Stanford

Newsha Ajami

Senior Research Scholar, Center for Ocean Solutions

Curriculum Vitae available Online

Bio

BIO

Dr. Ajami is a hydrologist and environmental policy expert and the Founding Director of the Program on Governance for Risk, Resilience, and Recovery (GR3) at the Stanford Doerr School of Sustainability. Trained as a civil and environmental engineer and having served in various policy roles, her work bridges science, policy, finance, and governance to advance resilient water systems. She pioneered the use of data science to study the human and policy dimensions of resilient urban water and hydrologic systems.

Previously, she served as Chief Strategic Development Officer for Research in the Earth and Environmental Sciences Area at Lawrence Berkeley National Laboratory from 2022 to 2026, where she led initiatives at the nexus of water, energy, and climate. Ajami also recently co-led the development of the Aspen National Water Strategy for the Aspen Institute, a national roadmap developed with cross-sector leaders to strengthen U.S. water security, modernize infrastructure, and align water management with economic growth and climate resilience.

Earlier in her career, she founded and directed the Urban Water Program at Stanford University. Dr. Ajami has also held several public service roles, including mayoral appointee to the San Francisco Public Utilities Commission (2021–2024) and gubernatorial appointee to the San Francisco Bay Regional Water Quality Control Board (2013–2021). She served on the Board on Water Science and Technology at the National Academies of Sciences, Engineering, and Medicine, and is currently a Nonresident Senior Fellow at the Brookings Institution.

She is a Fellow of the American Geophysical Union (AGU) and recipient of the prestigious AGU Ambassador Award, recognized for her leadership in bridging science, policy, and society, advancing science communication, and mentoring the next generation of interdisciplinary thinkers. Dr. Ajami received her Ph.D. in Civil and Environmental Engineering from the UC, Irvine, an M.S. in Hydrology and Water Resources from the University of Arizona, and a B.S. in Civil Engineering from Amir Kabir University of Technology in Tehran.

ACADEMIC APPOINTMENTS

- Senior Research Scholar, Center for Ocean Solutions
- Academic Research Staff, Stanford Woods Institute for the Environment
- Senior Research Associate, Water in the West

ADMINISTRATIVE APPOINTMENTS

- Founding Director, Governance for Risk, Resilience, Recovery Program (GR3), (2026- present)
- Founding Director, Urban Water Policy Program, (2013-2022)

HONORS AND AWARDS

- AGU Fellow, American Geophysical Union (2024)
- Ambassador Award, American Geophysical Union (2024)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Board Member, San Francisco Bay Regional Water Quality Control Board (Gubernatorial Appointment) (2013 - 2021)
- Commissioner, San Francisco Public Utilities Commission (2021 - present)
- Scientific Advisory Panel, National Research Council Owens Lake Study (2019 - 2019)
- Board Member, National Academies Board on Water Science and Technology (2018 - present)
- Science Advisory Committee Member, Delta Science Program (2018 - present)
- Advisory Board Member, Sustainable Silicon Valley (2016 - present)

Publications

PUBLICATIONS

- **Communicating Uncertainty in Total Maximum Daily Load Modeling to Support the Application of Probabilistic Models in Practice** *JOURNAL OF ENVIRONMENTAL ENGINEERING*
  Ahmadisharaf, E., Terui, S., Warner, L. A., Ajami, N. K., Gao, V., Benham, B. L., Zhang, Q., Boyer, E. W.
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- **Beyond silos: a conceptual framework for assessing interdependencies in emerging energy transition pathways** *ENVIRONMENTAL RESEARCH LETTERS*
  Zaki, M. T., Zhang, B., Ajami, N. K.
  2026; 21 (13)
- **Spatiotemporal and Economic Impacts of Media on Water Conservation During Drought: An Explainable AI Approach** *WATER RESOURCES RESEARCH*
  Lee, E., Choi, S., Lee, S., Ajami, N. K., Yoon, H., He, X., Kam, J.
  2026; 62 (6)
- **Facilitating water resilience in wildfire affected communities: lessons learned from rapid response research** *FRONTIERS IN WATER*
  Newcomer, M. E., Gonzalez-Pinzon, R., Siirila-Woodburn, E. R., Pena, J., Underwood, J. C., Webster, J. P., Whelton, A. J., Im, J., Paramasamy, D., Ulrich, C., Ajami, N., Meyer, R. S., Jagannathan, et al
  2026; 8
- **Socio-eco-hydrology and coupled human-water systems** *Routledge Handbook of Terrestrial Ecohydrology*
  Ghoreishi, M.
  Routledge.2026
- **The Essential Role of Local Context in Shaping Risk and Risk Reduction Strategies for Snowmelt-Dependent Irrigated Agriculture** *EARTHS FUTURE*
  Gordon, B. L., Boisrame, G. F. S., Carroll, R. W. H., Ajami, N. K., Leonard, B., Albano, C., Mizukami, N., Andrade, M. A., Koebele, E., Taylor, M. H., Harpold, A. A.
  2024; 12 (6)
- **Adaptable and comprehensive vulnerability assessments for water resources systems in a rapidly changing world.** *Journal of environmental management*
  Gordon, B. L., Koebele, E. A., Rego, J. J., Harpold, A. A., Ajami, N. K.
  2024; 352: 119958
- **Building water resilience in the face of cascading wildfire risks.** *Science advances*
  Belongia, M. F., Hammond Wagner, C., Seipp, K. Q., Ajami, N. K.
  2023; 9 (37): eadf9534

- **Fast in the pandemic, durable after droughts, inequal during economic downturn. A 20 year multi-dimensional retrospective analysis of water demand change in Southern California** *ENVIRONMENTAL RESEARCH LETTERS*
  Gross, M., Ajami, N. K., Cominola, A.
  2023; 18 (9)
- **A survey of water utilities' digital transformation: drivers, impacts, and enabling technologies** *NPJ CLEAN WATER*
  Daniel, I., Ajami, N. K., Castelletti, A., Savic, D., Stewart, R. A., Cominola, A.
  2023; 6 (1)
- **Do water savings persist? Using survival models to plan for long-term responses to extreme drought** *ENVIRONMENTAL RESEARCH LETTERS*
  Bolorinos, J., Rajagopal, R., Ajami, N. K.
  2022; 17 (9)
- **Building to conserve: Quantifying the outdoor water savings of residential redevelopment in Denver, Colorado** *LANDSCAPE AND URBAN PLANNING*
  Blount, K., Abdi, R., Panos, C. L., Ajami, N. K., Hogue, T. S.
  2021; 214
- **Environmental Impact Bonds: a common framework and looking ahead** *ENVIRONMENTAL RESEARCH: INFRASTRUCTURE AND SUSTAINABILITY*
  Brand, M. W., Seipp, K., Saksa, P., Ulibarri, N., Bomblies, A., Mandle, L., Allaire, M., Wing, O., Tobin-de la Puente, J., Parker, E. A., Nay, J., Sanders, B. F., Rosowsky, et al
  2021; 1 (2)
- **Infrastructure and the Digital Economy: Reinventing Our Role in the Design, Financing, and Governance of Essential Services for Society** *JOURNAL OF ENVIRONMENTAL ENGINEERING*
  Adriaens, P., Ajami, N.
  2021; 147 (5)
- **Mining the gap in long-term residential water and electricity conservation** *ENVIRONMENTAL RESEARCH LETTERS*
  Bolorinos, J., Rajagopal, R., Ajami, N. K.
  2021; 16 (2)
- **Satellites to Sprinklers: Assessing the Role of Climate and Land Cover Change on Patterns of Urban Outdoor Water Use** *WATER RESOURCES RESEARCH*
  Blount, K., Wolfand, J. M., Bell, C. D., Ajami, N. K., Hogue, T. S.
  2021; 57 (1)
- **Diverse paradigms of residential development inform water use and drought-related conservation behavior** *ENVIRONMENTAL RESEARCH LETTERS*
  Quesnel, K. J., Agrawal, S., Ajami, N. K.
  2020; 15 (12)
- **Trade-offs across the water-energy-food nexus: A triple bottom line sustainability assessment of desalination for agriculture in the San quintin Valley, Mexico** *ENVIRONMENTAL SCIENCE & POLICY*
  Smith, G., Block, L., Ajami, N., Pombo, A., Velasco-Aulcy, L.
  2020; 114: 445–52
- **Consumption change detection for urban planning: monitoring and segmenting water customers during drought** *Water Resources Research*
  Bolorinos, J., Ajami, N. K., Rajagopal, R.
  2020; 56 (3)
- **Shifting landscapes: decoupled urban irrigation and greenness patterns during severe drought** *ENVIRONMENTAL RESEARCH LETTERS*
  Quesnel, K. J., Ajami, N., Marx, A.
  2019; 14 (6)
- **Goal-based water trading expands and diversifies supplies for enhanced resilience** *NATURE SUSTAINABILITY*
  Gonzales, P., Ajami, N. K.
  2019; 2 (2): 138–47

- **Large Landscape Urban Irrigation: A Data-Driven Approach to Evaluate Conservation Behavior** *WATER RESOURCES RESEARCH*
  Quesnel, K. J., Ajami, N. K.
  2019; 55 (1): 771–86

- **A case-study based framework for assessing the multi-sector performance of green infrastructure.** *Journal of environmental management*
  Gordon, B. L., Quesnel, K. J., Abs, R., Ajami, N. K.
  2018; 223: 371–84

- **Advancing Water Innovation through Public Benefit Funds: Examining California's Electricity Public Goods Charge** *Journal American Water Works Association*
  Quesnel, K. J., Ajami, N. K.
  2018; 110 (2)

- **Recent innovations and trends in in-conduit hydropower technologies and their applications in water distribution systems** *Recent innovations and trends in in-conduit hydropower technologies and their applications in water distribution systems*
  Sari, M., Badruzzaman, M., Cherchi, C., Swindle, M., Ajami, N. K., Jacangelo, J. G.
  2018; 228: 416-428

- **Balancing marine ecosystem impact and freshwater consumption with water-use fees in California's power markets: An evaluation of possibilities and trade-offs** *Balancing marine ecosystem impact and freshwater consumption with water-use fees in California's power markets: An evaluation of possibilities and trade-offs*
  Bolorinos, J., Yu, Y., Ajami, N. K., Rajagopal, R.
  2018; 226 (C): 644-654

- **Evaluating Environmental Governance along Cross-Border Electricity Supply Chains with Policy-Informed Life Cycle Assessment: The California-Mexico Energy Exchange.** *Environmental science & technology*
  Bolorinos, J. n., Ajami, N. K., Muñoz Meléndez, G. n., Jackson, R. B.
  2018

- **A novel search algorithm for quantifying news media coverage as a measure of environmental issue salience** *Environmental Modelling & Software*
  Roby, N. A., Gonzales, P., Quesnel, K. J., Ajami, N. K.
  2018; 101: 249-255

- **An integrative regional resilience framework for the changing urban water paradigm** *SUSTAINABLE CITIES AND SOCIETY*
  Gonzales, P., Ajami, N. K.
  2017; 30: 128-138

- **A Framework for Building Efficient Environmental Permitting Processes** *SUSTAINABILITY*
  Ulibarri, N., Cain, B. E., Ajami, N. K.
  2017; 9 (2)

- **The changing water cycle: impacts of an evolving supply and demand landscape on urban water reliability in the Bay Area** *Wiley Interdisciplinary Reviews: Water*
  Gonzales, P., Ajami, N.
  2017; 4 (6): e1240

- **Social and Structural Patterns of Drought-Related Water Conservation and Rebound** *Water Resources Research*
  Gonzales, P., Ajami, N.
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- **Accelerating the Integration of Distributed Water Solutions: A Conceptual Financing Model from the Electricity Sector** *Environmental Management*
  Quesnel, K. J., Ajami, N. K., Wyss, N.
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- **Coordinating water conservation efforts through tradable credits: A proof of concept for drought response in the San Francisco Bay area** *Water Resources Research*
  Gonzales, P., Ajami, N., Sun, Y.
  2017; 53 (9): 7662–7677

- **Changes in water consumption linked to heavy news media coverage of extreme climatic events** *Science Advances*
  Quesnel, K. J., Ajami, N. K.
  2017; 3 (10): e1700784
- **Monthly water balance modeling: Probabilistic, possibilistic and hybrid methods for model combination and ensemble simulation** *JOURNAL OF HYDROLOGY*
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- **Complexity in microbial metabolic processes in soil nitrogen modeling: a case for model averaging** *STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT*
  Ajami, N. K., Gu, C.
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- **Addressing snow model uncertainty for hydrologic prediction** *ADVANCES IN WATER RESOURCES*
  Franz, K. J., Butcher, P., Ajami, N. K.
  2010; 33 (8): 820-832
- **Reply to Comment by B. Renard et al. on "An integrated hydrologic Bayesian multimodel combination framework: Confronting input, parameter, and model structural uncertainty in hydrologic prediction"** *WATER RESOURCES RESEARCH*
  Ajami, N. K., Duan, Q., Sorooshian, S.
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- **Sustainable water resource management under hydrological uncertainty** *WATER RESOURCES RESEARCH*
  Ajami, N. K., Hornberger, G. M., Sunding, D. L.
  2008; 44 (11)
- **Multi-model ensemble hydrologic prediction using Bayesian model averaging** *ADVANCES IN WATER RESOURCES*
  Duan, Q., Ajami, N. K., Gao, X., Sorooshian, S.
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- **An integrated hydrologic Bayesian multimodel combination framework: Confronting input, parameter, and model structural uncertainty in hydrologic prediction** *WATER RESOURCES RESEARCH*
  Ajami, N. K., Duan, Q., Sorooshian, S.
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- **Multi-Model Combination Techniques for Hydrological Forecasting: Application to Distributed Model Intercomparison Project Results** *Journal of Hydrolometeorology*
  Ajami, N. K., Duan, Q., Gao, X., Sorooshian, S.
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- **Hydrologic ensemble prediction experiment focuses on reliable forecasts** *EOS*
  Franz, K., Ajami, N. K., Schaake, J., Buizza, R.
  2005; 86 (25): 239
- **Overall distributed model intercomparison project results** *JOURNAL OF HYDROLOGY*
  Reed, S., Koren, Smith, M., Zhang, Z., Moreda, F., Seo, D. J., DMIP Participants
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- **Calibration Of A Semi Distributed Hydrologic Model For Streamflow Estimation Along A River System** *Journal of Hydrology*
  Ajami, N. K., Gupta, H., Wagner, T., Sorooshian, S.
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