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EDUCATION

PhD: Civil and Environmental Engineering, Tennessee Technological University, Cookeville, TN. 2016.
MSc: Civil Engineering, Sharif University of Technology, Tehran, Iran. 2012.
BSc: Civil Engineering, Sharif University of Technology, Tehran, Iran. 2010.

PROFESSIONAL APPOINTMENTS (ACADEMIA & INDUSTRY)

- **Assistant Professor**. Civil and Environmental Engineering Department, Florida State University, Tallahassee, FL, Aug 2024-Present.
- **Assistant Research Professor**. Civil and Environmental Engineering Department, Florida State University, Tallahassee, FL, Aug 2022-Aug 2024.
- **Senior Research Associate**. Civil and Environmental Engineering Department, Florida State University, Tallahassee, FL, Aug 2020-Aug 2022.
- **Hydrologic Scientist**. DHI (Danish Hydraulic Institute), Lakewood, CO, Sep 2019-Jun 2020.
- **Postdoctoral Associate**. Biological Systems Engineering Department, Virginia Tech, Blacksburg, VA, Sep 2016-Sep 2019.

RESEARCH INTERESTS

Compound hydroclimatic extremes; Surface water quality; Hydroinformatics; Flood impacts on water pollution & public health; Water systems under nonstationarity; Resilient water infrastructures.

RESEARCH GRANTS **(Total amount awarded: $4.6 million)**

Current

1. **NASA** SMAP. *Exploring the complex interplay of soil moisture and rainfall-driven floods: Analyzing relationships across spatial scales and flood attributes*. Role: **PI**. $460,295 (share: $336,295). 1/2025-1/2028.
2. **NASEM** Early Career Research Fellowship: Human Health and Community Resilience track. Role: PI. $76,000 (share: $75,000). 8/2024-8/2026.
3. **EPA** S FL Geographic Program. *Enhancing the ecological resiliency of the South Florida Gulf: Understanding, predicting and mitigating Karenia brevis blooms under climate change*. Role: **PI**. $749,972 (share: $749,972). 8/2025-8/2030.
4. **NSF** Env Eng. *RAPID: Short- and mid-term dynamics of microplastic in urban drainage systems after Hurricane Debby*. Role: **PI**. $200,000 (share: $113,094). 9/2024-8/2025.
5. **NSF** Env Sust. *RAPID: Short- and mid-term dynamics of water and sediment quality after Hurricane Idalia in the Apalachicola Bay*. Role: **PI**. $255,000 (share: $167,390). 10/2023-1/2026.
6. **EPA** S FL Geographic Program. *Nutrient pollution and salinity regimes in the St. Lucie and Caloosahatchee Estuaries: Unveiling the relative contribution of natural and anthropogenic factors*. Role: **PI**. $400,000 (share: $370,000). 8/2024-8/2028.
7. **EPA** S FL Geographic Program. *A scalable machine learning tool for water quality data analysis in the St. Lucie River and Estuary Basin*. Role: **PI**. $307,553 (share: $273,000). 1/2022-1/2025.
8. **USDA** NRCS CIG-FL. *Studying the extent of microplastic transport by stormwater runoff to urban farms under different weather patterns*. Role: **PI**. $250,000 (share: $132,000). 7/2023-7/2026.
9. **FDEP** Resilient Florida (through PPBEP). *Compound rain-tide floods in the Pensacola and Perdido Bay area under future climates*. Role: **PI**. $475,000 (share: $475,000). 2/2023-6/2025.

10. **FDEP** Resilient Florida (through Bay County). *Bay County climate change impact assessment and evapotranspiration*. Role: **PI**. $520,000 (share: $510,000). 10/2023-12/2026.
11. **FDEP** OEAT. *Temporal trends of various water quality constituents in the Apalachicola Bay*. Role: **PI**. $136,274 (share: $136,274). 7/2023-6/2025.
12. **EPA** STAR. *Three-pillar socio-health-environmental (TPSHE) framework to mitigate cumulative health impacts and environmental health disparities for polluted urban lakes in underserved communities*. Role: **Co-I**. $2 million (share: $120,000). 3/2025-3/2028.
13. **EPA** S FL Geographic Program. *Nature-based infrastructure for enhancing climate resiliency of groundwater resources in South Florida: An integrated modeling approach*. Role: **Co-PI**. $650,000 (share: $50,000). 1/2024-1/2027.
14. **EPA** S FL Geographic Program. *A model-experiment (ModEx) framework to advance understanding of fertilizer and pesticide reactive transport in rural agricultural areas*. Role: **Co-PI**. $400,000 (share: $50,000). 1/2024-1/2027.
15. **FSU** FYAP Program. *Space-time of storm surge events across the US Gulf*. Role: **PI**. $20,000 (share: $20,000). 5/2025-8/2025.

Completed

1. **FDEP** Resilient Florida (through Jacobs Inc.). *Vulnerability assessments of Okaloosa County against various flood events under sea level rise*. Role: **PI**. $105,000 (share: $85,000). 8/2024-2/2025.
2. **NSF** HDBE. *RAPID: Understanding the interrelationships among floods, building characteristics, mold growth and occupants' asthma symptoms in the aftermath of Hurricane Ida*. Role: **PI**. $129,422 (share: $64,000). 12/2021-2/2024.
3. **FDEP** INV. *A scalable predictive tool to identify vulnerable estuarine areas to harmful algae blooms across the panhandle*. Role: **PI**. $362,598 (share: $353,819). 8/2022-6/2024.
4. **FDEP** Resilient Florida (through Bay County). *County-wide vulnerability assessments of various floods under sea level rise*. Role: **PI**. $150,000 (share: $145,000). 3/2023-12/2024.
5. **Everglades Foundation**. *Precipitation and air temperature patterns in Central and Southern Florida under CMIP6 climate scenarios*. Role: **Co-PI**. $25,000 (share: $12,500). 1/2022-8/2022.
6. **FDEP** Resilient Florida (through City of Parker). *Lake Martin estuary resilience assessments*. Role: **PI**. $74,994 (share: $64,000). 1/2021-7/2021.

Pending/Planned

1. **NSF** LEAP HI. *Multiscale solutions to reduce the impacts of flooding on human respiratory health*. Role: **PI**. $2,000,000 (share: $705,000). 8/2025-8/2030.
2. **NASEM** Gulf Futures Challenge. *Combatting human health issues of hydroclimatic extremes from home: The use of digital health*. Role: **PI**. $20 million (share: $5 million). 1/2026-1/2031.
3. **NASA** PACE. *Understanding and forecasting Karenia Brevis bloom events in estuarine systems using high-resolution satellite imagery*. Role: **PI**. $1 million (share: $550,000). 8/2025-8/2028.
4. **NASA** FINESST. *A regional model to estimate depth-resolved marine phytoplankton biomass across the US Gulf*. Role: **PI**. $1 million (share: $150,000). 1/2026-1/2029.
5. **NASA** FINESST. *FLOODCAST: Flood Observation and Data-driven Computational Analyses for Severe Transients: Leveraging Machine Learning and Remote Sensing for Extreme Flood Hindcasting in Coastal Regions*. Role: **PI**. $1 million (share: $150,000). 1/2026-1/2029.
6. **USACE** ERDC. *Assessments of overtopping risks and the driving factors for large dams across the United States*. Role: **PI**. $1.2 million (share: $1.2 million). 8/2024-8/2029.
7. **HUD** Research Center of Excellence. *Resilience and environmental justice*. Role: **Co-PI**. $2 million (share: $300,000). 1/2025-1/2028.
8. **FHWA** PROTECT. *Compound floods in the coastal areas of Northwest Florida*. Role: **Co-PI**. $1,500,000 (share: $300,000). 8/2024-2/2026.
9. **USDA** NIFA-AFRI. *Mechanistic investigation of microplastic transport from biosolid treated farmland via surface runoff and wind erosion*. Role: **Co-PI**. $650,000 (share: $226,000). 6/2025-5/2030.

10. **DOD** ESTCP BAA- Water Resilience on DoD Installations. *Advanced hydrodynamic model to support decision-making related to urban flood mitigation practices*. Role: **Co-PI**. $2 million (share: $500,000). 1/2026-1/2031.
11. **NSF** SCC-IRG. *Smart and Connected litter management framework for mitigating urban flooding, erosion and watershed scale pollution*. Role: **Co-PI**. $1.5 million (share: $305,000). 11/2025-10/2029.
12. **FDEP** INV. *Satellite observations to mitigate harmful algae blooms*. Role: **PI**. $400,000 (share: $390,000). 7/2025-5/2027.
13. **Florida Council of 100**. *UF Water Center*. Role: **SP**. $100 million (share: $1 million). 7/2025-7/2035.
14. **NIH** P50. *Human health issues and climatic hazards*. Role: **PI**. $8 million (share: $160,000). 8/2025-8/2028.

PUBLICATIONS (1,363 Citations; h-index: 19; i-10 index: 26)

Refereed Journals (** denotes postdocs, * denotes students & ǂ corresponding)

42. Pakdehi M*, **Ahmadisharaf E**ǂ (2025) Hindcasting maximum water depths in coastal watersheds: The importance of incorporating off-channel data and their uncertainties in machine learning models. *Water Resources Research* (Accepted).
41. Pakdehi M*, **Ahmadisharaf E**ǂ, Azimi P, Yan Z*, Keshavarz Z, Caballero C*, Allen JG (2025) Modeling the latent impacts of extreme floods on indoor mold spores in residential buildings: Application of machine learning algorithms. *Environment International* 109319.
40. Ibna Hafiz AM*, **Ahmadisharaf E**ǂ, Salehi M, Farner J, White J, Zeng EY, Nazari B (2025) A review of processes and models for the export of microplastics from terrestrial to aquatic systems. *Wiley Interdisciplinary Reviews: Water* 12(1):e70004.
39. Adedeji IC*, **Ahmadisharaf E**ǂ, Clark CJ (2025) A unified subregional framework for modeling stream water quality across watersheds of a hydrologic subregion. *Science of the Total Environment* 958:177870.
38. Lashgari A, Rahimi L**, **Ahmadisharaf E**, Barari Aǂ (2025) Probabilistic pre-conditioned compound landslide hazard assessment framework: integrating seismic and precipitation data and applications. *Landslides* 22:413–434.
37. Kumar Sǂ, Imen S, **Ahmadisharaf E**, Barranco RN, Rabby SH*, Ramirez Avila J, Sridharan V, Lott C, La Plante R, Zhang HX, Quinn NWT (2025) Rethinking TMDLs– Perspective based on community survey. *Journal of Environmental Engineering* (Accepted).
36. Rabby SH*, Rahimi L**, **Ahmadisharaf E**ǂ, Ye M, Garwood J, Bourque E, Moradkhani H (2024) Dynamic disparities in inorganic nitrogen and phosphorus fluxes into estuarine systems under different flow regimes and streamflow droughts. *Water Research* 264:122238.
35. Rahimi L**, Hoque SMM*, Ahmadisharaf Eǂ, Alamdari N, Maran AC, Misra V, Kao SC, AghaKouchak A, Talchabhadel R (2024) Future climate projections for South Florida: Improving the accuracy of air temperature and precipitation extremes with a hybrid statistical bias correction technique. *Earth's Future* 12(8):e2024EF004531.
34. Pakdehi M*, **Ahmadisharaf E**ǂ, Nazari B, Cho E** (2024) Transferability of machine-learning-based modeling frameworks across flood events for hindcasting maximum river water depths in coastal watersheds. *Natural Hazards and Earth System Sciences* 24:3537–3559.
33. Cho E**, **Ahmadisharaf E**ǂ, Ahmadisharaf A, Nematirad R, AghaKouchak A (2024) Unraveling the relationships between trend of dam inflows, hydrometeorological variables and vegetation in West and Southwest United States. *Journal of Hydrometeorology* 25(12):793–1808.
32. Mayou LA*, Alamdari N, **Ahmadisharaf E**ǂ, Kamali M (2024) Impacts of future climate and land use/land cover change on urban runoff using fine-scale hydrologic modeling. *Journal of Environmental Management* 362:121284.
31. Leitman S, **Ahmadisharaf E**ǂ, Brunner MI (2024) Multi-reservoir system response to alternative stochastically simulated stationary hydrologic scenarios: An evaluation for the Apalachicola-Chattahoochee-Flint (ACF) Basin. *Journal of Hydrology: Regional Studies* 51:101608.

30. Salvati A, Moghaddam Nia A[ɪ], Salajegheh A, Shirzadi A, **Ahmadisharaf E**, Han D, Clague JJ (2024) A systematic review of Muskingum flood routing techniques. *Hydrological Sciences Journal* 69(66):810-831.
29. Esmaeili H, Shojaei P[ɪ], **Ahmadisharaf E** (2024) Performance of loss models for predicting flood hydrographs in a semiarid watershed with limited observations using deterministic and probabilistic hydrologic models. *Journal of Hydrologic Engineering* 29(5):05024017.
28. Borah DK[ɪ], Zhang HX, Moira Z, **Ahmadisharaf E**, Babbar-Sebens M, Quinn N, Kumar S, Sridharan VK, Leelaruban N, Lott C (2024) Advances in Total Maximum Daily Load implementation planning by modeling best management practices and green infrastructures. *Journal of Environmental Engineering* 150(7):03124003.
27. Pakdehi M[*], **Ahmadisharaf E**[ɪ], Nazari B, Cho E[**] (2023) Transferability of machine-learning-based modeling frameworks across flood events for hindcasting maximum river flood depths in coastal watersheds. *Natural Hazards and Earth System Sciences Discussions* 24, 3537–3559.
26. Cho E[**], **Ahmadisharaf E[ɬ]**, Done J, Yoo C (2023) A multivariate frequency analysis framework to estimate the return period of hurricane events using event-based copula. *Water Resources Research* 59(12):e2023WR034786.
25. Pakdehi M[*], Ardestani M, Niksokhan MH, Barkdoll BD, **Ahmadisharaf E[ɬ]** (2023) Using Analytical Hierarchy Process for excess chlorine risk assessments in a water distribution network: A case study. *Journal of Environmental Engineering* 149(12):05023008.
24. Adedeji IC[*], **Ahmadisharaf E[ɬ]**, Sun Y (2022) Predicting in-stream water quality constituents at the watershed scale using machine learning. *Journal of Contaminant Hydrology* 251:104078.
23. Rajesh M, Indranil P, **Ahmadisharaf E**, Singh SK, Rehana S (2022) Short-range reservoir inflow forecasting using hydrological and large-scale atmospheric circulation information. *Journal of Hydrology* 612(B):128153.
22. Darabi H, Rahmati O, Naghibi SA, Mohammadi F, **Ahmadisharaf E**, Kalantari Z, Haghighi AT, Soleimanpour SM, Tiefenbacher JP, Bui DT (2022) Development of a novel hybrid multi-boosting neural network model for spatial prediction of urban flood. *Geocarto International* 37 (19), 5716-5741.
21. **Ahmadisharaf E[ɬ]**, Alamdari N, Tajrishy M, Ghanbari S (2021) Effectiveness of retention ponds for sustainable urban flood mitigation across a range of storm depths in northern Tehran, Iran. *Journal of Sustainable Water in the Built Environment* 7(2): 05021003. (*Best Case Study Paper Award*)
20. Sridharan V, Quinn NWT, Kumar S, McCutcheon SC, **Ahmadisharaf E,** Fang X, Zhang H, Parker A (2021) Selecting reliable models for total maximum daily load development: A holistic protocol. *Journal of Hydrologic Engineering* 26(10): 04021031.
19. Asadi A, Moghadamnia A, Bakhtiari Enayat B, Alilou H, **Ahmadisharaf E**, Kanda EK, Kipkorir EC (2021) An integrated approach for prioritization of river water quality sampling points using Modified Sanders, Analytic Network Process and hydrodynamic modeling. *Environmental Monitoring and Assessment* 193(482).
18. Rajaei F, Behrooz RD, **Ahmadisharaf E**, Galalizadeh S, Dudic B, Spalevic V, Novicevic R (2021) Application of integrated watershed management measures to minimize the impacts on nitrate pollution. *Water* 13(15): 2039.
17. **Ahmadisharaf E[ɬ]**, Lacher IL, Fergus C, Benham BL, Akre T, Kline KS (2020) Projecting land use change impacts on nutrients, sediment and runoff in multiple spatial scales: Business-as-usual vs. stakeholder-informed scenarios. *Journal of Cleaner Production* 257: 120466.
16. **Ahmadisharaf E[ɬ]**, Benham BL (2020) Risk-based decision making for selection of pollutant reduction alternatives. *Science of the Total Environment* 702: 135022.
15. **Ahmadisharaf E[ɬ]**, Kalyanapu AJ (2019) A coupled probabilistic hydrologic-hydraulic modelling framework to investigate the uncertainty of flood loss estimates. *Journal of Flood Risk Management* 12(S2): e12536.

14. **Ahmadisharaf E[ɬ]**, Camacho RA, Zhang HX, Hantush MM, Mohamoud YM (2019) Calibration and validation of watershed models and advances in uncertainty analysis in TMDL studies. *Journal of Hydrologic Engineering* 24(7): 03119001.
13. Lacher IL[ɪ], **Ahmadisharaf E**, Fergus C, McShea WJ, Akre T, Benham BL, Kline KS (2019) Scale-dependent impacts of urban and agricultural land use on nutrients, sediment, and runoff. *Science of the Total Environment* 652: 611-622.
12. Janizadeh S, Avand M, Jaafari A, Phong TV, Bayat M, **Ahmadisharaf E**, Prakash I, Pham BT, Lee S (2019) Prediction success of several machine learning methods for flash flood modeling. *Sustainability* 11: 5426.
11. Borah D[ɪ], **Ahmadisharaf E**, Padmanabhan G, Imen S, Mohamoud YM (2019) Watershed models for development and implementation of total maximum daily load. *Journal of Hydrologic Engineering* 24(1): 03118001.
10. Mishra A, **Ahmadisharaf E[ɬ]**, Benham BL, Gallagher DL, Reckhow KH, Smith EP (2019) Two-phase Monte Carlo simulation for partitioning the impacts of epistemic and aleatory uncertainty in TMDL modeling. *Journal of Hydrologic Engineering* 24(1): 04018058.
9. **Ahmadisharaf E[ɬ]**, Kalyanapu AJ, Bates PD (2018) A probabilistic framework for floodplain mapping using hydrological modeling and unsteady hydraulic modeling. *Hydrological Sciences Journal* 63(12): 1759-1775.
8. **Ahmadisharaf E[ɬ]**, Kalyanapu AJ, Lillywhite J, Tonn GL (2018) A probabilistic framework to evaluate the uncertainty of design hydrograph: Case study of Swannanoa River Watershed. *Hydrological Sciences Journal* 63(12): 1776-1790.
7. Mishra A, **Ahmadisharaf E[ɬ]**, Benham BL, Wolfe ML, Leman SC, Gallagher DL, Reckhow KH, Smith EP (2018) Generalized Likelihood Uncertainty Estimation and Markov chain Monte Carlo simulation to prioritize TMDL pollutant allocations. *Journal of Hydrologic Engineering* 23(12): 05018025. (*Featured as the Editor's Choice*)
6. **Ahmadisharaf E[ɬ]**, Kalyanapu AJ, Chung ES (2017) Sustainability-based flood hazard mapping of the Swannanoa River watershed. *Sustainability* 9(10): 1735.
5. **Ahmadisharaf E**, Kalyanapu AJ[ɪ], Thames BA, Lillywhite J (2016) A probabilistic framework for comparison of dam breach parameters and outflow hydrograph generated by different empirical prediction methods. *Environmental Modelling & Software* 86: 248-263.
4. **Ahmadisharaf E**, Kalyanapu AJ[ɪ], Chung ES (2016) Spatial probabilistic multi-criteria decision making for assessment of flood management alternatives. *Journal of Hydrology* 533: 365-378.
3. **Ahmadisharaf E[ɬ]**, Tajrishy M, Alamdari N (2016) Integrating flood hazard into site selection of detention basins using spatial multi-criteria decision making. *Journal of Environmental Planning and Management* 59(8): 1397-1417.
2. **Ahmadisharaf E**, Kalyanapu AJ[ɪ], Chung ES (2015) Evaluating the effects of inundation duration and velocity on selection of flood management alternatives. *Water Resources Management* 29(8): 2543-2561.
1. **Ahmadisharaf E[ɬ]**, Tajrishy M (2015) Siting detention basins using SWMM and spatial multi-criteria decision making. *Journal of Water and Wastewater* 25(6): 57-66. (In Persian)

Refereed Journals (In Revision/Review/Preparation)

1. Adedeji IC[*], **Ahmadisharaf E[ɬ]**, Clark C. Transferring machine learning algorithms for predicting water quality constituents in poorly gauged watersheds. *Water Research* (In Review).
2. Rabby SH[*], **Ahmadisharaf E[ɬ]**, Sun X[**], Ye M, Archfield SA. Improving the prediction of high quantiles in machine learning-based modeling of chlorophyll-a in estuarine systems. *Water Research* (In Review).
3. Rabby SH[*], Kaiser S[*], Sun X[**], **Ahmadisharaf E[ɬ]**, Ye M, Kranz S. The frequency and severity of harmful algae blooms in estuarine systems under environmental changes. *Water Research* (In Preparation).
4. Rabby SH[*], Sun X[**], **Ahmadisharaf E[ɬ]**, Ye M, Kranz S. Hurricane impacts on chlorophyll-a concentration across the Gulf. *Water Research* (In Preparation).

5. Rabby SH[*], Sun X[**], Rahimi L[**], **Ahmadisharaf E[ɨ]**, Lamb M, Garwood J. Mid- and long-term trends of physical water quality parameters and nutrients in estuaries: What is driving the trends? *Water Research* (In Preparation).
6. Sun X[**], Rabby SH[*], **Ahmadisharaf E[ɨ]**, Ye M, Kranz S. Predicting red tides across the Florida Gulf. *Water Research* (In Preparation).
7. Sun X[**], **Ahmadisharaf E[ɨ]**, Ye M, Armstrong C. Long-term spatiotemporal patterns of water quality and the drivers in a coastal basin. *Journal of Environmental Management* (In Preparation).
8. Quinn NWT[ɨ], Rabby SH[*], Sridharan VK, Zellner M, Babbar-Sebens M, Guzmán SM, Lott K, La Plante RJ, **Ahmadisharaf E**. Justice, equity/opportunity, diversity, and inclusion in water quality management in the United States: a modeling perspective. *Journal of Environmental Engineering* (In Review).
9. Ibna Hafiz AM[*], Rabby SH[*], **Ahmadisharaf E[ɨ]**, Sridharan V, Kumar S, Zhang HX, Chao X, Guzman S, Quinn NWT (2025) Rethinking TMDLs– Perspective based on community survey. *Journal of Environmental Engineering* (In Review).
10. Ibna Hafiz AM[*], **Ahmadisharaf E[ɨ]**, Salehi M (2025) A database of microplastic in urban environments. *Scientific Data* (In Review).
11. Ibna Hafiz AM[*], **Ahmadisharaf E[ɨ]**, Salehi M (2025) A predictive model to estimate the microplastic flux in urban environments. *Scientific Data* (In Review).
12. Ibna Hafiz AM[*], **Ahmadisharaf E[ɨ]**, Salehi M, Nazari B (2025) A global-scale deep learning model to predict microplastic in marine environments. *Nature Water* (In Review).
13. Nuriddinov A[*], **Ahmadisharaf E[ɨ]**, Hashemi M, Jalilvand E (2025) A validated remotely-sensed database of flood extents for historical hurricanes. *Scientific Data* (In Review).
14. Almasi P, Sigaroodi SK, Salajeghe A, Koopaei SS, Moghaddamnia A[ɨ], Han D, **Ahmadisharaf E**. Performance improvement of hydrological models using unscented Kalman Filter-type data assimilation and data fusion. *Water Resources Management* (In Review).
15. **Ahmadisharaf E[ɨ]**, Warner L, Terui S, Golden H, Ajami N. Approaches for effective communication of model uncertainty in water quality restoration studies. *Environmental Science & Technology* (In Review).
16. Nazari B[ɨ], Abdolali, Zhang Y, **Ahmadisharaf E**. High-quality orthogonal grid generation for domains confined by two curves. *Geoscientific Model Development* (In Review).
17. Caballero C[*], Azimi P, **Ahmadisharaf E[ɨ]**, Keshavarz Z, Allen JG (2023) A review of flood impacts on human respiratory health. *Journal of Exposure Science & Environmental Epidemiology* (In Preparation).
18. Azimi P[ɨ], Keshavarz Z, Pakdehi M[*], Caballero C[*], Kaiser S[*], **Ahmadisharaf E**, Allen JG (2023) Hurricanes, mold growth and human respiratory health: Lessons from recent hurricane events. *Environmental Health Perspectives* (In Preparation).
19. Pakdehi M[*], Barkdoll BD, McDonald CP, **Ahmadisharaf E[ɨ]**, Kumari A[*]. Balancing nutrient runoff and meat production in Michigan through agricultural land use planning. *Agricultural Water Management* (In Review).
20. Pakdehi M[*], **Ahmadisharaf E[ɨ]**. Hindcasting maximum flood depths in highly regulated coastal watersheds: Can machine learning models perform well? *Water Resources Research* (In Review).
21. Pakdehi M[*], **Ahmadisharaf E[ɨ]**. The sensitivity of machine-learning based hindcasted flood depths to the source and resolution of topobathy data. *Water Resources Research* (In Review).
22. Rahimi L[**], **Ahmadisharaf E[ɨ]**. The value of sub-daily streamflow data in bivariate frequency analyses of flood events. *Advances in Water Resources* (In Preparation).
23. Rahimi L[**], **Ahmadisharaf E[ɨ]**, Moradkhani H. Characterizing antecedent soil moisture based on antecedent precipitation for flood events across the United States. *Environmental Research Letters* (In Preparation).
24. Rahimi L[**], **Ahmadisharaf E[ɨ]**, Di Michele C, AghaKouchak A. On the choice of probability distributions for precipitation intensity-duration-frequency curves: Insights from large-scale analyses across Iran. *Environmental Research Letters* (In Preparation).

25. Rahimi L[**], **Ahmadisharaf E[ɨ]**, Di Michele C, AghaKouchak A. Precipitation-driven flood events across large population centers of the United States are not best characterized by the current statistical methods. *Nature Communications* (In Preparation).
26. Kumari A[*], **Ahmadisharaf E[ɨ]**, Gain EG, Roland V. Recalibrating SPARROW model to consider a range of land covers for predicting water, sediment and nutrient yield across the Southeast United States. *Journal of Hydrologic Engineering* (In Preparation).
27. Kumari A[*], **Ahmadisharaf E[ɨ]**, Gain EG, Roland V. Impacts of future land cover change on freshwater inflows, nutrient and sediment loads across the Southeast United States: The importance of considering best management practices in the projections. *Science of the Total Environment* (In Preparation).
28. Cho E[**], **Ahmadisharaf E[ɨ]**, Villarini G, AghaKouchak A. Temporal changes in the overtopping risk of U.S. dams over the last 50 years. *Nature Communications* (In Review).
29. Tansar H[**], Pakdehi M[*], **Ahmadisharaf E[ɨ]**, Nazari B, Bates PD. Probabilistic hydrodynamic modeling to evaluate the impact of the uncertainty of design precipitation depth and temporal pattern on inundation characteristics. *Water Resources Research* (In Preparation).
30. Tansar H[**], Pakdehi M[*], **Ahmadisharaf E[ɨ]**, Nazari B, Bates PD. Comparative analyses of hydrodynamic, bathtub and machine learning models for hindcasting urban coastal floods. *Water Resources Research* (In Preparation).
31. Nazari B, **Ahmadisharaf E[ɨ]**, Sanders B, Bates PD, Moradkhani H, Lin N, Merwade V, Wahl T, Yamazaki D. Synergizing flood modeling approaches: From historical foundations to emerging technologies. *Communications Earth & Environment* (In Preparation).
32. Shayeghi S[*], Rahimi L[**], **Ahmadisharaf E[ɨ]**, Litvak E, Jalilvand E, Moradkhani H. Post-processing Climate Change Initiative's daily soil moisture data for urban areas. *Water Resources Research* (In Review).
33. Alborzi A, AghaKouchak A[ɨ], Vahedifard F, Mallakpour I, **Ahmadisharaf E**. Integrating future climate information into adaptive flood infrastructure design concepts. *PNAS Nexus* (In Review).
34. Rajaei F[ɨ], **Ahmadisharaf E**. Evaluation in historical simulations and future projections of air temperature and precipitation over Southeast Iran: CMIP5 vs CMIP6. *Earth's Future* (In Review).
35. Rajaei F[ɨ], **Ahmadisharaf E**. Responses of rice yield and water productivity to climate change in Northern Iran: Historical vs future conditions. *Paddy and Water Environment* (In Revision).

Book Chapters

1. Salehi M, Ibna Hafiz AM[*], **Ahmadisharaf E**, Jazaei F (2025) The role of terrestrial sources in the release of microplastics into freshwater environments. In: *Occurrence, detection, and fate of microplastics in freshwater ecosystems*. Bala K, Nogueira R, Darbha GK, Weichgrebe D (Eds) Springer.
2. Rabby SH[*], Sun X[**], Ibna Hafiz AM[*], Yan Z[*], Imtiaz SU[*], Pakdehi M[*], Moumouni AS[*], **Ahmadisharaf E[ɨ]**, Alamdari N (2025) Application of machine learning methods in water quality modeling. In: *Machine learning and artificial intelligence in toxicology and environmental health*. Lin Z, Chou WC (Eds). Elsevier.
3. **Ahmadisharaf E**, Camacho-Rincon RA, Zhang HX, Hantush MM, Mohamoud YM (2022) Model calibration and validation. In: *TMDL manual of practice*. Zhang HX, Quinn NWT, Borah DK, Padmanabhan G (Eds) ASCE, Arlington, VA.
4. Borah DK, **Ahmadisharaf E**, Padmanabhan G, Imen S, Zhang HX, Mohamoud YM (2022) Watershed models. In: *TMDL manual of practice*. Zhang HX, Quinn NWT, Borah DK, Padmanabhan G (Eds). ASCE, Arlington, VA.
5. Hantush MM, Zhang HX, Camacho-Rincon RA, **Ahmadisharaf E**, Mohamoud YM (2022) Model uncertainty analysis and margin of safety. In: *TMDL manual of practice*. Zhang HX, Quinn NWT, Borah DK, Padmanabhan G (Eds). ASCE, Arlington, VA.
6. Sridharan V, McCutcheon SC, Quinn NWT, Zhang HX, Kumar S, **Ahmadisharaf E**, Fang X, Parker A (2022) Model selection and applications for TMDL development. In: *TMDL manual of practice*. Zhang HX, Quinn NWT, Borah DK, Padmanabhan G (Eds). 319-356. ASCE, Arlington, VA.

7. Falah F, Rahmati O, Rostam M, **Ahmadisharaf E**, Daliakopoulos IN, Pourghasemi HR (2019) Artificial Neural Networks for flood susceptibility mapping in data-scarce urban areas. In: *Spatial modeling in GIS and R for earth and environmental science*. Eds: Pourghasemi HR, Gokceoglu C. 1st Ed. Elsevier.

Conference Proceedings

1. Borah DK, Zhang H, Zellner M, Ahmadisharaf E, Babbar-Sebens M, Quinn N, Lott C (2023) Total Maximum Daily Load implementation modeling, planning, and design: A Synthesis of Resources for Watershed Stakeholders. In: *Proceedings of the World Environmental and Water Resources Congress* 2023. 1298-1312.
2. **Ahmadisharaf E**, Kalyanapu AJ (2015) Investigation of the impact of streamflow temporal variation on dam overtopping risk: Case study of a high-hazard dam. In: Karvazy K, Webster VL (Eds) *Proceedings of the World Environmental & Water Resources Congress*, 1050-1057, Austin, TX.
3. **Ahmadisharaf E**, Bhuiyan M, Kalyanapu AJ (2013) Impact of spatial resolution on downstream flood hazard due to dam break events using probabilistic flood modeling. *Proceedings of the 5th Dam Safety Conference*, 263-276, Providence, RI.
4. Manshouri M, Pourmand O, **Ahmadisharaf E**, Alamdari N (2011) Qualitative study of Zohreh River water using QUAL2K model. *Proceedings of the International Conference on Environmental Pollution and Remediation*, 173-1-173-7, Ottawa, Canada.

Technical Reports/Memos

1. **Ahmadisharaf E**, Ye M, Sun X, Rabby SH (2024) A scalable predictive tool to identify vulnerable estuarine areas to harmful algae blooms across the panhandle. Florida Department of Environmental Protection. Final Report. 46 pages.
2. **Ahmadisharaf E**, Tang Y, Hoque SS (2021) Martin Lake estuary resilience assessment. Florida Department of Environmental Protection. Progress and Final Reports. 50 pages.
3. Benham BL, Tse W, Kline KS, Mitchem C, Yagow G, **Ahmadisharaf E** (2018) PCB total maximum daily load development for Reed Creek, the Upper New River, Peak Creek, Walker Creek, Stony Creek, and the Lower New River. Virginia Department of Environmental Quality. 109 pages.
4. Benham BL, Yagow G, Tse W, **Ahmadisharaf E**, Kline KS (2017) Bacteria TMDL development and a proactive approach to address the benthic impairment for Woods Creek, Rockbridge County and City of Lexington, Virginia. VA Department of Environmental Quality. 136 pages.

MEDIA COVERAGE

1. Mullin E (2024) After Hurricane Milton, Get ready for mold. *WIRED*.
2. Radulovich T (2024) Hybrid statistical technique for predicting extreme weather events in South Florida. *Phys.org*.
3. Cardenas K (2024) FSU researcher awarded Early-Career Research Fellowship by the National Academies of Sciences, Engineering, and Medicine. *Florida State University News*.
4. Radulovich T (2024) New research method improves extreme weather predictions for South Florida. *Florida State University News*.
5. Cardenas K (2024) Five Questions: FAMU-FSU professor uncovers the impacts of hurricane flooding on mold growth. *Florida State University News*.
6. Wellcok B (2024) Researchers examine how drought and water volume affect nutrients in Apalachicola river. *Phys.org*.
7. Wellcok B (2024) FAMU-FSU College of Engineering researchers examine how drought and water volume affect nutrients in Apalachicola River. *Florida State University News*.
8. Harris M (2024) Precipitation, pesticides and pollution: FSU researchers earn nearly $1.5M in EPA grants to study South Florida waterways. *Florida State University News*.
9. Krna E (2024) RCC Spotlight: Dr. Ebrahim Ahmadisharaf. *Florida State University News*.
10. Patterson S (2023) FSU VP: How Florida State University's research is shaping our everyday lives. *Tallahassee Democrat*.

11. Wellcok B (2023) FAMU-FSU researcher will map vulnerable critical infrastructure in western Florida. *Florida State University News*.
12. Wellcok B (2023) Ready for risk: FAMU-FSU researcher maps flood hazards in Bay County, Florida. *Florida State University News*.
13. Wellcok B (2022) Everglades Foundation awards FAMU-FSU civil engineers fellowship to study climate change. *Florida State University News*.
14. Ahmadisharaf E, Alamdari N (2022) Everglades research. *WFSU Public Media*.

AWARDS, RECOGNITIONS & HONORS

- **NSF Primary Travel Award.** $2,300. NHERI SimCenter Computational Symposium 2025. Feb 2024.
- **NSF Primary Travel Award.** $1,300. Natural Hazards Research Summit 2024. May 2024.
- **Environmental Data Innovation Impact Fellow**. CDC-FAS. Jul 2023.
- **MDPI Water Travel Award**, Feb 2019.
- **Outstanding Reviewer**, Journal of Hydrologic Engineering (2019), Environmental Research Letters (2017), Journal of Environmental Management (2017), Ecological Indicators (2017), Journal of Hydrology (2017).
- **Outstanding Graduate Research Award**, 1st Eminence Awards, Tennessee Technological University, Cookeville, TN, Apr 2014.
- **Doctor of Philosophy Best Paper Award**, 1st Eminence Awards, Tennessee Technological University, Cookeville, TN, Apr 2014.
- **Graduate Student Poster Award**, 9th Student Research Day, Cookeville, TN, Apr 2014.
- **Kandy Thevar International Engineering Graduate Student Scholarship**, Tennessee Technological University, Cookeville, TN, Oct 2013.
- **Best Student Paper Award**, 5th Dam Safety Conference, Providence, RI, Sep 2013.

SELECTED PRESENTATIONS

Keynote Speaker

1. 2021 FSU Fellows Forum. *'Enhancing community resilience to floods through advanced computational models'*. Virtual.
2. 2021 ASCE-EWRI Watershed Management Conference, Opening Plenary Panel Session. *TMDL analysis and modeling: State-of-the-Art and state-of-the practice*. Virtual.

Invited Speaker

1. Utilizing machine learning algorithms to model the impacts of hurricanes on indoor mold and human respiratory health. *Artificial Intelligence in Environmental and Global Health, Department of Environmental and Global Health, University of Florida*. Apr 2025.
2. Machine learning algorithms for flood modeling: How much can we trust them? *University of Missouri Environmental and Water Resources Seminar Series*. Virtual. Jan 2025.
3. After Hurricane Idalia: How did water and sediment quality change? *Florida Water & Climate Alliance*. Virtual. Dec 2024.
4. Machine learning models for hindcasting coastal flood inundation during hurricanes. *Australia Bureau of Meteorology Hydro-Café seminars*. Virtual. Nov 2024.
5. Towards better projections of extreme precipitation events under climate change. *Seminar Series of Department of Earth, Ocean and Atmospheric Sciences, Florida State University*. Nov 2024.
6. Impacts of hurricane events on mold growth and asthma risk in residential buildings: Findings from recent hurricanes. *Florida Environmental Health Association, 75th Anniversary AEM*. Crystal River, FL. May 2024.
7. Utilizing machine learning algorithms to predict water quality in streams and estuaries. *Artificial Intelligence in Environmental and Global Health, Department of Environmental and Global Health, University of Florida*. Apr 2024.
8. Individual and cascading impacts of flooding and surface water quality under a changing climate. *Department of Civil Engineering, Clemson University*. Clemson, SC. Mar 2024.

9. Characterizing environmental hazards and their impacts under nonstationary climate and land cover. *School of Geosciences, University of South Florida*. Tampa, FL. Feb 2024.
10. Estimating the frequency of hurricane events: Insights from Hurricane Ian. *Florida Department of Environmental Protection's Quarterly Resilience Forum*. Virtual. Feb 2024.
11. Hurricanes, mold growth and respiratory health issues. *Florida Department of Health's Annual Asthma Coalition Summit*. Ft. Myers, FL. Jun 2023.
12. Environmental extremes under nonstationary conditions. *Department of Civil, Environmental and Construction Engineering, Texas Tech University*. Lubbock, TX. Jun 2023.
13. The intersection of hurricanes and human respiratory health: Tips from Hurricane Ida. *Research in Real Time Natural Disasters: Bridging the Resilience Divide Virtual Workshop*. Feb 2023.
14. The impact of Hurricane Ida on asthma risk in New Orleans metro area. *Louisiana Department of Health's Climate and Health Workgroup*. Nov 2022.
15. Future precipitation and air temperature in South Florida: Projections based on Shared Socioeconomic Pathways. *South Florida Water Management's District's Water and Climate Resilience Metrics Workgroup*. Nov 2022.
16. Artificial neural networks to predict in-stream bacteria concentration. *Hydroclimatic Research Group, Laboratory for Spatial Informatics, International Institute of Information Technology*, Hyderabad, India. Feb 2022.
17. The importance of risk-based decision making for total maximum daily loads in a changing climate. Webinar on Climate Change Impacts on Wastewater/Stormwater Management. *Florida Water & Climate Alliance*. Sep 2021.
18. Flood hazard prediction via data-driven models. Data Mining. *Department of Computer and Information Sciences, Florida A&M University*. Mar 2021.
19. The impact of watershed model parameterization on the reliability of bacterial pollution mitigation strategies. *Biocomplexity Engineering Group, Department of Agricultural & Biological Engineering, University of Florida*. Jan 2021.
20. From models to decisions: Uncertainties in flood management. *Department of Environmental Engineering, Texas A&M University—Kingsville*. May 2020.
21. Sustainability-based management of coupled human-water systems under deep uncertainty. *Department of Civil and Mechanical Engineering, University of Missouri-Kansas City*. Feb 2020.

Oral Presentations (* denotes presenters)

1. Ibna Hafiz AM*, Legrand F, Bashir A, Zolfaghari S, Salehi M, **Ahmadisharaf E** (2025) Hurricane-induced microplastic contamination in urban drainage systems: A case study of Tallahassee following Hurricane Debby. *EWRI World Environmental & Water Resources Congress*, Anchorage, AK.
2. Rabby SH*, **Ahmadisharaf E** (2025) Complex interplay between hydro-meteorological factors and estuarine nutrients: A generalized additive modeling approach. *EWRI World Environmental & Water Resources Congress*, Anchorage, AK.
3. Ibna Hafiz AM*, Legrand F, Bashir A, Salehi M, **Ahmadisharaf E** (2025) Microplastic transport in urban agricultural systems: characterization, drivers, and implications for stormwater management. *EWRI World Environmental & Water Resources Congress*, Anchorage, AK.
4. Zhang HX, Babber-Sebens M, **Ahmadisharaf E**, Camacho-Rincon RA, Imen S (2025) Advances and research gaps for PFAS modeling in watersheds and receiving waters. *EWRI World Environmental & Water Resources Congress*, Anchorage, AK.
5. Kaiser S*, **Ahmadisharaf E** (2025) Improving projections of future sub-daily precipitation events in a changing climate across the U.S. Gulf coast. *AMS Annual Meeting*, New Orleans, LA.
6. Dahal P, Jalilvand E, Rahim L, **Ahmadisharaf E***, Kumar S, Das N (2025) The relative importance of soil moisture and rainfall for flood attributes in unregulated watersheds across multiple event severities. *IEEE International Geoscience and Remote Sensing Symposium*, Brisbane, Australia.
7. Kaiser S, **Ahmadisharaf E***, Polatel C (2024) Improving projections of extreme rainfall events under climate change across South Florida. *AGU Fall Meeting*, Washington, DC.

8. Rabby SH*, Archfield SA, **Ahmadisharaf E** (2024) Post-hurricane algal blooms in nearshore coastal waters: Control factors and their dominance. *AGU Fall Meeting*, Washington, DC.
9. Sun X*, Rabby SH, Legrand F, **Ahmadisharaf E**, Kranz S (2024) Identifying hot spots and hot moments of Karenia brevis Blooms in the Florida Gulf using machine learning algorithms. *AGU Fall Meeting*, Washington, DC.
10. Azimi P*, Keshavarz Z, Pakdehi M, **Ahmadisharaf E**, Allen JG (2024) Empirical equations to estimate mold growth and human respiratory health impacts of extreme floods in residential buildings: Hurricanes Ida and Ian case studies. *AGU Fall Meeting*, Washington, DC.
11. Datta DK, Ccanccapa A, Sun X, Yan Z, Rabby SH, Ahmadisharaf E, Alamdari N, Salehi M (2024) Impact of Hurricane Idalia on coastal water and sediment quality: focus on microplastics, organic carbon, and heavy metals. *International Mechanical Engineering Congress & Exposition*. Portland, OR.
12. Kaiser S*, Rahimi L, **Ahmadisharaf E** (2024) Updating intensity-duration-frequency (IDF) curves for short-duration precipitations under climate change: The case of Pensacola and Perdido Bays. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
13. Kumari A, Rahimi L, **Ahmadisharaf E*** (2024) Land cover change impacts on hydrology and water quality of the Southeast United States. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
14. Pakdehi M*, **Ahmadisharaf E** (2024) Generalizability of neural network models for hindcasting maximum river flood depths in coastal watersheds. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
15. Mayou LA*, Alamdari N, **Ahmadisharaf E** (2024) Changes in runoff peak and volume in an urban watershed due to changes in climate and land cover. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
16. Rahimi L*, **Ahmadisharaf E** (2024) Multivariate return periods of riverine flood events: Comparative analyses of instantaneous and daily timescales. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
17. Rabby SH*, Sun X, **Ahmadisharaf E**, Ye M, Garwood J (2024) Harmful algal blooms in bay-estuary systems under future climate: The case of Apalachicola Bay, Florida. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
18. Sun X*, Rabby SH, **Ahmadisharaf E**, Garwood J (2024) Long-term spatiotemporal characteristics of water quality parameters in Apalachicola Bay, Florida. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
19. Cho E*, **Ahmadisharaf E**, Aghakouchak A (2024) Unveiling Connections between shifting reservoir inflows trend and climate variables in West and Southwest United States. *ASCE-EWRI World Environmental & Water Resources Congress*, Milwaukee, WI.
20. Kaiser S*, Rahimi L, **Ahmadisharaf E** (2024) Updating Intensity-Duration-Frequency (IDF) Curves for Sub-Daily Precipitation Events under CMIP6 Climate Change Scenarios: The Case of Pensacola and Perdido Bays Watersheds. *NOAA's 48th Annual Climate Diagnostics and Prediction Workshop & 21st Annual Climate Prediction Applications Science Workshop*, Tallahassee, FL.
21. Cho E*, **Ahmadisharaf E** (2024) Probabilistic hydrodynamic modeling of compounding rain-storm surge flood events for vulnerability assessments of critical infrastructures in coastal cities. *NHERI Computational Symposium*, Los Angeles, CA.
22. Pakdehi M*, **Ahmadisharaf E** (2024) Hindcasting flood inundation depths across Central and Southern Florida during Hurricane Ian using spatially-distributed machine learning algorithms. *9th UF Water Institute Symposium*, Gainesville, FL.
23. Leitman S*, **Ahmadisharaf E** (2024) Relation between science and current management in the Apalachicola-Chattahoochee-Flint Basin. *9th UF Water Institute Symposium*, Gainesville, FL.
24. Rahimi L*, Hoque SMM, **Ahmadisharaf E**, Alamdari N (2023) A hybrid approach to reduce the uncertainty of bias correction in projecting future precipitation and air temperature: The case of South Florida. *AGU Fall Meeting*, San Francisco, CA.

25. Rahimi L[*], **Ahmadisharaf E** (2023) Event-specific interdependencies among flood attributes: The role of antecedent soil moisture and rainfall characteristics. *AGU Fall Meeting*, San Francisco, CA.
26. Rabby SH[*], Sun X, **Ahmadisharaf E**, Ye M (2023) A machine learning based tool to predict harmful algal bloom events in a bay-estuary system. *AGU Fall Meeting*, San Francisco, CA.
27. Caballero C[*], Azimi P, Keshavarz Z, Pakdehi M, Yan, Z, Allen JG, **Ahmadisharaf E** (2023) Understanding the interrelationship among human behaviors, building and flood characteristics, mold growth, and respiratory health after Hurricanes Ian and Ida. *International Society of Exposure Science*, Chicago, IL.
28. Cho E[*], **Ahmadisharaf E** (2023) Multivariate frequency analysis framework for hurricane events and its application on Hurricane Ian. *36th US-Korea Conference*, Dallas, TX.
29. Pakdehi M[*], **Ahmadisharaf E** (2023) Hindcasting maximum flood depths during Hurricane Ida using spatially distributed machine learning algorithms. *ASCE-EWRI World Environmental & Water Resources Congress*, Henderson, NV.
30. Adedeji IC[*], **Ahmadisharaf E** (2023) Scalability of machine learning-based modeling frameworks for watershed-scale water quality predictions. *ASCE-EWRI World Environmental & Water Resources Congress*, Henderson, NV.
31. **Ahmadisharaf E**[*], Leitman SF, Brunner MI (2023) Evaluating the response of the Apalachicola-Chattahoochee-Flint (ACF) Basin to alternative stationary hydrologic scenarios. *ASCE-EWRI World Environmental & Water Resources Congress*, Henderson, NV.
32. Borah DK[*], Zhang HX, Zellner M, Babbar-Sebens M, Leelan R, Quinn NWT, Kumar S, Lott C, **Ahmadisharaf E** (2023) Total Maximum Daily Load implementation modeling, planning, and design resources for stakeholders. *ASCE-EWRI World Environmental & Water Resources Congress*, Henderson, NV.
33. **Ahmadisharaf E** (2023) The intersection of hurricanes and human respiratory health: Tips from Hurricane Ida. *Research Coordination Network Workshop*. Virtual. Feb 2023.
34. Yan Z[*], Azimi P, Keshavarz Z, Caballero C, **Ahmadisharaf E**, Allen JG (2022) Key drivers of mold growth and human respiratory illness after a hurricane: Lessons from Hurricane Ida. *AGU Fall Meeting*, Chicago, IL.
35. Adedeji IC, **Ahmadisharaf E**[*], Clark C (2022) A machine learning-based framework to generate in-stream water quality data. *ASCE-EWRI World Environmental & Water Resources Congress*, Atlanta, GA.
36. Hoque SS, **Ahmadisharaf E***, Mayou L, Her Y, Tang Y (2022) Stream pollution under a changing climate: The case of Martin Lake Watershed in Northwest Florida. *ASCE-EWRI World Environmental & Water Resources Congress*, Atlanta, GA.
37. Azimi P[*], Keshavarz Z, Caballero C[*], Yan Z, Allen JG, **Ahmadisharaf E** (2022) Impacts of building and flood characteristics on mold growth and respiratory illnesses after Hurricane Ida. *International Society of Exposure Science*, Lisbon, Portugal.
38. Leitman SF*, **Ahmadisharaf E**, Brunner MI (2021) How much will climate variability effect flow and reservoir elevations in ACF watershed? *ANERR Virtual Research Symposium*.
39. **Ahmadisharaf E***, Benham BL (2019) Using the Enhanced Expert System for HSPF (HSPEXP+) to implement Generalized Likelihood Uncertainty Estimation (GLUE) for TMDL uncertainty analysis. *ASCE-EWRI World Environmental & Water Resources Congress*, Pittsburgh, PA.
40. **Ahmadisharaf E***, Lacher I, Fergus C, Benham BL, Kline KS, McShea W, Akre T (2018) Impact of land use change on water quantity and quality in the Shenandoah National Park. *ASCE-EWRI World Environmental & Water Resources Congress*, Minneapolis, MN.
41. **Ahmadisharaf E***, Kalyanapu AJ (2017) GIS-based uncertainty analysis of a coupled hydrologic-hydraulic modeling framework. *ASCE-EWRI World Environmental & Water Resources Congress*, Sacramento, CA.
42. Ketabchy M*, Tajrishy M, **Ahmadisharaf E** (2016) Development of Permeable Pavement Design Model (PPDM) for runoff reduction and pollutant removal efficiency prediction. *ASCE-EWRI World Environmental & Water Resources Congress*, West Palm Beach, FL.

43. **Ahmadisharaf E***, Kalyanapu AJ (2015) A risk and reliability analysis approach to investigate the impact of reservoir inflow change on dam overtopping. *24th Tennessee Water Resources Symposium* 2B4-7, Burns, TN.
44. **Ahmadisharaf E***, Kalyanapu AJ (2015) Investigation of the impact of streamflow temporal variation on dam overtopping risk: Case study of a high-hazard dam. *ASCE-EWRI World Environmental & Water Resources Congress*, Austin, TX.
45. **Ahmadisharaf E***, Ketabchy M, Alamdari N, Tajrishy M (2014) Investigation of the effectiveness of landscape improvement on downstream flow hydrograph at different return periods. *50th AWRA Annual Water Resources Conference*, Tyson's Corner, VA.
46. **Ahmadisharaf E***, Bhuiyan M, Kalyanapu AJ (2013) Impact of spatial resolution on downstream flood hazard due to dam break events using probabilistic flood modeling. *5th ASDSO Dam Safety Conference*, Providence, RI.

Poster Presentations (* denotes presenters)

1. Ahmadisharaf E*, Shayeghi S, Litvak E, Rahimi L, Moradkhani H (2025) A machine learning framework for post-processing satellite observations of soil moisture in urban areas. *EGU General Assembly*, Vienna, Austria.
2. Datta DK*, Ccanccapa A, Sun X, Yan Z, Rabby SH, Ahmadisharaf E, Alamdari N, Salehi M (2025) Studying the effects of Hurricane Idalia on contaminant transport in coastal water and sediment. *AEESP Research and Education Conference*. Durham, NC.
3. Rabby SH*, Garwood J, **Ahmadisharaf E**, Salehi M, Alamdari N (2024) Short- and mid-term impacts of Hurricane Idalia on nutrients and physical water quality parameters in the Apalachicola Bay. *AGU Fall Meeting*, Washington, DC.
4. Pakdehi M*, **Ahmadisharaf E** (2024) Comparative analyses of HEC-RAS and neural network models for hindcasting water depth and flow directions during Hurricane Sally. *AGU Fall Meeting*, Washington, DC.
5. Pakdehi M*, **Ahmadisharaf E** (2024) Impacts of the elevation data on hindcasting maximum flood depths using machine learning models. *AGU Fall Meeting*, Washington, DC.
6. Sun X*, **Ahmadisharaf E**, Ye M (2024) Spatially distributed modeling of nutrient concentrations in coastal watersheds using machine learning models. *AGU Fall Meeting*, Washington, DC.
7. Rahimi L*, Lashgari A, **Ahmadisharaf E** (2024) Integrating seismic and precipitation in pre-conditioned compound landslide hazard assessments. *AGU Fall Meeting*, Washington, DC.
8. Hafiz AMI*, **Ahmadisharaf E**, Salehi M (2024) The role of microplastic transport research in enhancing stormwater management. *FSA Winter Conference*, Orlando, FL.
9. Hafiz AMI*, **Ahmadisharaf E**, Jalilvand E (2023) Changes in land cover aftermath of hurricane events: The case of Hurricane Michael. *AGU Chapman Conference: Remote Sensing of the Water Cycle*, Honolulu, HI.
10. Cho E**, **Ahmadisharaf E**, Done J, Yoo C (2023) A copula-based frequency analysis framework to estimate the multivariate return period of hurricane events. *AGU Fall Meeting*, San Francisco, CA.
11. Sun X**, **Ahmadisharaf E**, Ye M (2023) Investigating the spatiotemporal variability and influencing factors of water quality by using geospatial analyses across a coupled inland-estuarine basin in south Florida. *AGU Fall Meeting*, San Francisco, CA.
12. Zou Y*, **Ahmadisharaf E**, Ye M (2022) Evaluating spatiotemporal trends of water quality in a coupled terrestrial-coastal basin: The case of St. Lucie Estuary and River Basin. *AGU Fall Meeting*, Chicago, IL.
13. Hoque SMM*, **Ahmadisharaf E**, Alamdari NA (2022) Statistical methods for downscaling and bias correcting CMIP6 data across Central and Southern Florida. *AGU Fall Meeting*, Chicago, IL.
14. Adedeji IC*, **Ahmadisharaf E** (2022) Transferability of machine learning-based frameworks in watershed-scale water quality predictions. *AGU Fall Meeting*, Chicago, IL.
15. Adedeji CI*, **Ahmadisharaf E** (2022) Evaluating multiple machine learning algorithms to generate in-stream bacteria concentration at the watershed scale. *HydroML Symposium*, State College, PA.

16. **Ahmadisharaf E***, Lacher I, Fergus C, Kline KS, Benham BL, Akre T, McShea W (2018) Stakeholder-informed scenarios to investigate the impact of land use/land change on nutrients, sediment and runoff in the Shenandoah National Park, Virginia. *AGU Fall Meeting*, Washington, DC.

TEACHING EXPERIENCE

Instructor

Florida State University, Tallahassee, FL

- Advanced hydrology (graduate level). Spring 2025.
- Graduate seminar (graduate level). Spring 2023. Student evaluation grade: 4.30/5.00

Guest Lecturer

Tennessee Technological University, Cookeville, TN

- Advanced GIS (graduate level): A session on floodplain mapping. Spring 2016.
- Advanced Modeling and Simulation for Flood Risk Management (graduate level): A session on probabilistic modeling. Spring 2015.
- Hydrology (undergraduate level): Sessions on infiltration. Fall 2014.
- Hydraulics (undergraduate level): Sessions on energy equations and uniform flow. Spring 2013.

SUPERVISION & MENTORING

Main Research Supervisor

Research Faculty/Postdoctoral Scholars

1. Eunsaem Cho, Florida State University, 2022-2024.
2. Leila Rahimi, Florida State University, 2023-2025.
3. Xiuming Sun, Florida State University, 2023-present.
4. Husnain Tansar, Florida State University, 2025-present.

PhD Students

1. Iftekhar Sayeed Khan, Florida State University, 2025-2029 (expected graduation year).
2. Piyush Dahal, Florida State University, 2025-2028 (expected graduation year).
3. Abdul Mobin Ibna Hafiz, Florida State University, 2023-2028 (expected graduation year).
4. Samiul Kaiser, Florida State University, 2023-2028 (expected graduation year).
5. Sumon Rabby Hossain, Florida State University, 2022-2027 (expected graduation year).
6. Azizbek Nuriddinov, Florida State University, 2022-2027 (expected graduation year).
7. Anjali Kumari, Florida State University, 2023-2028 (expected graduation year).
8. Maryam Pakdehi, Florida State University, 2022-2026 (expected graduation year).
9. Itunu C. Adedeji, Florida A&M University, 2023.

MSc Students

1. Lauren Mayou, Florida State University, 2023.

MEng Students

1. Yuan Zou, Florida State University, 2023.

BSc Students

1. Fiari Legrand, Florida State University, 2024-present.
2. Armita Amiri, Florida State University, 2023-present.
3. Cameron Cook, Florida State University, 2023-2024.
4. Isabella Prince, Florida State University, 2023-2024.
5. Christian Caballero, Florida State University, 2021-2022.
6. Madison Colovos, Florida State University, 2021.
7. Lauren Mayou, Florida State University, 2021.
8. Camryn Dillon, Florida State University, 2021.

K12 Students
1. Heewon Seo, High school, Florida State University, 2022-2023.
2. Arib Syed, High school, Florida State University, 2022-2023.

Student Project & Graduate Advising Committee Member
PhD Students
1. Syed Usama Imtiaz, Florida State University, 2023-2026 (expected graduation year).
2. Mitra Nasr Azadani, Florida State University, 2023-2027 (expected graduation year).
3. Mohana Debnath, Florida State University, 2023-2027 (expected graduation year).
4. Bismark Odum, Florida A&M University, 2024-2028 (expected graduation year).
5. Atif Bashir. University of Missouri-Columbia, 2024-2026 (expected graduation year).
6. Sakina Amankwah, Florida A&M University, 2023-2024.
7. Zhengxiao Yan, Florida State University, 2021-2024.
8. Mushfiqul Hoque, Florida State University, 2021-2024.
9. Abdullatif AlSaeed. University of Queensland, 2023-2024.
10. Yashar Makhtoumi, Florida State University, Apr 2022-Dec 2022.
11. Sarajeen S. Hoque, Florida State University, Jan 2021-Jun 2022.

WORKSHOPS

- ACWA. Calibration and validation and uncertainty/sensitivity analyses of watershed models in TMDLs. Feb 2022.

PROFESSIONAL SERVICE

Editorship

- *Associate Editor*
  - Journal of Hydrologic Engineering. 2023-present.
- *Guest Editor*
  - Journal of Hydrologic Engineering. Special Collection "Advancing flood characterization, modeling, and communication". 2023-2025.
  - ASCE OPEN: Multidisciplinary Journal in Civil Engineering. Special Collection "Towards Equitable and Effective Flood Risk Adaptation". 2024-present.
  - Water Resources Research-Earth's Future. Special Issue "Advancing flood characterization, modeling, and communication". 2022-2023
  - Sustainability. Special Issue "*Floods and landslides: A sustainability approach*"
  - Land. Special Issue "*Advances in hydrologic and water quality modeling of water systems*". 2020-2021

Peer-Review

- *Proposal Reviewer:* NSF (ENV ENG, GRFP, HS, EPSCoR Research Fellows and EAR-PF programs); NASA (ECIP-ES and MUREP INCLUDES); DOE (CRC); Connecticut and New York Sea Grants (Long Island Sound Study); USGS (Indiana WRRC); FFAR (Seeding Solutions and NIA programs); ASEE (eFellows); Canada Foundation for Innovation (JELF program).
- Report Reviewer: Report by NASEM's Committee on Independent Scientific Review of Everglades Restoration Progress.
- *Journal Reviewer:* Agricultural Water Management, Earth's Future, Ecological Indicators, Environmental Modelling & Software, Environmental Research Communications, Environmental Research Letters, Geophysical Research Letters, Human and Ecological Risk Assessment, Hydrology and Earth System Sciences, Hydrology Research, Hydrological Sciences Journal, International Journal of Disaster Risk Reduction, Journal of Cleaner Production, Journal of Environmental Management, Journal of Flood Risk Management, Journal of Hydroinformatics, Journal of Hydrologic Engineering, Journal of Hydrology, Journal of Hydro-Environment Research, Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, Journal of Sustainable Water in the Built Environment, Journal of the American Water Resources Association, Science of the Total

Environment, Natural Hazards and Earth System Sciences, Natural Hazards Review, Scientific Data, Scientific Reports, Theoretical and Applied Climatology, Urban Water Journal, Water Resources Management, Water Research, Water Resources Research.

- *Conference Reviewer:* 2019 World Environmental & Water Resources Congress, 2020 Watershed Management Conference.

Professional Society

- *Secretary:* ASCE-EWRI Surface Water Hydrology Technical Committee (2024-present).
- *Elected Member:* AMS Committee on Hydrology (2025-present), AGU Water Quality Technical Committee (2024-Present), ASCE-EWRI TMDL Analysis and Modeling Task Committee (2016-Present), ASCE-EWRI Watershed Management Technical Committee (2018-Present) and ASCE-EWRI Surface Water Hydrology Technical Committee (2023-present).
- *Regular Member:* ASCE (2010-Present), AGU (2012-Present), IAHS (2010-Present).

Academia

- Member: Student-Faculty Committee. Department of Civil and Environmental Engineering, FAMU-FSU College of Engineering (2023-Present).
- Member: Graduate Committee. Department of Civil and Environmental Engineering, FAMU-FSU College of Engineering (2020-2023).

Conference Session Moderator/Chair

- 2018-2024 World Environmental & Water Resources Congress; AGU Fall Meeting 2020-2024.

Conference Presentation Judge

- 2018 & 2020 AGU Fall Meeting OSPA.

Communities

- *Appointed member*. Leon County Science Advisory Committee. 2023-present.
- *Appointed member*. Bay County Vulnerability Assessment sub-committee of Local Mitigation Strategy Working Group. 2022-present.
- *Appointed member*. Military Installation Resiliency Review's Technical advisory committee. 2023-present.

OUTREACH

K-12 Education

- Science Fair Judge. Pineview Elementary School, Tallahassee, FL. Dec 2021-2024.

Public Education

- Guest Speaker, Lawn and Landscape Webinar Series. *Retention ponds for urban flood mitigation*. University of Florida's Institute of Food and Agricultural Sciences Leon County Extension Office. Jul 2021.