STEVEN A. GRAY

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Education

2010	Rutgers University	PhD	Ecology and Evolution
2006	Texas State University	MS	Geography and Planning
2002	University of Texas at Austin	BA	Anthropology

Positions

2023-present	Michigan State University, *Professor*
2018-2023	Michigan State University, *Associate Professor*
2020-2023	U.S. National Institute of Standards and Technology, *Research Scientist (IPA)*
2019-present	Collective Intelligence Unit IT University of Copenhagen, *Associate Fellow*
2015-2018	Michigan State University, *Assistant Professor* Department of Community Sustainability
2013-2015	University of Massachusetts, Boston, *Assistant Professor* School for the Environment (tenure track)
2011-2014	Leibniz Institute of Freshwater Ecology and Inland Fisheries, *Visiting Scientist* IGB Fellowship, Berlin Germany
2011-2013	University of Hawaii, *Assistant Professor* Department of Natural Resources and Environmental Management (tenure track) Graduate Program in Natural Resources and Environmental Management Head, Socio-economic Division, Water Resources Research Center
2010-2011	Rutgers University/Cary Institute of Ecosystem Studies, *Postdoctoral Researcher*

External Grant and Fellowships (>5.8 million in external funding as PI or co-PI)

2023-2025	**NOAA**, Adaptation Science *Collaborative Modeling the Benefits, Consequences, and Trade-offs* *of Mangroves and Seawalls for Coastal Communities* (co-PI with	$299,827
2021-2024	**NSF**, Improving Undergraduate STEM Education *Integrating Perspective-taking, Systems Thinking, and Model-based* *Reasoning for Complex Problem-Solving* (PI with co-PIs Jordan, Franz, Peterson) MSU budget $372,888 Scyphers, Hughes, Shepard, and Harlan)	$500,000
2021-2024	**DARPA,** Department of Defense MIMESIS: *Multi-Informed Models Emerging from Social Investigations and* *Semiotics*. (academic PI with government contractor Two Six Labs) (https://www.twosixlabs.com/) total budget $10,000,000)	$230,000
2020-2023	**FFAR**, Foundations for Food and Agriculture Resources (USDA) *Identifying leverage points for the emergency food system in rust-belt* *cities at a time of the COVID-19 crisis* (PI with co-PIs L. Schmitt-Olabisi, Wentworth and Aminpour)	$100,000
2018-2023	**FFAR**, Foundations for Food and Agriculture Resources (USDA) *Identifying leverage points for transformation in urban food systems*	$1,000,000

through participatory modeling (PI with co-PIs L. Schmitt-Olabisi, J. Hodbod)

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Completed

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2019-2020	**NSF**, Research Coordination Network (RCN)	$50,000
	Challenges to and opportunities for resilience in rapidly developing urban corridors (co-PI with J. Bammer, K. Faust, A. Ganguly, and P. Bixler)	
2017-2019	**NSF**, Improving Undergraduate STEM Education	$299,956
	Assessing systems thinking learning progressions in STEM fields through semi-quantitative cognitive mapping software (PI with E. Sterling, R. Jordan, A. Luz)	
2016-2018	**National Academy of Sciences,** Gulf Research Program	$407,113
	Collaborative modeling with Fuzzy Cognitive Maps: A novel approach to achieving safety culture (co-PI with A. Jetter, S. Scyphers)	
2016-2018	**NOAA,** Saltonstall-Kennedy Grant Program	$240,859
	Engaging commercial, recreational, and subsistence fishers to improve management of Striped Bass fisheries in New England (co-PI with S. Scyphers, J. Grabowski)	
2016	**Community Foundation of Greater Flint** *Community-based modeling of the Flint Water Crisis* (PI)	$16,000
2015-2018	**NSF Socio-Environmental Synthesis Center (SESYNC)**	$86,000
	Public participation and participatory modeling for action-oriented outcomes (PI with A. Voinov)	
2015-2017	**NOAA** Saltonstall-Kennedy Grant	$298,950
	Predicting the social impacts of climate change on fisheries (co-PI with S. Scyphers)	
2014-2016	**BLM Joint Fire Science Program**	$181,093
	Policy Scenarios for fire-adapted communities: understanding stakeholder risk-perceptions (co-PI with A. Jetter, L. Ellsworth)	
2014-2016	**NSF (Belmont Forum)**, Food Security & Climate Change	$299,894
	Sustainable management of agro-ecological resources for tribal societies (co-PI with C. Chan-Halbrendt, B. Sipes, T. Idol)	
2014-2016	**NOAA,** University of Hawaii Sea Grant	$56,000
	Forecasting climate change impacts on coastal ecosystem services in Hawaii through integration of ecological and social models (PI with C. Lepczyck)	
2013-2014	**USGS,** Water Resources Research Institute Programs	$28,000
	Forecasting climate change impacts on watershed-based ecosystem services in Hawaii (PI with A. Fares, C. Lepczyk)	
2012-2016	**NSF,** Cyberlearning	$1,206,384
	Sustaining ecological community thru cit sci & online collaboration (co-PI with R. Jordan, C. Hmelo-Silver, A. Crall, G. Newman)	
2012-2014	**USDA,** *Mental Modeler: Developing a software tool to support community-based decision-making* (PI with L. Cox)	$40,000
2012-2014	**Leibniz-Institute of Freshwater Ecology and Inland Fisheries**	$18,000
	Understanding the relationship between natural resource	

	decision-maker mental models and sustainable natural resource	
	management in freshwater recreational fisheries (PI with R. Arlinghaus)	
2011-2012	**NOAA** Cooperative Research, Conservation Engineering	$299,999
	Evaluation of broad and fine scale models of butterfish biomass	
	applied to by-catch reduction in the longfin inshore squid fishery	
	in the Mid-Atlantic Bight (co-PI with J. Kohut)	
2010-2012	**NOAA** Cooperative Research, Conservation Engineering	$217,089
	Integrating habitat models and stakeholder knowledge into commercial	
	fishing to reduce by-catch (co-PI with J. Kohut)	
2008	**NSF** Office of International Science and Engineering	$10,500
	Improving the management of data-poor fisheries: Evaluating risk and	
	uncertainty in fisheries management in Australia and the United States	
	(PI with J. Scandol)	
2007-2009	**NOAA** National Estuarine Research Reserve Social Science Fellow	$30,000
	What do recreational fishermen need to know? Recommendations that	
	foster ecosystem-based management (PI)	
2007	**U.S. EPA** NNEMS Research Fellow, Region 2 New York City, NY	$16,140
	Implementing sustainable programs in NYC area schools: Fostering	
	environmental stewardship in school-aged children (PI)	
2005	**U.S. EPA** NNEMS Research Fellow, Radiation and & Indoor	$9,500
	Environments National Laboratory *Determining sustainable*	
	environmental management programs through community outreach (PI)	

*Software Packages*_____

Gray, S. Mental Modeler: A fuzzy cognitive mapping software for systems thinking, scenario
    analysis and participatory research. Lead developer, http://www.mentalmodeler.org/
R Jordan and S. Gray, EcoModeler: A classification and ontological system for organizing
    thinking about complex systems (http://ecomodeler.org/)

*Books*_____

Gray, S. Paolisso, M, Jordan, R.C and S. Gray (Eds) (2017) *Environmental Modeling with*
    Stakeholders: Theory, Methods and Applications. Springer Publishing, New York City.

*Peer Reviewed Journal Articles*_____

(co-author: graduate student, *undergraduate, [1]community partner, [‡]K-12 student/teacher)
Google Scholar Profile (Total Citations: 5074, H Index: 38, i10 Index: 70)
2023

Knox, C.B., S. Gray, M., Zareei, N. Brugnone, P. Aminpour, R. Wallave, J. Hodbod, and C.
    Wentworth. (2023). Modeling complex problems by harnessing the collective
    intelligence of local experts: New approaches in Fuzzy Cognitive Mapping. *Collective*
    Intelligence.
Lalani, B., S Gray, and T Mitra-Ganguli (2023). Systems thinking in an era of climate change:
    Does cognitive neuroscience hold the key to improving environmental decision making?
    A perspective on Climate-Smart Agriculture. *Frontiers in Integrative Neuroscience* 17,
    1145744.
Jordan, R., AE Sorensen, S. Gray (2023) What undergraduate students know and what they want

to learn about in climate change education. *PLOS Sustainability and Transformation* 2 (4),

RC Jordan, S. Gray, AE Sorensen (2023). Systems thinking tools to address SDG #4. *Frontiers in Sustainable Cities 5*.

Wentworth, C., S. Gray, B. Feingold, D. Freedman, B. Jablonski, and A. van den Berg. Responsive (in press). Community-engagement in participatory urban food systems modeling: Examples from five U.S. cities. *Environmental Science and Policy.*

Von Hagen, L., S. Gray, B. Schulte, M. Githiru, H. Kiute, and C. Lepczyk (in press) Participatory modeling across Kenyan villages facilitates insight into the complexity of human-elephant interactions. *Oryx.*

Olabisi, L.S., C Wentworth, K Key, RV Wallace, M McNall, J Hodbod, and S.A. Gray (2022) Defining success in community-university partnerships: lessons learned from Flint *Journal of Responsible Innovation*, 1-23.

2022

Aminpour, P. S. Gray, M. Beck, K. Furman, I. Tsakiri, R. Gittman, J. Grabowski, J. Helgeson, L. Josephs, M. Ruth, and S. Scyphers. (2022) Urbanized knowledge syndrome: Lower knowledge diversity and systems thinking in urban coastal residents. *Urban Sustainability.* 2 (1), 1-10.

Murphy, R., J. Grabowski, S., Gray and S. Scyphers. (2022) Diversity in motivations and behavioral response to regulations in the Striped Bass commercial fishery. *Fisheries.* (1), 10-17.

Jordan, R., A. Sorenson, and S. Gray. (2022) Participatory modeling in support of citizen science. *Forests.* 13 (4), 567.

2021

Aminpor, P, S. Gray, A. Singer, S. Scyphers, A. Jetter, R. C. Jordan, R. Murphy, and J. H. Grabowski. (2021) The diversity bonus in pooling local knowledge about complex problems. *Proceedings of the National Academies of Sciences.* 118 (5).

Levin, P., S. Gray, C. Mollimon and A Stier. (2021). Perception and conflict in conservation: The Rashomon Effect. *BioScience.* (1) 64-72.

Schwerner, H., P., Aminpour, S. Funk S. Gray, C. Reza*, and C. Mollimon (2021). Modeling Social-ecological knowledge diversity. (2021) *Conservation Science and Practice* 3 (5), e396.

Hedelin, B, S., Gray, S. Woehlke, T. BenDor, A. Singer, R.C. Jordan, P. Giabbanelli , P. Glynn, K. Jenni, A Jetter, N. Kolagani, B. Laursen, K. Leong, L. Schmitt Olabisi, E. Sterling, and M. Zellner (2021). What's left before participatory modeling can fully support real-world environmental planning processes: A case study review. *Environmental Modeling and Software.* 143. 105073.

Baqir, L., P. Aminpour, S. Gray, M. Williams, L. Büchi, J. Haggar, P. Grabowski, J. Dambiro. (2021) Mapping farmer perceptions, conservation agriculture practices and on-farm measurements: the role of systems thinking in the process of adoption. *Agricultural Systems.* 191, 103171.

Betley, E, E Sterling, S Akabas, S Gray, A Sorensen, R Jordan, and C Eustice. (2021) Modeling links between corn production and beef production in the United States: A systems thinking exercise using Mental Modeler. *Lessons in Conservation*. 11, 26-32.

Furman, K. S., Aminpour, P., Gray, and S. Scyphers. (2021). Mental models for assessing social-

ecological systems following disasters: a case study contextualizing natural and built shorelines after Hurricane Irma. *Marine Policy* 125, 104334.

Jablonski, B., J. Casnovsky, J. Clark, R. Cleary, B. Feingold, D. Freeman, S. A. Gray, X. Romeiko, L. Schmitt Olabisi, A. van den Berg, C. Walsh, and C. Wentworth. Emergency food provision for children and families during the COVID-19 pandemic: Examples from five U.S. cities. (2021). *Applied Economic Perspectives and Policy*. 43 (1), 169-184.

Mamiit, R, S. Gray, J. Yanigida. (2021) Characterizing farm-level social relations' influence on sustainable food production. *Journal of Rural Studies*. 86, 566-577.

Murphy, R, B. Harris, N. Wolf, A. Kroska, and S.A. Gray. Using mental models to quantify linear and non-linear relationships in complex fishery systems *Marine Policy.* 125, 104334.

Aminpor, P., H. Schwerner, and S. Gray. The relationship between social identity and cognitive diversity in environmental stakeholders. *PLoS One.* 86, 566-577.

Jordan, R.C., A. Sorenson, and S.A. Gray (2021) Citizen Science, experts and expertise. *Current World Environment* 16 (2), 378.

2020

Aminpor, P., S. Gray, A. Jetter, J. Introne, and R. Arlinghaus. (2020) The wisdom of stakeholder crowds in complex social-ecological systems. *Nature Sustainability*. 3(13), 191-199.

Gray, S., Aminpor, P., C. Reza*, S. Scyphers, J. Grabowski, R. Murphy Jr., A. Jetter, and R.C. Jordan. (2020) Harnessing collective intelligence for conservation. *Frontiers in Ecology and the Environment.* 18 (8), 456-472.

Barnhagen, C., P. Howard, and S. Gray. (2020) A bird's eye view: Fruit grower interest in adoption of raptor nest boxes. *Agroecology and Sustainable Food Systems*. (10), 1384-1393.

Barnhagen, C., P. Howard and S. Gray. (2020) Farmer mental models of biological pest control: Associations with adoption of conservation practices in blueberry and cherry orchards. *Frontiers in Sustainable Food Systems.* 4(54).

Aminpor, P., S. Gray, A. Singer, A. L. Castro, A, Ramlan, and N. Chicoworee, (2020) Perspectives of scholars on the nature of sustainability: a survey study *Sustainability in Higher Education* 21(1), 34-53.

2019

Gray, S., E., Sterling, C. Wei, S. Akabas, A. Singer, P. Giabbanelli, R. Jordan, J. Hodbod. and P. Norris.(2019). Assessing (social-ecological) systems thinking using concept mapping techniques. *Sustainability* 11 (20), 5753.

Gray, S., B. O'Dwyer, C. O'Mahony, J. Gault, and S. A. Gray. (2019) Caught by the fuzz: Using FCM to prevent coastal adaptation stakeholders from fleeing the scene. *Marine Policy*. 109, 103: 688.

Murphy, R., J. Grabowski, S., Gray and S. Scyphers. (2019) Angler attitudes explain disparate behavioral reactions to fishery Regulations. *Fisheries*. 44(10).

Sterling, E., M. Zellner, K. Leong, K. Jenni, S., R. Jordan, T. BenDor, A. Jetter, L. Schmitt-Olabisi, M. Paolisso, K. Hubacek, P. Bommel, G. Bammer and S. Gray. (2019) Try, try again: Lessons learned from success and failure in participatory modeling. *Elementa*.

Cholewicki, J., JM Popovich Jr, P Aminpour, SA Gray, AS Lee, PW Hodges. (2019). Development of a collaborative model of low back pain: report from the 2017 NASS consensus meeting. *The Spine Journal* 19 (6), 1029-1040.

Hodges, P., J. Cholewicki, J. Popovic, A. Lee, P.Aminpour, and S. Gray. Building a collaborative model of Sacro-iliac joint dysfunction to understand the diverse perspective of experts. (2019) *PM&R Journal: The Journal of Injury, Function and Rehabilitation*. 11. 11-23.

Metzger, A., S. Gray, E. Douglas, N. Haigh, and P. Kirshen. (2019) Categorizing and clustering knowledge in Fuzzy Cognitive Maps. *International Journal of System of Systems Engineering* 9 (3), 235-256.

2018

Gray, S., Measuring systems thinking. (2018) *Nature Sustainability*. 1(3) 388-389.

Gray, S., A. Voinov, M. Paolisso, R.C. Jordan, T. BenDor, P. Glynn, B. Hedelin, K. Hubacek J. Introne, [1]N. Kolagani, B. Laursen, C. Prell, L. Schmitt-Olabisi, A. Singer, E. Sterling, and M. Zellner. Purpose, Processes, Partnerships, and Products: 4Ps to advance participatory socio-environmental modeling. (2018) *Ecological Applications*. 28(1). 46-61.

Voinov, A., K. Jenni, S. Gray, N. Kolagani, P. Glynn, P. Bommel, C. Prell, M. Zellner, M. Paolisso, R.C. Jordan, E. Sterling, L.Schmitt Olabisi, P. Giabbanelli, Z. Sun, C. Le Page, S. Elsawah, T. K. BenDor, K. Hubacek, B. K. Laursen, A. Jetter, L. Basco Carrera, A. Singer, L. Young, J. Brunacini, and A. Smajgl. (2018) Tools and methods in participatory modeling: selecting the right tool for the job. *Environmental Modeling and Software*. 109: 232-255.

Huang, J., C. Hmelo-Silver, R.C. Jordan, S. Gray, T. Frensley, and G. Newman, Scientific discourse of citizen scientists: Models as a boundary object for collaborative problem-solving. (2018) *Computers in Human Behavior*. 87: 480-492.

Jordan, R.C., A. Sorensen, S. Gray, D. Ebert-May, R. Shwom, C. Isenhour. J. Meta Robinson, and M. Nucci. Using authentic science in climate change education. (2018) *Applied Environmental Education and Communication* 1(32).

Jordan, R.C., A. Crall, C. Hmelo-Silver, Indiana University, S. Gray, G. Newman. (2018) Developing model-building as a scientific practice in collaborative citizen science. *Natural Sciences Education* 47(1).

Jordan, R.C., S. Gray, A. Voinov, A. Jetter, L. Schmitt-Olabisi, K. Hubacek, M. Zellner, P. Glynn, B. Hedelin, P. Bommel, T. BenDor, K. Jenni, E. Sterling, L. Basco-Carrera, K. Leong, N. Kolagani, A. Singer, P. Giabbanelli, and B. Laursen (2018). 12 Questions for the participatory modeling community. *Earth's Future*. 6 (8), 1046-1057.

2017 and prior

Gray, S., R. C. Jordan, A. Crall, G. Newman, C. Hmelo-Silver, J. Huang, W. Novak, D. Mellor, T. Frensley, M. Prysby, and A. Singer. (2017) Combining participatory modelling and citizen science to support volunteer conservation action. *Biological Conservation*. 208, 76-86.

Stier, A., J. Samhouri, S. Gray, R. Martone, R., M. Mach., B., Halpern, C. Kappel, C. Scarborough, and P. Levin. (2017). Integrating expert opinion into food web conservation and management. *Conservation Letters* 10(1), 67–76.

Gray, S., A. Singer, L. Schmitt-Olabisi, J. Introne, and J. Handerson.* (2017) Identifying the causes, consequences, and solutions to the Flint Water Crisis through collaborative modeling. *Environmental Justice.* 10 (5), 154-161.

Singer, A., S. Gray, [1]A. Sadler, L. Schmitt Olabisi, K. Metta, [1]R. Wallace, M. Lopez, J.

Introne, M. Gorman*, and J. Henderson.* (2017) Translating community narratives into semi-quantitative models to understand the dynamics of socio-environmental crises. *Environmental Modeling and Software*. 97, 46-55.

Sterling E., C. Filardi, J. Newell, S. Albert, D. Alvira, N. Bergamini, E. Betley, M. Blair, D. Boseto, K. Burrows, N. Bynum, S. Caillon, J.E. Caselle, J. Claudet, G. Cullman, R. Dacks, P. B. Eyzaguirre, N. Gazit, S. Gray, J. Herrera, P. Kenilorea, K. Kinney, N. Kurashima, S. Macey, S. Mauli, J. McCarter, H. McMillen, P. Pascua, P. Pikacha, A. Porzecanski, P. de Robert, M. Salpeteur, A. Sigouin, M. Sirikolo, M. H. Stege, K. Stege, T. Ticktin, A. Toomey, R. Vave, A. Wali, P. West, K. B. Winter, and S. Jupiter. (2017) Biocultural approaches to sustainability indicators: bridging local and global scales to foster human adaptive capacity and ecological resilience. *Nature: Ecology and Evolution.* 1, 1978-1806.

Frensley, T., A. Crall, M. Stern, R.C. Jordan, S.A. Gray, M. Prysby, G. Newman, and C. Hmelo-Silver. (2017) Bridging the benefits of online and community supported citizen science: A case study on motivation and retention with volunteers. *Citizen Science: Theory and Practice* (2), 1-14.

McGreavy, B., G. Newman, M. Chandler, M. Clyde, M. Haklay, H. Ballard, S. Gray, R. Scarpino, R. Hauptfeld, and J. Gallo. (2017) The power of place in citizen science. *Maine Policy Review* 26(2) 94 -95.

Santo, A., K. Guillozet, M.G., Sorice, T., Baird, S., Gray, and J. Donlan. (2017) Examining private landowners' knowledge systems of an invasive species. *Human Ecology*. 1-14.

Giabbanelli, P., S. Gray, and P. Aminpour. (2017) Combining fuzzy cognitive maps with agent-based modeling: frameworks and pitfalls of a powerful hybrid modeling approach to understand human-environment interactions *Environmental Modeling and Software.* 95:320-325.

Newman, G, B. McGreavy, M. Clyde, M. Chandler, M. Haklay, H. Ballard, S. Gray, D. Mellor, and J. Gallo. (2017) Leveraging the power of place in citizen science for effective conservation decision making. *Biological Conservation* 208, 55-64

Jordan, R.C., S. Gray, C. Hmelo-Silver, A. Sorensen, and G. Newman. (2017) Modeling with a conceptual representation: Is it necessary? Does it work? *Frontiers in Education*. 4,7.

Htun, H., S. Gray, C. Lepczyk, A. Titmus, and K. Adams. (2016) Combining watershed models and knowledge-based models to predict local-scale impacts of climate change on engendered wildlife. *Environmental Modeling and Software.* 84:440-457.

Li., O. S. Gray and S. Sutton. (2016) Mapping recreational fishers' informal learning of fisheries science using a fuzzy cognitive mapping approach to mental modeling. *Fisheries Management and Ecology.* 23(4), 315–329.

Douglas, E., S. Wheeler, D. Smith, I. Overton, S, Gray, N, Crossman, and T, Doody. (2016) Using mental-modelling to explore how irrigators in the Murray-Darling Basin make water-use decisions. *Journal of Hydrology: Regional Studies.* 6, 1-12.

Punawai, N., S.A. Gray, C. Severance, and C. Lepczyk. (2016) Mapping ocean currents through human observations: Insights from Hilo Bay, Hawai'i. *Human Ecology.* 1-10.

Jordan, R.C., A.M. Crall, S. Gray, S. La Deau, A. Sorenson, C. Hmelo-Silver, G. Newman, and D.T. Mellor. (2016) Studying citizen science, adaptive management, and learning feedback as a mechanism for improving conservation. *Conservation Biology.* 30(3), 487-495

Gray, S., S. Gray, J. L. De Kok, A. E. R. Helfgott, B. O'Dwyer, R. Jordan, and A. Nyaki[1].

(2015) Using fuzzy cognitive mapping as a participatory approach to analyze change, preferred states, and perceived resilience of social-ecological systems. *Ecology and Society* 20(2): 11.

Gray, S., A. McFall, J. Hilsberg, R. Arlinghaus. (2015) The impact of specialization and target species choice on the structure of mental models about fish population dynamics. *Journal of Outdoor Recreation and Tourism*. 12:1-13.

Henly-Shepard, S., S. Gray, and L. Cox. (2015) Facilitating community adaptation through participatory modeling and social learning. *Environmental Science and Policy.* 45:109-122.

Jordan, R.C., W. Brooks, J. Delisi, S. Gray, and A. Berkowitz. (2015) Ecology nature of science: shared discussions and practices among ecologists and high school teachers. *Ecosphere*. 6(11): 1-17.

Barnes-Mauthe, M. S. Gray, S. Arita, J. Lynham, and P. Leung. (2015) What determines social network capital in a social-ecological system? *Environmental Management*. 55:392-410.

Jordan, R., A Crall, S. Gray, T Phillips, and D Mellor. (2015) Citizen science as a distinct field of inquiry. *BioScience* 65 (2), 208-211.

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Cover Article for January 2015

Mellor, D., W. Brooks, S, Gray, and RC Jordan. (2015) Troubled transitions into college and the effects of a small intervention course. *Journal of College Student Retention: Research, Theory & Practice.* 17 (1), 44-63.

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[1]Nayaki, A., S. Gray, C. Lepczyk, J. Skibins, and D. Rentsch. (2014) Understanding the hidden drivers and local-scale dynamics of the bushmeat trade through participatory modeling *Conservation Biology* 28(5) 1403-1414.

Pleasant, M, S. Gray, C. Lepcyzk, A. Fernandez*, N. Hunter*, and D. Ford* (2014) Managing cultural ecosystem services: Local management yields large-scale benefits. *Ecosystem Services.* 8: 141-147.

Halbrendt, J., S. Gray, T. Radovich, A. Kimura, B. Reed, and B. Tammang. (2014) Implications of conservation agriculture for men's and women's workloads among marginalized farmers in the Central Middle Hills of Nepal. *Mountain Research and Development.* 34(3) 214-222.

Punawai, N., L. Canale, M. Haws, J. Potemra, and S. Gray. (2014) Development of a GIS-based tool for aquaculture siting. *International Journal of Geo-Information.* 3:800-816.

Nicosia[†] K, S. Daaram[†], B. Edelman[†], L. Gedrich[†], E. He[†], S. McNeilly[†], V. Sheno[†], A. Velagapudi[†], W. Wu[†], L. Zhang[†], A. Barvalia[†], V. Bokka[†], B. Chan[†], J. Chiu[†], S. Dhulipalla[†], V. Hernandez[†], J. Jeon[†], P. Kanukollu[†], P. Kravets[†], A. Mantha[†], C. Miranda[†], V. Nigam[†], M. Patel[†], S. Praveen[†], T. Sang[†], S. Upadhyay[†], T. Varma[†], C. Xu[†], B. Yalamanchi[†], M. Zharova[†], A. Zheng[†], R. Verma[†], J. Vasslides[1], J. Manderson, R.C. Jordan, and S. Gray. (2014) Determining the willingness to pay for ecosystem service restoration in a degraded coastal watershed: A ninth grade investigation. *Ecological Economics*. 104: 145–151.

Gray, S., A. Gagnon, S. Gray, C. Mahony, D. Muir, and M. Falaleeva (2014) Are local coastal managers detecting the problem? Assessing stakeholder perception of climate vulnerability using Fuzzy Cognitive Mapping. *Ocean and Coastal Management.* 94:74-89.

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Jordan, R.C., C. Hmelo-Silver, L. Liu, and S. Gray. (2013) Using a complex system ontology to foster ecosystem learning. *Applied Environmental Education and Communication* 12(1) 55-64.

Jordan, R.C., J. DeLisi, W. Brooks, S. Gray, A. Alvarado, and A. Berkowitz. (2013) A collaborative model of science teacher professional development. *International Journal of Modern Education Forum* 2(2) 31-41.

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Gray, S. and R.C. Jordan. (2010) Ecosystem-based angling: Incorporating recreational fishermen into ecosystem-based management. *Human Dimensions of Wildlife.* 15(4) 233-246.

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Jordan, R.C., S. Gray, and R. Golan-Duncan. (2008) Teachers and scholarship: Self-definition of teachers in the scientific enterprise. *Education and Society,* 26(3) 33-44.

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Giabbanelli, P., C. Knox, K., Furman, S Gray, and A. Jetter (2023). Defining and Using Fuzzy Cognitive Mapping (2023). IN *Fuzzy Cognitive Maps: Best Practices and Modern Methods* Eds P. Giabbanelli. Springer Publishing. New York.

Drymon, M., A. Osowski, A. Jargowsky, M. Ajemian, A. Collins, B. Fluech, S. Gray, J. Lively, and S. Scyphers (2022). *Co-Producing a shared characterization of depredation in the Gulf of Mexico reef fish fishery: Comprehensive Report* (Mississippi State University)

Kininmonth, S., S. Gray, and K. Kok. Expert-based Modeling. *A Guide to Navigating Methods for Studying Social-Ecological Systems*. Eds: Biggs, R., A. de Vos, R Prieser, M. Schluter, H. Clements, and K. Maciejewski. 231-334.

Metzger, A., S. Gray, A. Jetter, and E. Papageorgiou. Typologies and Tradeoffs: A standardized approach to creating participatory Fuzzy Cognitive Maps In. (2020) *Innovations in Collaborative Modeling,* Eds: McNall, M. and L. Schmitt-Olabisi, Michigan State University Press.

Crall, A., D. Mellor, S. Gray and G. Newman. (2020) Collecting high quality data: begin with the end in mind. In *Citizen Science for Practitioners*. Eds: Lepczyk, C. University of California Press.

Jordan, R.C., Sorenson, A. and S. Gray (2020) Undertaking program evaluation. In *Citizen Science for Practitioners*. Eds: Lepczyk, C. University of California Press.

Lavin, E.A., P. Giabbanelli, A.Stefanik, S. Gray, R. Arlinghaus, (2018) Should we simulate mental models to assess whether they agree? In Proceedings of the 2018 Spring Simulation Multi-Conference, Annual Simulation Symposium (SpringSim-ANSS)

Gray, S.A. and S. Scyphers. (2017) Innovations in Collaborative Science: Advancing citizen science, crowdsourcing and participatory modeling to understand and manage marine social-ecological systems. In Levin, PS and M. Poe Editors. *Conservation in the Anthropocene Ocean: Interdisciplinary Science in Support of Nature and People*. Elsevier, San Diego

Gray, S. A., M. Paolisso, R, Jordan, and S. Gray. (2017) Introduction to Environmental Modeling with Stakeholders. *Environmental Modeling with Stakeholders: Theory, methods and applications.* Springer Publishing, New York City

Singer, A., A. Jetter, L. Ellsworth, S. Gray, P. Zhang, and O. Lariarchi, (2017) Policy Scenarios for Fire-Adapted Communities: Understanding Stakeholder Risk Perceptions in Ashland, Oregon. BLM Report

Gray, S., A. Sadler[1], R. Brown, S. Alison, L. Schmitt-Olabisi, M. Lopez, J. Henderson*, M,, Gorman*, R. Wallace[1], and M. Kaplowitz. (2016). Voices of Flint: Flint resident perceptions about the causes, consequences, and solutions to the Flint Water Crisis. Community Foundation of Greater Flint Report

Gray, S., S. Gray, and E. Zanre, (2014) Fuzzy Cognitive Maps as representations of mental models and group beliefs: theoretical and technical issues. In *Fuzzy Cognitive maps for Applied Sciences and Engineering –From fundamentals to extensions and learning algorithms* Ed: Elpiniki I. Papageorgiou. Springer Publishing. pp 29-48.

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Gray, S. S. Gray, L. Cox, and S. Henly-Shepard. (2013) Mental modeler: A fuzzy-logic cognitive mapping modeling tool for adaptive environmental management. *Proceedings of the 46th International Conference on Complex Systems*. 963-973

Kohut, J. Palarama, L., Bochenek, E., Jenson, O., Manderson, J. Oliver, M., Gray, S., and C. Roebuck[1] (2012) Using ocean observing systems and local ecological knowledge to nowcast butterfish bycatch events in the Mid-Atlantic Bight longfin squid fishery. *Oceans*, 1-6

Jordan, R.C., J. Ehrenfeld, S. Gray, W. Brooks and C.E. Hmelo-Silver. (2012) Cognitive considerations in citizen science. Eds: R. Bonnie J. Dickenson. In *Citizen Science: Public Participation in Environmental Research*. Cornell University Press

Gray, S**.** and L. L. Gray. (2011) LEED Standards. In: *Green Energy Considerations. Green Society: Towards a Sustainable Future*. Eds. D. Mulvaney and P. Robbins.SAGE Publishing. Thousand Oaks, CA. pp 277-283

Sinha, S., S. Gray, C. Hmelo-Silver, R. Jordan, S. Honwad, (2010) Appropriating conceptual representations: A case of transfer among middle school science teachers *Proceedings of the 9th International Conference of the Learning Sciences*.(1) 834-841

Gray, S. **(**2010) Are robots and satellites the future of fisheries management? *Fisheries.* 35(1) 48.

McCay, B.J., C.F. Creed, and S. Gray. (2009) Fish or Cut Bait: How to participate in the FisheriesManagement System, 3rd revised edition. Fort Hancock, NJ: New Jersey Marine Sciences Consortium. (12pp)

Gray, S. M. Ives, J. Scandol, and R. Jordan. (2009) Classifying the risk in fisheries management in Australia and the U.S. Atlantic coast. In: *Scandol JP, Ives MC and Lockett MM Development of national guidelines to improve the application of risk-based methods in the scope, implementation and interpretation of stock assessments for data-poor species.* Final report to the Fisheries Research & Development Corporation for Project No. 2007/016.3 Industry & Investment NSW Final Report Series No. 115. Cronulla Fisheries Research Centre of Excellence, NSW, Australia pp 164-179.

Gray, S., C. E. Hmelo-Silver, L. Liu, R.C. Jordan, and H. Jeong. (2008) Learning with ecosystem. models. *Proceedings of the 8th International Conference of the Learning Sciences* (1) 289-296.

Gray, S. (2009) William D. Ruckelshaus. Ed: George Cevasco. In *The Modern American Environmentalist*. Johns Hopkins University Press. Baltimore MD. Pp 448-452.

Gray, S**.,** R.C. Jordan, and D. V. Howe. (2008) Oceanic Changes. *The Encyclopedia of Global Warming and Climate Change*. Ed: S. George Philander. Sage Publications.

Jordan, R.C., S. Gray and D.V. Howe. (2008) Atlantic Ocean. *The Encyclopedia of Global Warming and Climate Change*. Ed: S. George Philander. Sage Publications.

Hmelo-Silver, C. R. C. Jordan, L. Lui, S. Gray**,** M. Demeter, S. Rugaber, S.Varrtam, and A. Goel. (2008) Focusing on function: Thinking below the surface of complex natural systems *Science Scope*, 31: 27-35

Jordan, R.C., S. Gray, M. Demeter, L. Lui, and C. Hmelo-Silver. (2008) Quick fix: Don't forget behavior in systems thinking! *American Biology Teacher*. 70: 329-330.

2022   Resource for the Future (RFF), "Social Science for Solar Geoengineering"
            Discussant
2022   American Association of Geography Annual Meeting. "Harnessing Collective
            Intelligence for Conservation" New York, NY.
2021 (invited) Gene Convene (FNIH), Fuzzy Cognitive Maps to Conceptualize Complex
            Problems
2021 (invited) University of Twente, HABITABLE project, Dept of Environmental Modeling
2020 (invited) Oberlin College and Conservatory, Oberlin Ohio
2020   National Council for Science and the Environment. "Participatory Modeling in
            Environmental Decision-making." Washington D.C. (session co-organizer)
2019 (invited) Ohio State University. School for the Environment, Columbus OH
2019 (organizer and co-lead) Collaborative Modeling Field School, Detroit MI
2019 (invited) Copenhagen Business School, Collective Intelligence Unit, Copenhagen
2019 (invited) Leibniz Institute of Agricultural Development in Transition Economies, Halle
2019 (invited) Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin
2019 (invited) University of Texas at Austin, Department of Civil Engineering, Austin, TX
2018 (invited) Texas State University, Department of Geography Distinguished Lecture Series,
            "Harnessing collective intelligence for complex environmental decision-making",
            San Marcos, TX
2018   International Environmental Modeling and Software Society (IEMSS) Annual
            Meeting, Fort Collins CO (co-author to student papers*)
                    (a) Participatory Modeling 2.0: Interfaces, Tools and Methods
                    (b) Participatory Modeling 2.0: New Tools (Workshop Organizer)
                    (c) Making Models Meaningful (Workshop Organizer)
                    (d) Harnessing Wisdom of the Crowd for Complex Systems Modeling*
                    (e) Modeler Decision-making: Why choose what model?*
                    (f) A Review of Participatory Modeling Research*
2018 (keynote) University of Texas, Texas Water Research Network (TWRN) Annual
            Conference, "The collaborative modeling toolbox" Austin, TX
2017 (invited) NASS Annual Meeting, "Collaborative modeling for health sciences" Orlando
2017 (organizer) Resilience 2017. "Looking inside the Participatory Modeling Toolbox"
            Symposium/Interactive Session. Stockholm, Sweden
2017 (invited) University of Hawaii, "Modeling social-ecological systems with Fuzzy Cognitive
            Mapping" **(invited for FCM workshop and research talk)** Honolulu, HI
2017 (keynote) Columbia University. Teaching and Learning about Food Systems Conference
            (invited plenary presentation, panel discussion, and workshop) New York
2017   Citizen Science 2017, Tools for Conservation-based Citizen science, Minneapolis
2017   Michigan State University, Conference on Teaching and Learning. Measuring
            Systems Thinking with Mental Modeler, East Lansing, MI
2017 (invited) Autonomous National University of Mexico, Applied Mathematics and Systems
            Research Institute**, (invited for FCM workshop and research talk)** Mexico City
2016   American Geophysical Union, "4Ps to improve collaborative socio-environmental
            modeling" San Francisco CA **(presentation and invited panel discussion)**
2016 (invited) Stanford University and University of Minnesota (Natural Capital Project)
            "Collaborative modeling to understand social-ecological systems"

2016 (keynote) The Ohio State University School of Social Work- Research Conference 2016 "Participatory modeling for wicked problems" Columbus OH

2016 (invited) Northern Illinois University, Department of Computer Science, "Crowdsourcing platforms to understand wicked problems: is the crowd wise?" Dekalb, IL

2016   Innovations in Collaborative Modeling 2016. East Lansing, MI
- (a) "The Participatory Modeling Toolbox" **(invited plenary panel)**
- (b) "Review of FCM Typologies for Collaborative Modeling" (co-author)
- (c) "4 Ps for Participatory Modeling" (co-author)
- (d) "An introduction to Mental Modeler" (90 minute workshop)
- (e) "Collaborative modeling of wildfire" (co-author)

2016 (invited) MSU Extension Community and Natural Resources Development Association Annual Conference, "Systems thinking tools for extension and outreach"

2016 (organizer) International Congress on Environmental Modeling Society, "Participatory Modeling Workshop" (with A. Voinov and N. Kolagani) Toulouse. France

2015 (invited) Conference on Conservation Science, "Modeling social-ecological systems" (training workshop), New York, NY

2015   ICES, "How the sausage is made: when public/science partnerships decrease trust of science", Copenhagen, Denmark

2015   International Congress for Conservation Biology, "Collaborative modeling for conservation" Montpellier, France

2015   Western Economic Association International. "Probability of adoption: Using mental models of farm dynamics and perception of environmental change to understand farming practices in rural India" Honolulu, HI

2015 (invited) Socio-Environmental Synthesis Center. "Mental Modeler: An overview for measuring learning about social-ecological systems" Annapolis, MD

2015   Collaborative Modeling 2015. East Lansing, MI
- (a) "Using FCM to measure change, resilience and preferred states of socio-ecological systems"
- (b) "Linking products, people, and process in participatory modeling" (Invited plenary panel discussion)
- (c) "An introduction to Mental Modeler" (90 minute workshop)
- (d) "Flood models that matter: integrating FCM and ABM" (co-author)

2015 (invited) Michigan State University. Department of Community Sustainability. "A cognitive approach to understanding human-environment interactions" East Lansing, MI

2015 (invited) Auburn University. School of Forestry and Wildlife Science. "Using mental models to understand human-wildlife interactions" Auburn, AL

2015   Citizen Science 2015, San Jose, CA
- (a) "Modeling with citizen scientists: Using community-based modeling tools to develop citizen-science projects resulting in resource management outcomes"
- (b) "How the sausage is made: When public participation in science leads to decreased trust of scientific assessment"
- (c) "Determining the Willingness to Pay for Ecosystem Service Restoration: A High-School Citizen Science Project" (co-author)

(d) "The Challenges with Training Outdoor Enthusiasts" Online (co-author)

(e) "Citizen Science Learning and Epistemology in Socio-Ecologically Oriented Projects" (co-author)

2014 (invited) University of Nebraska. Water Resources Research Institute/Department of Natural Resources: "Using mental models to understand human-environment interactions" Lincoln, NE

2014 Japan Society for International Development "Cognitive considerations in conservation agriculture" Osaka, Japan (part of our Belmont Forum Symposium)

2014 Human Ecology, "A FCM-based software for measuring perceptions of the environment" Bar Harbor, ME

2014 International Symposium on Society and Resource Management, "Using mental models to understand conservation related attitudes and policy preferences: an empirical study of anglers and stocking" Hanover, Germany

2014 International Congress on Environmental Modelling and Software (iEMSs) San Diego, CA

(a) "Predicting local scale climate change impacts on endangered birds by integrating watershed models and expert knowledge-based models for decision-support".

(b) "Modeling with citizen scientists"

2014 Resilience 2014: Session Chair/Organizer "Fuzzy-logic Cognitive Mapping as a tool to understand change and transformation in social-ecological systems" Montpellier, France

(a) "What is FCM?"

(b) "A FCM software tool for research and planning"

(c) "Case study: Coastal sustainability from the waterfront view of homeowners" (Steven Scyphers, lead author)

2014 (keynote) NOAA Ecosystem Modeling Workshop "Mixed models/mixed messages" Seattle, WA.

2014 Citizen Cyber-Science Summit, "Modeling with citizen scientists." London

2013 Hawaii Conservation Congress. "Coupling watershed modeling and knowledge-based modeling to understand climate change impacts on endangered birds on Kauai. Honolulu, HI

2013 University of Massachusetts, School for the Environment, "Using mental models to understand human-environment interactions." Boston, MA

2013 US Fish and Wildlife. Decision-support software for federal natural resource management agencies. (webinar)

2013 International Symposia on Society and Resource Management. "A fuzzy-logic based software tool for resource management." Estes Park, CO

2013 (invited) Colorado State University, Department of Human Dimensions, "Mental models as a human dimension" Fort Collins, CO

2013 Hawaii International Conference on Complex Systems, "Mental Modeler: A participatory fuzzy-logic cognitive mapping software for adaptive environmental management, Maui, HI

2012 Human Dimensions of Fisheries and Wildlife, Breckenridge CO

(a) "Understanding factors that influence stakeholder trust of natural resource science and institutions"
(b) "The influence of specialization and target species choice on anglers' mental models of fish ecology"
(c) "Mental Modeler: Incorporating individual and group stakeholder understanding into natural resource decision-making through a fuzzy-logic cognitive mapping software tool"
(d) "Comparing the structure and function of mental models of fishery scientists and angling experts related to pike (Esox lucius) ecology and management"

2012 Ecological Society of America annual meeting in Portland OR
(a) "Examining the relationship between ecosystem service characteristics and their management: A case study of Hawaii's watersheds and coasts"
(b) "Why and how should high school students learn about the ecology-nature of science?"
(c) "Lessons from implementing a model-based pedagogy in the K12 classroom"

2012 (invited) Leibniz Institute for Freshwater Ecology and Inland Fisheries: "Toward Collaborative Conservation: Integrating social science, natural science and participation in US fisheries management." Berlin Germany

2012 (invited) University of Massachusetts, Environment, Earth, and Ocean Sciences Department, Boston, MA "Managing the social-ecological ocean"

2011 (invited) University College Cork, Department of Geography, Cork, Ireland "Integrating social and natural science to develop natural resource policy"

2011 (invited) University of Hawaii, Department of Natural Resources and Environmental Management, Manoa, HI, "What are the human dimensions of natural resources"

2011 (invited) State University of New York, Environmental Science and Forestry, Syracuse, NY, Department of Environmental Studies "Developing methods for integrating stakeholder knowledge in participatory management"

2011 American Educational Research Association, New Orleans, LA "Understanding learning as an outcome of modeling"

2011 (invited) Saint Peters College, Department of Biology, Jersey City, NJ "Managing marine fisheries as a social-ecological system"

2011 Resilience 2011: Resilience, Innovation, and Sustainability, Tempe, AZ "Integrating stakeholder knowledge into social-ecological decision-making"

2011 (invited) International Council for the Exploration of the Seas (ICES) Halifax, NS "Integrating social datasets into an ecosystem assessment for the North Atlantic"

2011 (invited) University of Illinois, Department of Natural Resources and Environmental Science, Urbana, IL, "Managing marine fisheries as a social-ecological system"

2011 (invited) Science and Policy Advisory Panel for the Barnegat Bay Partnership, Tom's River, NJ, "Developing an integrated social-ecological assessment model for Barnegat Bay"

2010 (invited) American Geophysical Union, San Francisco, CA, "Structure, Behavior, Function as a conceptual framework for teaching and learning about complexity in ecosystems"

2010 (invited) Ecosystem Planning Committee, Mid-Atlantic Fisheries Management Council,

Norfolk, VA, "What makes some parts of the ocean sticky to fish? Ocean observing for marine habitat science and ecosystem management"

2010 (invited) Colby College Department of Environmental Studies, Waterville, ME "Integrating natural and social science to develop marine policy"

2010 Human Dimensions of Fisheries and Wildlife, Estes Park, CO, "Benefits and limitations to knowledge diversity in social-ecological decision-making"

2010 (invited) NOAA NMFS Howard Marine Laboratory, Sandy Hook, NJ "Integrating stakeholder knowledge into the management of marine fisheries"

2009 (invited) NOAA Office of Ocean and Coastal Management, Washington D.C. "Characterizing recreational anglers and as a component of social-ecological systems: friend or foe to conservation?"

2009 Mid-Atlantic American Fisheries Society, New Jersey "Developing ecological indicators for fisheries management using IOOS defined habitat characteristics in the mid-Atlantic Bight" (winner, best student presentation)

2009 Ecological Society of America Annual Meeting, Albuquerque, NM "Combining fuzzy logic cognitive mapping & resilience theory to understand coupled social-ecological system dynamics: a case study of the summer flounder fishery" poster

2009 Ecological Society of America Annual Meeting Albuquerque, NM "Assessment methods for interdisciplinary ecological dissertation research" (workshop)

2009 Mid-Atlantic Fisheries Management Council meeting New York City, "Developing ecological indicators for fisheries management using IOOS defined habitat characteristics in the mid-Atlantic Bight"

2009 Society for Conservation Biology International Marine Conservation Congress. Washington D.C "Identifying the risks in fisheries management"

2009 American Educational Research Association (AERA) Annual Meeting. San Diego, CA, "Modeling practices as function of task structure"

2008 (invited) National Estuarine Research Reserve Systems (NERRS) Annual Meeting, Monterrey, CA "How can social science help the NOAA NERRS: Implications for ecosystem-based management"

2008 North American Association of Environmental Educators Annual Research Symposium. Wichita, KS "A characterization of ecology and ecosystem understanding: a call for targeted instruction"

2008 NJ Biology Teachers' Association at the New Jersey Science Teacher's Convention. Somerset, NJ, "Thinking below the surface: using aquaria to teach about systems"

2008 Proceedings of the International Conference of the Learning Sciences: Utrecht, the Netherlands, "Learning with ecosystem models: A tale of two classrooms"

2008 National Science Teacher Association National Conference Boston, MA "Representational tools to support learning about complex systems"

2008 American Educational Research Association (AERA) Annual Meeting, New York, NY, "An integrated framework for bridging diverse analytical tools for understanding technology-mediated learning about complex natural systems"

2007 (invited) Rutgers Marine Field Station, NOAA Review, Tuckerton, NJ, "Developing costal training programs built around recreational fishermen for the Jacques Cousteau NERR"

2005 (invited) U.S. EPA National Radiation and Indoor Environment Laboratory, Las Vegas,

NV, "Sustainable environmental management programs through community outreach and web communication"

<u>*Teaching Experience*</u>

2023	Michigan State University, ISB 202: *Ecology and Society*
2022	Michigan State University, CSUS 820: *Social-ecological Resilience*,
	Michigan State University, ISB 202: *Ecology and Society*
2022	Michigan State University, ISB 202: *Ecology and Society*
2021	Michigan State University, ISB 202: *Ecology and Society*
2021	Michigan State University, CSUS 834: *Survey Research Methods*
2020	Michigan State University, ISB 202: *Ecology and Society*
2019	Michigan State University, ISB 202: *Ecology and Society*
2018	Michigan State University, CSUS 802: *Research Methods*
	Michigan State University, CSUS 834: *Survey Research Methods*
2017	Michigan State University, CSUS 802: *Research Methods*
	Michigan State University, CSUS 890: Special Topics: *Modeling Social-ecological Systems with Fuzzy Cognitive Maps*
	Michigan State University, CSUS 834: *Survey Research Methods*
	Michigan State University, CSUS 200: *Introduction to Sustainability*
2016	Michigan State University, CSUS 200: *Introduction to Sustainability*
2015	University of Massachusetts, EEOS 604: *Coasts and Communities* (Graduate cornerstone II)
2014	University of Massachusetts, EEOS 603: *Coasts and Communities* (Graduate cornerstone I);
	University of Massachusetts, EEOS 122: *Introduction to Environmental Policy*
	University of Massachusetts, EEOS 476: *Capstone*
	University of Massachusetts, EEOS 699: *People and Protected Areas*
2012-2013	University of Hawaii, Capacity Building Grant Awarded ($50,000 as PI) Creating Virtual Calculus: Distance Learning for NREM 203: *Applied Calculus*
2012	University of Hawaii, *Applied Calculus for the Life and Social Sciences*
	University of Hawaii, *Environmental and Natural Resource Policy*
2010-2011	Rutgers University, *Portal to Academic Student Success (PASS)*
2008-2009	Rutgers University, *Politics of Environmental Issues (teaching assistant)*

<u>*Service and Working Groups*</u>

Editorial Board
Editorial Board, Socio-ecological Systems Modeling (founding board member, 2017)
Guest Editor, Mathematical Modelling and Complex Systems in Agroecology for *Frontiers in Sustainability Food Systems*

Proposal Review Panels
NSF Dynamics of Integrated Socio-environmental Systems (DISES) invited review panel (multiple years)
NSF Coupled Natural and Human Systems (CNHS) invited review panel (multiple years)
NOAA, Collaborative Research Catalyst Grants
Swiss National Science Foundation (ad hoc)
NSF Risk and Decision, invited panel review (ad hoc, multiple times)

National Academies of Science (NAS), Healthy Ecosystems, invited panel review
NSF Research Traineeship (NRT), invited panel review
EU European Research Council (ERC), Consolidator Grants, invited review panel
NOAA NERR Collaborative Science, invited review panel (multiple years)
Working Groups and Science Advisory Panels
Collective Intelligence 2023 (Boston and Copenhagen) Advisory Board
Collective Intelligence 2020 (Boston and Copenhagen) Advisory Board
Ocean Modeling Forum (The Nature Conservancy and University of Washington)
NSF National Ecological Synthesis Center (NCEAS) workshop participant, Biocultural
    indicators for resilience
NSF Socio-Environmental Synthesis Center (SESYNC) workshop PI, Participatory modeling of
    action-oriented outcomes
NSF Socio-Environmental Synthesis Center (SESYNC) workshop participant, Teaching about
    socio-environmental systems
NSF National Evolutionary Synthesis Center (NaESCent) workshop participant, Anthropogenic
    Sensory Stimuli as Drivers of Evolution: A conceptual synthesis and roadmap for an
    integrated citizen-science research network
NSF Socio-Environmental Synthesis Center (SESYNC) workshop participant, Climate Social
    Science Literacy
NOAA National Ecosystem Modeling working group member
International Council for the Exploration of the Seas (ICES) Social Science Advisory Panel
Journal Reviewer
*Nature: Sustainability, Nature: Ecology and Evolution, Science Advances (AAAS),
Neurocomputing, Biological Conservation, Ecological Engineering, Ecological Modeling,
Frontiers in Ecology and the Environment, Ecology and Society, Environmental Management,
Environmental Modeling and Software, Land Use Policy, Sustainability, Annals of Fuzzy
Mathematics and Informatics, PLoS One, Tropical Ecology, Journal of Agricultural Extension
and Rural Development, Environmental Education Research*

Advising _____
Postdocs
2020   Payam Aminpor
2019-present Chelsea Wentworth
Graduate (Chair)
2019-present Carissa Knox, (University of Michigan, PhD, co-chair).
2018-present Mahdi Zahreei (MSU, PhD)
2022-2023   Nathan Brugonee (MSU, PhD), computational social scientist, TwoSix Labs
2016-2020   Payam Aminpor, (MSU, PhD), postdoc Johns Hopkins University, NIST
2017-2020   Laura Young, (MSU, MS), assistant director office of sustainability, MSU
2015-2019   Allison Singer, (MSU, PhD), assistant professor, Northern Arizona University
2014-2018   Alexander Metzger, (UMass, PhD), environmental consultant, Boston
2012-2015   Noelani Puniwai, (UHawaii, PhD), assistant professor, University of Hawaii
2011-2014   Jackie Halbrendt, (UHawaii, PhD), postdoc, Wageningen University
2012-2014   Molly Miller, (UHawaii, MS), PhD student, University of Maine
2011-2013   Angela Nyaki, (UHawaii MS), Reserve manager, Tanzania National Parks
2011-2013   Mary Younkin, (UHawaii, MS), Research coordinator, Oregon Sea Grant

Graduate (Committee)
2017-2021   Chris Henderson (MSU, PhD)
2017-2020   Chris Bargenhaden (MSU, PhD)
2015-2020   Bethany Laursen (MSU, PhD)
2017-2020   Kyle Metta (MSU, PhD)
2016-2018   Emily Koryto (MSU, MS)
2016-2018   Natalia Ocampo Dias (MSU, MS)
2016-2018   John Olwande, (MSU, PhD)
2012-2017   Hla Htun, (UHawaii, PhD
2015-2016   Zak Mertz (UMass, MS)
2014   Jennifer Ly (UMass, MS)
2011-2016   Rusyan Jill-Mamitt (UHawaii, PhD)
2013-2014   Vijaylaxsmi Kesavan, UMass, MS)
2011-2013   Sarah Henly-Shepard (UHawaii, PhD)
2011-2012   Michele Barnes (UHawaii, MS, PhD)
2011-2012   Kara Miller (UHawaii, MS)
2011-2012   Cheryl Lohr (UHawaii, PhD)

Undergraduate (Supervised research)
2019-2021   Grace Newland (MSU, CSUS)
2016-2018   Raisa Lenau, (MSU, AFRE) Krogers Sustainability Office
2015-2018   Maddie Gorman (MSU, CSUS) State of Michigan
2015-2018   Caite Reza (MSU, Zoology) USGS. MS student UC Santa Barbara
2015-2018   Degen Gemarowski, (MSU, Plant Science)
2015-2017   Jane Henderon (MSU/U of San Diego) PhD student at UC Berkley
2014-2017   Rachel Robers-Toler, (UMass, SFE) environmental consultant
2014-2015   Emily True, (UMass, SFE) MS student at Duke University
2014-2015   Alexander Berry, (UMass, SFE)
2014-2015   Faynshteyn,Nickolas, (UMass, SFE) MS student at Northeastern University
2012-2013   Nate Hunter, (UHawaii, NREM)
2011-2013   Anthea Fernandez, (UHawaii, Biology) Ernst and Young
2011-2012   Derek Ford, (UHawaii, NREM)
2010-2011   Alicia Raeburn, (Rutgers Marine Science and Policy) NRDC
2010-2011   Kathryn Gardella, (Rutgers Human Ecology) MS student at UMiami
2010-2011   Samantha Paeswak, (Rutgers Marine Science and Education)
2009-2010   Amanda Gettlefinger, (Rutgers Environmental Policy) PS&S Consulting
2009-2010   Dan Clark, Rutgers Ecology, MS, Purdue, PhD student Rutgers
2009-2010   Alex Chan, Rutgers Mathematics and Biology (medical school 2010)

Awards
2018   MSU TEDx speaker (1 of 10 speakers selected out of 120+ speakers)
2016   Elinor Ostrom Young Scholar Award (International) nominee
2013   Leibniz-Institute of Freshwater Ecology and Inland Fisheries Fellowship
2013   Mentor of the Year, University of Hawaii, NREM Graduate Student Organization
2010   Rutgers University Research Award
              ($1000 prize, 1 of 6 students awarded from university-wide competition)

2009	American Fisheries Society Student Writing Award
2009	American Fisheries Society (Mid-Atlantic) Best Student Presentation
2008	Australian Academy of Sciences EAPSI Recipient
2006	U.S. EPA STEP Program (3 month award)
2005	U.S. EPA Environmental Scholar Award, Radiation National Laboratory