

Jacopo Alessandro Baggio

Personal Data

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Position:

2021 – Present	Associate Professor, School of Politics, Security, and International Affairs; core member, Sustainable Coastal System Cluster and National Center for Integrated Coastal Research, University of Central Florida
2018 – 2021	Assistant Professor, School of Politics, Security, and International Affairs; core member, Sustainable Coastal System Cluster and National Center for Integrated Coastal Research, University of Central Florida
2015 – 2018	Assistant Professor, Department of Environment and Society, College of Natural Resources, Utah State University
2011 – 2015	Postdoctoral Research Associate at the Center for Behavior, Institutions and the Environment, Arizona State University (formerly known as the Center for the Study of Institutional Diversity)

Education:

- PhD in International Development (2011). University of East Anglia, School of International Development, Norwich, UK. (Supervisors: Prof. Katrina Brown and Dr. Elissaios Papyrakis)
- MA in Development Economics (2007). University of East Anglia, School of Development Studies, Norwich, UK. (Supervisor: Dr. Elissaios Papyrakis)
- Bsc in Economics and Social Sciences (2005). University of Milano-Bicocca, School of Economics, Milan, Italy (Supervisors: prof. L. Bruni, prof. L. Stanca).
- Classical high school diploma (Maturità classica, 1999). Liceo Ginnasio Statale G. Parini, Milan, Italy.

Grants and Funding

- **2021:** UCF Seed Grant for Interdisciplinary Research: co-PI with Sergio Alvarez (PI) Chris Emmrich (co-PI), Thomas Wahl (co-PI): Influences of coupled natural-human systems on sea-level rise adaptation pathways for Florida. (\$67,500)
- **2019:** NAS: co-PI with Chris Emmrich (PI), Thomas Wahl (co-PI), Kristy Lewis (co-PI), Sergio Alvarez (co-PI), Sonia Stephens (co-PI): The New First Line of Defence: Building Community Resilience through Residential Risk Disclosure Resilience. (\$3,403,554.00).
- **2017:** USDA-NIFA: co-PI with Kari Veblen (PI), Mark Brunson (co-PI) and David Pyke (co-PI): A pre-emptive rangeland restoration approach to improving biodiversity and provision of ecosystem services (\$500,000)
- **2016:** NSF INFEWS Track 1: co-PI for Utah State University sub-award (\$423,899) with Christopher Lant (co-PI). Proposal PI: Ben Ruddell, Arizona State University: Mesoscale Data Fusion to Map and Model the U.S. FEWS system (INFEWSion) (\$3,000,000) (other co-Pi: Kevin R Gurney, Michael Hanemann, John L Sabo, Shade T Shuttters, Tara J Troy, Alfonso I Mejia, Kristen Averyt, Megan Konar)
- **2016:** NSF IBSS: co-PI with Jacob Freeman (PI) and Thomas Coyle (co-PI): Diversity, Intelligence and Robust Cooperation in Social Ecological Systems (\$465,893)
- **2015:** SPARC Seed Grant from Utah State University, co-PI with Jordan Smith (PI) and Sarah Null (co-PI): Developing a coupled socio-hydrological agent-based model to examine the demand for and supply of outdoor recreation and tourism opportunities under future climate scenarios (\$35,000)
- **2015:** Seed Grant from the Center for Biodiversity Outcomes, Arizona State University, co-PI with Michael Schoon, Candice Carr Kelman and Dara Wald: Collaborative Governance for Improving Biodiversity Outcomes (\$7,000)
- **2015:** Consortium for Biosocial Complex Systems, co-PI with Michael Schoon, Ken Abbot, Erik Johnston and Jose Lobo: Working across Scales in the Governance of Social-Ecological Systems, seed grant (\$1,000)

- **2014:** Haynes Foundation, consultant, with Prof. Hal Nelson (PI): Power Struggles: Improving Energy Infrastructure Project Siting, Outcomes in the Los Angeles Region (\$127,940)
- **2007:** ESRC PhD scholarship (Economic and Social Research Council, UK)

Awards

- **2017** Researcher of the Year -, SJ & Jessie E. Quinney College of Natural Resources Researcher of the Year, Utah State University

Journal Articles (45)

2021 Cremades, R., Sanchez-Plaza, A., Hewitt, R. J., Mitter, H., **Baggio, J. A.**, Olazabal, M., ... Tudose, N. C. (2021). Guiding cities under increased droughts: The limits to sustainable urban futures. *Ecological Economics*, 189, 107140.

Baggio, J.A. (2021). Knowledge generation via social-knowledge network co-evolution: 30 years (1990–2019) of adaptation, mitigation and transformation related to climate change. *Climatic Change*, 167:13 doi: 10.1007/s10584-021-03146-5

Lambert, J., Epstein, G., Joel, J., & **Baggio, J.** (2021). Identifying Topics and Trends in the Study of Common-Pool Resources Using Natural Language Processing. *International Journal of the Commons*, 15(1), 206–217

Lee, J., **Baggio J.A.**, (2021). Promises and limits of community-based organizations in bridging mismatches of scale: a case study on collaborative governance on federal lands. *Ecology and Society*, 26(1):7

Epstein, G., Gurney, G., Chawla, S., Anderies, J.M., **Baggio, J.A.**, Unnikrishnan, H., Villamayor-Tomas, S., Cumming, G. (2021). Drivers of compliance monitoring in forest commons. *Nature Sustainability*, <https://doi.org/10.1038/s41893-020-00673-4>

2020 Young, J.K., Coopock, L.D., **Baggio, J.A.**, Rood, K.A., Yrga, G. (2020). Linking Human Perceptions and Spotted Hyena Behavior in Urban Areas of Ethiopia. *Animals*, 10(12), 2400.

Cockburn, J., Schoon, M., Cundill, G., Robinson, C., Aburto Frias, J., Alexander, S., **Baggio, J.A.**, Barnaud, C., Chapman, M., Garcia Llorente, M., Garcia-Lopez, G., Hill, R., Ifejika, C., Lee, J., Meek, C., Rosenberg, E., Schultz, L., Thondhlana, G. (2020). Understanding the context of multifaceted collaborations for social-ecological sustainability: A methodology for cross-case analysis. *Ecology and Society*, 25(3):7

Freeman, J., #Robinson, E., *Bird, D., Beckman, N., **Baggio, J.A.**, Anderies, J.M. (2020). The Global Ecology of Human Population Density and Interpreting Changes in Radiocarbon Time-series. *Journal of Archaeological Sciences*, 120: 105168

Cumming, G.S, Epstein, G.B., Anderies, J.M., Apetrei, C, **Baggio, J.A.**, Bodin, O, Chawla, S., Clements, H.S., Cox, M., Egli, L., Gurney, G., Lubell, M., Magliocca, N., Morrison, T., Müller, B., Seppelt, R., Schlüter, M., Unnakrishnan H., Villamayor-Tomas, S., Weible, C. (2020). Advancing understanding of natural resource governance: a post-Ostrom research agenda, *Current opinion in environmental sustainability*, 44, 26-34.

Freeman, J., **Baggio, J.A.**, Coyle, T.R.(2020). Social and general intelligence improves collective action in a common pool resource system. *Proceedings of the National Academy of Sciences*, 117(14), 7712-7718.

Mathias, J.D., Anderies, J.M., **Baggio, J.A.**, Hodbod, J., Huet, S., Janssen, M.A., Milkoreit, M., Schoon, M. (2020). Exploring non-linear transition pathways in social-ecological systems, *Scientific Reports*, 10(1), 4136

2019 **Baggio, J.A.**, Schoon, M., Valury, S. Managing Networked Landscapes: Conservation in a connected, fragmented world, *Regional Environmental Change* 19(8), 2551–2562

Freeman, J., **Baggio, J. A.** (2019). The effect of ownership on ecosystem management among human foragers. *Quaternary International*, 518, 11–20.

Sayles, J., Mancilla-Garcia, M., Hamilton, M., Alexander, S., **Baggio, J.A.**, Fisher, A., Ingold, K., Meredith, G., Pittman, J. (2019). Social-ecological network analysis for sustainability sciences: a systematic review and innovative research agenda for the future, *Environmental Research Letters*, 14(9): 093003

Bodin, Ö., Alexander, S., **Baggio, J.A.**, Barnes, M.L., Berardo R, Cumming, G.S., Dee, L., Fischer, P., Fisher, M., Garcia M., Guerrero, A., Ingold, K., Hileman, J., Matous, P., Morrison, T., Pittman, J., Robins, G., Sayles, J.(2019). Improving network approaches to the study of complex social-ecological interdependencies, *Nature Sustainability*, 2(7), 551-559

Friesen, S., Martone, R., Rubidge, E., **Baggio, J.A.**, Ban, N. (2019). An approach to incorporating inferred connectivity of adult movement into marine protected area design with limited data. *Ecological Applications*, 29(4): e01890.

Fagua, J. C., **Baggio, J.A.**, Ramsey, R.D. (2019). Drivers of forest cover changes in the Choco-Darien Global Ecoregion of South America. *Ecosphere* 10(3): e02648.

Baggio, J.A., Freeman, J., Coyle, T., Nguyen, T., Elpers, K.E., Hancock, D., Nabity, S., Dengha, F., Pillow, D. (2019). The importance of cognitive diversity for sustaining the commons *Nature Communications*, 10(1), 875

Lant, C., **Baggio J.**, Konar M., Meija A., Ruddell B., Rushforth R., Sabo J., and Troy T. (2019). The U.S. food-energy-water system: A blueprint to fill the mesoscale gap for science and decision-making. *Ambio*, 48(3), 251-263

2018 Coyle, T., Elpers, K.E., Gonzalez, M.C., Freeman, J., **Baggio J.A.** (2018) General Intelligence (g), ACT scores and theory of mind: (ACT)g predicts limited variance among theory of mind tests. *Intelligence* 71, 85–91.

Freeman, J., **Baggio, J.A.**, Robinson, E., Byers, D.A., Gayo, E., Finley, J.B., Meyer, J.A., Kelly, R.L., Anderies, J.M. (2018). Synchronization of energy consumption by human societies throughout the Holocene. *Proceedings of the National Academy of Sciences*, 115(40), 9962-9967

Baggio, J.A., Hillis, V. (2018). Managing ecological disturbances: learning and the structure of social-ecological networks. *Environmental Modelling and Software*, 109, 32-40

Haefner M., **Baggio J.A.**, Galvin K. (2018). Investigating environmental migration and other rural drought strategies in Baja California Sur, Mexico, *Regional Environmental Change*, 8(5), 1495-1507

Milkoreit, M., Hodbod, J. **Baggio, J.A.**, Benessaiah K., Calderon-Contreras, R., Donges, J.F., Mathias, J.D., Rocha, J.C., Schoon, M., Werners, S.E., (2018) Defining Tipping Points for Social-Ecological Systems Scholarship – An Interdisciplinary Literature Review, *Environmental Research Letters*, 13(2), 033005

- 2017** Shanafelt D.W., Salau K.R., **Baggio J.A.** (2017). Do-it-yourself networks: a novel method of generating weighted networks. *Royal Society Open Science*, 4, 171227
- Janssen, M.A., **Baggio, J.A.** (2017). Using Agent-Based Models to Compare Behavioral Theories on Experimental Data: Application for Irrigation Games. *Journal of Environmental Psychology*, 54, 194-203
- Sayles, J., **Baggio, J.A.** (2017). Social-Ecological network analysis of scale-mismatches in estuary watershed restoration. *Proceedings of the National Academy of Sciences*, 114(10), E1776-E1785
- Schoon, M.L., York, A., Sullivan, A., **Baggio, J.A.** (2017). The Emergence of an environmental governance network: the case of the Arizona Borderlands. *Regional Environmental Change*, 17(3), 677-689
- Sayles, J., **Baggio J.A.** (2017). Who collaborates and why: Assessment and diagnostic of governance network integration for salmon restoration in Whidbey Basin, Puget Sound, WA. *Journal of Environmental Management*, 186, 64-78
- 2016** **Baggio, J.A.**, Burnsilver, S., Arenas, A., Magdanz, J., Kofinas, G., DeDomenico, M. (2016). Multiplex social ecological network analysis reveals how social changes affect community robustness more than resource depletion *Proceedings of the National Academy of Sciences*, 113(48), 13708-13713
- Baggio J.A.**, Barnett A., Perez-Ibarra I., Brady U., Ratajczyk E., Rollins N., Rubiños C., Shin H.C., Yu D.J., Aggarwal R., Anderies J.M., Janssen M.A. (2016). Explaining Success and Failure in the Commons: The Configural Nature of Ostrom's Institutional Design Principles. *International Journal of the Commons*, 10(2), 417-439.
- Barnett A., **Baggio J.A.**, Perez-Ibarra I., Brady U., Ratajczyk E., Rollins N., Rubiños C., Shin H.C., Yu D.J., Aggarwal R., Anderies J.M., Janssen M.A. (2016). An iterative approach to Large-N case studies: insights from qualitative analysis of quantitative inconsistencies. *International Journal of the Commons*, 10(2), 467-494.
- Ratajczyk E., Brady U., **Baggio J.A.**, Barnett A., Perez-Ibarra I., Rollins N., Rubiños C., Shin H.C., Yu D.J., Aggarwal R., Anderies J.M., Janssen M.A. (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.
- Freeman, J., Coyle, T., **Baggio, J.A.** (2016). The Functional Intelligence Proposition. *Journal of Personality and Individual Differences*, 99, 46-55
- Wu, L., **Baggio J.A.**, Janssen M.A. (2016). The role of diverse strategies in the sustainability of online communities. *PLoS ONE*, 11(3), e0149151
- 2015** **Baggio, J.A.**, Rollins N.D., Pérez I., Janssen M.A. (2015). Irrigation experiments in the lab: trust, environmental variability, and collective action. *Ecology and Society*, 20 (4), 12
- Baggio, J.A.**, Brown, K., Hellebrandt, D. (2015). Boundary Object or Bridging Concept? A Citation Network Analysis of Resilience. *Ecology and Society*, 20(2), 2
- 2014** Moore, M.-L., Tjornbo, O., Enfors, E., Knapp, C., Hodbod, J., **Baggio, J.A.**, Norström, A., Olsson, P., Biggs, D. (2014). Studying the complexity of change: toward an analytical framework for understanding deliberate social-ecological transformations. *Ecology and Society*, 19(4), 54
- Sikor, T., & **Baggio, J.A.** (2014). Can smallholders engage in tree plantations? An entitlements analysis from Vietnam. *World Development*, 64(Supp1), S101-S112.

Hill, K.R., Wood, B.M., **Baggio, J.**, Hurtado A.M., Boyd R.T. (2014). Hunter-Gatherer Inter-Band Interaction Rates: Implications for Cumulative Culture. *PLoS ONE* 9(7): e102806.

Schoon, M.L., **Baggio, J.A.**, Salau, K. & Janssen, M. (2014). Insights for Managers from Modeling Species Interactions across Multiple Scales in an Idealized Landscape. *Environmental Modeling and Software*, 54, 53-59.

Short summary available at: <http://www.conservationcorridor.org/>

Baggio, J.A., & Papyrakis, E. (2014). Agent Based Simulations of Subjective Well-Being. *Social Indicators Research*, 115(2), 623-635.

2012 Salau, K., Schoon, M.L., **Baggio, J.A.**, Janssen, M.A. (2012). Varying Effects of Connectivity and Dispersal on Interacting Species Dynamics. *Ecological Modelling*, 242, 81-91.

2011 **Baggio, J.A.**, Salau, K., Janssen, M.A., Schoon, M.L., & Bodin, Ö. (2011). Landscape connectivity and predator-prey population dynamics. *Landscape Ecology*, 26(1), 33-45.

2010 **Baggio, J.A.**, & Papyrakis, E. (2010). Ethnic Diversity, Property Rights and Natural Resources. *The Developing Economies*, 48(4), 473-495.

Books and Book Chapters (1 book, 6 book chapters)

2021 Maciejewski, K., **Baggio, J.A.** (2021). Network Analysis. In Biggs, R., de Vos A., Preiser, R., Clements, H., Maciejewski, K., Schlüter, M. (Eds.) *The Routledge Handbook of Research Methods for Social-Ecological Systems* (pp. 321-331). London: Routledge

2020 **Baggio, J.A.**, Baggio, R. (2020). Modelling and Simulations for Tourism and Hospitality. Bristol, Channelview. ISBN: 9781845417413

2017 **Baggio, J.A.**, Calderon-Contreras, R. (2017). Socioecosistemas y Resiliencia. Fundamentos para un Marco Analítico. In Calderon-Contreras, R. (Ed), *Los Sistemas Socioecológicos y su Resiliencia: Casos de Estudio* (pp.23-38). Mexico City, Mexico: UAM Press

Baggio, J.A. (2017). Complex Adaptive Systems, Simulations and Agent-Based Modelling. In R. Baggio & J. Klobas (Eds.), *Quantitative research methods in tourism: a handbook*, 2nd Edition (pp. 363-396). Bristol: Channelview.

2015 Dakos, V., Quinlan, A., **Baggio, J.A.**, Bennett, E., Burnsilver, S., Bodin, Ö. (2015). Principle 2: Manage Connectivity. In Biggs O., Schlüter, M., and Schoon, M. (Eds), *Principles for Building Resilience: Sustaining ecosystem services in social-ecological systems* (Chapter IV) Cambridge University Press.

2013 Baggio, R., & **Baggio, J.A.** (2013). Modeling Information Asymmetries. In M. Kozak, L. Andreu, J. Gnoth, S. S. Lebe, & A. Fyall (Eds.), *In Tourism Marketing: On Both Sides of the Counter* (pp. 156-174), Newcastle, UK: Cambridge Scholars Publishing.

2011 **Baggio, J.A.** (2011). Agent-Based Modelling and Simulations. In R. Baggio & J. Klobas (Eds.), *Quantitative research methods in tourism: a handbook* (pp. 99-219). Bristol: Channelview.

Conference Proceedings (2)

2016 **Baggio, J.A.**, & Hillis, V. (2016). Success bias imitation increases the probability of effectively dealing with ecological disturbances. In T. M. K. Roeder, P. I. Frazier, R. Szechtman, E. Zhou, T.

Huschka, and S. E. Chick (Eds.), *Proceedings of the 2016 Winter Simulation Conference*, (pp.1702-1712). Piscataway: IEEE

- 2013 Baggio J.A., & Janssen M.A.** (2013). Comparing agent-based models on experimental data of irrigation games. In R. Pasupathy, S.-H. Kim, A. Tolk, R. Hill, and M. E. Kuhl (Eds.), *Proceedings of the 2013 Winter Simulation Conference* (pp. 1742-1753).

Invited Presentations, Seminars and Lectures (25)

- 2021 Invited Workshop:** Social Ecological Network Analysis, Webinar (online) IASC Water Commons Conference, May 20th.

- 2020 Invited Presentation:** Vulnerability and Complexity of traditional livestock systems in Spain, Webinar (online) Center for Behavior, Institution and The Environment (CBIE) seminar series, Nov. 16th.

Invited Presentation: Complexity, Diversity, Cognition and Group's problem solving ability, Webinar (online), Mathematical Biology Seminar Series, UCF, November 5th.

Invited Presentation: ABM, Networks and Natural Resource Management, Webinar (online), CASL virtual seminar series, UCF, October 9th.

Invited presentation: Social Tipping Points, Webinar (online) for the Resilience Alliance Reading Group Seminar Series, June 17th.

Invited presentation: General suggestions for managing social ecological systems, Webinar (online) for the Sustainable World, Sustainable Kingdom program, May 19th

- 2019 Invited presentation:** Agent-based modeling for assessing the relationship between structure-processes and outcomes, Webinar (online), December 17th:

https://www.dropbox.com/s/oxyd988109q3coz/zoom_0.mp4?dl=0

Invited presentation at the Advancing interdisciplinary research on social-ecological networks to understand ecosystem services across scales, SESYNC workshop, Annapolis, MD, USA (September 1).

Invited presentation: Common Pool Resources and Complex Collaborative Problem Solving. Summer Lecture Series, Orlando, FL, USA (June 14)

Invited lecture and presentation: Northern Arizona University: Master class on food-water and energy systems in a global economy, Presentation on Robustness of networks in coupled infrastructure systems. Flagstaff, AZ, USA (May 13-16).

Invited presentation: University of Arizona: The importance of cognitive diversity for sustaining the commons, 2nd Workshop on Common Pool Resources: Working Together, University of Arizona, Tucson USA (March 7-8)

- 2017 Invited presentation:** Laboratorio Nacional de Ciencias de la Sostenibilidad, UNAM (Univerisdad Nacional Autonoma de Mexico): Social-Ecological Networks: how structural properties influence social-ecological system's resilience, Mexico City, Mexico (December 4th).

Invited presentation: Ohio State University: Individuals, Networks and Institutions: what drives the successful management of social-ecological systems?, Columbus, OH, USA (November 16th)

Invited presentation (job talk): University of Central Florida: *Institutional design, cognitive abilities and networks: explaining resilience of social-ecological systems*, Orlando, FL, USA (October 18th).

Invited presentation: University of Victoria: *Assessing potential drivers of Social-Ecological system robustness: networks, institutional design principles and agent based modelling*, Victoria, BC, Canada (April 5th)

Invited presentation (job talk): UC Davis, Department of Environmental Science and Policy: *Using networks and agent based modelling to analyze social-ecological systems*, Davis, CA, USA (February 8th)

Invited presentation: Utah Valley University: *Identifying drivers of Socio-Ecological System's resilience: integrating networks and agent based modelling*, Orem, UT, USA (January 23rd)

2016 Invited Presentation: 2016 Winter Simulation Conference: *Success biased imitation increases the probability of effectively dealing with ecological*, Washington DC, USA (December 11-14)

Invited Presentation: Baggio J. A., *Striving for a Successful Management of Biodiversity Conservation and Ecological Disturbances*. UDWR-USU Brown Bag Luncheon Seminar Series, Salt Lake City, UT, USA (October 11). Video available at: http://qcnr.usu.edu/research/centers/usgs_seminars

2015 Invited Presentation: Taller de Elaboracion de Seminarios Virtuales de la Red de Socio-Ecosistemas y Sustentabilidad: *Que es un Ecosistema*, Cuernavaca, Mexico (November 17 – 19) (Given in Spanish)

Invited Presentation: Taller de Elaboracion de Seminarios Virtuales de la Red de Socio-Ecosistemas y Sustentabilidad: *Elementos de Socio-Ecosistemas*, Cuernavaca, Mexico (November 17 – 19) (Given in Spanish)

Invited Presentation (job talk): Utah State University, Department of Environment and Society: *Modelling and Analyzing Social-Ecological Systems: integrating multiple methods to devise robust policies*, Logan, UT, USA (February 22 – 24)

2014 Invited presentation: Simposio sobre las Aproximaciones y metodologías para la evaluación de cambio ambiental: *experiencias desde los sistemas de monitoreo climático: Modeling robustness and resilience to climate change: assessing effects of microclimate on agricultural production and the social system.*, Fundacion Natura, Bogota, Colombia (29 October). (Given in Spanish).

Invited Presentation: Coloquio Internacional: Resiliencia: Una aproximación multidisciplinaria al Cambio Climático: *The origins of Resilience: Is it a bridging concept?* UAM Cuajimalpa, Mexico City, Mexico (18-19 June). (Given in Spanish)

2013 Invited presentation: Claremont Graduate University. *Agent Based Modelling of lab experimental data: Cooperation in asymmetric commons dilemma*. Claremont, California, USA.

Conferences, Workshops participation and Presentations (37)

2020 Baggio, J.A., *Cognitive abilities for collective action: from individuals to nation states*. Paper and at the 3rd Workshop on Common Pool Resources: Working Together, Arizona State University, Tempe USA (March 11-13).

2019 Baggio, J.A., *Empirically Grounded Agent-Based Models in Tourism*. Paper at the 5th World Research Summit for Tourism and Hospitality, Orlando, FL, USA (December 13-16)

Baggio, J.A., *Individual cognitive abilities and group ability to adaptively manage common pool resources*. Paper at the Earth System Governance Conference, Oaxaca, Mexico, November 6-9 2019

Invited participant at the Advancing interdisciplinary research on social-ecological networks to understand ecosystem services across scales, SESYNC workshop in September 2019, Annapolis, MD, USA.

Invited participant at the Food-Energy-Water Interdependencies of the Global Agrarian Transition, SESYNC Pursuit between 2019-2021, Annapolis, MD, USA

Baggio, J.A., *Scale Mismatches in coastal systems*. Paper at the AESS conference, Orlando, FL, USA June 26-29,

Baggio, J.A., *Cognitive abilities and group adaptability to changes*. Paper at the AESS conference, Orlando, FL, USA (June 26-29)

2018 Invited participant at the Testing and extending Ostrom's frameworks: quantitative synthesis and modeling of social-ecological dynamics, SESYNC Pursuit between 2018-2020, Annapolis, MD, USA

2017 Baggio, J.A., Freeman J., Coyle, T., Nabity, S., Nguyen T., Elpers K., Hancock, D., *Individual cognitive abilities and group adaptability to changing social and environmental conditions*, Poster at the II Conference of the program on ecosystem change and society, Oaxaca, Mexico (November 7-

Baggio, J.A., *Managing ecological disturbances: Learning and the structure of social-ecological networks*. Paper at the II Conference of the program on ecosystem change and society, Oaxaca, Mexico (November 7-10)

Baggio, J.A. *Constraints in identifying and analyzing social-ecological networks: data and common currencies*. Paper at the 2017 Resilience Conference, Stockholm, Sweden (August 21-24).

Nabity, S., Freeman, J., Baggio, J.A., Coyle, T., Nguyen, T., Elpers, K., *Cognitive abilities and the resilience of common pool resource systems to ecological change*. Poster presented at the 2017 Resilience Conference, Stockholm, Sweden (August 21-24).

Meredith, G., Baggio, J.A., Brunson, M., *Inter-agency management of rangelands: success biased learning effects on innovation adoption rates*. Poster presented at the 2017 Resilience Conference, Stockholm, Sweden (August 21-24).

Meredith, G., Baggio, J.A., Brunson, M., *Inter-agency collaboration in natural resource governance the case for exponential random graphs*. Poster presented at the 2017 Resilience Conference, Stockholm, Sweden (August 21-24).

Baggio, J.A., Valury S., Schoon, M., *Modelling the management of networked landscapes: the importance of learning and strategy diversity*. Paper at the 2017 International Association for the Study of the Commons Conference, Utrecht, Netherlands (July 10-14)

Nabity S., Baggio, J.A., Freeman, J., Nguyen, T., Hancock, T., Elpers, K., Coyle, T., Pillow, D., *Cognitive abilities and group adaptability in a common pool resource game*. Paper at the 2017 International Association for the Study of the Commons Conference, Utrecht, Netherlands (July 10-14)

2016 Baggio J.A., *Conservation on private landscapes: social learning and social networks*. Paper at the North American Congress for Conservation Biology, Madison, WI, USA (July 17-20)

Invited expert for a workshop on "Synthesizing Coding Efforts for SES Research", SESYNC, Annapolis, MD, USA (July 6-7)

Sayles, J., Baggio J.A. *Social-ecological network analysis of scale mismatches in estuary watershed restoration*. Paper at the 2016 Spring Runoff Conference, Logan, UT, USA (April 5 – 6)

- 2015** Baggio J.A., *Analyzing Design Principles to diagnose Common Pool Resources: methodological challenges and possible solutions*. Paper at the 2015 Biennial Global Conference of the International Association for the Study of the Commons, Edmonton, Alberta, Canada, May 25-29.

Hillis, V. and Baggio J.A. *A cultural evolutionary model of crop disease prevention in a networked social-agroecological system*. Paper at the 2015 Biennial Global Conference of the International Association for the Study of the Commons, Edmonton, Alberta, Canada, May 25-29.

Janssen, M.A. and Baggio, J.A. *Using Agent-Based Models to Compare Behavioral Theories on Experimental Data: Application for Irrigation Games*. Paper at the 2015 Biennial Global Conference of the International Association for the Study of the Commons, Edmonton, Alberta, Canada, May 25-29.

- 2014** Baggio, J.A., Galafassi D., Bodin, Ö., Janssen M.A., Schoon M.L.. *Social-Ecological Connectivity in the Lab*. Paper at the 2014 Resilience Conference, Montpellier, France (4-8 May).

Burnsilver, S., Baggio, J.A., DeDomenico, M., Arenas, A., Kofinas, G. (2014) *Multiplexity in food sharing and cooperative networks: Implications for household vulnerability in the Alaskan North*. Paper at the 2014 Resilience Conference, Montpellier, France (4-8 May)

Baggio, J.A., Nelson, H. (2014) *Linking social networks to opinion formation: how social networks influence social opposition to large infrastructure development in Southern California*. Paper at the 2014 Resilience Conference, Montpellier, France (4-8 May)

Sayles, J., Baggio, J.A. (2014). *A social-ecological approach to estuary restoration planning: integrating social networks into landscapes*, 2014 Salish Sea Ecosystem Conference, Seattle, Washington, USA (April 30 – May 2).

- 2013** Baggio, J.A.. (2013). *Synchronization of Management Strategies*. Paper at the 2013 Computational Social Science Society of America Annual Conference, Santa Fe, New Mexico, USA (22 – 25 August).

Schoon, M.L., Baggio, J.A., Salau, K. & Janssen, M. (2012). *Modeling Decision-making across Habitat Patches: Insights on Large-Scale Conservation Management*. Paper at the 2012 Computational Social Science Society of America Annual Conference, Santa Fe, New Mexico, USA (18 – 21 September).

- 2011** Salau, K., Schoon, M. L., Baggio, J. A., & Janssen, M. (2011). *Assessing the role of connectivity and dispersal in interacting species dynamics*. Paper at the 2011 Computational Social Science Society of America Annual Conference, Santa Fe, New Mexico, USA (9 – 12 October).

Baggio, R., & Baggio, J. A. (2011). *Experiencing information asymmetries in tourism*. Paper at the 4th Advances in Tourism Marketing Conference (ATMC), Maribor, Slovenia (6-9 September).

Salau K., Baggio J. A., Schoon M.L., & Janssen, M. A. (2011). *Management and Dynamics in a Predator-Prey Metapopulation*. Paper at the Resilience Conference, 2011, Arizona State University, Tempe, USA (11 – 16 March, 2011)

Baggio, J.A. (2011). *Multiple managers and heterogeneous landscapes: an integrated social-ecological network modelling approach*. Paper at the Resilience Conference, 2011, Arizona State University, Tempe, USA (11 – 16 March, 2011)

2009 Baggio, J. A., Schoon, M. L., Salau, K., & Janssen, M. A. (2009). *Managing Networked Landscapes*. Paper at the 2009 North American Association for Computational Social and Organization Sciences Annual Conference, Arizona State University, Tempe, USA (23-24 October, 2009).

Baggio, J. A., & Papyrakis, E. (2009). *The Curse of Natural Resources: Ethnic Fractionalization vs Polarization*. Paper at the 8th International Conference of the European Society for Ecological Economics, Ljubljana, (29 June – 2 July).

Baggio, J. A., & Papyrakis, E. (2009). *Ethnic Diversity, Property Rights and Natural Resources*. Paper at the European Association of Environmental and Resource Economists 17th Annual Conference, Amsterdam (24 - 27 June 2009),

Baggio, J. A., Salau, K., Bodin, Ö., Janssen, M. A., & Schoon, M. L. (2009). *Landscape connectivity, patch centrality and predator-prey population dynamics*. Paper at the The Center for the Study of Institutional Diversity's weekly Wednesday afternoon lecture series, Arizona State University, Tempe, USA (29 April).

Teaching

University of Central Florida

Graduate Level:

- Political Network Analysis POS 6729 (Spring 2021)
- Advanced Quantitative Methods in Political Research POS 7745 (Fall 2019, Fall 2020)
- Networks in political science, Theory and Applications POS-6938 (Spring 2019)

Undergraduate Level:

- Sustainability Online PUP 3204 (Fall 2019, Spring 2020, Fall 2020, Spring 2021)
- Sustainability PUP 3204 (Fall 2018, Spring 2019, Spring 2020)

Independent/Directed Research:

- Spring 2021: Haley Andrews (Undergraduate): developing an agent based model focusing on factors affecting pro-environmental behavior
- Fall 2020: Haley Andrews (Undergraduate): reviewing factors affecting pro-environmental behavior
- Fall 2020: Ozgur Kayaalp (Graduate): systematic literature review on migration and environmental change in the middle
- Summer 2020: Jennifer Joel (Graduate): on building a dataset and perform analysis to assess the effects of conflict and environmental change on women empowerment in the Chad Region.
- Spring 2020: Alex Potocki (Undergraduate): on the relation between the evolution of rare-earth trade networks and geopolitical events.
- Spring 2020: Logan Kerschner (Graduate): Work on advanced time-series analysis to assess synchronization and causality in air incursion time-series.
- Spring 2019: Felicia Gordian (Undergraduate): Work on the relationship between perceptions of sustainability and socio-demographic and economic factors that may shape such perception

Other Institutions:

Graduate Level:

- Research Approaches to Human-Environment Systems (Spring 2017) (Utah State University, Logan, UT, USA)

Mixed Graduate/Undergraduate Level:

- Modelling Human-Environment Systems (Fall 2015, Spring 2016, Fall 2016) (Utah State University, Logan, UT, USA)

Undergraduate Level:

- Quantitative Assessment of Environmental and Natural Resource Problems (Fall 2017 – Utah State University, Logan, UT, USA)
- Social Simulations (co-taught with Marco Janssen) (Spring 2014, Spring 2015) (Arizona State University, Tempe, AZ, USA)
- Macroeconomics (Teaching Assistant) (Spring 2009, Spring 2010) (University of East Anglia, Norwich, UK)
- Introduction to Development Studies (Teaching Assistant) (Fall 2007, Fall 2008) (University of East Anglia, Norwich, UK)

Independent/Directed Studies:

- Spring 2018: Network analysis (non-evaluated) with Stan Rhodes and Gwendwr Meredith (Graduates) (Utah State University, Logan, UT, USA)
- Fall 2017: R for statistical analysis and modelling with Netlogo with Stan Rhodes (Graduate) (Utah State University, Logan, UT, USA)
- Fall 2017: Python for statistical analysis and modelling with Netlogo with Laurent Merchant (Graduate) (Utah State University, Logan, UT, USA)

- Spring 2016: Modelling food or fuel choices in Iowa with Michelle Arnold (Graduate) (Utah State University, Logan, UT, USA)
- Spring 2016: Modelling urban sprawl with Lindy Perry (Graduate) (Utah State University, Logan, UT, USA)

Honors Courses and Labs

- Honors Book Lab on Resilience in Social-Ecological Systems, Utah State University, Logan, UT, USA

Invited Lectures and short Courses - 8 - (4 since at UCF)

Since at UCF

- 2020: Course Level: Undergraduate: Course Title: Systems Thinking. Title of Lecture: From Networks to Social-Ecological Networks – online, (November 3), Arizona State University, Tempe, AZ, USA
- 2019: Course Level: Graduate: Course Title: Interdisciplinary Graduate Seminar. Title of Lecture: From individual, to communities: complex social-ecological feedbacks , (November 20) University of Central Florida, Orlando, FL, USA
- 2019: Course Level: Honors Undergraduate: Course Title: Introduction to Game Theory, ECO 4400H. Title of Lecture: Common Pool Resources and Complex Problem Solving , (October 19) University of Central Florida, Orlando, FL, USA
- 2019: Course Level: Graduate and Post-Graduate: Complex Network and Multilayer network lecture at the Master class on food-water and energy systems in a global economy. Northern Arizona University, Flagstaff, AZ, USA (May 13-16).

While at previous Institutions

- 2017: Course Level: Graduate students and faculty; Course Title: Network Analysis for Social-Ecological Systems, (Laboratorio Nacional de Ciencias de la Sostenibilidad, (December 4-8), Universidad Nacional Autonoma de Mexico, Mexico City, Mexico.
- 2014: Course Level: Undergraduate; Course Title: System Thinking; Guest Lecture on Complex Systems and Agent Based Models (October), Arizona State University, Tempe, AZ, USA.
- 2013: Course Level: Undergraduate; Course Title: System Thinking; Guest Lecture on Complex Systems and Modelling; Guest Lecture on Agent Based Models (October), Arizona State University, Tempe, AZ, USA.
- 2012: Course Level: Graduate and Post-PhD: Lectures on:
 - Comparing different modelling approaches (system dynamics vs agent based models)
 - Modelling decision making in complex ecological systems
 - Representing synthetic population and social networks (with Ingrid Van Putten)
 (July), IMBER ClimEco3 Summer School, Ankara, Turkey.

Advising and Mentoring

Postdoctoral Research Associates

Dr. Joshua Lambert is working on the commons synthesis project as well as on analysing policy documents to assess the co-evolution of natural disasters and policies in the gulf of mexico region.

Dr. Graham Epstein is working on the Commons Synthesis Projects for advancing the understanding of institutions and their role in our ability to manage natural resources and adapt to change.

Graduate Students

Jennifer Joel (chair, PhD in security studies),

Mrs Joel is working on migration, climate change and security as well as conflict and cooperation in groups

Devyn Escalanti (preliminary co-chair with Dr. Powell),

Mrs Escalanti is working on the relationship between epidemics and conflict in the sub-Saharan African context.

Committee member:

- Erika Ricci (Security Studies Program)
- Veronica Maxwell (Security Studies Program)
- Ozgur Kayaalp (Security Studies Program)
- Frida Bahja (Rosen College of Hospitality)
- Bruce Miller (Industrial Engineering)
- MA Lux Miranda (Industrial Engineering)

Utah State University, Logan, USA

- Stanley Rhodes (committee member (ex Chair)), PhD in Environment and Society,
- Carmen Calzado (committee member (ex co-Chair with Mark Brunson), PhD in environment and society;

Past Students (my role in parenthesis)

Utah State University

- 2019: Gwendwr Meredith (committee member) – PhD in Human Dimensions of Ecosystem Science and Management
- 2019: Ryan James (committee member) – MS in Water Resources Engineering
- 2018: Riana Gayle (co-Chair with Jordan Smith) – MS in Ecology
- 2018: Lyndi Perry (committee member) – MS in Landscape and Urban Planning
- 2018: Jeffrey Height (committee member) – MS in Watershed Sciences, Utah State University,
- 2018: Jose Camilo Fagua (committee member) – PhD in Wildland Resources, Utah State University
- 2016 – 2018 Samantha Marie Nabity – Major in Anthropology, (Supervisor) – Undergraduate Research Assistant. Samantha presented a paper at a major international conference (XVI Biennial IASC Conference).
- 2016 – 2017 Tam Nguyen – PhD in Computer Science, (Supervisor) – Graduate Research Assistant
- 2016 – 2017 Erica Hawvermale – Major in Anthropology, (Supervisor) – Undergraduate Research Assistant.

Service

University, College and Departmental Service

University of Central Florida, Orlando, FL

University Level:

- 2020: Part of the curriculum development team for an in fieri Master degree in Sustainable Development in partnership with the Sustainable Development Goal Academy.
- 2019-2020 Leading the development of a new Certificate in Network Analysis and Applications in collaboration with the Department of Computer Science and the School of Public Administration.
- 2019: Judge at the Graduate Poster Competition for the 16th Annual Graduate Research Forum
- 2019: Reviewer for Limited Submission Internal Competition for ORC (for proposal to be submitted at the Department of Defense)

Department Level:

- 2020-Present: PhD Program and Planning Committee
- 2020-Present: Strategic Planning Committee
- 2019-2020: Peer Evaluation Committee
- 2018-2020: PhD Student Success Committee
- 2018-2020: Computer and Technology Committee

Utah State University, Logan, UT

University Level:

- Spring 2017: Honors' program admission committee, Utah State University

College Level:

- Spring 2017: Curricular subcommittee, College of Natural Resources, Utah State University

Department Level:

- Fall 2017: Graduate studies curriculum committee, Department of Environment and Society, Utah State University
- 2016-2017: Hiring committee member for the Department of Environment and Society, Utah State University

International / Discipline Service

- 2021 - Associate/Subject editor, Ecology and Society.
- 2020 - Reviewer for the German Academic Exchange Service (DAAD) proposals for postdoctoral funding
- 2020 – Evaluation of research, service, outreach and teaching for the 5-year assessment of research chair for the South Africa National Research Foundation (NRF)
- 2019 - Reviewer for the Swiss National Science Foundation, Switzerland
- 2019 - Reviewer for the Natural Science and Engineering Research Council (NSERC), Canada
- 2019 - Reviewer for the New Hampshire Sea Grant program, NH, USA
- 2018 - Evaluation of research output and standing for a peer research for the South Africa's National Research Foundation (NRF)
- 2018 - SESYNC Mentor invitation (competitive mentorship program, in which mentors apply and are selected based on interdisciplinary research outputs and ideas).

Committee member and session organization and chairing at Conferences:

- 2020 Organizer: Roundtable discussion on the role of cognitive ability in managing common pool resources and in social-ecological systems, CBIE Seminar Series, Arizona State University Online (November 2nd).
- Co-organizer of a Half Day workshop: Integrating Psychological Theory and Environmental Social Science, at the 3rd IASC Workshop, Tempe, AZ, USA (March 11-13)
- 2019 Session Chair and Convener: Sustaining coastal systems: challenges and (opportunities) at the AESS conference, Orlando, FL, USA (June 26-29)
- Track program committee for The Environmental and Sustainability Applications track at the 2019 Winter Simulation Conference, National Harbor, MD, USA (December 8-11)
- 2017 Track program committee for The Environmental and Sustainability Applications track at the 2017 Winter Simulation Conference, Washington, DC, USA (December 11-14)
- Session Chair and Convener: Social Tipping Points at the II Conference of the program on ecosystem change and society, Oaxaca, Mexico (November 7-10)
- Session Chair and Convener: Social-Ecological Networks current and future research frontiers for Resilience 2017, Stockholm, Sweden (August 21-24)
- Co-organizer with Orjan Bodin of a workshop on social-ecological networks. Stockholm (August 20th).
- 2016 Track program committee for The Environmental and Sustainability Applications track at the 2016 Winter Simulation Conference, Washington, DC, USA (December 11-14)
- 2015 Session Organizer: Schoon, M.L., Baggio J.A., Anderies, J.M., Janssen M.A.. The Robustness of Coupled Infrastructure Systems and Complexity: Satellite session at the the 2015 Conference on Complex Systems, Tempe, AZ, USA (28 September – 2 October)
- Session Organizer: Hodbod, J., Baggio, J.A., Milkoreit, M., Schoon, M.L.. Concepts, Methods and Measurements of Social Tipping Points: Satellite session at the 2015 Conference on Complex Systems, Tempe, AZ, USA (28 September – 2 October)
- 2014 Session Chair and Convener: Baggio, J.A., Burnsilver S., Bodin, Ö. Networks and Cooperation: are social network characteristics generalizable or specific to the environment in which they are embedded? At the 2014 Resilience Conference, Montpellier, France (4- 8 May)

Reviewer for the following journals (in alphabetical order)

Ambio, Biological Conservation, Biological Invasions, CoGen Social Science, Cognition, Earth's Future, Ecological Applications, Ecological Economics, Ecological Modelling, Ecology and Society, Ecosystems, Ecosystems and People, Environmental Research Letters, EPJ Data Science, Global Environmental Change, Heliyon, International Journal of the Commons, Journal of Applied Ecology, Journal of Cleaner Production, Journal of Computational Social Science, Journal of Destination Marketing & Management, Journal of Environmental Management, Journal of Environmental Research, Journal of Happiness Studies, Journal of Sustainable Tourism, Journal of Travel Research, Journal of Water Resources Planning and Management, Land, Landscape and Urban Planning, Landscape Ecology, Methods in Ecology and Evolution, Ocean and Coastal Management, People and Nature, People and Nature, Physics Review Letters A, PlosOne, Proceedings of the National Academies of Sciences (PNAS), Policy Studies Journal, Proceedings of the Royal Society A, Proceedings of the Royal Society B, Regional Environmental Change, Regulation and Government, Royal Society Interface, Science of the Total Environment, Scientific Reports, Social Indicators Research, Social Science Research, Society and Natural Resources, Sustainability, Tourism and Hospitality, Utilities Policy, WinterSim16, WinterSim17, WinterSim18, WinterSim19, World Development

Professional Society Membership

- International Association for the Study of the Commons – Co-Founder of the Behavior and Cognition section.
- Complex Systems Society
- Society for Conservation Biology
- Red de Socio-ecosistemas y sustentabilidad (<http://redsocioecos.org>)