moumouni | FAMU, Civil Engineering 12/2022 – 12/2024
 - Project: *Machine Learning Applications for Estimating E. coli Risk: Harnessing Water Quality, Meteorological, and Land Use Data to Evaluate the Efficacy of Green Infrastructure and Climate Change Adaptation Strategies*
- Elham Mahmood por | FSU, Civil Engineering 6/2023 – 12/2024
 - Project: *Predicting Harmful Algal Blooms in Estuaries: Integrating Predictive Models and Environmental Monitoring for Enhanced Management and Mitigation*
- Arunan Manickavelu | UNC Charlotte, Civil Engineering 05/2020 – 12/2020
 - Project: *Locating and Confirming Wastewater Treatment Plant Locations and Discharge Sites across the United States*

Undergraduate Student Mentoring

- Brooklynn Blackwell | HU Spring 2025
 - Project: Investigate the Countermeasures for Pedestrian Distraction Mitigation.
- Mentor, I-lead project in Water Management, Howard University. 2024
- Jessica Smith | FSU 12/2022 – 12/2024
 - Project: Assessing the Impact of Green Infrastructure on Runoff Reduction in the Sweet Creek Watershed under Climate Change Scenarios
- Hannah Hutton | Smith College 01/2022 – 09/2022
 - Project: *Assessing impacts of MPs in bioaccumulation of AgNP in Daphnia magna*
- Noor Sheikh | Smith College 01/2022 – 09/2022
 - Project: *Assessing impacts of MPs in bioaccumulation of AgNP in Daphnia magna*

LEADERSHIP AND SERVICE

Journal Article Review

2022 – Present

- *ES & T Water*
- *Environmental Modelling & Software*
- *Ecological Indicator*
- *Environmental Management*
- *Scientific Report*

Proposal Review

2025 – Present

- National Science Foundation Merit Reviewer

Professional Affiliations

- Association of Environmental Engineering and Science Professors (AEESP)
- American Geophysical Union (AGU)
- American Chemical Society (ACS)
- American Society of Civil Engineers (ASCE)
- American Water Works Association (AWWA)
- Graduate Women International (GWI)
- Water Environment Federation (WEF)
- Chesapeake Water Environment Association (CWEA)
- American Water Resources Association National Capital Region Section (AWRA-NCRS)

University Service

- *Member, Advisory Group on Strategic Planning (Hilltop Architects), HU.* 10/2024 – 05/2025
- *Search Committee Member, Dean of the College of Engineering, HU.* Spring 2025
- *Search Committee Member, Assistant Professor in Transportation Engineering, HU.* Spring 2025
- *Search Committee Member, Full Professor in Transportation Engineering, HU.* Spring 2025
- *Academic Advisor, Juniors in Civil Engineering, HU.* 2024 to present
- *Advisor, Howard University Water Environment Association (HUWEA).* 2024 to present
- *Committee Member, Undergraduate Curriculum and Assessment Committee, HU.* 2024 to present
- *Committee Member, ABET Accreditation Preparation, HU* 2024
- *Reviewer, AEESP SPSC Academic Job Application Review.* Fall 2024
- *Secretary, Iranian Student Organization (ISO), UNCC* 2019-2021
- *Search Committee Harshini V. de Silva Graduate Mentor Selection.* Spring 2019

Dissertation Committee Member

- Ph.D. Dissertation Committee Member, Mitham Al-Faliti, Civil and Environmental Engineering, Howard University, August 2024. Dissertation Title: "Viruses and Virome in Wastewater Treatment Plants: Wastewater-Based Epidemiology and Bioprocess Engineering."
- Ph.D. Dissertation Committee Member, Hossein Safa, Civil and Environmental Engineering, Howard University, April 2024. Dissertation Title: "Transport and Retention of CeO₂ NPs in Saturated Sand: Effects of Sand Grain Size and Solution Chemistry."

Conferences and Symposiums

- *Panelist, Ph.D. Career Panel, University of North Carolina at Charlotte* 2025
- *Panelist, Women Making Waves Panel, Chesapeake Water Environment Association, DC* 2024
- *Moderator, AEESP Research and Education Conference. Boston, MA* 06/2023

Outreach

- *Young Scholar Program | Mentored two high school students* 06/2023 – 07/2023
- *Free Kids' Day | Volunteer* 2023
- *Girl's Day | Volunteer* 2023

Media Appearances

- FAMU-FSU College of Engineering researchers reveal harmful blue-green algae hotspots across Florida's lakes: [accessed here](#)
- RIDER Attends Girl's Day at The Challenger Learning Center, A K-12 STEM Outreach Event: [accessed here](#)
- Five Minute Research (5MR) Postdoc Competition: [accessed here](#)
- WRRI Supporting 10 Graduate Students for 2021-22: [accessed here](#)

Computer Model and Spatial Tool Development

- [Equitable Nutrient Reduction Decision Support Tool](#): Developed a web-based tool that demonstrates predicted total pollutant loads including nutrients, phosphorus, total-suspended solids, and biochemical oxygen demand across HUC-12 watersheds in Florida alongside the effectiveness of multiple stormwater best management practices on reducing these pollutants and equity index consisting of environmental justice metrics such as race, ethnicity, and socioeconomic status.
- [Developed National Antibiotic Pollution Vulnerability Index](#) (Index) to identify vulnerable watersheds to antibiotic resistance and to inform sampling site selection.
- [Developed a web-based tool to support the identification of future field studies](#) for antibiotic occurrence analysis alongside instructional materials to provide necessary information and guidance to the end-users including researchers, planners, policymakers, and decision-makers.
- [iPlan-GreenS2](#): Developed an open-source, web-based tool tailored for Florida to determine ideal locations for implementing diverse green infrastructures, while also analyzing cost-effective GI solutions to achieve targeted nutrient reduction.
- [Developed a web application to display cyanobacteria concentrations](#) in Florida's lakes since 2002, using remote sensing data from MERIS, Sentinel-3A, and Sentinel-3B to track harmful algal blooms.
- Developed a unique spatially explicit approach to quantify antibiotic concentrations at wastewater-impacted streams and to identify streams susceptible to antibiotic resistance under varying streamflow conditions at 13245 discharge sites across the U.S.
- Modeled pesticide concentrations downstream of 162 WWTPs across California under varying streamflow conditions and developed a multimetric index to identify most and least impacted watersheds by pesticides, such information will be used to regulate pesticide concentrations in WWTP effluent in CA.
- Modeled UNC Charlotte campus sewershed for the monitoring of covid-19 outbreak via wastewater surveillance.

TECHNICAL SKILLS

Experimental/Analytical

- Transmission Electron Microscopy
- Liquid chromatography-mass spectrometry
- Inductively coupled plasma mass spectrometry
- Solid Phase Extraction
- Scanning Electron Microscopy

Computational

- ArcGIS, ArcMap, GIS online
- EPA SWMM, PC SWMM
- AI/ML
- MATLAB, R, Python