

Antonia Hadjimichael

ASSISTANT PROFESSOR · THE PENNSYLVANIA STATE UNIVERSITY

212 Deike Building, University Park, PA 16802

✉ hadjimichael@psu.edu | 🏠 <https://www.hadjimichaelgroup.info/> | 📄 <https://github.com/antonia-had>

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

Publications

PEER-REVIEWED JOURNAL ARTICLES n=17; 8 as first author

- Hadjimichael, A.**, Reed, P.M., Quinn, J.D., Vernon, C.R., Thurber, T., Scenario storyline discovery for planning in multi-actor human-natural systems confronting change. *Earth's Future* (In Press)
- 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, 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>
- Fletcher S., **Hadjimichael, A.**, Quinn J.D., Osman K., Giuliani M., Gold D., Figueiroa 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](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* 2020, 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., Flaming, T., Corominas, L., 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, L., **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., Dyreson, 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

- Eyni A., Zaitchik B.F., **Hadjimichael, A.**, Hobbs, B., Equitable urban heat island reduction pathways under climate change. *Scientific Reports* (In Review)
- Hadjimichael, A.**, Schlumberger, J., Haasnoot, M., On the use of visualization to inform decision making under deep uncertainty. *Environmental Research Letters* (In Review)

IN PREP

- Son, K., **Hadjimichael, A.**, Chen, X., Climate data choice shapes uncertainty characterization in watershed modeling. (to be submitted to *Water Resources Research* September 2024)
- Hadjimichael, A.**, Reed, P.M., Vernon, C.R., Thurber, T., Understanding the capacity of adaptive water transfers to modulate the effects of drought in Western multi-actor river basins. (to be submitted to *Earth's Future* December 2024)

IN POPULAR MEDIA n=5

- 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>

Conference and Invited Presentations

INVITED TALKS n=25

- 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, IN, USA.
- 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 advised students; * indicates student advised by Hadjimichael

- Hadjimichael, A.**, Reed, P.M., Quinn, J.D., Vernon, C.R., Thurber, T., Scenario storyline discovery for multi-actor human-natural systems confronting change. DOE EESM PI Meeting, Rockville, MD. August, 2024.
- Bunyon, E. *, **Hadjimichael, A.**, Guico Aquino, C. F., Son, K., Chowdhury, P. K. R., Deines, J., & Hetland, R., Uncertainty Characterization in Coupled Human-Natural Systems: Modeling Agricultural Adaptation in The Great Lakes Region, AGU Fall Meeting, American Geophysical Union (AGU), San Fransisco, CA, December, 2023. (poster)
- Thames, A. B. *, **Hadjimichael, A.**, Kukal, M., & Cibir, R., Assessing the Compound Impacts of Precipitation and Temperature on Agriculture in the Upper Colorado River Basin, AGU Fall Meeting, American Geophysical Union (AGU), San Fransisco, CA, December, 2023. <https://doi.org/10.5281/zenodo.10267605> (poster)
- 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 Francisco, 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

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

Mentoring

POSTDOCTORAL ASSOCIATES

2023-... **Gabriela Gesualdo**, Postdoctoral Associate

GRADUATE STUDENTS

2024-... **Ethan Heidtman**, PhD Student, Geosciences

2023-... **Madison Hernandez**, MSc Student, Geosciences

2023-... **Ava Spangler**, PhD Student, Geosciences and Climate Science Dual Title

2022-... **Enock Bunyon**, MSc Student, Geosciences

2022-... **Alexander Thames**, PhD Student, Geosciences and Climate Science Dual Title

UNDERGRADUATE STUDENTS

2024-... **Carlin Blash**, BSc Student, Climatology & Political Science

2024-... **Rayna Palkewicz**, BSc Student, Geobiology

2024 **Sierra Wright**, REU Student, Geosciences

Grants

Total directed to Hadjimichael Group: **\$1,143,546**

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: \$750,000

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

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 I

DEPARTMENT OF ENERGY, OFFICE OF SCIENCE, EARTH AND ENVIRONMENTAL SYSTEM SCIENCE DIVISION

Sep. 2022 - Sep. 2024

Subcontract (\$161,724)

Integrated Multisector Multiscale Modeling (IM3), Phase 2

DEPARTMENT OF ENERGY, OFFICE OF SCIENCE, EARTH AND ENVIRONMENTAL SYSTEM SCIENCE DIVISION

Jan. 2022 - Sep. 2024

Subcontract (\$300,212)

Professional Service

LEADERSHIP

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

JOURNAL EDITORSHIP & PEER REVIEW

- 2024 - ... **Environmental Research: Water**, Editorial Board Member (journal launch September 2024)

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

- 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 **Inaugural 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