Antonia Hadjimichael

Assistant Professor · The Pennsylvania State University

hadjimichael@psu.edu | https://www.hadjimichaelgroup.info/

Appointments

2022-... **Assistant Professor**, Department of Geosciences, The Pennsylvania State University
2022-... **Faculty Associate**, Earth and Environmental Systems Institute (EESI), The Pennsylvania State University
2017-2021 **Postdoctoral Associate**, School of Civil and Environmental Engineering, Cornell University
2014-2015 **Visiting Researcher**, Waterschap de Dommel, The Netherlands

Education

2012 - 2016 **PhD Water Science and Technology**, Universitat de Girona, Spain
2011 - 2012 **MSc Environmental Modelling**, University College London (UCL), United Kingdom
2008 - 2011 **BSc Mathematics**, University of Leicester, United Kingdom

Awards and Fellowships

2025 - 2028 **Wilson Faculty Fellow**, College of Earth & Mineral Sciences, The Pennsylvania State University

Publications

Peer-Reviewed Journal Articles n=20; * denotes Hadjimichael advisee

Li, M., Najjar, R., Kaushal, S., Mejia, A., Chant, R., Ralston, D., Burchard, H., **Hadjimichael, A.**, Lassiter, A., Wang, X., 2025. The emerging global threat of salt contamination of water supplies in tidal rivers. *Environmental Science & Technology Letters* https://doi.org/10.1021/acs.estlett.5c00505

Eyni A., Zaitchik B.F., **Hadjimichael, A.**, Hobbs, B., Shi, R., 2025. Distributional outcomes of urban heat island reduction pathways under climate extremes. *Scientific Reports* 15, 9594. https://doi.org/10.1038/s41598-025-93896-4

Hadjimichael, A., Schlumberger, J., Haasnoot, M., 2024. Data visualization for decision making under deep uncertainty: Current challenges and opportunities. *Environmental Research Letters* 19(11), 111011. https://doi.org/10.1088/1748-9326/ad858b

Hadjimichael, A., Reed, P.M., Quinn, J.D, Vernon, C.R., Thurber, T., 2024. Scenario storyline discovery for planning in multi-actor human-natural systems confronting change. *Earth's Future*, 12(9), e2023EF004252. https://doi.org/10.1029/2023EF004252

Zeff, H.B., **Hadjimichael, A.**, Reed, P.M., Characklis, G.W., 2024. Using financial contracts to facilitate informal leases within a Western United States water market based on prior appropriation. *Earth's Future* 12(5), e2023EF003739, https://doi.org/10.1029/2023EF003739

Gupta, R.S., Vernon, C.R., Thurber, T.B, Gold, D.F., Hirsch, Z.M., **Hadjimichael, A.**, Reed, P.M., 2024. statemodify: a Python framework to facilitate accessible exploratory modeling for discovering drought vulnerabilities. *Journal of Open Source Software* 9(96), 6325, https://doi.org/10.21105/joss.06325

Giang, A., Edwards, M.R., Fletcher, S.M., Gardner-Frolick, R., Gryba, R., Mathias, J.-D., Vernier-Cambron, C., Anderies, J. M., Berglund, E., Carley, S., Erickson, J., Grubert, E., **Hadjimichael, A.**, Hill, J.D., Mayfield, E., Nock, D., Pikok, K. K., Saari, R. K., Lezcano, C.M.S., Siddiqi, A., Skerker, J. B., Tessum, C. W., 2024. Equity and modeling in sustainability science: examples and opportunities throughout the modeling process. *Proceedings of the National Academy of Sciences* Special Feature: Modeling Dynamic Systems for Sustainability Science. https://doi.org/10.1073/pnas.2215688121

Taberna A., Filatova T., **Hadjimichael, A.**, Noll, B., 2023. Uncertainty in boundedly-rational households adaptation to environmental shocks. *Proceedings of the National Academy of Sciences* Special Feature: Modeling Dynamic Systems for Sustainability Science. https://doi.org/10.1073/pnas.2215675120

Hadjimichael, A. Yoon, J., Reed, P.M., Voisin, N., Xu, W., 2023. Exploring the Consistency of Water Scarcity Inferences between Large-Scale Hydrologic and Node-Based Water System Model Representations of the Upper Colorado River Basin. *Journal of Water Resources Planning and Management* 149, 04022081. https://doi.org/10.1061/JWRMD5.WRENG-5522 **Journal Reproducibility Award**

Fletcher S., **Hadjimichael, A.**, Quinn J.D., Osman K., Giuliani M., Gold D., Figeuroa A. J., Gordon B., 2022. Equity in water resources planning: a path forward for decision-support modelers. *Journal of Water Resources Planning and Management* 148, 7. https://doi.org/10.1061/(ASCE)WR.1943-5452.0001573, **Editor's Choice Paper** and **2024 Best Policy Oriented Paper Award**

Reed, P.M., **Hadjimichael, A.**, Moss, R.H., Brelsford, C., Burleyson, C.D., Cohen, S., Dyreson, A., Gold, D.F., Gupta, R.S., Keller, K., Konar, M., Monier, E., Morris, J., Srikrishnan, V., Voisin, N., Yoon, J., 2022. MultiSector Dynamics: Advancing the Science of Complex Adaptive Human-Earth Systems. *Earth's Future*, e2021EF002621. https://doi.org/10.1029/2021EF002621

Moss, R.H., Reed, P.M., **Hadjimichael, A.**, Rozenberg, J., 2021. Planned relocation: Pluralistic and integrated science and governance. *Science* 372, 1276–1279. https://doi.org/10.1126/science.abh3256

Hadjimichael, A., Quinn, J.D., Reed, P.M., 2020. Advancing diagnostic model evaluation to better understand water shortage mechanisms in institutionally complex river basins. *Water Resources Research*, e2020WR028079. https://doi.org/10.1029/2020WR028079

Quinn, J.D., **Hadjimichael, A.**, Reed, P.M., Steinschneider, S., 2020. Can exploratory modeling of water scarcity vulnerabilities and robustness be scenario neutral? *Earth's Future*. https://doi.org/10.1029/2020EF001650

Hadjimichael, A., Reed, P.M., Quinn, J.D., 2020. Navigating Deeply Uncertain Tradeoffs in Harvested Predator-Prey Systems. *Complexity*, Special Issue: Complexity, Dynamics, Control, and Applications of Nonlinear Systems with Multistability. e4170453. https://doi.org/10.1155/2020/4170453

Hadjimichael, A., Quinn, J.D., Wilson, E., Reed, P.M., Basdekas, L., Yates, D., Garrison, M., 2020. Defining Robustness, Vulnerabilities, and Consequential Scenarios for Diverse Stakeholder Interests in Institutionally Complex River Basins. *Earth's Future* 8, e2020EF001503. https://doi.org/10.1029/2020EF001503

Hadjimichael, A., Gold, D., Hadka, D., Reed, P.M., 2020. Rhodium: Python Library for Many-Objective Robust Decision Making and Exploratory Modeling. *Journal of Open Research Software* 8, 12. https://doi.org/10.5334/jors.293

Hadjimichael, A., Comas, J., Corominas, L., 2016. Do machine learning methods used in data mining enhance the potential of decision support systems? A review for the urban water sector. *AI Communications* 29, 747–756. https://doi.org/10.3233/AIC-160714

Hadjimichael, A., Morera, S., Benedetti, L., Flameling, T., Corominas, Ll., Weijers, S., Comas, J., 2016. Assessing urban wastewater system upgrades using integrated modeling, life cycle analysis and shadow pricing. *Environmental Science & Technology*. *https://doi.org/10.1021/acs.est.5b05845*

Garcia, X., Barceló, D., Comas, J., Corominas, Ll., **Hadjimichael, A.**, Page, T.J., Acuña, V., 2016. Placing ecosystem services at the heart of urban water systems management. *Science of The Total Environment* 563–564, 1078–1085. https://doi.org/10.1016/j.scitotenv.2016.05.010

Books, Reports and Other Publications n=4

Monier, E., Reed, P. M., Vernon, C. R., **Hadjimichael, A.**, Brelsford, C., Burleyson, C. B., Dyerson, A., Fletcher, S., Giang, A., Gupta, R. S., Jackson, N. D., Jones, A., Lamontagne, J., McCollum, D., Morris, J., Moss, R., Peng, W., Saari, R., Srikrishnan, V., Szinai, Julia, Yoon, J. (2024). MultiSector Dynamics: 2023 Inaugural Workshop Report. https://doi.org/10.57931/2371710

Reed, P.M., **Hadjimichael, A.**, Moss, R., Monier, E., Alba, S., Brelsford, C., Burleyson, C., Cohen, S., Dyreson, A., Gold, D., Gupta, R., Keller, K., Konar, M., Macknick, J., Morris, J., Srikrishnan, V., Voisin, N., Yoon, J., 2022. MultiSector Dynamics: Scientific Challenges and a Research Vision for 2030, A Community of Practice Supported by the United States Department of Energy's Office of Science. https://doi.org/10.5281/zenodo.5825889

Reed, P.M., **Hadjimichael, A.**, Malek, K., Karimi, T., Vernon, C.R., Srikrishnan, V., Gupta, R.S., Gold, D.F., Lee, B., Keller, K., Rice, J.S., Thurber, T.B. 2022. Addressing Uncertainty in Multisector Dynamics Research [e-book]. https://doi.org/10.5281/zenodo.6110623

Voisin, N., Keller, K., **Hadjimichael, A.**, Monier, E., Reed, P.M, Moss, R.H. 2022. A two-way street: Interdependence of climate variability and change with human systems. US CLIVAR Variations. Online, Washington. US CLIVAR Variations, 20(1), 22-31. https://doi.org/10.5065/9mn8-1p50

In Review or Revision n=2

Gesualdo, G.*, **Hadjimichael, A.**, Beyond One-Size-Fits-All: Regionalizing Flash Drought Detection for Effective Water Management. *Environmental Research: Water* (In Revision)

Zaitchik, B.F. and *The Baltimore Social-Environmental Collaborative Team* including **Hadjimichael, A.**, American cities in a time of global environmental change: the case of the Baltimore Social-Environmental Collaborative. *Environmental Research: Infrastructure and Sustainability* (In Review)

In Prep n=6

Deines, J.M., Baur, S., Kendall, A., **Hadjimichael, A.**, Hetland, R., Understanding the drivers and yield effects of irrigation expansion across the traditionally-rainfed US Corn Belt. (to be submitted to *Earth's Future* September 2025)

Kenney, M.A., Kopp, R.E., Samaras, C., ... , **Hadjimichael, A.** et al., What a robust, evidence-based United States climate assessment needs. (to be submitted to *Earth's Future* September 2025)

Son, K., **Hadjimichael, A.**, Chen, X., Climate data choice shapes uncertainty characterization in watershed modeling. (to be submitted to *Journal of Hydrology* October 2025)

Jones, A., Buddhavarapu, S., Gutowski, W., **Hadjimichael, A.**, Jagannathan, K., Lehner, F., Longmate, J., Reed, K.A., Rhoades, A., Schwarz, A., Tebaldi, C., Zarzycki, C., Probabilistic Storylines: Characterizing the Likelihood of Extreme Events in a Deeply Uncertain World. (to be submitted to *Bulletin of the American Meteorological Society* October 2025)

Thames, A.*, **Hadjimichael, A.**, Quinn, J.D., Understanding Compound Climate Impacts to Agriculture Using a Multisite Weather Generator in the Upper Colorado River Basin. (to be submitted to *Water Resources Research* November 2025)

Hetland, R., Kraucunas, I., Painter, S., Coon, E., **Hadjimichael, A.**, Qian, Y., Jeffery, N., Digital Testbeds for Advancing Regional Earth System Modeling in Coastal Domains. (to be submitted to *npj Climate and Atmospheric Science* November 2025)

Public Communication n=8

Zuidema, T., De onzekere toekomst van de Colorado rivier (The uncertain future of the Colorado River). *Techniek & Wetenschap in perspectief*, June 2025, `https://tw.nl/de-onzekere-toekomst-van-de-colorado-rivier/`

Hadjimichael, A., The Colorado River crisis: Water shortages, climate change, and sustainable management. *IEE Blog*, March 2025, `https://iee.psu.edu/news/blog/colorado-river-crisis-water-shortages-climate-change-and-sustai`

Hadjimichael, A., Corney, M., Mattoo, P., Thurber, T., Navigating the Possible Futures of the Colorado River. December 2024, `https://frnsic.msdlive.org/`

Sliman, K., Growing Impact: Climate, crops, and the Colorado River. *Growing Impact Podcast*, January 2024, `https://iee.psu.edu/news/podcast/growing-impact-climate-crops-and-colorado-river`

Hadjimichael, A., Weaving Data Viz Into Science and Engineering Education. *Nightingale*, June 2023, `https://nightingaledvs.com/weaving-data-viz-into-science-and-engineering-education/`

Thomson, J., When will the megadrought gripping southwestern states end? *Newsweek*, February 2023, `https://www.newsweek.com/megadrought-southwest-states-climate-change-1780833`

Thomson, J., America's drought-hit lakes and rivers in sobering before and after photos, 2002, *Newsweek*, December 2022, `https://www.newsweek.com/drought-lakes-rivers-us-climate-change-1765637`

Hadjimichael, A., What is a flash drought? An earth scientist explains, *The Conversation*, November 2022, `https://theconversation.com/what-is-a-flash-drought-an-earth-scientist-explains-194141`

Selected Presentations

Invited Talks n=30

May, 2025. *Discovering scenario storylines to inform planning in complex human-natural systems.* Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano.

February, 2025. *Discovering scenario storylines to inform planning in complex systems.* Women Advancing River Research Seminar Series, Online. `https://doi.org/10.5281/zenodo.14900908`

January, 2025. *Discovering scenario storylines to inform planning in complex human-natural systems.* Department of Environmental Science, Baylor University.

January, 2025. *Data Visualization for scientists and engineers.* Department of Civil and Environmental Engineering, The Pennsylvania State University.

October, 2024. *Data Visualization for scientists and engineers.* Department of Civil and Environmental Engineering, Cornell University.

May, 2024. *Data Visualization for scientists and engineers.* Step Change Seminar Series, Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano.

April, 2024. *Data Visualization for scientists and engineers.* 26th Annual Pennsylvania State University's Interdisciplinary Environmental Research Symposium, The Pennsylvania State University.

March, 2024. *Multi-actor, multi-impact scenario discovery of consequential narrative storylines for human-natural systems planning.* Water Energy Food Nexus Seminar, Department of Ecosystem Science & Management, The Pennsylvania State University.

February, 2024. *Discovering narrative storylines to inform planning in multi-actor human-natural systems.* Civil and Environmental Engineering Seminar Series, Department of Civil and Environmental Engineering, Princeton University.

December, 2023. *Advancing uncertainty characterization for understanding projected water scarcity in multi-sector, multi-actor river basins across scales.* American Geophysical Union Fall Meeting. `https://doi.org/10.57931/2281204`

December, 2023. *Advancing scenario discovery to identify impacts and consequential dynamics for complex multi-actor human-natural systems* American Geophysical Union Fall Meeting. `https://doi.org/10.5281/zenodo.8400589`

October, 2023. *Scenario discovery for impacts and consequential dynamics in complex, multi-actor, human-natural systems* Advances in Water Management and Climate Adaptation Lecture Series, Institute of Fluid Mechanics and Technical Acoustics, Technische Universität Berlin, Germany

October, 2023. *Understanding how human and natural processes interact to shape nutrient exports in the Great Lakes* (poster) Multi-Sector Dynamics Workshop, Davis, CA, USA

October, 2023. *Advancing scenario discovery to identify impacts and consequential dynamics for complex multi-actor human-natural systems* Environmental Engineering Seminar Series, Department of Civil and Environmental Engineering, Stanford University. `https://doi.org/10.5281/zenodo.8400589`

March, 2023. *Planning for water resources systems under uncertainty: the case of the Upper Colorado River Basin.* Water Energy Food Nexus Seminar, Department of Ecosystem Science & Management, The Pennsylvania State University.

February, 2023. *Addressing uncertainty in MultiSector Dynamics research: an eBook guide for novice and experienced modelers.* Co-presented with David Gold. Multisector Dynamics Working Group, United States Geological Survey (USGS).

November, 2022. *Planning for water resources systems under uncertainty: the case of the Upper Colorado River Basin.* Energy and Environmental Economics and Policy Initiative (EEEPI) Seminar, The Pennsylvania State University.

October, 2022. *Water scarcity vulnerabilities for stakeholders in institutionally complex river basins under uncertainty.* INFORMS Annual Meeting, Indianapolis, USA.

September, 2022. *Advancing the science of complex adaptive human-Earth systems through MultiSector Dynamics.* Climate Dynamics Seminar, Department of Meteorology and Atmospheric Science, The Pennsylvania State University.

September, 2022. *Understanding complex adaptive human-Earth systems through MultiSector Dynamics.* Coffee Hour Colloquium, Department of Geography, The Pennsylvania State University.

September, 2022. *Planning for water resources systems under uncertainty: the case of the Upper Colorado River Basin.* Environmental and Water Resources Engineering Seminar, Department of Civil and Environmental Engineering, The Pennsylvania State University.

June, 2022. *Advancing the science of complex adaptive human-Earth systems through MultiSector Dynamics.* Escuela de Gobierno y Transformación Pública, Tecnológico de Monterrey, Mexico. `https://doi.org/10.5281/zenodo.6611750`

April, 2022. *Simulation-based optimization: Basic fundamentals and some examples.* Guest lecture for the Modelling & Simulation Discussion Group, Wageningen University, The Netherlands. `https://doi.org/10.5281/zenodo.6457891`

February, 2022. *Advancing the science of complex adaptive human-Earth systems through MultiSector Dynamics.* Government and Public Entrepreneurship Group, Escuela de Gobierno y Transformación Pública, Tecnológico de Monterrey, Mexico. `https://doi.org/10.5281/zenodo.6047072`

February, 2021. *Planning for water resources systems under uncertainty: competition, transitions and multisector dynamics*. Earth and Environmental Systems Institute, The Pennsylvania State University.

February, 2020. *Drought vulnerability and consequential scenarios for diverse stakeholders: The Upper Colorado River Basin*. Water in the West, Stanford University.

June, 2019. *Assessing multi-stakeholder conflicts, vulnerabilities, and risk in the Upper Colorado River Basin*. Binational Laboratory of Sustainability, Vulnerability and Adaptation to Climate Change. Merida, Mexico.

November, 2016. *Decision making for urban water systems under uncertainty*. IWA Young Water Professionals session. International Integrated Water Cycle Show (iWater). Barcelona, Spain.

June, 2013. *Towards a decision support system to assess environmental and socio-economic impacts of Urban Wastewater Systems.* Emerging Challenges for a Sustainable and Integrated Urban Water System Management Workshop. LET conference. Bordeaux, France.

January, 2013. *Towards a decision support system to assess environmental and socio-economic impacts of Urban Wastewater Systems.* Advanced Tools for Wastewater Treatment Workshop. Tiruchirappalli, India.

Contributed Presentations

Selected presentations led by Hadjimichael and *advisees. A fuller list of presentations by the Hadjimichael group can be found at `https://www.hadjimichaelgroup.info/presentations`.

Hadjimichael, A., Reed, P.M., Vernon, C.R., Thurber, T., Scenario storyline discovery for complex multi-actor human-natural systems. AGU Fall Meeting, American Geophysical Union (AGU), Washington, DC, December, 2024. `https://doi.org/10.57931/2480781` (poster)

Gesualdo, G.*, & **Hadjimichael, A.**. Detecting flash drought events to inform adaptive water management. Annual Meeting of the Society for Decision Making under Deep Uncertainty, Denver, CO. October, 2024. `https://doi.org/10.57931/2500386`

Hadjimichael, A., Reed, P.M., Quinn, J.D., Vernon, C.R., Thurber, T., Multi-actor, multi-impact scenario discovery of consequential narrative storylines in human-natural systems. Annual Meeting of the Society for Decision Making under Deep Uncertainty, Delft, The Netherlands. October, 2023.

Hadjimichael, A., Bader, M., Hobbs, B., Nicholas, R., Wu, H., Sanders Thach, T., Kirchner, S., Smith, G., Iulo, L.D., Zaitchik, B., Identifying equitable adaptation pathways at scale: the Baltimore Social-Environmental Collaborative. Annual Meeting of the Society for Decision Making under Deep Uncertainty, Delft, The Netherlands. October, 2023.(poster)

Hadjimichael, A., Peng, W., Bader, M., Hobbs, B., Nicholas, R., Wu, H., Sanders Thach, T., Kirchner, S., Smith, G., Iulo, L.D., Zaitchik, B., Advancing the urban science necessary to inform equitable adaptation: the Baltimore Social-Environmental Collaborative (BSEC), Multi-Sector Dynamics Workshop, Davis, CA, USA (poster)

Hadjimichael, A., Yoon, J., Reed, P. M., Voisin, N., Exploring the consistency of water scarcity vulnerabilities across scales: Do our inferences converge?. World Environmental & Water Resources Congress (EWRI), Atlanta, Georgia. June, 2022. `https://doi.org/10.5281/zenodo.6624320`

Hadjimichael, A., Yoon, J., Reed, P.M., Voisin, N., Inferring water scarcity vulnerabilities: do converging model representations of water systems lead to convergent insights? American Geophysical Union Fall Meeting. December, 2021. `https://doi.org/10.5281/zenodo.5826341` (poster)

Hadjimichael, A., Reed, P.M., Vernon, C.R., Thurber, T., Exploring the consistency of inferred water shortage vulnerabilities using rival framings of adaptive demands in a multi-actor, multi-sector river basin. American Geophysical Union Fall Meeting. December, 2021. `https://doi.org/10.5281/zenodo.5879234` (poster)

Hadjimichael, A., Quinn, J.D., Reed, P.M., Evaluating the consistency of inferred multi-actor vulnerabilities to agricultural water shortages through the use of rival framings. ASCE World Environmental & Water Resources Congress, Online. June, 2021. `https://doi.org/10.5281/zenodo.5879244`

Hadjimichael, A., Quinn, J.D., Reed, P.M., Understanding how water scarcity vulnerabilities vary across multi-sectoral users within institutionally complex river basins. American Geophysical Union Fall Meeting. December, 2020.

Hadjimichael, A., Quinn, J.D., Reed, P.M., Mapping DMDU inference traps: exploring rival framings of scenario discovery to evaluate the consistency of inferred multi-actor agricultural vulnerabilities. Annual Decision Making Under Deep Uncertainty Meeting. Online. November 2020.

Hadjimichael, A., Quinn, J.D., Wilson, E., Reed, P.M., Basdekas, L., Yates, D., Garrison, M., Drought vulnerability and consequential scenarios for diverse stakeholders: The Upper Colorado River Basin. American Geophysical Union Fall Meeting. San Fransisco, USA. December, 2019.

Hadjimichael, A., Quinn, J.D., Wilson, E., Reed, P.M., Basdekas, L., Yates, D., Garrison, M., Defining robustness, vulnerabilities, and consequential scenarios for diverse stakeholder interests within the Upper Colorado River Basin. Annual Decision Making Under Deep Uncertainty Meeting. Delft, the Netherlands. November, 2019.

Hadjimichael, A., Quinn, J.D., Wilson, E., Reed, P.M., Basdekas, L., Yates, D., Garrison, M., Assessing multi-stakeholder conflicts, vulnerabilities, and risk in the Upper Colorado River Basin. ASCE World Environmental & Water Resources Congress, Pittsburg, USA. May, 2019.

Hadjimichael, A., Reed, P.M., Quinn, J.D., When Tradeoffs Are Not What They Appear and Robustness May Not Exist: The Fisheries Challenge. American Geophysical Union Fall Meeting. Washington DC, USA. December, 2018.

Hadjimichael, A., Reed, P.M., Quinn, J.D., Avoiding fisheries collapse: Can robustness frameworks capture and navigate uncertain harvest tradeoffs? Annual Decision Making Under Deep Uncertainty Meeting. Culver City, USA. November, 2018.

Hadjimichael, A., Reed, P.M., Quinn, J.D., Avoiding Collapse: An Illustration of Problem Framing Challenges using the Fisheries Game. ASCE World Environmental & Water Resources Congress. Minneapolis, USA. June, 2018.

Hadjimichael, A., Morera, S., Weijers, S., Comas, J. Environmental benefits to society and sustainability aspects of wastewater treatment processes. WATERMATEX. Gold Coast, Queensland, Australia. June, 2015. (poster)

Hadjimichael, A., Corominas, Ll., Poch, M., Comas, J., Towards a decision support system to assess environmental and socio-economic impacts of Urban Wastewater Systems (UWS). ICA conference. Narbonne, France. September, 2013.

Hadjimichael, A., Oliva Felipe, L., Corominas, Ll., Poch, M., Cortés U., Comas J., Multi-agent based decision support system for the integrated management of UWWS. ICCE conference. Barcelona, Spain. June, 2013. (poster)

Teaching Experience

2022-2025	**Risk Analysis in the Earth Sciences (GEOSC 450)**, Instructor	*Penn State*
2025	**Data Visualization for DMDU (DMDU Summer School)**, Instructor	*Utrecht, NL*
2023-2025	**Water and Society (EARTH 111)**, Instructor	*Penn State*
2024	**Data Visualization for DMDU (DMDU Summer School)**, Instructor	*Abuja, Nigeria*
2023	**Data Visualization for DMDU (DMDU Summer School)**, Instructor	*Mexico City, Mexico*
2023-2024	**Data Visualization for Scientists and Engineers (GEOSC 497)**, Instructor	*Penn State*
2018-2019	**Interdisciplinary Master of Engineering Project (CEE 5050)**, Co-Instructor	*Cornell University*
2018	**Engineering Management Methods (CEE 5930)**, Instructor	*Cornell University*

Mentorship

Fellowships and Scholarships: ⋆ NSF Graduate Research Fellow, ◇ Penn State Bunton-Waller Scholar

Postdoctoral Associates

2025-... **Abhijeet Abhishek**, Postdoctoral Associate
2023-... **Gabriela Gesualdo**, Postdoctoral Associate

Graduate Students

2025-... **Tsunami Sharmba**◇, PhD, Geosciences
2024-... **Ethan Heidtman**⋆, PhD, Geosciences and Climate Science Dual Title
2023-... **Ava Spangler**⋆, PhD, Geosciences and Climate Science Dual Title
2022-... **Alexander Thames**, PhD, Geosciences and Climate Science Dual Title
2023-2025 **Madison Hernandez**◇, MSc, Geosciences
2022-2024 **Enock Bunyon**, MSc, Geosciences

Undergraduate Students

2025-... **Mara Grigore**, BSc, Earth Science and Policy
2024-2025 **Carlin Blash**, BSc, Earth Sciences
2024-2025 **Rayna Palkewicz**, BSc, Geobiology

Research Experiences for Undergraduates (REU)

2025 **Raven McRae**, BSc, Computer Science, Fort Valley State University
2024; 2025 **Sierra Wright**, BSc, Geosciences, Penn State Altoona

Grants

Total directed to Hadjimichael Group: **$1,363,642**

The Baltimore Social-Environmental Collaborative IFL
Department of Energy, Office of Science, Earth and Environmental System Science Division — *Sep. 2022 - Aug. 2027*
Co-PI ($586,973); PI: Benjamin Zaitchik (Johns Hopkins); Total award amount: $24,511,753

Coastal Observations, Mechanisms, and Predictions Across Systems and Scales - Great Lakes Modeling (COMPASS-GLM): Phase 1
Department of Energy, Office of Science, Earth and Environmental System Science Division — *Sep. 2022 - Jan. 2026*
Subcontract ($281,125)

Integrated Multisector Multiscale Modeling (IM3): Phase 2
Department of Energy, Office of Science, Earth and Environmental System Science Division — *Jan. 2022 - Sep. 2025*
Subcontract ($400,907)

Navigating the Complexity of Earth System Risks Through Cross-Class Interdisciplinary Collaboration and Experiential Learning
College of Earth and Mineral Sciences, The Pennsylvania State University; Gladys Snyder Education Grant Program — *Feb. 2024 - Dec. 2024*
PI; Total award amount: $5,000

Track K: Prototyping decision support and monitoring tools for equitable management of salt contamination of water supplies in tidal rivers
NSF Convergence Accelerator — *Jan. 2024 - Nov. 2024*
Senior Investigator ($51,960); PI: Ming Li (University of Maryland); Total award amount: $650,000

Empowering Interdisciplinary Scholars for Future Challenges
U.S. Geological Survey, 104B Program *Sep. 2023 - Aug. 2024*
Co-PI ($14,769); PI: Elizabeth Boyer (Penn State); Total award amount: $14,769

Understanding compound stressors and stakeholder tradeoffs of agricultural adaptation to climate change in the Colorado River
Institutes of Energy and the Environment, The Pennsylvania State University *Sep. 2023 - Jun. 2024*
PI; Total award amount: $22,908

Professional Service

Leadership

2025 - ...	**Society for Decision Making under Deep Uncertainty (DMDU)**, Chair of Fundraising
2022 - ...	**Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI)**, Penn State Representative
2019 - ...	**MultiSector Dynamics Community of Practice Facilitation Team**, Member
2022 - 2024	**Penn State Water Council**, Member
2021 - 2024	**Society for Decision Making under Deep Uncertainty (DMDU)**, Chair of Communications and Outreach

Contributions to assessment reports

2024 - 2025	**Sixth National Climate Assessment, Climate Effects on US International Interests chapter**, Graphics Development Lead and Contributing Author

Journal Editorship & Peer Review

2024 - ...	**Environmental Research: Water**, Editorial Board Member

Reviewer for:
Journal of the American Water Resources Association, Earth's Future, Journal of Environmental Engineering, Environmental Modelling and Software, Environmental Research Letters, Journal of Environmental Studies and Sciences, Frontiers in Water, Journal of Hydrology, Hydrology and Earth System Sciences, Nature Water, Proceedings of the National Academy of Sciences, Regional Environmental Change, Science of the Total Environment, Journal of Water Resources Planning and Management, Water Resources Research

Funding Agency Peer Review

Panel Reviewer for:
Department of Energy (DOE) Office of Science

Ad-hoc Reviewer for:
BARD US-Israel Agricultural Research and Development Fund, Department of Energy (DOE) Office of Science, National Science Foundation (NSF) Hydrologic Sciences Program

Conference Organization & Peer Review

2024	**Water and Society: Water resources management and policy in a changing world**, Co-convener & OSPA Liaison	*AGU Fall Meeting*
2024	**Methodological Innovations to Meet Decision Making Challenges**, Co-convener	*DMDU Annual Meeting*
2023	**Water and Society: Water resources management and policy in a changing world**, Co-convener & OSPA Liaison	*AGU Fall Meeting*
2023	**Enhancing Decision Making through Effective Visualization Techniques**, Co-convener	*DMDU Annual Meeting*
2023	**Multisector Dynamics Workshop**, Reviewer	*Multisector Dynamics Workshop*
2022	**Annual Meeting for the Society of Decision Making under Deep Uncertainty**, Organizing Committee Member & Reviewer	*DMDU Annual Meeting*
2022	**Water and Society: Water resources management and policy in a changing world**, Co-convener & OSPA Liaison	*AGU Fall Meeting*
2022	**Resilience, vulnerability and equity in multi-actor water resources systems**, Convener	*ASCE-EWRI*
2021	**Resilience, vulnerability and equity in multi-actor water resources systems**, Convener	*ASCE-EWRI*
2020-2021	**Planning & Management Section**, Reviewer	*ASCE-EWRI*
2019-2021	**Multiple sessions**, OSPA Judge	*AGU Fall Meeting*

Professional Memberships

American Geophysical Union

Data Visualization Society