Last Update: 3/2023

David J. Yu

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RESEARCH AREA

I investigate the ***governance, resilience, and sustainability*** of infrastructure systems and coupled natural-human systems (e.g., water resources system, socio-hydrological, socio-technical or social-ecological systems)—in which some common-pool resources (natural commons as well as engineered commons) are used by many people across multiple domains of use and exposed to social dilemmas and environmental variability. I examine how configurations of biophysical factors and institutional designs shape individual and collective behaviors and system-level outcomes in these systems. I apply the theoretical lenses of systems science, resilience thinking, and collective action and governance of commons. I use a multi-method approach consisting of systems modeling, institutional analysis, and controlled behavioral experiments.

PROFESSIONAL EXPERIENCE

Assistant Professor – Tenure-Track (08/2015 ~ Present)
Joint Appointments with the **Lyles School of Civil Engineering** (75%, tenure home) & **Department of Political Science**, Purdue University (25%), W. Lafayette, IN

Faculty Associate & Graduate Research Associate (08/2010 ~ 05/2015)
School of Sustainability, Arizona State University, Tempe, AZ

Visiting Research Associate (05/2011 ~ 08/2011)
Ecology Lab, Graduate School of Environmental Studies, Seoul National University, Korea

Advisory Consultant, Samsung SDS, Korea (07/2004 ~ 07/2008)

Co-founder, Entrepreneur, Genops Bioinformatics, Inc., Burnaby, BC, Canada (03/2000 ~ 09/2002)

EDUCATION

Ph.D. in Sustainability Science (2015)
School of Sustainability, Arizona State University, Tempe, AZ
Committee: John M. Anderies (Chair), Marco A. Janssen, Rachata Muneepeerakul

Master in Public Policy (2010)
Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore
Advisor: Eduardo Araral

Bachelor of Applied Science (2004)
School of Engineering Science, Simon Fraser University, Burnaby, BC, Canada
Exchange student, (KAIST) Korea Advanced Institute of Science & Technology (1998)

HONOURS & AWARDS

Faculty Early Career Development (NSF CAREER) Award, National Science Foundation (2022)

Roy E. & Myrna G. Wansik Civil Engineering Research Award, Purdue University (2022)

Water Resources Research Editor's Choice Award for Best Papers, American Geophysics Union (2018)

Selected as a Dow Sustainability Post-doctoral Fellow, University of Michigan School of Natural Resources and Environment (SNRE) (2015, declined)

REFEREED JOURNAL ARTICLES

Superscripts G and UG stand for graduate and undergraduate students, respectively.
Superscript† indicates corresponding author (if different from the first author).
Superscript# indicates equally contributing authors.
Underlines indicate Purdue graduate or undergraduate students (work initiated while at Purdue or currently at Purdue).

1. Ching, L., and **D. J. Yu**[G]. 2010. Turning the tide: informal institutional change in water reuse. *Water Policy* 12(S1):121. Tier 2.

2. Araral, E., and **D. J. Yu**[G]. 2013. Comparative water law, policies, and administration in Asia: Evidence from 17 countries. *Water Resources Research* 49(9):5307–5316. Tier 1.

3. **Yu, D. J.**[G], J. M. Anderies, D. Lee, and I. Perez. 2014. Transformation of resource management institutions under globalization: the case of songgye community forests in South Korea. *Ecology and Society* 19(2):art2. Tier 1.

4. Janssen, M. A., J. M. Anderies, I. Pérez, and **D. J. Yu**[G]. 2015. The effect of information in a behavioral irrigation experiment. *Water Resources and Economics* 49 (2), 55-62. Tier 1.

5. **Yu, D. J**., M. R. Qubbaj, R. Muneepeerakul, J. M. Anderies, and R. M. Aggarwal. 2015. Effect of infrastructure design on commons dilemmas in social−ecological system dynamics. *Proceedings of the National Academy of Sciences* 112(43):13207–13212. Tier 1.

6. Perez, I., **D. J. Yu**[G], M. A. Janssen, and J. M. Anderies. 2015. Social roles and performance of social-ecological systems: evidence from behavioral lab experiments. *Ecology and Society* 20(3):art23. Tier 1.

7. **Yu, D. J**., H. C. Shin, I. Pérez, J. M. Anderies, and M. A. Janssen. 2016. Learning for resilience-based management: Generating hypotheses from a behavioral study. *Global Environmental Change* 37:69–78. Tier 1.

8. Baggio, J. A., A. J. Barnett, I. Perez-Ibarra, U. Brady, E. Ratajczyk, N. Rollins, C. Rubiños, H. C. Shin, **D. J. Yu**, R. Aggarwal, J. M. Anderies, and M. A. Janssen. 2016. Explaining success and failure in the commons: the configural nature of Ostrom's institutional design principles. *International Journal of the Commons* 10(2):417. Tier 1.

9. Barnett, A. J., J. A. Baggio, H. C. Shin, **D. J. Yu**, I. Perez-Ibarra, C. Rubiños, U. Brady, E. Ratajczyk, N. Rollins, R. Aggarwal, J. M. Anderies, and M. A. Janssen. 2016. An iterative approach to case study analysis: insights from qualitative analysis of quantitative inconsistencies. *International Journal of the Commons* 10(2):467. Tier 1.

10. Ratajczyk, E., U. Brady, J. A. Baggio, A. J. Barnett, I. Perez-Ibara, N. Rollins, C. Rubiños, H. C. Shin, **D. J. Yu**, R. Aggarwal, J. M. Anderies, and M. A. Janssen. 2016. Challenges and opportunities in coding the commons: Problems, procedures, and potential solutions in large-N comparative case studies. *International Journal of the Commons* 10(2):440–466. Tier 1.

11. **Yu, D. J.**, N. Sangwan[G], K. Sung[G], X. Chen, and V. Merwade. 2017. Incorporating institutions and collective action into a socio-hydrological model of flood resilience. *Water Resources Research* 53:1336–1353. Tier 1.

12. Ishtiaque, A.[G], N. Sangwan[G], and **D. J. Yu**[†]. 2017. Robust-yet-fragile nature of partly engineered social-ecological systems : a case study of coastal Bangladesh, *Ecology and Society* *22*(3). Tier 1.

13. Sung, K.[G], H. Jeong, N. Sangwan[G], and **D. J. Yu**[†]. 2018. Effects of Flood Control Strategies on Flood Resilience Under Sociohydrological Disturbances. *Water Resources Research* 54(4): 2661–2680. Tier 1.

14. Naderpajouh, N., **D. J. Yu**, D. P. Aldrich, I. Linkov, and J. Matinheikki. 2018. Engineering meets institutions: an interdisciplinary approach to the management of resilience. *Environment Systems and Decisions* 38:306–317. Tier 1.

15. Konar, M., Garcia, M., Sanderson, M. R., **Yu, D. J**., and Sivapalan, M. 2019. Expanding the scope and foundation of sociohydrology as the science of coupled human-water systems. *Water Resources Research* 55:874–887. Tier 1.

16. Chacon-Hurtado[G], D., K. Gkritza, J. D. Fricker, and **D. J. Yu**. 2019. Exploring the role of worker income and workplace characteristics on the journey to work. *International Journal of Sustainable Transportation* 13:553–566. Tier 1.

17. Choi, J.[G], N. Naderpajouh, **D. J. Yu**, and M. Hastak. 2019. Capacity Building for an Infrastructure System in Case of Disaster Using the System's Associated Social and Technical Components. *ASCE Journal of Management in Engineering* *35(4).* Tier 1.

18. Di Baldassarre, G., Sivapalan, M., Rusca, M., Cudennec, C., Garcia, M., Kreibich, H., Konar, M., Mondino, E., Mård, J., Pande, S., Sanderson, M. R., Tian, F., Viglione, A., Wei, J., Wei, Y., **Yu, D. J.**, Srinivasan, V., & Blöschl, G. 2019. Sociohydrology: Scientific Challenges in Addressing the Sustainable Development Goals. *Water Resources Research* 55(8): 6327–6355. Tier 1.

19. Feng M[G], Liu P, Guo S, **Yu D.J.**, Cheng L, Yang G, Xie A. 2019. Adapting reservoir operations to the nexus across water supply, power generation, and environment systems: An explanatory tool for policy makers. *Journal of Hydrology* 574:257–275. Tier 1.

20. Jeong H, Bhattarai R, Adamowski J, **Yu D.J.** 2020. Insights from socio-hydrological modeling to design sustainable wastewater reuse strategies for agriculture at the watershed scale. *Agricultural Water Management* 231:105983. Tier 1.

21. **Yu, D. J.**, Chang, H., Davis, T. T., Hillis, V., Marston, L. T., Oh, W. S.[G], Sivapalan, M., Waring, T. M. 2020. Socio-hydrology: an interplay of design and self-organization in a multilevel world. *Ecology and Society*, 25(4), art22. Tier 1.

22. **Yu, D. J.**, Schoon, M. L., Hawes, J. K.[G] , Lee, S., Park, J., Rao, P. S. C., Siebeneck, L., Ukkusuri, S. V. 2020. Toward General Principles for Resilience Engineering. *Risk Analysis*, 40(8), 1509–1537. Tier 1.

23. Chacon-Hurtado, D.[G], Losada-Rojas, L. L.[G], **Yu, D.**, Gkritza, K., & Fricker, J. D. (2020). A Proposed Framework for the Incorporation of Economic Resilience into Transportation Decision Making. *Journal of Management in Engineering*, 36(6), 04020084. Tier 1.

24. Shin, H. C.[G], **Yu, D. J.**, Park, S.[G], Anderies, J. M., Abbott, J. K., Janssen, M. A., & Ahn, T. K. (2020). How do resource mobility and group size affect institutional arrangements for rule enforcement? A qualitative comparative analysis of fishing groups in South Korea. *Ecological Economics*, 174(February), 106657. Tier 1.

25. Zanotti, L., Ma, Z., Johnson, J. L., Johnson, D. R., **Yu, D. J.**, Burnham, M., & Carothers, C. 2020. Sustainability, resilience, adaptation, and transformation: tensions and plural approaches. *Ecology and Society*, 25(3), art4. Tier 1.

26. Jeong, H. Y.[G], **Yu, D. J.**, Min, B., & Lee, S. 2020. The humanitarian flying warehouse. *Transportation Research Part E: Logistics and Transportation Review*, 136(February), 101901. Tier 1.

27. Naderpajouh, N., Choi, J., Yu, **D. J.**, & Hoon Kwak, Y. 2021. Management of Resilience in Civil Infrastructure Systems: An Interdisciplinary Approach. *Journal of Management in Engineering*, 37(1), 02020002. Tier 1.

28. Proctor, C. R., Lee, J., **Yu, D.**, Shah, A. D., & Whelton, A. J.[†] 2020. Wildfire caused widespread drinking water distribution network contamination. *AWWA Water Science*, 2(4), 1–14. Tier 1.

29. Chang, H., **D.J. Yu**, S. Markolf, C. Hong, S. Eom, W. Song, D. Bae. 2021. Urban Flood Risk Management in the Anthropocene: Cross City Comparison across the Pacific. *Annals of the American Association of Geographers*, 0(0), 1–21. Tier 1.

30. Lu, Y.[G], Tian, F., Guo, L.[G], Borzì, I.[G], Patil, R.[G], Wei, J., Liu, D., Wei, Y., **Yu, D. J.,** & Sivapalan, M. 2021. Socio-hydrologic modeling of the dynamics of cooperation in the transboundary Lancang–Mekong River. *Hydrology and Earth System Sciences*, *25*(4): 1883–1903. Tier 1.

31. Odimayomi, T. O.[G], C. R. Proctor, Q. E. Wang[G], A. Sabbaghi, K. S. Peterson, **D. J. Yu**, J. Lee, A. D. Shah, C. J. Ley[G], Y. Noh[G], C. D. Smith, J. P. Webster, K. Milinkevich, M. W. Lodewyk, J. A. Jenks, J. F. Smith, and A. J. Whelton. 2021. Water safety attitudes, risk perception, experiences, and education for households impacted by the 2018 Camp Fire, California. *Natural Hazards*, (0123456789). Tier 1.

32. Oh, W. S.[G], **Yu, D. J.**, & Muneepeerakul, R. 2021. Efficiency-fairness trade-offs in evacuation management of urban floods: The effects of the shelter capacity and zone prioritization. *PLoS ONE*, 16(6 June), 1–15. Tier 1.

33. Shin, Hoon C., Sechindra Vallury, Joshua K. Abbott, John M. Anderies, and **D.J. Yu**. 2022. Understanding the Effects of Institutional Diversity on Irrigation Systems Dynamics. *Ecological Economics*, 191: 107221. 3. Tier 1.

34. Pouladi, P.[G], Badiezadeh, S., Pouladi, M., Yousefi, P.[G], Farahmand, H., Kalantari, Z., **Yu, D. J.** , & Sivapalan, M. 2021. Interconnected governance and social barriers impeding the restoration process of Lake Urmia. *Journal of Hydrology*. 598: 126489. Tier 1.

35. Pouladi, P.[G], Nazemi, A. R., Pouladi, M., Nikraftar, Z., Mohammadi, M., Yousefi, P.[G], **Yu, D. J.**[†], Afshar, A., Aubeneau, A., Sivapalan, M. 2022. Desiccation of a saline lake as a lock-in phenomenon: A socio-hydrological perspective. Desiccation of a saline lake as a lock-in phenomenon: A socio-hydrological perspective. *Science of the Total Environment*. 811: 152347. Tier 1.

36. Garcia, M. **Yu, D.J.**, Park, S.[G], Yousefi, P.[G], Iravanloo, B.M.[G], & Sivapalan, M. 2022. Weathering water extremes in a changing climate. *Water Security*. *January*, 100110. Tier 1.

37. Wei, Y., Wei, J., Li, G., Wu, S., **Yu, D.J.**, Ghoreishi, M., Lu, Y., Souza, F. A. A., Sivapalan, M., & Tian, F. 2022. A socio-hydrological framework for understanding conflict and cooperation with respect to transboundary rivers. *Hydrology and Earth System Sciences*. 26(8), 2131–2146. Tier 1.

38. Shin, H. C., Vallury, S., Janssen, M. A., & **Yu, D. J.** 2022. Joint effects of voluntary participation and group selection on the evolution of altruistic punishment. *PLoS ONE*. 17(5), 1–13. Tier 1.

39. Sung, K., Kim, Y., & **Yu, D.J.** 2022. Spatially explicit agent-based approach for human–flood interaction modeling under external support. *Journal of Hydrology*. 612, 128175. Tier 1.

40. **Yu, D.J.**, Haeffner, M., Jeong, H., Pande, S.,[†], Dame, J., Di Baldassarre, G., Garcia-Santos, G., Hermans, L., Muneepeerakul, R., Nardi, F., Sanderson, M. Tian, F., Wei Y., Wessels, J., Sivapalan, M., 2022. On Capturing Human Agency and Methodological Interdisciplinarity in Sociohydrology Research. *Journal of Hydrology*. 67(13), 1905–1916. Tier 1.

41. Shrestha, A.[G#], Souza, F. A. A.[G#], Park, S.[G#], Cherry, C., Garcia, M., **Yu, D. J.**, & Mendiondo, E. M. 2022. Socio-hydrological modeling of the tradeoff between flood control and hydropower provided by the Columbia River Treaty. *Hydrology and Earth System Sciences*, *26*(19): 4893–4917. Tier 1.

42. Marston, L., Zipper, S., Smith, S. M., Allen, J. J., Butler, J. J., Gautam, S.[G], & **Yu, D. J.** 2022. The importance of fit in groundwater self-governance. *Environmental Research Letters*,17(11), 111001. Tier 1.

JOURNAL ARTICLES UNDER REVIEW & REVISION

1. Hoon C. Shin, Peyman Yousefi[G], Samuel Park[G], **David J. Yu**†, Marco Janssen et al. On the Relative Effectiveness of Coping Strategies for Inadequate Public Water Supply: A Behavioral Experimental Study. (Under review by *Water Resources Research*).

2. Hamed Zamenian[G], Dulcy M. Abraham, **David J. Yu**, Daniel DeLaurentis. Analysis of Coupled Human and Water Infrastructure Systems under Events of Water Main Breaks and Water Rate Increases. (Under review by *Sustainable Cities and Society*).

BOOKCHAPTERS & PROFESSIONAL REPORTS

1. Park, J. and **D. J. Yu**. 2016. Chapter 5-Modeling Resilience in Ecological Systems. In *Ecological Engineering: Theory and Application*. Seoul, Korea. (In Korean)

2. Johnson, J., L. Zanotti, D.R., Johnson, Z., Ma, **D.J. Yu**, A., Kirkham, C., Carothers. 2017. Chapter 1-Interplays of Sustainability, Resilience, Adaptation and Transformation. In book: *Handbook of Sustainability and Social Science Research*, pp.3-25. Springers. DOI10.1007/978-3-319-67122-2_1

3. **Yu, D**. J, P. S. C. Rao, C.J. Klinkhamer[G], E. H. Krueger[G], N. Sangwan[G], and K. Sung[G]. 2016. Aligning Different Schools of Thought on Resilience of Complex Systems and Networks. IRGC Resource Guide on Resilience. Published by International Risk Governance Council Resource Guide on Resilience.

PROFESSIONAL ACTIVITIES

Guest co-editor, *Water Resources Research* Special Section - Socio-hydrology: Spatial and Temporal Dynamics of Coupled Human-Water Systems. 2017 (in collaboration with Murugesu Sivapalan, University of Illinois; Megan Konar, University of Illinois; Taikan Oki, University of Tokyo; and Christopher Scott, University of Arizona).

Guest co-editor, *Hydrological Sciences Journal* Special Issue - Advancing socio-hydrology: a synthesis of coupled human–water systems across disciplines. 2018.

Guest co-editor, *ASCE Journal of Management in Engineering* Special Issue - Management of Resilience in Civil Infrastructure Systems: An Interdisciplinary Approach. 2018.

CONFERENCE AND WORKSHOP PRESENTATIONS

Invited Talk & Seminars:

1. **Yu, D. J.**, H. C. Shin, I. Pérez, J. M. Anderies, and M. A. Janssen. 2017. A Behavioral Approach to the Study of Socio-Hydrology. Invited presentation at 2017 Japan Geophysics Union (JpGU) Meeting (Chiba, Japan, May 2017).

2. **Yu, D. J.**, H. C. Shin, I. Pérez, J. M. Anderies, and M. A. Janssen. 2017. A Laboratory Behavioral Experiment for the Study of Socio-Hydrology. Invited seminar at *Ven Te Chow Hydrosystems Laboratory Seminar Series* at University of Illinois at Urbana-Champaign (Urbana-Champaign, IL, Apr. 2017).

3. **Yu, D. J. 2018**. Part Designed & Part Self-Organized Nature of Human-Flood System. Invited presentation at the IAHS Panta Rhei Symposium on Comparative socio-hydrology of floods, droughts, and water management (Beijing, Apr. 2018).

4. **Yu, D. J.**, M. R. Qubbaj, R. Muneepeerakul, J. M. Anderies, and R. M. Aggarwal. 2018. The effect of infrastructure on social-ecological system dynamics. Invited presentation at 2018 American Geophysics Union (AGU) Fall Meeting (Washington, D.C., Dec. 2018).

5. **Yu, D. J**. 2018. Towards a more nuanced approach to capturing the levee and adaptation effects in sociohydrorlogy modeling of human-flood interaction. Invited presentation at 2018 American Geophysics Union (AGU) Fall Meeting (Washington, D.C., Dec. 2018).

6. **Yu, D. J.** 2020. Resilience of Coupled Human-Water Systems. Invited seminar at *The Environmental Fluid Dynamics Lecture Series* at University of Notre Dame (South Bend, IN, Nov. 2020).

7. **Yu, D. J.** M. Schoon. 2020. Toward General Principles for Resilience Engineering. Invited presentation at the International Association for Impact Assessment Conference (Virtual due to COVID, Nov. 2020).

8. **Yu, D. J.**, P. Yousefi[G], S. Park[G]. H. C. Shin. 2021. A behavioral experimental approach to understanding coupled human-water systems. Invited presentation at 2021 American Geophysics Union (AGU) Fall Meeting (New Oreleans, LA, Dec. 2021).

9. **Yu, D. J.** 2022. On the Relative Effectiveness of Coping Strategies for Inadequate Public Water Supply: A Behavioral Experimental Study. Invited seminar at *The Geography & Spatial Sciences Seminar Series* at University of Delaware (Newark, DE, May 2022).

Conference Presentations:

1. **Yu, D. J.,** M. R. Qubbaj, R. Muneepeerakul, J. M. Anderies, and R. M. Aggarwal. 2014. The effect of infrastructure on social-ecological system dynamics: Provision thresholds and asymmetric access. Presented at Workshop on the Ostrom Workshop (Bloomington, IN, June 2014).

2. **Yu, D. J., J.** M. Anderies, D. Lee, and I. Perez. 2014. Transformation of resource management institutions under globalization: the case of songgye community forests in South Korea. Presented at Workshop on the Ostrom Workshop (Bloomington, IN, June 2014).

3. **Yu, D. J.**, H. C. Shin, I. Pérez, J. M. Anderies, and M. A. Janssen. 2015. Adaptive management of social-ecological system under uncertainty: Evidence from a behavioral experiment. Presented at 15th Biennial Global Conference International Association for the Study of the Commons (Edmonton, Alberta, May 2015).

4. **Yu, D. J.**, N. Sangwan[G], K. Sung[G], X. Chen, and V. Merwade. 2016. Modeling human-flood interactions: Collective action and community resilience. Presented at 2016 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2016).

5. Sangwan[G], N., J. Eisma, K. Sung[G], and **D. J. Yu**. 2016. A Socio-Hydrological Model of the Voluntary Urban Water Conservation Behavior during Droughts. Presented at 2016 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2016).

6. Sung, K. [G], **D. J. Yu**, W. Oh[G], and N. Sangwan[G]. 2016. Poster: Land Sea Level Difference Impacts on Socio-Hydrological System. Presented at 2016 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2016).

7. Hawes, J. [G], **D.J. Yu**, Z. Ma. Agent Based Modeling for Exploratory Predictive Analysis of Adaptation Decision Making. Presented at 2018 American Association for Geographers (AAG) Conference (New Orleans, LA, Apr. 2018).

8. Samuel Park[G], **David J. Yu**. Effects of Social Media on Community Disaster Resilience. Presented at 2018 Asia Resilience Conference (Seoul, S. Korea, Nov. 2018).

9. Hoon C Shin[G], Peyman Yousefi[G], Samuel Park[G], Marco Janssen, **David J. Yu**. A Behavioral Study on Social Feedbacks to Address Deterioration in Public Water Services. Presented at 2019 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2019).

10. Samuel Park[G], **David J. Yu**. Effects of Social Media on Community Disaster Resilience. Presented at 2019 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2019).

11. Giuliano Di Baldassarre, Murugesu Sivapalan, Maria Rusca, Christophe Cudennec, Margaret Ellen Garcia, Heidi Kreibich, Megan Konar, Elena Mondino, Johanna Mård, Saket Pande, Matthew R Sanderson, Fuqiang Tian, Alberto Viglione, Jing Wei, Yongping Wei, **J Yu David**, Veena Srinivasan, Guenter Bloeschl. How sociohydrology can help address the global water crisis. Presented at 2019 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2019).

12. Peyman Yousefi[G], Hoon C. Shin, Samuel Park[G], Mauneel Monalkumar Amin[UG] and **David J. Yu**. Can Communication Help People's Social Feedbacks to Facilitate the Provision of Public Water Services? Evidence from a Behavioral Experiment. Presentation at 2020 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2020).

13. **David J. Yu**, Hoon C. Shin, Peyman Yousefi[G], Samuel Park[G], and Mauneel Monalkumar Amin[UG]. Experimental evidence on effectiveness of exit, voice, and their combination on public water infrastructure improvement. Presentation at 2020 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2020).

14. Peyman Yousefi[G], Parsa Pouladi[G], Sahar Badiezadeh, Mehrsa Pouladi, Hamid Farahmand, Zahra Kalantari, **David J. Yu**, Murugesu Sivapalan. Socio-hydrological Issues Preventing Restoration of the Urmia Lake in Iran. Presentation at 2020 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2020).

15. You Lu[G], Fuqiang Tian, Liying Guo, Iolanda Borzì, Rupesh Jayaram Patil, Jing Wei, Dengfeng Liu, Yongping Wei, **David J. Yu** and Murugesu Sivapalan. Socio-Hydrologic Modeling of the Dynamics of Cooperation in the Transboundary Lancang-Mekong River. Presentation at 2020 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2020).

16. Charlotte Cherry[G], Samuel Park[G], Ashish Shrestha, Felipe A A Souza, Margaret Ellen Garcia, **David J. Yu** and Murugesu Sivapalan. Behavioral Sciences Approach to Analyzing Cooperation Dynamics in Transboundary Water Management between the U.S. and Canada in the Columbia River Basin. Presentation at 2020 American Geophysics Union (AGU) Fall Meeting (San Francisco, CA, Dec. 2020).

17. Paul Dawley[G], Parsa, Pouladi[G], **David J. Yu**. A Role-Playing Game for Social Learning about Cascading Failures due to Urban Flooding. Poster presentation at 2021 American Geophysics Union (AGU) Fall Meeting (New Orleans, LA, Dec. 2021).

18. Samuel Park[G], Hoon C. Shin, Peyman Yousefi[G], **David J. Yu**. A behavioral experimental approach to examining strategic interactions between users and a provider of critical water infrastructure: How social network structure affects infrastructure sustainability. Poster presentation at 2021 American Geophysics Union (AGU) Fall Meeting (New Orleans, LA, Dec. 2021).

19. Samuel Park[G], Parsa Pouladi[G], Peyman Yousefi[G], Tomas Olivier, **David J. Yu**. Challenges and opportunities in coding the governance of water resource systems: problems, procedures, and potential solutions based on the Lake Mendocino reservoir, California. Poster presentation at 2021 American Geophysics Union (AGU) Fall Meeting (New Orleans, LA, Dec. 2021).

20. Samuel Park[G], Margaret Garcia, Murugesu Sivapalan, **David J. Yu**. On modeling the interdependency among adaptive reservoir operation, floodplain land-use, and agricultural production: a socio-hydrological approach. Poster presentation at 2021 American Geophysics Union (AGU) Fall Meeting (New Orleans, LA, Dec. 2021).

21. Parsa, Pouladi[G], Peyman Yousefi[G], … **David J. Yu**. Adaptative System of Interconnected Loops Emerged from People Coping with Degrading Environment. Poster presentation at 2021 American Geophysics Union (AGU) Fall Meeting (New Orleans, LA, Dec. 2021).

RESEARCH GRANTS & INVESTMENTS

Funding Source	Year	Amount
PI (NSF CAREER), National Science Foundation, CMMI 2146483	2022	$546,668
Co-PI, National Science Foundation, ICER 2108196	2021	$1,599,999 ($325,028)
Co-PI of a sub-award, National Science Foundation, OIA 2033607	2020	$411,800 ($69,375)
PI, Research Grant, Purdue Research Foundation	2020	$30,657

PI, Exploratory Research Social Sciences Grant, Purdue Research Foundation	2019	$34,113
Collaborative PI, National Science Foundation, CMMI 1913665	2019	$468,429 ($154,523)
Co-PI of a sub-award, National Science Foundation, OIA 1937099	2019	$105,439 ($2,677)
PI, Faculty Summer Grant, Purdue Research Foundation	2019	$12,000
ASPIRE travel grant, Purdue University	2018	$1,500
PI, Seed Grant, Center for the Environment, Purdue University	2018	$15,000
Co-PI, Seed Grant, USDA NIFA	2017	$70,000 ($3,000)
PI, Seed Grant, Center for the Environment, Purdue University	2017	$20,000
Co-PI, Resilience Engineering Grant, Lloyd's Register Foundation	2017	$28,778 ($7,000)
PI, Research Grant, Purdue Research Foundation	2016	$29,130
ASPIRE travel grant, Purdue University	2016	$2,500
Co-PI, Seed Grant, Center for the Environment, Purdue University	2016	$20,000 ($7,000)
Co-PI, Seed Grant, Center for the Environment, Purdue University	2016	$20,000 ($3,000)
Dow Sustainability Post-doctoral Fellowship, University of Michigan (declined)	2015	$108,000
Neely Research Grant, Arizona State University	2014	$400
Venture Capital Seed Funding for Bioinformatics S/W Platform, A Private Investor	2000	$800,000

TEACHING EXPERIENCE

Instructor:

SEM/YEAR	COURSE TITLE	COURSE NUMBER
F/14	Intro to Applied Math for the Life and Social Sciences, Arizona State University	AML100 (ASU)
S/16	Dynamics of Social, Ecological & Technological Systems: Concepts & Tools	CE597/POL693
F/16	Community Resilience: From Rural to Urban	CE497/ POL492
S/17	It's a Complex World: Addressing Global Challenges	CE497/ POL492/IE490/ ME297
S/17	Introduction to Environmental Policy	POL 223
S/18	Community Resilience: From Rural to Urban	CE497/ POL492

F/18	Introduction to Modeling Social-ecological, Socio-hydrological, and Socio-technical System	CE597/POL693
S/19	It's a Complex World: Addressing Global Challenges	SYS 300
F/19	Introduction to Modeling Social-ecological, Socio-hydrological, and Socio-technical System	CE597/POL693
S/20	Introduction to civil engineering systems design	CE398
S/20	Introduction to computational modeling for public policy	CE497/ POL492
F/20	Introduction to Modeling Social-ecological, Socio-hydrological, and Socio-technical System	CE597/POL693
S/21	Introduction to Environmental Policy	POL223
F/21	Introduction to Modeling Social-ecological, Socio-hydrological, and Socio-technical System	CE597/POL693
S/22	Introduction to Environmental Policy	POL223
F/22	Introduction to Modeling Social-ecological, Socio-hydrological, and Socio-technical System	CE597/POL693

Teaching Assistant:
AML100-Intro to Applied Math for the Life and Social Sciences, Arizona State University (F/2012, S/2013)

SERVICE

Service to Purdue:

CE Study Abroad Committee
ESE Graduate admissions review committee
CE Justice, Equity, Diversity, and Inclusion (JEDI) committee
CE undergraduate committee and curriculum committee

Guest Co-Editor for journals:

AGU *Water Resources Research*
ASCE *Journal of Management in Engineering*
IAHS *Hydrological Sciences Journal*

Peer Reviewer for journals:

Water Resources Research, Risk Analysis, Sustainable Cities and Society, World Development, Ecology & Society, Sustainability Science, International Journal of the Commons, Nature Human Behavior, Nature Sustainability, Hydrological Processes, Hydrology and Earth System Sciences