Curriculum Vitae

Margaret Garcia

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Web Resources: *Google Scholar*

TABLE OF CONTENT

Sections based on CV template required by the Fulton Schools of Engineering at Arizona State University
Last update: 12/30/2024

BASIC INFORMATION

Education

August 2012 – May 2017: Ph.D. in Civil & Environmental Engineering, Tufts University, Medford, Ma. Dissertation: *Infrastructure, Hydrology, and Policy: Socio-Hydrological Modeling of Urban Water Consumption Dynamics*

September 2011 – June 2012: M.S. in Civil & Environmental Engineering, Concentration in Hydrology and Water Resources Engineering. University of California, Los Angeles, CA.

August 2003 – May 2007: B.S. Civil & Environmental Engineering, B.A. International Studies. Lafayette College. Thesis: *Improving Evaluation Methods for Small Water Systems to Aid Sustainable Design*

Academic Experience

August 2024 – Present: Associate Professor at the School of Sustainable Engineering and the Built Environment, Arizona State University, Tempe, Arizona.

August 2017 – July 2024: Assistant Professor at the School of Sustainable Engineering and the Built Environment, Arizona State University, Tempe, Arizona.

August 2017 – Present: Senior Global Futures Scientist, Global Futures Laboratory (formerly the Global Institute of Sustainability and Innovation), Arizona State University, Tempe, Arizona.

Professional Licensure

2006 – Present: Engineer in Training, State of Pennsylvania

2008 – Present: LEED Accredited Professional

Areas of Expertise

Teaching: Hydrology, data science, uncertainty analysis, socio-hydrology

Research: Water resources infrastructure, climate adaptation, system analysis, socio-hydrology, hydrological modeling

HONORS, AWARDS AND DISTINCTIONS

2021: Nominee for the International Science Council's Early Career Award, Nominated by National Academies of Sciences, Engineering and Medicine's Board on International Scientific Organizations

2020: NSF CAREER Award

2020: ASU Nominee for the Packard Fellowship

2019: Invited Faculty Advisor at the Summer Research Institute on Transboundary Water Management, Kunming, China

2016: Littleton Award, Civil & Environmental Engineering Department, Tufts University

2016: National Socio-Environmental Synthesis Center Graduate Student Fellow

2015: Future Leaders in Engineering Education Fellowship, Tufts University ($24,000)

2015: Water Systems Science Society Fellowship, Tufts University ($4,000)

2014: Young Scientist Summer Program Fellowship, International Institute of Applied Systems Analysis ($7,000)

2012-2014: National Science Foundation Integrative Graduate Education and Research Traineeship in Water Diplomacy, Tufts University ($84,000)

2007: Intellectual Citizenship Award, Lafayette College

2007: Carroll Phillips Bassett Prize outstanding senior, Civil Engineering, Lafayette College

2006: Environmental Protection Agency P3 Award (As project manager of Engineers without Borders Lafayette College Student Chapter) ($75,000)

2003-2007: Marquis Scholarship, Lafayette College ($48,000)

PUBLICATIONS, INTELLECTUAL PROPERTY, AND PRESENTATIONS

PUBLICATIONS AND INTELLECTUAL PROPERTY

Summary

Abstracts Published in Conference Proceedings: 58
Journal Publications (Published, In Press, and /or Accepted) from ASU: 35
Journal Publications Prior to ASU (Published, In Press, and /or Accepted): 4
Total Journal Publications (Published, In Press, and/or Accepted): 39
Manuscripts Submitted / in Revision from ASU: 6
Manuscripts in Preparation from ASU: 4
Journal Editorials Published: 3
Invited Book Chapters Published: 5
Invited Book Chapters Submitted / In Preparation: 0
Refereed Conference Papers: 2
Data sets and models published: 5

Legend

(*) Corresponding Author
Bold Font: ASU Ph.D. Student for whom Dr. Garcia is the primary advisor
Bold Italic Font: ASU Ph.D. Student for whom Dr. Garcia is a co-advisor or has significant mentoring responsibility
Underline Font: ASU Master's Student for whom Dr. Garcia is the primary advisor or a co-advisor
(#) ASU Undergraduate Student
(✕) ASU Postdoctoral Researcher
(+) Equal Contributions (if not equal include estimated % of participation)
(~) Presenting author

Overview. *Dr. Garcia has 39 published papers since 2015. Dr. Garcia is first author on seven papers. She has co-authored twelve papers with postdoctoral scholars, Ph.D. students, and M.S. students that she has directly supervised at ASU. She has currently six papers under review (three co-authored with students she directly supervises) and six in preparation (four co-authored with students she directly supervises).*

In Dr. Garcia's research areas, the first author is usually the person that provided the largest contribution to the paper, followed by the other authors; the corresponding author is the individual that has led the research paper. Dr. Garcia's H-index is 17 and the number of citations is 1698 *(Google Scholar; September 29, 2024).*

Total Journal Publications (Published, In Press, and/or Accepted): 39

1. **Alonso Vicario, S.,** Hornberger, G., Garcia, M. (2025). Drivers and trends of streamflow droughts in natural and human-impacted basins across the contiguous United States. *Journal of Hydrology*

2. Olivier, T., Yu, D., Shin, H., Garcia, M. (2025). Rule-mediated connectivity in reservoir operation: A Comparative Network Analysis of Argentina and the United States. *Journal of Environmental Management.* Impact Factor: 6.0. *Role*: literature review, writing, editing, funding acquisition.

3. Azizi, K.(✕)*, Barnes, J., Deslatte, A., Koeble, E., Anderies, J.M., Garcia, M. (2025). The Distributional Impacts of Sustainable Water Management Transitions: The Case of the Miami-Dade Water and Sewer Department. *Journal of Water Resources Planning and Management.* Impact Factor: 3.537. *Role*: supervision, conceptualization, writing, editing, funding acquisition.

4. Yu, D., Shin, H., Olivier, T., Garcia, M., Meerow, S., Park, J. (2025). Identifying Logical Interdependencies in Infrastructures. *Risk Analysis. Role*: writing, editing, funding acquisition.

5. Perez, C.F., **Alonso Vicario, S.,** von Cauwenbergh, N., Garcia, M. and Werner, M. (2024). Disentangling the Socio-Natural Dynamics of Drought and Water Scarcity in Colombia's Tropical Andes. *Journal of Hydrology: Regional Studies.* Role: writing and editing.

6. ***Lawless, K.L.*,*** Garcia, M. and White, D.D. (2024). Institutional Analysis of Water Governance in the Colorado River Basin, 1922-2022. *Frontiers in Water.* Impact Factor: 3.98. *Role*: conceptualization, supervision, editing, funding acquisition.

7. Van Loon, Garcia, M. et al. (2024). Drought as a continuum: memory effects in interlinked hydrological, ecological, and social systems. *Natural Hazards and Earth Systems Science*. *Role*: case study development, writing, editing, funding acquisition.

8. Garcia, M.*,* **Mohajer Iravanloo, B.,** and Sivapalan, M. (2024). A Diagnostic Approach to Modeling Watersheds with Human Interference. *Journal of Hydrology.* Impact Factor: 5.24. *Role*: conceptualization, methodology, writing, editing, funding acquisition.

9. Azizi, K.(✕)*, Barnes, J, Anderies J.M., and Garcia, M. (2024). Equity implications of Efficient Water Conservation Programs. *Environmental Research Letters*. *Role*: conceptualization, supervision, writing, editing, funding acquisition.

10. **Shrestha, A.,** Garcia, M. (20%), and Doerry, E. (2024). Leveraging catchment scale automated novel data collection infrastructure to advance urban hydrologic-hydraulic modeling. *Environmental Modeling & Software*. Impact Factor: 5.471. *Role*: conceptualization, supervision, editing, funding acquisition.

11. Azizi, K.(✕)**,* Hornberger, G., Baggio, J., Koebele, E., Anderies, M. and Garcia, M. (15%). (2024). What conditions support the provision of high-quality and affordable urban drinking water in the U.S.? *Journal of Water Resources Planning and Management.* Impact Factor: 3.537. *Role*: conceptualization, supervision, editing, funding acquisition.

12. **Alonso Vicario, S.***, Hornberger, G., Mazzoleni, M., and Garcia, M. (15%), (2024). The importance of climate and anthropogenic influence in precipitation partitioning in the Contiguous United States. *Journal of Hydrology.* Impact Factor: 5.24. *Role*: conceptualization, supervision, editing, funding acquisition.

13. Barendrecht, M.*,* Matanó, A., Mendoza, H., Weesie, R., Rohse, M., De Ruiter, M., Garcia, M. (5%), Mazzoleni, M., Aerts, J., Ward, P., Di Baldassarre, G., Day, R., Van Loon, A. (2024). Exploring drought-to-flood interactions and dynamics: a global case review. *WIRE's Water.* Impact Factor: 7.428. *Role*: conceptualization, writing, editing.

14. Wiechman, A.* Anderies, M., Garcia, M. (15%), **Alonso Vicario, S.**, Azizi, K.(✕), and Hornberger, G. (2024). Institutional Dynamics Impact the Response of Urban Socio-Hydrologic Systems to Supply Changes. *Water Resources Research*. Impact Factor: 5.24. *Role*: conceptualization, supervision, editing, funding acquisition.

15. **Shrestha, A.*,** Garcia, M. (20%) (2023). Influence of precipitation uncertainty and land use change on the optimal catchment scale green infrastructure configuration. *Journal of Sustainable Water and the Built Environment. 9*(2), 04023001. Impact Factor: 2.453. *Role*: methodology, supervision, editing, funding acquisition. ***Featured as Editor's Choice for Vol 9 Issue 2.***

16. Rudko, N., Muenich, R.*,* Garcia, M. (10%), & Xu, T. (2023). Development of a Point-Source Model to Improve Simulations of Manure Lagoon Interactions with the Environment. *Journal of Environmental Management*. *325*, 116332. Impact Factor: 6.789. *Role*: methodology, editing.

17. **Shrestha, A.*,** Park, S., Cherry, C., Souza, F. A., Garcia, M. (10%), Yu, D., Mendiondo, E. M. (2022). Socio-Hydrological Modelling of the Tradeoff Between Flood Control and Hydropower Provided by the Columbia River Treaty. *Hydrology and Earth System Sciences. 26*(19), 4893-4917. Impact factor: 6.617. *Role*: methodology, supervision, writing, editing.

18. Garcia, M.* (50%), Yu, D., Park, S., **Iravanloo, B. M.,** Bahambari, P. Y., & Sivapalan, M. (2022). Weathering water extremes and cognitive biases in a changing climate. *Water Security. 15*, 100110. Impact Factor: 3.87. *Role*: conceptualization, methodology, writing, editing, funding acquisition.

19. **Shrestha, A.*,** Mascaro, G., & Garcia, M. (15%) (2022). Effect of stormwater infrastructure data completeness and model resolution on urban flood modeling. *Journal of Hydrology*, *607*, 127498. Impact Factor: 6.708. *Role*: conceptualization, supervision, editing, funding acquisition.

20. Lara-Valencia, F., Garcia, M.* (20%), Norman, L. M., Morales, A. A., & Castellanos-Rubio, E. E. (2022). Integrating urban planning and water management through green infrastructure in the United States-Mexico

border. *Frontiers in Water*, *4*, 4. Impact Factor not yet available (new journal). *Role*: supervision, visualization, writing, editing, funding acquisition.

21. Hjelmstad, A., **Shrestha, A.,** Garcia, M. (10%), & Mascaro, G.* (2021). Propagation of radar rainfall uncertainties into urban pluvial flood modeling during the North American monsoon, AZ. *Journal of Hydrological Science. 66*(15), 2232-2248. Impact Factor: 3.942. *Role*: supervision, methodology, editing, funding acquisition.

22. Helmrich, A. M.*, Ruddell, B. L., Chester, M., Bessem, K., Chohan, N., Doerry, E., Eppinger, J., Garcia, M. (5%), Goodall, J. L., Lowry, C., & Zahura, F. T. (2021). Opportunities for Crowdsourcing in Urban Flood Monitoring. *Journal of Environmental Modeling and Software*. *143*, 105124. Impact Factor: 5.471. *Role*: writing, editing, funding acquisition.

23. Deslatte, A.*, Helmke-Long, L., Anderies, J. M., Garcia, M. (10%), Hornberger, G. M., & Koebele, E.A. (2022). Assessing sustainability through the Institutional Grammar of urban water systems. *Policy Studies Journal*, 50(2), 387-406. Impact Factor: 5.141. *Role*: methodology, writing, editing, funding acquisition.

24. Garcia M* (80%), and Islam S. (2021). Water stress & water salience: implications for water supply planning. *Hydrologic Sciences Journal. 66*(6), 919-934. Impact Factor: 3.942. *Role*: conceptualization, methodology, visualization, writing, editing.

25. Chester M*, Underwood S, Allenby B, Miller T, Preston B, Sanders K, Garcia M. (10%), Samaras C, and Markolf S. (2021). Infrastructure resilience to navigate increasingly uncertain and complex conditions in the Anthropocene. *Npj Urban Sustainability*, *1*(1), 4. Impact Factor not yet available (new journal). *Role*: conceptualization, writing, editing.

26. Garcia M* (50%), Ridolfi E, and di Baldassarre G. (2020). The interplay between reservoir storage and operating rules under evolving conditions. *Journal of Hydrology*, *590*, 125270. Impact Factor: 6.708.

27. Brelsford, C (15%), Dumas, M* (15%), Schlager, E+, Dermody, B+, Aiuvalasit, M+, Allen-Dumas, M+, Beecher, J+, Bhatia, U+, D'Odorico, P+, Garcia, M+, Gober, P+, et al. (2020). Developing a sustainability science approach for water systems. *Ecology and Society*, *25*(2). Impact Factor: 4.403. *Role*: conceptualization, writing, editing.

28. Garcia M* (30%), Koebele, E, Deslatte, A, Ernst, K, Manago, K, and Treuer, G. (2019). Drivers of and barriers to sustainable urban water management transitions: a cross case comparison. *Global Environmental Change, 53*(1), 891-908. Impact Factor: 11.156. *Role*: conceptualization, methodology, data curation, visualization, writing, editing, funding acquisition.

29. Di Baldassarre, G.*, Sivapalan, M., Rusca, M., Cudennec, C., Garcia, M. (5%), Kreibich, H., Konar, M., et al. (2019). Socio-hydrology: scientific challenges in addressing a societal grand challenge. *Water Resources Research*, *55*(8), 6327-6355. Impact Factor: 5.24. *Role*: data curation, writing, editing.

30. Zipper, S. C.*, Whitney, K. S., Deines, J. M., Befus, K. M., Bhatia, U., Albers, S. J., Beecher, J., Garcia, M. (5%), et al. (2019). Balancing Open Science and Data Privacy in the Water Sciences. *Water Resources Research, 55*(7), 5202-5211. Impact Factor: 5.24. *Role*: conceptualization, writing, editing.

31. Garcia, M*(80%) and Islam, S. (2019). The Role of External and Emergent Drivers of Water Use Change in Las Vegas. *Urban Water Journal, 15*(9), 888-898. Impact Factor: 2.675. *Role*: conceptualization, methodology, data curation, visualization, writing, editing.

32. Gilrein EJ*, Carvalhaes TM, Markolf SA, Chester MV, Allenby BR, and Garcia M (10%). (2019). Emerging concepts and practices for transforming infrastructure from rigid to adaptable. *Sustainable and Resilient Infrastructure, 6*(3-4), 213-234. Impact Factor: 3.937. *Role*: methodology, editing.

33. Wallen, KE*, Filbee-Dexter, K, Pittman, J, Posner, SM, Alexander, SM, Romulo, CL, Bennett, DE, Clark, EC, Cousins, SJM, Dubik, BA, Garcia (4%), M, Haig, HA, Koebele, EA, Qiu, J, Richards, RC, Symons, CC, Zipper, SC. (2019). Integrating team science into interdisciplinary graduate education: an exploration of the SESYNC Graduate Pursuit. *Journal of Environmental Studies and Sciences*, *9*, 218-233. Impact Factor: 3.10. *Role*: conceptualization, writing, editing.

34. Konar, M*, Garcia M (18%), Sanderson MR, Yu DJ, & Sivapalan M. (2019). Expanding the scope and foundation of sociohydrology as the science of coupled human-water systems. *Water Resources Research, 55*(2), 874-887. Impact Factor: 5.24. *Role*: conceptualization, writing, editing.

35. Di Baldassarre, G*, Wanders, N, AghaKouchak, A, Kuil, L, Rangecroft, S, Veldkamp, TIE, Garcia, M (7%), van Oel, PR, Breinl, K, and Van Loon, AF (2018). Water shortages worsened by reservoir effects. *Nature Sustainability*, 1(11), 617-622. Impact Factor: 27.157. *Role*: data curation, visualization, writing, editing.

36. Treuer, G*, Koebele, E, Deslatte, A, Ernst, K, Garcia, M. (15%) and Manago, K, (2017). A narrative method for analyzing transitions in urban water management: The case of the Miami-Dade Water and Sewer Department. *Water Resources Research*, 53(1), 891-908. Impact Factor: 5.24. *Role*: conceptualization, methodology, data curation, writing, editing, funding acquisition.

37. Srinivasan, V*, Sanderson, M, Garcia, M. (15%), Konar, M, Blöschl, G and Sivapalan, M, (2017). Prediction in a socio-hydrological world. *Hydrological Sciences Journal*, 62(3), 338-345. Impact Factor: 3.942. *Role*: conceptualization, writing, editing.

38. Garcia, M* (80%), Portney, K, & Islam, S, (2016). A question driven socio-hydrological modeling process. *Hydrology and Earth System Sciences*, 20(1), 73-92. Impact factor: 6.617. *Role*: conceptualization, methodology, data curation, writing, editing.

39. Read, L* and Garcia, M. (50%), (2015). Water diplomacy: Perspectives from a group of interdisciplinary graduate students. *Journal of Contemporary Water Research & Education*, 155(1), 11-18. Impact Factor: 0.514. *Role*: conceptualization, methodology, writing, editing.

Manuscripts Submitted / in Revision from ASU: 7

1. **Tezcan, B.*** and Garcia, M. (30%) (In Review). Training a Non-Homogenous Hidden Markov Model with PMDI and Temperature to Create Climate Informed Hydrologic Scenarios. *Frontiers in Water.* Impact Factor: 6.708. *Role*: conceptualization, supervision, editing, funding acquisition.

2. Olivier, T., Yu, D., Shin, H., Garcia, M. (In Review). WhatsApp governance: strategies for collaboration in a context of weak institutions. *Policy Studies Journal*. *Role*: writing, editing, funding acquisition.

3. Wiechman, A., Deslatte, A., Koebele, E., Garcia, M., and Anderies, JM. (In Review). Connecting Institutional Design to Infrastructure System Robustness: A Mixed Methods Investigation of Administrative Choice. Submitted to *Journal of Public Administration Research and Theory*

4. Wiechman, A., Deslatte, A., Koebele, E., Garcia, M., and Anderies, JM. (In Review). The Inclusion-Consensus Trade-Off: Comparing the Design and Functionality of Collaborative Water Governance Forums. Submitted to *Policy Studies Journal*

5. Gautam, S., Park, S., Yu, D.J., Garcia, M., Sivapalan, M., and Shin, H.C. (In Review). Homo juridicus, homo heuristicus, and homo anticipans: a sociohydrological study of operator behavior and flood-drought tradeoffs in reservoirs. *Water Resources Research*

6. Gupta, N., Meixner, T., Gallo, E., Korgaaonkar, Y., Garcia, M. (In Review). Hydrological Evaluation of Influence of Green Stormwater Infrastructure on Neighborhood-Scale Semi-Arid Nested Catchments in Tucson, Arizona. *Journal of Sustainable Water & the Built Environment*

7. Azizi, K. et al. (In Review). Socio-Behavioral Dynamics of Household Stormwater Management: An Agent-Based Exploration of Green Stormwater Infrastructure Adoption. *Nature Cities*

Manuscripts in Preparation from ASU: 5

1. Wiechman, A., Garcia, M., and Anderies, JM. (In prep). Politics, Inequality, & Robustness of Shared Infrastructure Systems in the Anthropocene. To be submitted to: *Proceedings of the National Academy of Sciences.*

2. ***Lawless K.,*** Garcia, M., Wutich, A., White, D.D. (In Prep). Policy Analysis of Rural Groundwater Management in Arizona: Voter-Driven Policy Change. To be submitted to: *Society & Natural Resources*

3. ***Lawless K.,*** Garcia, M., Wutich, A., White, D.D. (In Prep). Coordinating Colorado River Water Management: Governance and Upstream-Downstream Dynamics. To be submitted to: *Policy Studies Journal: Policy Theory and Practice*

4. Garcia, M., Deslatte, A., Koebele, E., Garcia, M., Hornberger, G., Anderies, JM., **Alonso Vicario, S**., Azizi, K. (✕), Barnes, J., Wiechman, A., (In Prep). Fit to keep pace with change? Archetypes of urban water systems. To be submitted to: *Ecology & Society*

5. **Alonso Vicario, S**. Garcia, M., Wiechman, A., Anderies, JM, Hornberger, G. (In Prep). Vulnerability of Urban Water Systems to Changing Droughts: The Case of Santa Rosa, California

Journal Editorials Published:

1. Kaspryzk, J.*, & Garcia, M. (50%) (2023). Guiding Questions for Water Resources Systems Analysis Research. *Journal of Water Resources Planning and Management.* 149 (8): 1–4. Impact factor: 3.537. *Role*: conceptualization, writing, editing, funding acquisition.
2. Srinivasan, V. (20%), Sanderson, M. (16%), Garcia, M. (16%), Konar, M. (16%), Blöschl, G. (16%), & Sivapalan, M. (16%) (2018). Moving socio-hydrologic modelling forward: unpacking hidden assumptions, values and model structure by engaging with stakeholders. *Hydrological Sciences Journal,* 63 (9), 1444-1446. Impact Factor: 3.942. *Role*: conceptualization, writing, editing.
3. Levy, M. C., Garcia, M. (30%), Blair, P., Chen, X., Gomes, S. L., Gower, D. B., Grames, J., Kuil, L., Liu, Y., Martson, L., McCord, P. F., Roobavannan, M., Zeng, R. (2016). Wicked but worth it: student perspectives on socio-hydrology. *Hydrol. Process*, *30*(9), 1467-1472. Impact Factor: 3.55. *Role*: conceptualization, methodology, writing, editing.

Intellectual Property Disclosures from ASU: 1

1. **Shrestha, A.,** and Garcia, M. (2022). Stormwater Infrastructure Modeling and Data Support Tools. Invention Disclosure Submitted for Review to Skysong Innovations in December 2022.

Published Data Sets and Model Products from ASU: 6

1. **Alonso Vicario, S.,** M. Garcia, M. Mazzoleni, G. Hornberger (2025). Drivers and trends of streamflow droughts in natural and human-impacted basins across the contiguous United States, CUASHI HydroShare Database. https://doi.org/10.4211/hs.48dd60fa723a4720ac66d580e4c19b9a
2. **Alonso Vicario, S**., Hornberger, G., Mazzoleni, M., & Garcia, M. (2024). Climate, land use, topography, soil, vegetation, and anthropogenic factors for GAGES-II gages (1990-2020). CUASHI HydroShare Database. https://doi.org/10.4211/hs.eb4fcfe84d95474b8cbe3477bcb4e0be
3. Garcia, M. (2024). Model of Human Influenced Hydrology of the East Fork of the Russian River (CA, USA) with data. CUASHI HydroShare Database. https://doi.org/10.4211/hs.1d1f7d9e86e049ee92ce6d0df2ebdff4
4. **Shrestha, A.,** Garcia, M. (2024). Algorithm for novel data application & urban flood model. CUASHI HydroShare Database. https://doi.org/10.4211/hs.0b994c0f13f445ababaa8858ece6e843
5. Wiechman, A., **Alonso Vicario, S.,** Garcia, M., Hornberger, G., & Anderies, J. (2023). Urban Water Infrastructure Investment Model (PMA Version). CUASHI HydroShare Database. https://doi.org/10.4211/hs.136128c172c3414397be66e66678c7b4
6. **Shrestha, A.,** Garcia, M. (2023). Filling missing stormwater infrastructure attributes data for hydrologic-hydraulic (SWMM) model development. CUASHI HydroShare Database. https://doi.org/10.4211/hs.eaf9a871fd254a759a4f381be4f0a325

Invited Book Chapters Published: 5

1. Garcia, M.* (30%), Koebele, E., Haeffner, M., Massuel, S., Mens, M., Ajami, N., Teutchbein, C., **Tezcan, B.,** & White, C. (In Press). Chapter 7: Human-Drought Systems. In Coevolution and Prediction of Coupled Human-Water Systems: A Synthesis of Change in Hydrology and Society. Published by International Association of Hydrological Sciences
2. Marvel, K. (20%), Su, W. (10%), Delgado, R. (10%), Aarons, S.+, Chatterjee, A.+, Garcia, M.+, Hausfather, Z.+, Hayhoe, K.+, Hence, D.+, Jewett, E.+, Robel, A.+, Singh, D.+, Tripati, A.+, Vose, R.+ (2023). Chapter 2: Climate Trends. 5th National Climate Assessment. https://nca2023.globalchange.gov/chapter/2/

3. Deslatte, A.*, Garcia, M. (15%), Anderies, J. M., & Koebele, E. (2022). Sustainability Transitions in Urban Water Management: Assessing the Robustness of Institutional Arrangements. In Routledge Handbook on Urban Water Governance.
4. Turlington, M.W., de Neufville, R. and Garcia, M. (20%), 2017. Flexible Design of Water Infrastructure Systems. Water Diplomacy in Action: Contingent Approaches to Managing Complex Water Problems, 1, p.51. http://www.jstor.org/stable/j.ctt1jktqgh
5. AlMisnad, A., de Neufville, R. and Garcia, M. (20%), 2017. Risk Distribution and the Adoption of Flexibility: Desalination Expansion in Qatar. Water Diplomacy in Action: Contingent Approaches to Managing Complex Water Problems, 1, p.229. http://www.jstor.org/stable/j.ctt1jktqgh

Refereed Conference Papers: 2

1. Hjelmstad, A.#, Garcia, M. (40%), & Larson, K. (2019). Effect of Drought Policies on Los Angeles Water Demand. World Environmental and Water Resources Congress.
2. Parker, P. J., Penn, M. R, Apul, D. S., Garcia, M. (18%), & Torlapati, J. (2018). Collaboratively Developing an Introductory Infrastructure Systems Curriculum: The One Water Module. ASEE Annual Conference & Exposition

Abstracts Published in Conference Proceedings: 62

1. Garcia, M., Anderies, J.M., Deslatte, A., Hornberger, G., Koebele, E., **Alonso Vicario, S.,** Azizi, K. **(✕)**, Barnes, J., Wiechman, A. (2024, December). Fit to keep pace with change? Archetypes of urban water systems. American Geophysical Union Fall Meeting. Washington, DC: American Geophysical Union
2. **Alonso Vicario, S.,** Hornberger, G. & Garcia, M. (2024, December). Spatiotemporal Patterns and Trends of Drought Characteristics in Natural and Human-Modified Basins in the Contiguous United States. American Geophysical Union Fall Meeting. Washington, DC: American Geophysical Union
3. Wiechman, A., Anderies, J.M., & Garcia, M. (2024, December). Can Political Processes Responsible for Infrastructure Investment Adapt to Environmental Change? A General Dynamical Systems Approach. American Geophysical Union Fall Meeting. Washington, DC: American Geophysical Union
4. **Tezcan, B.** & Garcia, M. (2024, December). Enhancing Water Supply Resilience in the Colorado River Basin under Hydrological Uncertainty. American Geophysical Union Fall Meeting. Washington, DC: American Geophysical Union
5. Azizi, K. **(✕)** (~), Barnes, J., Koebele, E., Anderies, J.M. and Garcia, M., (2023, December). Equity and Effectiveness in Sustainable Water Management Practices: Insights from Miami-Dade's Water Conservation Program. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
6. ***Lawless, K.*** (~)**,** & Garcia, M. (2023, December). Colorado River Water Management Coordination: Governance and Upstream-Downstream Dynamics. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
7. Azizi, K. **(✕),** Baggio, J., Koebele, E., Anderies, J.M. and Garcia, M. (2023, December). Identifying Key Factors for Providing High-Quality and Affordable Drinking water: A Study of U.S. Urban Water Systems. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
8. **Tezcan, B.** (~)**,** & Garcia, M. (2023, December). Training a Non-Homogenous Hidden Markov Model with PMDI and Temperature to Create Climate Informed Hydrologic Scenarios. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
9. Guatam, S., Yu, D., Sivapalan, M. and Garcia, M. (2023, December). Water Extremes: The Interplay of Formal Rules and Cognitive Biases in Reservoir Operation. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union.
10. Hausfather, Z., Marvel, K., Su, W., Delgado, R.A., Aarons, S.M., Chatterjee, A., Garcia, M., Hayhoe, K., Hence, D.A., Jewett, E., Robel, A., Singh, D., Tripati, A.K., Vose, R.S. (2023, December). Chapter 02 - Climate Trends - The Fifth National Climate Assessment. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union.
11. **Alonso Vicario, S.** (~), Mazzoleni, M., and Garcia, M. (May, 2023). Exploring the human influence on surface water availability in the contiguous United States. European Geophysical Union Meeting, Vienna, Austria
12. Wiechman, A. (~), **Alonso Vicario, S.,** Koebele, E., Deslatte, A., Hornberger, G., Garcia, M., & Anderies, J. M. (2023, January). Capturing the Policy Process in Dynamic Models of Coupled Infrastructure Systems: An Urban Water Example. Conference on Policy Process Research. Denver, CO: University of Colorado Denver School of

Public Affairs.

13. Gund, K. (~), & Garcia, M. (2022, December). Model Complexity in a Data Sparse Semi-Arid Region of the Rio Chubut River Basin. American Geophysical Union Fall Meeting. Chicago, Illinois: American Geophysical Union
14. ***Lawless, K.*** (~)**,** & Garcia, M. (2022, December). Institutional Analysis of the Colorado River Basin's Water Governance. American Geophysical Union Fall Meeting. Chicago, Illinois: American Geophysical Union
15. Helmrich, A. (~), Ruddel, B., Bessem, K., Chester, M., Chohan, N., Doerry, E., … Zahura, F. (2022, December). Opportunities for crowdsourcing in urban flood monitoring. American Geophysical Union Fall Meeting. Chicago, Illinois: American Geophysical Union
16. Garcia, M. (~), & Sivapalan, M. (2022, December). A diagnostic approach to modeling watersheds with human interference. American Geophysical Union Fall Meeting. Chicago, Illinois: American Geophysical Union
17. **Shrestha, A.** (~)**,** & Garcia, M. (2022, December). Influence of precipitation uncertainty and land use change on the optimal catchment scale green stormwater infrastructure configuration. American Geophysical Union Fall Meeting. Chicago, Illinois: American Geophysical Union.
18. **Tezcan, B.** (~)**,** & Garcia, M. (2022, December). A Non-Homogenous Hidden Markov Model to Generate Future PMDI Time Series in order to Inform Water Supply Planning and Generate Streamflow Ensembles. American Geophysical Union Fall Meeting. Chicago, Illinois: American Geophysical Union.
19. ***Lawless, K.*** (~)**,** Garcia, M., & White, D. D. (2022, June). Institutional Analysis of the Colorado River Basin's Water Governance. International Association for Society and Natural Resources Conference. San José, Costa Rica: International Association for Society and Natural Resources.
20. Garcia, M. (~), Yu, D., Park, S., Yousefi Bahambari, P., **Mohajer Iravanloo, B.,** & Sivapalan, M. (2022, June). Weathering water extremes and cognitive biases in a changing climate. Frontiers in Hydrology. San Juan, PR: American Geophysical Union.
21. **Shrestha, A.** (~)**,** Garcia, M., & Mascaro, G. (2021, December). Improving Calibration of Urban Flood Models Using Camera Images and Binary Observations from Citizen Science Contributions. American Geophysical Union Fall Meeting. New Orleans, LA: American Geophysical Union.
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28. Garcia, M. (~)., Koebele, E., Ajami, N., Haeffner, M., Mens, M., Teutschbein, C., **Tezcan, B.,** White, C. (2021, September). Panta Rhei: Integrating Human & Natural Dimensions of Drought. International Conference on Sociohydrology. Delft, Netherlands.
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31. Van Loon, A. (~), Matanó, A., Di Baldassarre, G., Day, R., Garcia, M., Rohse, M., … Ward, P. (2021).

Unravelling socio-hydrological processes behind cascading drought-to-flood disasters. European Geophysical Union Annual Meeting. Virtual: European Geophysical Union.

32. **Mohajer Iravanloo, B.,** (~). Garcia, M., Janssen, M. A., & Yu, D. (2021, April). Model Informed Data Collection in Coupled Human-Water Systems: An Exploratory Application of a Hydrological and Agent-Based Model. European Geophysical Union Annual Meeting. Virtual: European Geophysical Union.
33. Park, S. (~), Yousefi, P., **Mohajer Iravanloo, B.,** Garcia, M., Sivapalan, M., & Yu, D. (2021). Socio-hydrological analysis of adaptive reservoir operation: Navigating the tradeoffs between flood risk and water shortages. AAG Annual Meeting. Virtual: American Association of Geographers.
34. Hjelmstad, A. (~), **Shrestha, A.,** Garcia, M., Hopper, L. J., Iñiguez, P., & Mascaro, G. (2021). Propagation of Radar Rainfall Uncertainty into Urban Flood Predictions during the North American Monsoon. American Meterological Society. Online.
35. Garcia, M. (~), **Alonso Vicario, S.,** & Hornberger, G. (2020, December). A Mixed-Method Approach to Detecting and Attributing Changes in Streamflow. In American Geophysical Union Fall Meeting. American Geophysical Union.
36. Rudko, N. (~), Muenich, R. L., Garcia, M., & Xu, T. (2020, December). Hydrologic and Water Quality Modeling of a CAFO Dairy Lagoon. In American Geophysical Union Fall Meeting. American Geophysical Union.
37. **Mohajer Iravanloo, B.,** (~), Sivapalan, M., & Garcia, M. (2020, December). Top-Down Approach for Time-Variant Anthropogenic Signature Attribution in Socio-Hydrological Systems. In American Geophysical Union Fall Meeting. American Geophysical Union.
38. Cherry, C. (~), Park, S., **Shrestha, A.,** Souza, F. A., Garcia, M., Sivapalan, M., & Yu, D. (2020, December). Behavioral Sciences Approach to Analyzing Cooperation Dynamics in Transboundary Water Management between the U.S. and Canada in the Columbia River Basin. In American Geophysical Union Fall Meeting. American Geophysical Union.
39. **Shrestha, A.** (~), Garcia, M., & Mascaro, G. (2020, December). Effect of data and model resolution on urban flood modeling. In American Geophysical Union Fall Meeting. American Geophysical Union
40. Souza, F. A. (~), Sarmento Buarque, A. C., Gesualdo, G. C., Benso, M. R., Garcia, M., Sivapalan, M., & Mendiondo, E. M. (2020, December). Water conservation policies under drought conditions: the Sao Paulo Metropolitan Area case study. In American Geophysical Union Fall Meeting. American Geophysical Union.
41. Cherry, C. (~), Souza, F. A. A., Park, S., **Shrestha, A.,** Yang, L., Barendrecht, M., Garcia, M., Yu, D., Sivapalan, M., Wei, J., & Tian, F. (2020, May). Scenario Analysis of Cooperation Dynamics on the Columbia River under Changing Conditions using Socio-Hydrological Modelling. In European Geophysical Union. European Geophysical Union.
42. Di Baldassarre, G.(~), Sivapalan, M., Rusca, M., Mondino, E., Konar, M., Cudennec, C., Pande, S., Garcia, M., Kreibich, H., Mård, J., Sanderson, M., Tian, F., Wei, J., Srinivasan, V., Yu, D., Viglione, A., & Blöschl, G. (2020, May). How sociohydrology can help address the global water crisis and meet the sustainable development goals. In European Geophysical Union. European Geophysical Union.
43. Deslatte, A.(~), Helmke-Long, L., Garcia, M., Koebele, E., Anderies, J. M., & Hornberger, G. (2020, January). Interdisciplinary Challenges and Opportunities in Analyzing Coupled Natural-Human Water Management Systems. In Southern Political Science Association. Southern Political Science Association.
44. **Shrestha, A.** (~), Garcia M, and Mascaro G. Improving Urban Flood Modeling with the Integration of Novel Data Sources. American Geophysical Union, San Francisco, CA, Dec. 9-13, 2019.
45. di Baldassarre G. (~), Sivapalan M, Rusca M, Cudennec C, Garcia M, et al. How sociohydrology can help address the global water crisis. American Geophysical Union, San Francisco, CA, Dec. 9-13, 2019.
46. Cherry C. (~), Souza F, **Shrestha A**, Park S, Yang L, Barendrecht M, Wei J and Tian F. Socio-Hydrological Modelling of the Tradeoff Between Flood Control and Hydropower Provided by the Columbia River Treaty. American Geophysical Union, San Francisco, CA, Dec. 9-13, 2019.
47. Lowry, C. S.(~), P. Avellaneda, D. Ficklin, D. Hall, J. Knouft, R. Pastel, B. L. Ruddell, E. Doerry, M. Chester, M. Garcia, G. Mascaro, and T. Meixner (2019) Using Citizen Science as a Core Tool for Water Resource Management and Forecasting: Closing the Professional and Citizen Science Gap. Geological Society of America Annual Meeting, Phoenix, AZ, September 22-25, 2019, Geological Society of America Abstracts with Programs. Vol. 51(5) doi:10.1130/abs/2019AM-336087
48. Hjelmstad, A#(~), Garcia, M., & Larson, K., (2019). Effect of Drought Policies on Los Angeles Water Demand. World Environmental and Water Resources Congress.
49. Garcia M. (~), Ridolfi E, and di Baldassarre G. Reservoir storage & reliability under evolving conditions.

American Geophysical Union, Washington DC, Dec.10-14, 2018.
50. Garcia M. (~) and Islam S. Water stress, water salience, and the implications for water supply planning. American Geophysical Union, New Orleans, LA, Dec.11-15, 2017.
51. Garcia M. (~). Conflicting Epistemologies and Inference in Coupled Human and Natural Systems. American Geophysical Union, New Orleans, LA, Dec.11-15, 2017.
52. Garcia M. (~) and Islam S. Water stress, water salience, and the implications for water supply planning. American Water Resources Associate, Portland, OR, Nov. 5-9, 2017.
53. Garcia, M. (~), Koebele, E, Manago, K, Deslatte, A, Treuer, G, and Ernst, K. Understanding Transitions toward Sustainable Urban Water Management: Miami, Las Vegas, Los Angeles. American Geophysical Union, San Francisco, CA, Dec.12-16, 2016.
54. Garcia, M. (~), Islam, S. Modelling Per Capita Water Demand Change to Support System Planning. American Geophysical Union, San Francisco, CA, Dec.12-16, 2016.
55. Garcia, M. (~), Koebele, E, Manago, K, Deslatte, A, Treuer, G, and Ernst, K. Understanding Transitions toward Sustainable Urban Water Management. International Symp. Soc. & Resource Management, Houghton, MI, June 22-26, 2016.
56. Garcia M. (~), Portney K and Islam S. Water Stress as a Trigger of Demand Change: Exploring the Implications for Drought Planning. American Geophysical Union, San Francisco, CA, Dec. 2015.
57. Manago K. (~) and Garcia M. Redefining Urban Water Stress. American Geophysical Union, San Francisco, CA, Dec. 2015.
58. Garcia M. (~), Flexible Design of Water Supply Infrastructure, ASCE Environmental & Water Resources Institute Conference, Austin, TX, May 17-21, 2015
59. Garcia M. (~), Portney K and Islam S. Reconciling Scale Mismatch in Water Governance, Natural Processes & Infrastructure Systems of Water Supply. American Geophysical Union, San Francisco, CA, Dec. 2014.
60. Van Rees, C, Garcia, M. (~), Alarcon, T, and Sixt G. Confronting Oahu's Water Woes: Identifying Scenarios for a Robust Evaluation of Policy Alternatives. American Geophysical Union, San Francisco, CA, Dec. 2014.
61. Lopez S. (~), Garcia, M., Burke M. and Hogue, T. Long-term Changes to Hydrology & Sediment Transport due to Climate Variability in Southern CA Watersheds. American Geophysical Union, San Francisco, CA, Dec. 2013.
62. Jones, S, Brandes, D, and Garcia, M. (~). Facilitating an Undergraduate Service-learning Effort to Provide Sustainable Rural Infrastructure in Developing Countries, American Society of Engineering Education Global Colloquium, Rio de Janeiro, Basil, 2006

PRESENTATIONS

Summary

Invited Presentations – External: 18
Invited Presentations – ASU Internal: 9
Invited Conference Presentations, including students: 4
Peer-reviewed Conference Presentations, including students: 74

Invited Presentations – External: 18

1. Garcia, M. & **Shrestha, A.** (December, 2023). Influence of precipitation uncertainty & land use change on the optimal green stormwater infrastructure. Arizona Floodplain Management Association Webinar Series
2. **Alonso Vicario, S.** and Garcia, M. (December, 2023). Hydrology, water governance & sustainable urban water systems in the USA. Vrije Universiteit Amsterdam's Drought Seminar Series.
3. **Tezcan, B.** (~) and Garcia, M. (2023, September). Training a Non-Homogenous Hidden Markov Model with PMDI and Temperature to Create Climate Informed Hydrologic Scenarios. Central Arizona Project's September Board Meeting.
4. ***Lawless, K.*** (~), White, D., and Garcia, M. (2023, September). Institutional Analysis of Water Governance in the Colorado River Basin, 1922-2022. Central Arizona Project's September Board Meeting.
5. Garcia, M. (~), Wiechman, A., **Alonso Vicario, S.,** Azizi, K. (✕), and Anderies J.M. (2023, March). The Influence of Infrastructure and Institutional Design on Urban Water Supply Robustness. Arizona Hydrological Society Monthly Meeting. Tempe, AZ.
6. Garcia, M. (~), **Mohajer Iravanloo, B.,** and Sivapalan, M. (2022, September). A diagnostic approach to modeling watersheds with human interference. UIUC WRES Seminar Series. Urbana-Champagne, Illinois, USA: University of Illinois, Urbana-Champagne.

7. Garcia, M. (~), & **Shrestha, A.** (2022, September). Integrating Novel Data Sources and High-Resolution Modeling for Urban Flood Prediction. AzSCE Environmental & Water Resource Institute Webinar Series. Virtual: AzSCE Environmental & Water Resource Institute.
8. Garcia, M. (2022, March). Modelado y diagnostico hidrológica: del forma al proceso. Eco Fluvial Lab. Centro Nacional Patagónico (CENPAT/CONICET), Puerto Madryn, Chubut, Argentina
9. Garcia, M. (~), Koebele, E., Ajami, N., Haeffner, M., Mens, M., Teutschbein, C., **Tezcan, B.,** … White, C. (2022, October). Panta Rhei: Integrating Human & Natural Dimensions of Drought. Drought in the Anthropocene Webinar. Virtual: IAHS Drought in the Anthropocene Working Group.
10. Garcia, M (~). (2021, November). Modeling Urban Water Supply Dynamics. Vrije Universiteit Amsterdam, Netherlands. Perfect Storm Project Meeting. Virtual.
11. Garcia, M (~). (2021, October). Managing Variability & Change in Water Supply Systems. Human Water Systems Monthly (Virtual Presentation Series).
12. Garcia, M (~) & **Shrestha, A.** (2021, October). Integrating Novel Data Sources and High-Resolution Modeling for Urban Flood Prediction, University of Arizona, Tucson, AZ.
13. Garcia, M (~). (2021, October). Towards Urban Water Sustainability: Analyzing drivers and barriers to management transitions. University of Massachusetts, Virtual.
14. Garcia, M. (~). (2021, May) Empirically Grounded Socio-Hydrology in Progress. NEXO Project Network. Virtual.
15. Garcia M (~). (2019, July). Transition and Adaption Dynamics in Water Supply Systems. IAHS Summer Research Institute on Transboundary Water Management. Yunnan University, Kunming, China.
16. Garcia M (~), Mascaro, G (~). (2019, June). Developing technologies and communications for real-time flood detection. Phoenix Monsoon Day, Phoenix, AZ.
17. Garcia M (~). (2018, October). Drought Response, Policy, & Management. IAHS Working Group Meeting: Drought in the Anthropocene, Utrecht University. Utrecht, Netherlands.
18. Garcia M (~). (2015, May). Socio-hydrological Modeling for Adaptive & Flexible Planning. Socio-Hydrology Working Group Meeting at the National Socio-Environmental Synthesis Center, Annapolis, MD.

Invited Presentations – ASU Internal: 9

1. Garcia, M. (~) and **Shrestha, A.** (2021, September). Integrating Novel Data Sources and High-Resolution Modeling for Urban Flood Prediction. SSEBE's Director's Lecture Series.
2. Garcia, M. (~). (2021, April). Managing Variability & Change in Water Supply Systems. ASU Center for Behavior, Institutions and the Environment.
3. Garcia, M. (~). (2019, April). External and Emergent Drivers of Urban Water Demand, DCDC Urban Water Demand Roundtable.
4. Garcia, M (~). (2019, March). Engineering Sustainable Water Infrastructure in a Changing World. Construction Faculty Meeting.
5. Garcia, M (~). (2017, October). Flexible Design for Water Supply Systems, Environmental Engineering Seminar, Tempe, AZ.
6. Garcia, M (~), Koebele, E, Manago, K, Deslatte, A, Treuer, G, and Ernst, K. (2017, October). Understanding Transitions toward Sustainable Urban Water Management: Miami, Las Vegas, Los Angeles, Center for Behavior, Institutions and the Environment Seminar, Tempe, AZ.
7. Garcia, M (~). (2017, October). Decision Center for the Desert City Water Climate Briefing on Water Demand Panelist, Tempe, AZ.
8. Garcia, M (~). (2017, September). Sustainable urban water management: hydrology and policy. Hydrosystems Seminar, Tempe, AZ.
9. Garcia, M (~). (2017, September). Socio-hydrological systems and sustainable water management, Landscape Architecture Graduate Seminar on Urban Water, Tempe, AZ.

Invited Conference Presentations, including students: 4

1. Garcia M (~). (2018, April). Urban Drought Response. IAHS Symposium: Comparative socio-hydrology of floods, droughts, and water management, Tsinghua University, April 26-28, 2018.
2. Garcia M (~) and Islam S. (2017, December). Water stress, water salience, and the implications for water supply planning. American Geophysical Union, New Orleans, LA, Dec.11-15, 2017.
3. Garcia M (~). (2017, December). Conflicting Epistemologies and Inference in Coupled Human and Natural Systems. American Geophysical Union, New Orleans, LA, Dec.11-15, 2017.

4. Garcia, M (~), Koebele, E, Manago, K, Deslatte, A, Treuer, G, and Ernst, K. (2016, December). Understanding Transitions toward Sustainable Urban Water Management: Miami, Las Vegas, Los Angeles. American Geophysical Union, San Francisco, CA, Dec.12-16, 2016.

Peer-reviewed Conference Presentations, including students: 74

1. Wiechman, A., E Koebele, ME Garcia, JM Anderies. (2024). The Inclusion-Consensus Trade-Off for Intermediate Collaborative Forums in Polycentric Environmental Governance: A Comparison of Water User Associations in Arizona. Workshop on the Workshop
2. Wiechman, A., A Deslatte, E Koebele, ME Garcia, JM Anderies. (2024). Connecting Institutional Design to Infrastructure System Robustness: A Mixed Methods Story of Collective Inference. Workshop on the Workshop
3. Azizi, K. **(✕)** (~), Barnes, J., Koebele, E., Anderies, J.M. and Garcia, M., (2023, December). Equity and Effectiveness in Sustainable Water Management Practices: Insights from Miami-Dade's Water Conservation Program. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
4. ***Lawless, K.*** (~)**,** & Garcia, M. (2023, December). Colorado River Water Management Coordination: Governance and Upstream-Downstream Dynamics. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
5. Azizi, K. **(✕),** Baggio, J., Koebele, E., Anderies, J.M. and Garcia, M. (2023, December). Identifying Key Factors for Providing High-Quality and Affordable Drinking water: A Study of U.S. Urban Water Systems. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
6. **Tezcan, B.** (~)**,** & Garcia, M. (2023, December). Training a Non-Homogenous Hidden Markov Model with PMDI and Temperature to Create Climate Informed Hydrologic Scenarios. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union
7. Guatam, S., Yu, D., Sivapalan, M. and Garcia, M. (2023, December). Water Extremes: The Interplay of Formal Rules and Cognitive Biases in Reservoir Operation. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union.
8. Hausfather, Z., Marvel, K., Su, W., Delgado, R.A., Aarons, S.M., Chatterjee, A., Garcia, M., Hayhoe, K., Hence, D.A., Jewett, E., Robel, A., Singh, D., Tripati, A.K., Vose, R.S. (2023, December). Chapter 02 - Climate Trends - The Fifth National Climate Assessment. American Geophysical Union Fall Meeting. San Francisco, CA: American Geophysical Union.
9. **Alonso Vicario, S.** (~), Mazzoleni, M., and Garcia, M. (May, 2023). Exploring the human influence on surface water availability in the contiguous United States. European Geophysical Union Meeting, Vienna, Austria
10. Wiechman, A. (~), **Alonso Vicario, S.,** Koebele, E., Deslatte, A., Hornberger, G., Garcia, M., & Anderies, J. M. (2023, January). Capturing the Policy Process in Dynamic Models of Coupled Infrastructure Systems: An Urban Water Example. Conference on Policy Process Research. Denver, CO: University of Colorado Denver School of Public Affairs.
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26. **Shrestha, A.,** & Garcia, M. (2021, September). Application of Novel Data Sources to Calibrate Urban Hydrologic-Hydraulic Model for Pluvial Flood Simulation in Cities. Arizona Hydrological Society Annual Symposium. Tempe, AZ: Arizona Hydrological Society.
27. **Tezcan, B.,** ***Lawless, K.,*** & Garcia, M. (2021, September). Identifying spatial correlations of wet and dry periods across Interconnected Management Watersheds in the Colorado River Basin. Arizona Hydrological Society Annual Symposium. Tempe, AZ: Arizona Hydrological Society.
28. **Alonso Vicario, S.,** Garcia, M., Anderies, J. M., & Hornberger, G. (2021, September). Managing variance in the Salt and Verde Watersheds: analysis of robust yet fragile trade-offs. Arizona Hydrological Society Annual Symposium. Tempe, AZ: Arizona Hydrological Society.
29. **Mohajer Iravanloo, B.,** Garcia, M., & Sivapalan, M. (2021, September). Characterizing anthropogenic changes in Coupled Human-Water Systems: Hybrid application of Top-Down Hydrological Modeling and Data Analysis. Arizona Hydrological Society Annual Symposium. Tempe, AZ: Arizona Hydrological Society.
30. ***Lawless, K.,*** **Tezcan, B.,** & Garcia, M. (2021, September). Institutional analysis of Lower Colorado River Basin Water Governance. Arizona Hydrological Society Annual Symposium. Tempe, AZ: Arizona Hydrological Society.
31. Wiechman, A., Garcia, M., & Anderies, J. M. (2021, September). Including Institutional Dynamics in Models of Urban Water Coupled Infrastructure Systems. Arizona Hydrological Society Annual Symposium. Tempe, AZ: Arizona Hydrological Society.
32. Garcia, M. (~)., Koebele, E., Ajami, N., Haeffner, M., Mens, M., Teutschbein, C., **Tezcan, B.,** White, C. (2021, September). Panta Rhei: Integrating Human & Natural Dimensions of Drought. International Conference on Sociohydrology. Delft, Netherlands.
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34. **Mohajer Iravanloo, B.,** (~)**,** Garcia, M., & Sivapalan, M. (2021, April). Hybrid hydrological modeling and data analysis for time variant anthropogenic change quantification in socio-hydrological systems. International Conference on Sociohydrology. Delft, Netherlands.
35. Van Loon, A. (~), Matanó, A., Di Baldassarre, G., Day, R., Garcia, M., Rohse, M., … Ward, P. (2021, April). Unravelling socio-hydrological processes behind cascading drought-to-flood disasters. European Geophysical Union Annual Meeting. Virtual: European Geophysical Union.
36. **Mohajer Iravanloo, B.,** (~). Garcia, M., Janssen, M. A., & Yu, D. (2021, April). Model Informed Data

Collection in Coupled Human-Water Systems: An Exploratory Application of a Hydrological and Agent-Based Model. European Geophysical Union Annual Meeting. Virtual: European Geophysical Union.

37. Park, S. (~), Yousefi, P., **Mohajer Iravanloo, B.,** Garcia, M., Sivapalan, M., & Yu, D. (2021, April). Socio-hydrological analysis of adaptive reservoir operation: Navigating the tradeoffs between flood risk and water shortages. AAG Annual Meeting. Virtual: American Association of Geographers.
38. Anides Morales, A. L. (~), Lara-Valencia, F., Garcia, M., & Norman, L. (2021, February). Developing a Land Suitability Analysis for Green Infrastructure Placement in Ambos Nogales. RiversEdge West Conference. Virtual.
39. Hjelmstad, A. (~), **Shrestha, A.,** Garcia, M., Hopper, L. J., Iñiguez, P., & Mascaro, G. (2021). Propagation of Radar Rainfall Uncertainty into Urban Flood Predictions during the North American Monsoon. American Meterological Society. Online.
40. Garcia, M. (~), **Alonso Vicario, S.,** & Hornberger, G. (2020, December). A Mixed-Method Approach to Detecting and Attributing Changes in Streamflow. In American Geophysical Union Fall Meeting. American Geophysical Union.
41. Rudko, N. (~), Muenich, R. L., Garcia, M., & Xu, T. (2020, December). Hydrologic and Water Quality Modeling of a CAFO Dairy Lagoon. In American Geophysical Union Fall Meeting. American Geophysical Union.
42. **Mohajer Iravanloo, B.** (~), Sivapalan, M., & Garcia, M. (2020, December). Top-Down Approach for Time-Variant Anthropogenic Signature Attribution in Socio-Hydrological Systems. In American Geophysical Union Fall Meeting. American Geophysical Union.
43. Cherry, C. (~), Park, S., **Shrestha, A.,** Souza, F. A., Garcia, M., Sivapalan, M., & Yu, D. (2020, December). Behavioral Sciences Approach to Analyzing Cooperation Dynamics in Transboundary Water Management between the U.S. and Canada in the Columbia River Basin. In American Geophysical Union Fall Meeting. American Geophysical Union.
44. **Shrestha, A.** (~), Garcia, M., & Mascaro, G. (2020, December). Effect of data and model resolution on urban flood modeling. In American Geophysical Union Fall Meeting. American Geophysical Union
45. Souza, F. A. (~), Sarmento Buarque, A. C., Gesualdo, G. C., Benso, M. R., Garcia, M., Sivapalan, M., & Mendiondo, E. M. (2020, December). Water conservation policies under drought conditions: the Sao Paulo Metropolitan Area case study. In American Geophysical Union Fall Meeting. American Geophysical Union.
46. Cherry, C. (~), Souza, F. A. A., Park, S., **Shrestha, A.,** Yang, L., Barendrecht, M., Garcia, M., Yu, D., Sivapalan, M., Wei, J., & Tian, F. (2020, May). Scenario Analysis of Cooperation Dynamics on the Columbia River under Changing Conditions using Socio-Hydrological Modelling. In European Geophysical Union. European Geophysical Union.
47. Di Baldassarre, G.(~), Sivapalan, M., Rusca, M., Mondino, E., Konar, M., Cudennec, C., Pande, S., Garcia, M., Kreibich, H., Mård, J., Sanderson, M., Tian, F., Wei, J., Srinivasan, V., Yu, D., Viglione, A., & Blöschl, G. (2020, May). How sociohydrology can help address the global water crisis and meet the sustainable development goals. In European Geophysical Union. European Geophysical Union.
48. Deslatte, A.(~), Helmke-Long, L., Garcia, M., Koebele, E., Anderies, J. M., & Hornberger, G. (2020, January). Interdisciplinary Challenges and Opportunities in Analyzing Coupled Natural-Human Water Management Systems. In Southern Political Science Association. Southern Political Science Association.
49. **Shrestha, A.** (~), Garcia M, and Mascaro G. Improving Urban Flood Modeling with the Integration of Novel Data Sources. American Geophysical Union, San Francisco, CA, Dec. 9-13, 2019.
50. di Baldassarre G. (~), Sivapalan M, Rusca M, Cudennec C, Garcia M, et al. How sociohydrology can help address the global water crisis. American Geophysical Union, San Francisco, CA, Dec. 9-13, 2019.
51. Cherry C. (~), Souza F, **Shrestha A**, Park S, Yang L, Barendrecht M, Wei J and Tian F. Socio-Hydrological Modelling of the Tradeoff Between Flood Control and Hydropower Provided by the Columbia River Treaty. American Geophysical Union, San Francisco, CA, Dec. 9-13, 2019.
52. Lowry, C. S.(~), P. Avellaneda, D. Ficklin, D. Hall, J. Knouft, R. Pastel, B. L. Ruddell, E. Doerry, M. Chester, M. Garcia, G. Mascaro, and T. Meixner (2019) Using Citizen Science as a Core Tool for Water Resource Management and Forecasting: Closing the Professional and Citizen Science Gap. Geological Society of America Annual Meeting, Phoenix, AZ, September 22-25, 2019, Geological Society of America Abstracts with Programs. Vol. 51(5) doi:10.1130/abs/2019AM-336087
53. Hjelmstad, A#(~), Garcia, M., & Larson, K., (2019). Effect of Drought Policies on Los Angeles Water Demand. World Environmental and Water Resources Congress.
54. Bystrov I# (~), Muenich RL, Garcia M. Stormwater water quality analysis to inform green infrastructure design in desert cities. ASU Urban Climate Research Center Symposium, Tempe, AZ, U.S.A., March 23, 2019

55. Garcia M. (~), Ridolfi E, and di Baldassarre G. Reservoir storage & reliability under evolving conditions. American Geophysical Union, Washington DC, Dec.10-14, 2018.
56. **Shrestha, A**. (~), and Garcia, M. (2019). Urban Stormwater Modeling in the Phoenix Metro Area. AZ Water Research Symposium, January 8, 2019
57. Bystrov I# (~), Muenich RL, Garcia M. Stormwater water quality analysis to inform green infrastructure design in desert cities. Arizona Hydrological Society 31st Annual Symposium, Phoenix, AZ, U.S.A., September 19-21, 2018.
58. Parker PJ (~), Penn MR, Apul DS, Garcia M, & Torlapati J. Collaboratively Developing an Introductory Infrastructure Systems Curriculum: The One Water Module. ASEE Annual Conference & Exposition 2018
59. Garcia M. (~) and Islam S. Water stress, water salience, and the implications for water supply planning. American Geophysical Union, New Orleans, LA, Dec.11-15, 2017.
60. Garcia M. (~). Conflicting Epistemologies and Inference in Coupled Human and Natural Systems. American Geophysical Union, New Orleans, LA, Dec.11-15, 2017.
61. Garcia M. (~) and Islam S. Water stress, water salience, and the implications for water supply planning. American Water Resources Associate, Portland, OR, Nov. 5-9, 2017.
62. Garcia, M. (~), Koebele, E, Manago, K, Deslatte, A, Treuer, G, and Ernst, K. Understanding Transitions toward Sustainable Urban Water Management: Miami, Las Vegas, Los Angeles. American Geophysical Union, San Francisco, CA, Dec.12-16, 2016.
63. Garcia, M. (~), Islam, S. Modelling Per Capita Water Demand Change to Support System Planning. American Geophysical Union, San Francisco, CA, Dec.12-16, 2016.
64. Garcia, M. (~), Koebele, E, Manago, K, Deslatte, A, Treuer, G, and Ernst, K. Understanding Transitions toward Sustainable Urban Water Management. International Symp. Soc. & Resource Management, Houghton, MI, June 22-26, 2016.
65. Garcia M(~), Portney K and Islam S. Water Stress & Water Salience: Exploring the implications for drought planning. Water Systems Science Society, Symposium, Medford, MA, Apr. 2016.
66. Treuer, G(~), Deslatte, A., Ernst, K, Garcia, M., Koebele, E., and Manago, K., Narrative synthesis of urban water transitions: A case study of Miami-Dade Water and Sewer. University of Florida Water Institute Symposium, Gainesville, FL, 2016.
67. Garcia M. (~), Portney K and Islam S. Water Stress as a Trigger of Demand Change: Exploring the Implications for Drought Planning. American Geophysical Union, San Francisco, CA, Dec. 2015.
68. Manago K. (~) and Garcia M. Redefining Urban Water Stress. American Geophysical Union, San Francisco, CA, Dec. 2015.
69. Garcia M. (~), Flexible Design of Water Supply Infrastructure, ASCE Environmental & Water Resources Institute Conference, Austin, TX, May 17-21, 2015
70. Garcia M. (~), Portney K and Islam S. Reconciling Scale Mismatch in Water Governance, Natural Processes & Infrastructure Systems of Water Supply. American Geophysical Union, San Francisco, CA, Dec. 2014.
71. Van Rees, C, Garcia, M. (~), Alarcon, T, and Sixt G. Confronting Oahu's Water Woes: Identifying Scenarios for a Robust Evaluation of Policy Alternatives. American Geophysical Union, San Francisco, CA, Dec. 2014.
72. Lopez S. (~), Garcia, M., Burke M. and Hogue, T. Long-term Changes to Hydrology & Sediment Transport due to Climate Variability in Southern CA Watersheds. American Geophysical Union, San Francisco, CA, Dec. 2013.
73. Garcia M. (~) and Flath B. (~). Integrating Sustainability Topics in Infrastructure Management Courses. Engineering Sustainability Conference, University of Pittsburgh, 2007
74. Jones, S, Brandes, D, and Garcia, M. (~). Facilitating an Undergraduate Service-learning Effort to Provide Sustainable Rural Infrastructure in Developing Countries, American Society of Engineering Education Global Colloquium, Rio de Janeiro, Basil, 2006

PROFESSIONAL ACTIVITIES AND SERVICE

Summary

International/national conferences sessions chaired: 5
International/national conferences sessions committee: 3
International/national conferences sessions organized: 5
Member of Editorial Board for peer-reviewed journals: 1
Peer Reviewer for 23 Journals
Proposal Review Service for 2 Funding Agencies
Member of 7 Unit-level Committees at ASU

International/national conferences sessions chaired: 5

1. Global Water Risks: Advances in Large-Scale Flood and Drought Risk Assessment and Management for a Sustainable Future. Oral and Poster Session at the American Geophysical Union 2024 Fall Meeting.
2. Global Water Risks: Advances in Large-Scale Flood and Drought Risk Assessment and Management for a Sustainable Future. Oral and Poster Session at the American Geophysical Union 2023 Fall Meeting.
3. Panta Rhei: Hydrology, Society, and Environmental Change. Poster and Virtual Poster Session at the American Geophysical Union 2022 Fall Meeting.
4. Dynamics of Human-Water Systems – Learning from Socio-Hydrological Data and Modeling. Oral in person and virtual sessions at the Frontiers in Hydrology 2022 Conference.
5. Science to Action: Best Practices and Lessons Learned from Interdisciplinary Research. Poster and eLightning Sessions at the American Geophysical Union 2018 Fall Meeting.

International/national conferences sessions committee: 3

1. *2019-2021:* Member of the leadership team for the *International Association of Hydrological Science (IAHS)*, Panta Rhei International Hydrological Decade, Fourth Biennium.
2. *2017-present:* Member of the Water and Society Technical Committee of the *American Geophysical Union (AGU)*, which provides support for the organization of the *AGU Fall Meetings* and the selection of annual awards, among other tasks.
3. *2017-present:* Member of the Drought in the Anthropocene Working Group for the *International Association of Hydrological Sciences (IAHS).*

International/national conferences sessions organized: 5

1. Global Water Risks: Advances in Large-Scale Flood and Drought Risk Assessment and Management for a Sustainable Future. Oral and Poster Session at the American Geophysical Union 2024 Fall Meeting.
2. Global Water Risks: Advances in Large-Scale Flood and Drought Risk Assessment and Management for a Sustainable Future. Oral and Poster Session at the American Geophysical Union 2023 Fall Meeting.
3. Panta Rhei: Hydrology, Society, and Environmental Change. Poster and Virtual Poster Session at the American Geophysical Union 2022 Fall Meeting.
4. Dynamics of Human-Water Systems – Learning from Socio-Hydrological Data and Modeling. Oral in person and virtual sessions at the Frontiers in Hydrology 2022 Conference.
5. Science to Action: Best Practices and Lessons Learned from Interdisciplinary Research. Poster and eLightning Sessions at the American Geophysical Union 2018 Fall Meeting.

Editorial Board Member for peer-reviewed journals: 1

1. ASCE Journal of Infrastructure Systems, 2019-Present

Peer Reviewer for 23 Journals:

1. *Water Resources Research*
2. *Hydrology and Earth Systems Science*
3. *Journal of Hydrology*
4. *Ecology & Society*
5. *Environmental Processes*
6. *Environmental Economics*
7. *Earth's Future*
8. *Elementa: Science of the Anthropocene*

9. *Sustainable Water in the Built Environment*
10. *Urban Water Journal*
11. *Journal of Infrastructure Systems*
12. *Ecology & Society*
13. *Reviews of Geophysics*
14. *WIRE's Water*
15. *Nature Scientific Reports*
16. *Environmental Research Letters*
17. *Journal of Water Resources Planning and Management*
18. *Climate Risk Management*
19. *Ecological Modeling*
20. *Environmental Modeling and Software*
21. *Natural Hazards and Earth Systems Science*
22. *Resources, Conservation and Recycling*
23. *Review of Geophysics*

Proposal Review Service for 2 Funding Agencies

1. National Science Foundation, reviewer for the following programs:
    a. CBET: Environmental Sustainability
    b. CMMI: Leading Engineering for America's Prosperity, Health, and Infrastructure (LEAP HI)
    c. EPSCoR Research Infrastructure Improvement Program Track-1
    d. Historically Black Colleges and Universities - Excellence in Research
    e. Hydrologic Sciences
    f. Strengthening America's Infrastructure
2. BARD - The US-Israel Agricultural Research & Development Fund

Member of 8 Unit-level Committees at ASU

1. *2024-Present:* SSEBE Graduate Committee
2. *2022-2024:* Laboratory Committee
3. *2022-2023:* Hiring Committee for Sustainable Engineering position
4. *2021-2022:* Graduate Committee
5. *2019-2021:* Curriculum Committee
6. *2019:* Hiring Committee for the Groundwater Hydrology position
7. *2019:* School of Sustainability Graduate Committee (SSEBE representative)
8. *2017-2019:* Scholarship Committee

Advisor of the ASU Chapter of Defend our Future

1. *2019-2020*: Served as an advisor to student advocacy and education group focused on renewable energy.

PERSONNEL: STUDENT SUPERVISION / MENTORING, TEACHING, DISSERTATION COMMITTEES, RESEARCHERS, AND OUTREACH

MENTORING

Summary

Postdoctoral Researchers at ASU: 1
Ph.D. Students Graduated at ASU: 1
Ph.D. Students Current at ASU: 4
M.S. Thesis Students Graduated at ASU: 2
M.S. Project Students Graduated at ASU: 4
Undergraduate Students (Research) at ASU: 8
Student Fellowships and Awards at ASU: 10
Graduate Student Committee Participation at ASU: 24

Postdoctoral Researchers at ASU: 1 current

1. Ahmed Aljanabi, 2024-present. Working on Arizona Water Innovation Initiative grant
2. Koorosh Azizi, 2022-2024. Working on urban water supply sustainability and equity within an NSF grant.

Ph.D. Students Graduated at ASU: 3

1. Dr. Sara Alonso Vicario, 2025. *Human influences on the hydrological cycle: from flows to management,* SSEBE, Arizona State University.
2. Dr. Krista Lawless, (Co-Chair), 2024. *Analyzing Water Supply Management and Governance Institutions Across Scales.* SHESC, Arizona State University.
3. Dr. Ashish Shrestha, 2022. *Advances in Urban Flood Management: Addressing Data Uncertainty, Data Gaps and Adaptation Planning*, SSEBE, Arizona State University, 217 pp.

Ph.D. Students Current at ASU: 2

1. Burcu Tezcan, Ph.D. Candidate, expected graduation Fall 2025. *Fragility and Robustness of the Western Water Network.*
2. Kyungmin Kim, Ph.D., Student, expected graduation Spring 2028. *Topic TBD*

M.S. Thesis Students Graduated at ASU: 2

1. Laura Walter, 2022. (Co-Chair). *Dynamics in integrated wastewater systems – a comparative analysis of the cities of Phoenix, Hamburg, and Zurich*, Global Sustainability Science, Joint Program with Leuphana University of Luneburg, Germany and Arizona State University.
2. Annika Hjelmstad, 2020. (Co-Chair). *Propagation of Radar Rainfall Uncertainties into Urban Flood Predictions: An Application in Phoenix, AZ*, SSEBE, Arizona State University, 127 pp.

M.S. Project Students Graduated at ASU: 4

1. Karissa Gund, 2023. Applied Project for the M.S. in Civil Engineering. *Incorporating Spatial Data and Bias Correction Methods for Hydrological Modeling in the Data Limited Region of the Rio Chubut River Basin*.
2. Muthukaruppan Kathiresan, 2023. *Assessing Responses to Colorado River Cuts in Pinal County Agriculture*. Applied project for the M.S. in Environmental Engineering at Arizona State University.
3. Abdullah Alotaibi, 2022. *Uncertainty Analysis for Energy Conversion Stations Based on the Scenario Development Approach.* Applied project for the M.S. in Sustainable Engineering at Arizona State University.
4. Dillon Nys, 2019, *BioSim: Model of a Closed-loop Water Recycling System.* Applied project for the M.S. in

Environmental Engineering at Arizona State University.

Undergraduate Students (Research) at ASU: 8

1. Manasa Sreeram, 2024-present. *Analyzing the regulatory regime for carbon management in the Southwest U.S.* Undergraduate Research Assistant on NSF Project, Arizona State University. Current.
2. Shriya Danekar, 2024-present. *Developing a regional streamflow model*. Undergraduate Research Assistant on NSF Project, Arizona State University. Current.
3. Karissa Gund, 2021. *Watershed delineation and streamflow statistical analysis*. Undergraduate Research Assistant on NSF Project, Arizona State University.
4. Julia Zimmerman, 2021, *Passive Thermosyphon Solar Water Heater for Existing Swimming Pool*. Barret Honors Thesis, Arizona State University. 59 pp.
5. Marielle Ransom, 2020: *Assessing water supply infrastructure for 16 large U.S. Cities.* Undergraduate Research Assistant on NSF Project, Arizona State University.
6. Kiran Pendyala, 2019, *Analysis of Santa Monica Water Usage Data for Water Conservation.* Barrett Honors Thesis Program, Arizona State University. 50 pp.
7. Ivan Bystrov, 2018-19, *Green infrastructure field monitoring.* Undergraduate Research Assistant on Field Project, Arizona State University.
8. Annika Hjelmstad, 2018, *Effect of Drought Policies on California Water Demand*. Fulton Undergraduate Research Initiative and Barret Honors Thesis, Arizona State University. 31 pp.

Student Fellowships and Awards at ASU: 10

1. **Burcu Tezcan**: Awarded 1st place in Central Arizona Project's Award for Water Research in September 2023.
2. ***Krista Lawless***: Awarded 2nd place in Central Arizona Project's Award for Water Research in September 2023.
3. **Ashish Shrestha**: Dissertation paper "Influence of Precipitation Uncertainty and Land Use Change on the Optimal Catchment Scale Configuration of Green Stormwater Infrastructure" featured as Editor's Choice for Journal of Sustainable Water in the Built Environment for May 2023.
4. ***Krista Lawless***: Awarded ASU School of Human Evolution and Social Change Summer Writing Fellowship for Summer 2023.
5. **Sara Alonso Vicario** and Adam Wiechman: 2nd place in the 2022 Central Arizona Project Award for Water Research.
6. **Ashish Shrestha**: 2nd place in the Arizona Hydrological Society Student Presentation Competition at the 2021 Arizona Hydrological Society Annual Symposium.
7. **Sara Alonso Vicario** and Adam Wiechman: Awarded 2021 Summer Research Fellowship for Collaborative Research by ASU's Earth Systems Science for the Anthropocene Graduate Student Network
8. **Behshad Mohajer Iravanloo:** Awarded Summer 2021 Research Fellowship for Research with Stakeholder Partner by ASU's Earth Systems Science for the Anthropocene Graduate Student Network
9. Annika Hjelmstad#: 3rd place in the student poster competition at ASCE Environmental and Water Resources Institute 2019 Conference.
10. Ivan Bystrov#: 1st place in the Arizona Hydrological Society Student Presentation Competition at the 2018 Arizona Hydrological Society Annual Symposium.

Graduate Student Committee Participation at ASU: 24

1. Sara Alonso Vicario, SSEBE, Ph.D., (Chair) current
2. Burcu Tezcan, SSEBE, Ph.D., (Chair) current
3. Krista Lawless, SHESC, Ph.D. (Co-chair), 2024
4. Adam Wiechman, SOS, Ph.D., current
5. Xinyu Chen, SSEBE, Ph.D., current

6. Shiqi Wei, SSEBE, Ph.D., 2024.
7. Karissa Gund, SSEBE, M.S. (Chair), 2023
8. Muthukaruppan Kathiresan, SSEBE, M.S., (Chair), 2023.
9. Ashley Heida, Biological Design, SEMTE, Ph.D., 2023
10. Glorynel Ojeda-Matos, SOS, Ph.D., 2023.
11. Ashish Shrestha, SSEBE, Ph.D., (Chair) 2022.
12. Julia Zimmerman, M.S., 2022
13. Behshad Mohajer Iravanloo, SSEBE, Ph.D., (Chair) 2019-22.
14. Abdullah Alotaibi, SSEBE, M.S., (Chair) 2022.
15. Laura Walter, SOS, M.S., (Co-Chair), 2022.
16. Nehal Ansh, SSEBE, M.S., 2022, Ph.D, current
17. Adil Mounir, SSEBE, Ph.D. 2022.
18. Adenike Opejin, SOS, Ph.D., 2022.
19. Lorrayne Miralha, SSEBE, Ph.D., 2021.
20. Alysha Helmrick, SSEBE, Ph.D., 2021.
21. Noah Rudko, SSEBE, M.S. 2021.
22. Mercedes Kindler, SSEBE, M.S., 2021.
23. Annika Hjelmstad, SSEBE, M.S. (Co-Chair), 2020.
24. Dillon Nys, SSEBE, M.S., (Chair), 2019.
25. Erica Gilrein, SSEBE, M.S., 2018.

TEACHING

Summary

Undergraduate Courses Taught, including New Course Development: 2
Graduate Courses Taught, including New Course Development: 6
Weighted Average Teaching Evaluation Score for Undergraduate Courses taught at ASU: 4.45
Weighted Average Teaching Evaluation Score for Graduate Courses taught at ASU: 4.57

Note: *Teaching evaluations are on a scale of 5 with 5 being the most effective (scores are only reported for courses taught during the tenure track period). There are three components to the evaluation (course, instructor and overall) and the numbers reported are an average of the three scores.*

Undergraduate Courses Taught, including New Course Development: 2

1. CEE 440 Hydrology, Co-listed with GLG: 471. Spring 2018–Present, Arizona State University, 3 credits.
   - Built off of existing course and introduced new active learning activities, developed online material, including videos and quizzes. Note that evaluations and enrollment counts do not include the GLG students.
   - Evaluations: Spring 2018: 4.40 based on 12 out of 27 students.
     Spring 2019: 3.98 based on 28 out of 33 students.
     Spring 2020: 4.66 based on 33 out of 33 students (Taught in online post-spring break).
     Spring 2021: 4.43 based on 27 out of 37 students (Taught in hybrid mode).
     Spring 2022: 4.61 based on 18 out of 22 students.
     Spring 2023: 4.51 based on 25 out of 33 students.
     Spring 2024: 4.25 based on 20 out of 30 students.
2. EVE 314 Data Science for Civil and Environmental Engineers, Spring 2022–present, Arizona State University, 3 credits.
   - New course developed in collaboration with Dr. Muenich (teaches Fall section) including learning objectives, course plan, lectures, demos, homework assignments, interactive in-class activities, and final project.
   - Evaluations: Spring 2022: 4.62 based on 7 out of 10 students.
     Spring 2023: 4.59 based on 10 out of 11 students.

Graduate Courses Taught, including New Course Development: 6 during tenure-track period

1. CEE 598 Socio-Hydrological Systems Analysis, Fall 2017–Present, Arizona State University. 3 credits.
   - New course developed by Dr. Garcia focused on how hydrological, infrastructure, and institutional sub-systems collectively respond to change.
   - Evaluations: Fall 2017: 4.96 based on 7 out of 8 students.
     Fall 2018: 4.38 based on 5 out of 9 students.
     Fall 2020: 4.96 based on 7 out of 9 students (Taught online).
     Fall 2022: 4.00 based on 2 out of 9 students

2. CEE 598 Uncertainty Analysis for Infrastructure Systems, Fall 2019-Present, Arizona State University. 3 credits.
   - New course developed by Dr. Garcia focused on mathematical methods for uncertainty analysis.
   - Evaluations: Fall 2019: 4.92 based on 7 out of 9 students.
     Fall 2021: 4.56 based on 5 out of 9 students.
3. CEE 545 Hydrology, Spring 2019–Present, Arizona State University. 3 credits.
   - Built off of existing course and introduced new active learning activities, developed online material, including videos and quizzes. Taught with CEE 440.
   - Evaluations: Spring 2019: 3.95 based on 5 out of 5 students.
     Spring 2020: 4.71 based on 6 out of 6 students (Taught in online post-spring break).
     Spring 2021: 4.81 based on 6 out of 6 students (Taught in hybrid mode).
     Spring 2022: 4.62 based on 3 out of 3 students.
     Spring 2023: 4.78 based on 8 out of 8 students.
     Spring 2024: 4.41 based on 8 out of 8 students.
4. CEE 591: Hydrosystems Seminar Series, Fall 2019, Fall 2022, Spring 2024, Arizona State University. 1 credit.
   - Co-led seminar course for graduate students of the Hydrosystems program focused on research and professional development.
   - Evaluations: Fall 2019: 4.80 based on 4 out of 13 students.
     Fall 2022: 4.82 based on 5 out of 15 students.
     Spring 2024: 4.87 based on 14 out of 21 students.
5. CEE 507: Urban Infrastructure Anatomy, Co-listed with SOS 575 and PUP 533, Spring 2020, Arizona State University. 3 credits.
   - Existing course covered for a colleague on sabbatical.
   - Evaluations: Spring 2020 CEE: N/A based on 0 out of 3 students. (Taught online post-spring break
     Spring 2020 SOS: 3.94 based on 1 out of 3 students. (Taught online post-spring break)
     Spring 2020 PUP: N/A based on 0 out of 3 students. (Taught online post-spring break)
6. Instructor at the Summer School on "Sociohydrology Summer Institute on Transboundary Water Management" Yunnan University, Kunming, China. July 1–12, 2019
   - Immersive collaborative research experience supported by lectures and mentorship for graduate students.

OUTREACH

Popular Press

- Torres, Jorge. (2023). No place in the US is safe from the climate crisis, but a new report shows where it's most severe. https://www.abc15.com/news/national/no-place-in-the-us-is-safe-from-the-climate-crisis-but-a-new-report-shows-where-its-most-severe, *ABC 15 Arizona*
- James, Ian. (2023). Fed says Colorado River water cuts are sufficient to stave off immediate risks. https://www.latimes.com/environment/story/2023-10-25/colorado-river-feds-give-update. *Los Angeles Times*
- Garcia, M. and Koebele, E. (2022). No more Band-Aids: How to make the Colorado River sustainable for the long term. https://www.azcentral.com/story/opinion/op-ed/2022/12/26/how-to-make-colorado-river-sustainable-for-long-term/69740492007/, *Arizona Republic*
- Bippus, Keetra. (2022). One billion gallons: ASU and the future of the Colorado River. https://www.statepress.com/article/2022/10/arizona-colorado-river-water-megadrought-asu-sustainability-practices, *State Press*
- Tenore, Haley. (2022). Climate change contributing to worsening drought. https://azcapitoltimes.com/news/2022/09/16/climate-change-contributing-to-worsening-drought/, *Arizona Capital Times*
- James, Ian. (2021). 'Red alert': Lake Mead falls to record-low level, a milestone in Colorado River's crisis. https://www.azcentral.com/story/news/local/arizona-environment/2021/06/10/lake-mead-declines-new-low-

colorado-river-crisis-deepens-arizona-drought/7621138002/, *Arizona Republic*

- James, Ian. (2021). As Lake Mead drops below shortage mark, shifting shorelines keep marinas in motion. https://www.azcentral.com/story/news/local/arizona-environment/2021/05/28/lake-mead-falls-below-shortage-level-forcing-marinas-to-move/5032052001/, *Arizona Republic*
- Elder, Jordan. (2019). Before the flood: System to predict rising water is tested in Phoenix and Flagstaff. https://cronkitenews.azpbs.org/2019/10/10/urban-flood-prediction-technology/, *Arizona PBS*
- KTAR. (2019). ASU engineers want to use traffic cameras to warn about urban flooding. https://ktar.com/story/2757700/asu-engineers-using-traffic-cameras-to-warn-about-urban-flooding/, *KTAR News*
- Thompson, Megan. (2019). Researchers turn to technology to help detect when storms will flood Valley streets. https://www.abc15.com/news/operation-safe-roads/researchers-turn-to-technology-to-help-detect-when-storms-will-flood-valley-streets, *ABC 15 Arizona*
- Fox 10. (2019). ASU engineers working on warning system for urban flooding. https://www.fox10phoenix.com/news/asu-engineers-working-on-warning-system-for-urban-flooding, *Fox 10 Phoenix*

Stakeholder Outreach

- *2024*: Organized three focus groups of technology companies, state and federal regulators and utilities to develop policy recommendations for the integration of new technologies in water and energy infrastructure as part of the NSF Southwest Sustainability Innovation Engine
- *2024*: Co-organized a community mural painting event with PhD graduate Lawless focused on building awareness of groundwater management.
- *2021, 2023*: Organized two workshops with project partners and stakeholders from the Centro Nacional Patagónico (CENPAT/CONICET) and Universidad Nacional de la Patagonia, San Juan Bosco for NSF CIS award.
- *2022*: Organized two workshops on urban water system sustainability and investment dynamics with water utilities from the Phoenix Metropolitan area and the Indianapolis Metropolitan area as part of the NSF CNH2 award.
- *2020*: Co-developed educational videos on modeling and monitoring of urban hydrology as part of the NSF SCC award. https://www.youtube.com/watch?v=f1mr3UbEEVo
- *2020:* Co-organized stakeholder workshop with local and federal public works, flood management and weather service professionals for NSF SCC award.
- *2020:* Organized workshop with project partners and stakeholders from the Sonoma County Water Authority for NSF CIS award.
- *2020*: Presenter at Realtime Flood Detection Virtual Workshop with Local and National Stakeholders. Online.

Other Professional Service

- *2023-present:* Appointed Member of the City of Phoenix Water and Wastewater Rates Advisory Committee
- *2020-present*: Member of the Lafayette College Civil & Environmental Engineering Department External Advisory Board.
- *2020-present:* ASU Earth Systems Science for the Anthropocene Graduate Scholars Network affiliate & mentor
- *2022, 2023:* Provided input to the Colorado River Basin Supplemental EIS process
    - *Pre-Scoping Comments:* https://www.usbr.gov/ColoradoRiverBasin/post2026/pre-scope/index.html, https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/pre-scoping/PS_706_ASU.pdf
    - *Scoping Comments:* https://www.usbr.gov/ColoradoRiverBasin/post2026/scoping/summary-input.html, https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/scoping/Organizations_A-F_508.pdf
- *2021-2023:* National Climate Assessment (NCA) Climate Trends Chapter Author. 2021-2023
- *2020*: Co-Organized workshop on Promising Practices for Effective Student Mentorship, co-sponsored by ESSA Graduate Scholars Network and the Engineering New Faculty Council.
- *2020*: Scientific Judge for Everything Change Climate Fiction Contest run by the Imagination and Climate Futures Initiative at ASU.
- *2020*: External Reviewer for PhD proposal in Hydrology and Water Management at Wageningen University.
- *2020*: Moderator for Sustainability Series Talk on Rigidly Defined Infrastructure for Climate Uncertainty and

Doubt. Online. October 15, 2020.

- *2020*: Speaker at ASU-Verizon Innovative Learning Back-to-School Webinar. Online. August 13, 2020.
- *2020*: Panelist at Empowering Women in STEM Panel. ASU, March 4, 2020.
- *2019*: External Honors Examiner for Swarthmore College
- *2018-2019*: ASU Review Committee for Maricopa County Green Infrastructure Guidelines
- *2017-2019*: Developer and reviewer of water resource engineering course modules for the Center for Infrastructure Transformation and Education
- *2003-2013:* Volunteer for Engineers without Borders in a variety of roles including engineer, team lead, project manager and technical support for student chapter.

RESEARCH SUPPORT

Summary

Total amount of all pending proposals in which Prof. Margaret Garcia is the PI or co-PI as of 12/30/2024: $1,077,796
Total amount of all awards in which Prof. Margaret Garcia is the PI or co-PI as of 12/30/2024: $19,029,489
Prof. Margaret Garcia's share in all awards as PI or co-PI as of 12/30/2024: $2,482,738
Total amount of all awards in which Prof. Margaret Garcia is the PI as of 12/30/2024: $2,272,468
Prof. Margaret Garcia's share of the total award amount at ASU as of 12/30/2024: $2,482,738
Prof. Margaret Garcia's share of research expenditures as of 12/30/2024: $2,110,085

Awards Funded & Active

- Pataki, D., (PI), Anderies, J.M., Ariaratnam,S., Barclay, S., Campbell, W., Candan, K., Dann, A., Dirks, G., Dorsey, M., Flory, J., Garcia, M. (Co-Investigator), Goodnick, S., Green, M., Hendricks, M., Huapaya, M., Johnson, T., Johnson, B., Karna, B., Keeler, L., Mathews, M., Miller, C., Neithalath, N., Nielson, D., Pataki, D., Rittman, B., Rossol-Allison, P., Santanam, R., Solis, P., Sutton, M., Vivoni, E., Wentz, E., Westerhoff, P., White, D., Wilson, E. 2024-2026. *Sustainability Innovation Engine for the Southwest (SIES*). $15,000,001 (Garcia's recognition: $300,000), NSF Engines: Type-2.
- Garcia, M. (Co-PI), Fox, P. (Co-PI). 2024-2025. *Capturing Lost Water: A Significant Water Resource for the Phoenix Active Management Area*. $82,020. (Garcia's recognition: $41,010), Arizona Water Innovation Initiative. **[Not counted in summary numbers – not in FSAR]**
- Garcia, M. (PI). 2020-2025. *Career: Balancing Local and Systemic Resilience in the Western Water Network.* $509,394. (Garcia's recognition: $509,394), NSF CAREER: Faculty Early Career Development.
- Garcia, M. (PI), Marty Anderies, Elizabeth Koebele, Aaron Deslatte, George Hornberger. 2019-2025. *CNH2-L: Transition Dynamics in Integrated Urban Water Systems*. $1,499,157, (Garcia's recognition: $1,019,427), NSF Coupled Human and Natural Systems.

Awards Funded & Complete

- Garcia, M (PI), White, D.D. (Co-PI). 2023-2024. *Rural Groundwater Management in Arizona Voter-Driven Policy Change and Community Engagement Mural.* $75,000, (Garcia's recognition: $37,500). Virginia Piper Trust via Impact Water - Arizona. **[Not counted in summary numbers – not in FSAR]**
- Garcia, M. (PI). 2019-2023. *CIS: Collaborative Research: Cross-Scale Interactions & the Design of Adaptive Reservoir Operations*. $263,917. (Garcia's recognition: $263,917), NSF Civil Infrastructure Systems.
- Francisco Lara-Valencia (PI), Margaret Garcia (Co-PI), Gabriel Diaz-Montmayor, Hilda Garcia, Cesar Lopez, Adriana Zuniga, 2020-2022. North American Development Bank. Sustainable Strategies for Stormwater and CSOs Control in Ambos, Nogales. $100,000. (Garcia's recognition: $15,000), North American Development Bank.
- Chester M. (PI), Mascaro G. (Co-PI), Garcia M. (Co-PI), 2018-2023. *SCC: Community-based Automated Information for Urban Flooding*. $1,500,000 (Garcia's recognition: $375,000), NSF Smart and Connected Communities.

Pending proposals as of 11/30/2024

- Garcia, M. (ASU PI), Lall, U., Larson, R., Laubichler, M., and Xu, T. (2024). Collaborative Research: SRS RN: ATTEST: Assessing Trade-offs Towards Equitable and Sustainable Transformations in the Colorado River Basin. In collaboration with University of Arizona, ASU budget $1,077,796, (Garcia's recognition $538,898). NSF Sustainable Regional Systems Program.

Proposals not funded

- Deslatte, A. (PI), Anderies, J.M., Garcia, M. (ASU PI), Koebele, E., and Singh, D. (2023). (Co-PI) DISES: Closing the Feedback Loop: Navigating Robustness-Fragility Tradeoffs in Polycentric Urban Water Systems. ASU subaward $602,427, (Garcia's recognition $301,214). NSF Dynamics of Integrated Socio-Environmental Systems (DISES)

- Gerlack, A., Buzzard, V., Crosson, C., Gupta, N., Tomson, B., Schoener, G., Himmelberger, H., Cadol, D., Tong, D., Garcia, M. (Co-PI), (2023). Creation of A Southwest Center of Excellence for Stormwater Control Infrastructure Technologies. In collaboration with University of Arizona. ASU portion $57,861, (Garcia's recognition $28,931) US Environmental Protection Agency (EPA)
- Georgescu, M., Cheng, C. Garcia, M. (Co-PI), Moustaoui, M. Salamanca Palou, F, and Tong, D. 2022. *Understanding and predicting water-energy-biogeochemistry interactions in semiarid Cities of the Sun Corridor amid new urban designs for equitable climate solutions*. Led by U. of A., ASU total: $2,413,665, (Garcia's recognition: $386,186). DOE's Office of Science's Urban Integrated Field Laboratories.
- Grimm, N. (PI), Cease, A. (Co-PI), Garcia, M. (Co-PI), Harnett, H. (Co-PI), York, A. (Co-PI). 2021. *NRT: Earth System Science for the Anthropocene*. $2,997,484. (Garcia's recognition: $239,799). NSF Research Traineeship Program
- Anderies, J.M. (PI), Garcia, M. (Co-PI), Eakin, H., Evans, T., Freeman, J., Baggio, J., Lobo, J., Siddiki, S., Schlager, E., Lubell, M., Muneepeerakul, R., Weible, C., & Janssen. M., 2021. *SRS RN: Robust, Polycentric Governance for Sustainable Regional Systems in the Anthropocene*. $148,272. (Garcia's recognition: $22,241). NSF Sustainable Regional Systems Research Networks
- Grimm, N. (PI), Cease, A. (Co-PI), Garcia, M. (Co-PI), Harnett, H. (Co-PI), York, A. (Co-PI). 2020. *NRT: Earth System Science for the Anthropocene.* $2,999,689. (Garcia's recognition: $299,969). NSF Research Traineeship Program
- Garcia, M. (PI), Anderies, J.M. (Co-PI). 2019. *Feedbacks Between Knowledge and Physical Infrastructures: The Case of the Combined Water-Supply and Flood-Control System in Bogota*, Colombia. Postdoc Grant covering salary, benefits, and travel funds (No direct ASU funds). SESYNC Postdoc Fellowship Grant.
- Chester, M. (PI), Breetz, H. (Co-PI), Garcia, M. (Co-PI), Parker, N. (Co-PI). $245,833. Pre-proposal did not advance. Sloan Foundation: Transmission and Distribution.
- Muenich, R. (PI), Garcia, M. (Co-PI). *Green Infrastructure for Stormwater Pollutant Mitigation in Desert Cities.* $150,194. Pre-proposal did not advance. Water Research Foundation.
- Garcia, M. (PI), Anderies, J.M. (Co-PI), Koebele, E. (Co-PI), Deslatte, A. (Co-PI), Hornberger, G. (Co-PI). 2018. *CNH-L: Transition Dynamics in Coupled Urban Water Systems*. $1,077,290. (Garcia's recognition: $754,103), NSF Coupled Human and Natural Systems.
- Garcia, M. (PI), Muenich, R. (Co-PI), Meerow, S. (Co-PI), Chen, C. (Co-PI), Coseo, P. (Co-PI). 2018. *Ecological infrastructure in desert cities: quantifying tradeoffs in integrated green infrastructure and urban agriculture.* $299,228. (Garcia's recognition: $59,846), NSF Critical Resilient and Interdependent Infrastructure Systems. NSF CBET Environmental Sustainability.
- Mascaro G. (PI), Sefair J., White D., Garcia M. (Co-PI), York. A. 2018. *CRISP 2.0 Type 2: Integrated Infrastructure and Institutional Modeling and Analysis to Enhance Urban Resilience*. $1,998,124.00 (Garcia's recognition: $359,662), NSF Critical Resilient and Interdependent Infrastructure Systems.
- Garcia, M. (PI), Seager, T. (Co-PI), Aldrich, D. (Co-PI), Kuhl, L. (Co-PI), Eckelman, M. (Co-PI), Alderson, D. (Co-PI). 2017. *The Role of Technology and Institutions in Mitigating Migration Risks.* $1,800,000. Pre-proposal did not advance. DOD MURI.

PROFESSIONAL EXPERIENCE AND MEMBERSHIPS

Professional Experience

2007–2011: Civil Engineer, Civil Infrastructure Group, Arup. New York, NY.

2006: Intern Civil Engineer, Langan Engineering, Doylestown, PA.

Professional Memberships

American Geophysical Union; American Society of Civil Engineers, International Association of Hydrological Science