

Stefani A. Crabtree, Ph.D.

CONTACT INFORMATION

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 Utah State University
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RESEARCH INTERESTS

Computational social science; Human Behavioral Ecology; food webs; coupled human-natural systems; human dimensions of climate change; complex adaptive systems; network science (methods, theories, applications); agent-based modeling.

APPOINTMENTS

Current

- Assistant Professor in Social-Environmental Modeling, Department of Environment and Society, College of Natural Resources, Utah State University

Professional and International Positions

- ASU-SFI Center for Biosocial Complex Systems Fellow, The Santa Fe Institute
- Research Associate, Crow Canyon Archaeological Center
- Fellow, Centre de Recherches Interdisciplinaires, Paris France
- Research Associate, Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage
- Visiting Research Scholar, the Levin Lab at Princeton University Ecology & Evolutionary Biology
- Board of Directors, the Coalition for Archaeological Synthesis
- Board of Directors, NOMAD Science Mongolia

past

- Post-doctoral scholar, The Pennsylvania State University (Jan 2017-December 2018)
- Researcher, Laboratory for Social Minds, Indiana University (2016)
- Research Fellow, Department of Anthropology, Washington State University (2009-2016)
- Teaching Fellow, Department of Anthropology, Washington State University (2012-2016)

EDUCATION

- Ph.D. Archéologie, Territoires, Environnement Université de Franche-Comté, Besançon, Franche-Comté, France. February, 2017
- Ph.D. Department of Anthropology, Washington State University, Pullman, WA. December, 2016
- M.A. Department of Anthropology, Washington State University, Pullman WA. 2012
- B.A. Department of Anthropology, Scripps College, Claremont, CA. *Minor: French.* 2004

MAJOR FELLOWSHIPS AND GRANTS (PI or co-PI)

Grants Received

- 2022-2027 From the Desert to the Sea: Managing Rock Art, Country and Culture, Australian Research Council. (Jo McDonald Senior PI). \$4.6 million AUD. Grant ID # LP200300886.
- 2021-2023 Complexity Science for the Study of the Human Past Research Collaboration Network. University of Aarhus, Denmark. (Co-PI). 288,000 DKK
- 2020-2022 John Templeton Foundation. Progress in Complexity Science: Three Research Syntheses from the Santa Fe Institute. Grant ID # 61988. (Jennifer Dunne, Senior PI) \$173,304.
- 2020-2023 The National Geographic. Preserved in the Permafrost: Lives of the Mongol Elite. (Co-PI). \$30,000.
- 2020-2025 Netwerk voor Agent-gebaseerd modelleren van Sociaal-ecologische systemen in Archeologie (NASA). Scientific Research Networks, Flanders Research Foundation. (Co-PI). €100,000.
- 2018-2023 Coalition for Archaeological Synthesis. The ArchaeoEcology Project (PI). \$50,000.
- 2017 Rust Family Foundation Grant. The Northern Mongolia Archaeology Project (PI). \$5000.
- 2015-2019 National Science Foundation. Adapting Subsistence Regimes to the Roof of the World: A case study from the Jiuzhaigou National Park. (Jade d'Alpoim Guedes, Senior PI). \$195,536.
- 2010-2015 National Science Foundation Graduate Research Fellowship (PI). \$129,000.
- 2013-2014 Chateaubriand Fellowship Program, Humanities and Social Science (PI). €7500.
- 2013-2014 National Science Foundation Graduate Research Opportunities Worldwide (PI). \$5000.
- 2004-2005 Thomas J. Watson Fellowship (PI). \$22,000.

Grants Currently in Review or Preparation

- In Prep* The Dynamic Impacts of Environmental Change on Rangeland Ecosystems and Traditional Livelihoods in Transitional Zones. National Science Foundation Anthropology Division. (PI). \$500,000.
- In Prep* Examining Food Webs Across the Northern Arctic. NSF Arctic Research Opportunities. (Co-PI). \$500,000.
- Submitted* Examining the (Geo)Physical Limits of Human Migration in Deep Time. National Science Foundation. (PI) \$352,950.

Pending ARC Centre of Excellence for Indigenous and Environmental Histories.
Australian Research Council. Co-PI (Partner Investigator). \$92 million AUD.

PUBLICATIONS Citations: 480; H-index: 12; i10-index: 13

**Indicates corresponding author*

Peer-reviewed journal articles

- In Press* Zirou Qiu, Baltazar Espinoza, Vitor V. Vasconcelos, Chen Chen, Sara M. Constantino, **Stefani A. Crabtree**, Luojun Yang, Anil Vullikantia, Jiangzhuo Chen, Jörgen Weibull, Kaushik Basu, Avinash Dixit, Simon Levin, and Madhav Marathea.
“Understanding the co-evolution of mask-wearing and epidemics : a network perspective.” Submitted to *Proceedings of the National Academy of Sciences*.
- 2022 Jennifer G. Kahn, Abigail Buffington, Claudia Escue, and **Stefani A. Crabtree**. “Social and Ecological Factors Effect Long-Term Resilience of Voyaging Canoes in Pre-Contact Eastern Polynesia: a Multiproxy Approach from the ArchaeoEcology Project.” *Frontiers in Ecology and Evolution*. 9:942.
<https://doi.org/10.3389/fevo.2021.750351>
- 2021 **Crabtree, Stefani A.**, Devin A. White, Corey J. A. Bradshaw, Frédérik Saltré, Alan N. Williams, Robin J. Beaman, Michael I. Bird, Sean Ulm. “Landscape rules predict optimal super-highways for the first peopling of Sahul.” *Nature: Human Behaviour*. 5: 1303-1313. <https://dx.doi.org/10.1038/s41562-021-01106-8>
- 2021 **Stefani A. Crabtree**, Sarah C. Klain. “Weaving Frames of Knowledge.” *Australian Archaeology*. 87:3, 307-308, DOI: [10.1080/03122417.2021.1991399](https://doi.org/10.1080/03122417.2021.1991399)
- 2021 **Crabtree, Stefani A.**, Jennifer A. Dunne, Spencer Wood. “Ecological Networks and Archaeology.” *Antiquity*. 95 (381): 812-825.
- 2021 Bird, Michael I., **Stefani A. Crabtree**, Jordahna Haig, Sean Ulm, Christopher Wurster.
“A Global Carbon and Nitrogen Isotope Perspective on Modern and Ancient Human Diet.” *Proceedings of the National Academy of Sciences*. 118(19).
- 2021 Verhagen, J. W. H. Philip, **Stefani A. Crabtree**, Hans Peeters, Daan Raemaekers.
“Reconstructing human centered interaction networks of the Swifterbant culture in the northwestern Netherlands: An example from the ArchaeoEcology Project.” *Applied Sciences*. 11(11):4860.
- 2021 Bradshaw, Corey J., Justin M. Chalker, **Stefani A. Crabtree**, Bart A. Eijkelkamp, John A. Long, Justine R. Smith, Kate Trinajstic, Vera Weisbecker.

- “A fairer way to compare researchers at any career stage and in any discipline using open-access citation data.” *PLoS One*. 16(9): e0257141. <https://doi.org/10.1371/journal.pone.0257141>
- 2021 Zachary D. Miller, Wayne Freimund, **Stefani A. Crabtree** and Ethan P. Ryan. “No Limits of Acceptable Change: A Proposed Research Framework for Informing Visitor Use Management in the Context of Cultural Resources.” *Sustainability*, 13(1):377. <https://doi.org/10.3390/su13010377>
- 2019 **Crabtree, Stefani A.**, Benjamin Davies, Iza Romanowska, Kathryn Harris. “Outreach in Archaeology with Agent-based Modeling.” *Advances in Archaeological Practice*, 7(2): 194-202. doi:10.1017/aap.2019.4
- 2019 **Crabtree, Stefani A.**, and Lewis Borck. Social Networks for Archaeological Research. *Encyclopedia of Global Archaeology*. C. Smith (Ed.) Springer, NY 2019 Edition. 2019. doi:10.1007/978-3-319-51726-1_2631-2
- 2019 **Crabtree, Stefani A.**, Douglas W. Bird, Rebecca Bliege Bird. “Subsistence Transitions and the Simplification of Ecological Networks in Western Australia.” *Human Ecology*. 2019. <https://doi.org/10.1007/s1074>
- 2019 Romanowska, Iza, **Stefani A. Crabtree**, Benjamin Davies, Kathryn Harris. Agent-based Modeling for Archaeologists. Part 1 of 3. *Advances in Archaeological Practice*, 7(2), pp. 178-184. doi:10.1017/aap.2019.6
- 2019 Benjamin Davies, Iza Romanowska, Kathryn Harris, **Stefani A. Crabtree**. Combining Geographic Information Systems and Agent-Based Models in Archaeology: Part 2 of 3. *Advances in Archaeological Practice*, 7(2), pp. 185-193. doi:10.1017/aap.2019.5
- 2018 Moritz, Mark, Roy Behnke, Christine Beitzl, Rebecca Bliege Bird, Rafael Chiaravalloti, Julia K. Clark, **Stefani A. Crabtree**, Sean Downey, Ian M. Hamilton, Sui Chian Phang, Paul Scholte, James Wilson. *Emergent Sustainability in Open Property Regimes. Proceedings of the National Academy of Sciences*, 115(51)12859-12867.
- 2017 **Crabtree, Stefani A.**, Lydia J. S. Vaughn, Nathan T. Crabtree “Reconstructing Ancestral Pueblo food webs in the southwestern United States.” *Journal of Archaeological Science*, 81:116-127.
- 2017 **Crabtree, Stefani A.**, R. Kyle Bocinsky, Paul L. Hooper, Susan C. Ryan, and Timothy A. Kohler. “How to Make a Polity (in the Central Mesa Verde Region).” *American Antiquity*, 82(1), 71-95.
- 2016 D’alpoim Guedes, Jade, **Stefani A. Crabtree**, R. Kyle Bocinsky, Timothy A. Kohler “21st Century Approaches to Ancient Problems: Climate and Society.”

Proceedings of the National Academy of Sciences, 113(51), 14483-14491; doi: 10.1073/pnas.1616188113.

- 2016 **Crabtree, Stefani A.**, and Benjamin A. Bellorado “Using Cross-Media Approaches to Understand Invisible Industry: How Cotton Production Influenced Pottery Designs and Kiva Murals in Cedar Mesa.” *Kiva*, 82(2), 174-200.
- 2016 **Crabtree, Stefani A.** “Simulating Littoral Trade: Modeling the trade of wine in the Bronze to Iron Age transition in Southern France.” *Land* **2016**, 5(1), 5; doi:10.3390/land5010005.
- 2015 Clark, Julia K., **Stefani A. Crabtree** “Examining Social Adaptations in a Volatile Landscape in Northern Mongolia Via the Agent-Based Model Ger Grouper.” *Land* **2015**, 4(1), 157-181; doi:10.3390/land4010157.
- 2015 **Crabtree, Stefani A.** “Inferring Ancestral Pueblo Social Networks from Simulation in the Central Mesa Verde” *Journal of Archaeological Method and Theory*: Volume 22, Issue 1 (2015), Page 144-181. DOI 10.1007/s10816-014-9233-8
- 2013 Cockburn, Denton, **Stefani A. Crabtree**, Timothy A. Kohler, R. Kyle Bocinsky “Simulating Social and Economic Specialization in Small-scale Agricultural Societies.” *Journal of Artificial Societies and Social Simulation*. Vol 16(5).
- 2013 **Crabtree, Stefani A.** and Ludovic Malécot “The Solitary Goddess: Evidence of Roman and Gaulish syncretism in the *Déesse de l’Abondance* of Rom, France.” *The European Archaeologist*. Vol 39, p. 7-14.
- 2012 **Crabtree, Stefani A.** and Timothy A. Kohler “Modeling Across Millennia: Interdisciplinary Paths to Ancient Socio-natural Systems” *in* special issue Modeling Across Millennia: Interdisciplinary Paths to Ancient Socio-natural Systems. *Ecological Modelling*. Vol 241, p. 2-4.
- 2012 Timothy A. Kohler* R. Kyle Bocinsky, Denton Cockburn, **Stefani A. Crabtree**, Mark Varien, Ken Kolm, Shaun Smith, Scott Ortman, and Ziad Kobi “Modelling Prehispanic Societies in their Ecosystems” *in* special issue Modeling Across Millennia: Interdisciplinary Paths to Ancient Socio-natural Systems. *Ecological Modelling*. Vol 241, p. 30-41.

Peer Reviewed Articles in Review

- In Review* **Crabtree, Stefani A.**, Jennifer G. Kahn, Rowan Jackson, Jacob Earnshaw, Iain McKechnie, Philip Verhagen, Spencer A. Wood, Patrick V. Kirch, Jennifer A. Dunne, Andrew Dugmore.

“Why are sustainable practices often elusive? The role of information flow in the management of networked human-environment interactions.” Submitted to *Global Environmental Change*.

In Review Ross, Cody, Monique Borgerhoff Mulder, Jennifer Smith, Eric Alden Smith, Sergey Gavrillets, Kim Hill, Anne Pusey, Susan Perry, Claire El Mouden, Daniel Nettle, **Stefani A. Crabtree**, et al.
“Small sex differences in reproductive skew in humans compared to non-human mammals.” Submitted to *Proceedings of the National Academy of Sciences*.

In Review Wolpert, David H., Michael H. Price, **Stefani A. Crabtree**, Timothy A. Kohler, Jürgen Jost, James Evans, Peter F. Stadler, Hajime Shimao, Manfred D. Laubichler. “The Past as a Stochastic Process.” Submitted to *Nature Human Behaviour*.

In Review **Stefani A. Crabtree**, Jennifer A. Dunne. “Toward a Science of Archaeoecology”. Submitted to *Proceedings of the National Academy of Sciences*.

Books (peer reviewed)

2021 Romanowska, Iza, Colin D. Wren and **Stefani A. Crabtree**. Agent-based modeling for archaeology: simulating the complexity of societies. *SFI Press*. Santa Fe, NM. ISBN-13: 978-1947864252. <https://www.sfi.org/books/agent-based-modeling-archaeology>

In Preparation **Crabtree, Stefani A.** Thinking Through Archaeological Complexity. *Routledge Press*. Forthcoming 2023.

Peer reviewed Book chapters

2021 **Crabtree, Stefani A.** “What History Can Teach Us about Resilience?” The Complex Alternative: Complexity Scientists on the COVID-19 Pandemic. Geoffrey West and David Krakauer, editors. The Santa Fe Institute Press, Santa Fe, NM.

2021 **Crabtree, Stefani A.** and Jennifer A. Dunne. “Food Webs.” The Oxford Handbook of Archaeological Networks. Matthew A. Peeples, Jessica Munson, Barbara Mills and Tom Brughmans, Editors. Oxford University Press, Oxford, UK.

2021 **Crabtree, Stefani A.** The simulation of trading in the first Iron Age: a highly stylised model. Settling the World. Lena Sanders and Laure Nuninger, Editors. Presses Universitaires François Rabelais ; Paris, France.

- 2020 Dugmore, Andrew, Rowan Jackson, David Cooper, **Stefani Crabtree**, George Hambrecht, Megan Hicks, Viðar Hreinsson, Árni Daníel Júlíusson, Anthony Newton, Richard Streeter and Tom McGovern. “Abrupt *versus* slowly unfolding catastrophes- when the pace of change might help coping strategies, but does not.” In Going Forward by Looking Back: Archaeological Perspectives on Socio-ecological Crisis, Response, and Collapse, Felix Reide and Payson Sheets, Editors. Berghan Books, New York NY.
- 2018 **Stefani A. Crabtree**. La simulation des échanges au premier Age du Fer : un modèle très stylisé. pp. 229-234. Peupler la Terre: De la préhistoire à l'ère des métropoles. Presses Universitaires François Rabelais ; Paris, France.
- 2018 Kohler, Timothy A., **Stefani A. Crabtree**, R. Kyle Bocinsky and Paul Hooper “Sociopolitical Evolution in Midrange Societies: The Prehispanic Pueblo Case.” In The Emergence of Premodern States: New Perspectives on the Development of Complex Societies. Sabloff, JA and Sabloff, PLW, Editors. SFI Press, Santa Fe, NM.
- 2018 Laure Nuninger, Pierre Garmy, Thérèse Libourel, **Stefani A. Crabtree**, Jean-Luc Fiches, Jacques Ferber. Modéliser les mutations territoriales de l'Âge du Fer dans le midi de la Gaule (VIe-Ve siècles av. J.-C.). pp. 213-228. Peupler la Terre: De la préhistoire à l'ère des métropoles. Presses Universitaires François Rabelais ; Paris, France.
- 2018 Timothy A. Kohler, **Stefani A. Crabtree**. « Village and Polity Formation in Pueblo Societies: How Population Growth Channels Social Processes in Neolithic Societies ». Peupler la Terre: De la préhistoire à l'ère des métropoles. Presses Universitaires François Rabelais ; Paris, France.
- 2018 Nuninger, Laure, Lena Sanders, Timothy A. Kohler, **Stefani A. Crabtree** et al. Un cadre conceptuel générique pour décrire des transitions dans les systèmes de peuplement - Application à un corpus de douze transitions entre 70000 BP et 2050. Peupler la Terre: De la préhistoire à l'ère des métropoles. Presses Universitaires François Rabelais ; Paris, France.
- 2012 Kohler, Timothy A., R. Kyle Bocinsky, **Stefani A. Crabtree** and Ben Ford. *Exercising the Model: Settlement Efficiency and Changes in Locational Practice, in Emergence and Collapse of Early Villages: Models of Central Mesa Verde Archaeology*. Cal Press. p. 153-164.

Book Reviews, Other publications and works

- 2021 **Crabtree, Stefani A.**, Al Williams, Corey Bradshaw, Devin White, Fred Saltré, Sean Ulm. We mapped the ‘super-highways’ the First Australians used to cross the ancient land. The Conversation. <https://theconversation.com/we->

[mapped-the-super-highways-the-first-australians-used-to-cross-the-ancient-land-154263](#)

- 2020 **Crabtree, Stefani A.**, Laurent Hébert-Dufresne. « Face aux changements, la transdisciplinarité : le cas des cryonoses. » *Magazine ACFAS*, 22 septembre 2020.
- 2020 **Crabtree, Stefani A.** Understanding the Deep Socioecological System of Beringia via Bathsheba Demuth's Floating Coast. *Current Anthropology* 61(5) October 2020.
- 2020 **Crabtree, Stefani A.**, and Evan A. Holt. Studying the Human Place in Food Webs. *Traditional Ecological Knowledge: National Parks Service*.
<https://www.nps.gov/subjects/tek/stefani-a-crabtree-phd-with-evan-a-holt-ph-d-student-both-of-utah-state-university.htm>
- 2019 **Crabtree, Stefani A.**, An Encyclopedia of complex systems. *Physics Today* 72(11). doi: <https://10.1063/PT.3.4344>
- 2018 **Crabtree, Stefani A.** *American Antiquity*. Review of: Connected Communities: Networks, Identity, and Social Change in the Ancient Cibola World. MATTHEW A. PEEPLES. 2018. The University of Arizona Press, Tucson. vii + 276 pp. (hardback).
- 2017 **Crabtree, Stefani A.** *Journal of Artificial Societies and Social Simulation*. Review of: Simulating Prehistoric and Ancient Worlds (Computational Social Sciences), Barceló, Juan A. and Castillo, Florencia Del (eds.). Springer-Verlag: Berlin. Vol 20(20):2017. <http://jasss.soc.surrey.ac.uk/20/2/reviews/2.html>
- 2012 **Crabtree, Stefani A** and Timothy A. Kohler *editors* Modeling Across Millennia: Interdisciplinary Paths to Ancient Socio-natural Systems. *Ecological Modelling*. August, 2012. Vol 241.
- 2009 **Crabtree, Stefani** *Healing Secrets of the South Pacific: An anthropologist discovers Samoan tinctures you can sample right at home*. March, "Natural Health Magazine", pp.89-90.
- 2008 SWCA Environmental Associates. *A Class III Cultural Resource Inventory for the Ryan Gulch 3-D Geophysical Exploration Project, Rio Blanco County, Colorado*. November, 2008.
- 2005 **Crabtree, Stefani** *Medicinal Matriarchs: Women and Traditional Medicine in Oceania and Asia*. Thomas J. Watson Foundation Final Report.

TEACHING EXPERIENCE, INSTRUCTOR OF RECORD

- Fall 2021: ENVS 6901: Introduction to Methodologies in Social Science, Utah State University
- Spring 2021: ENVS 6100/4100: Agent-based Modeling of Human Environment Systems, Utah State University
- Fall 2020: ENVS 6901: Introduction to Methodologies in Social Science, Utah State University
- Spring 2020: ENVS1350: Introduction to Environmental Science, Utah State University.
- Summer 2019: Complexity and the Evolution of Societies, The Santa Fe Institute Complex Systems Summer School
- Summer 2018: Modeling Past Human Societies, The Santa Fe Institute Complex Systems Summer School
- Summer 2018: Agent-based Modeling and Computational Social Science, The Barcelona Super Computing Summer School. Barcelona, Spain.
- Spring 2018: Introduction to Agent-Based Modeling, The Pennsylvania State University
- Spring 2017: Agent-based modeling, an introduction. A 2-day workshop at the Computer Approaches in Archaeology Conference. Atlanta, GA.
- Fall 2016: Anthropology 130: Great Discoveries in Archaeology, Washington State University
- Anthropology 330: The Origins of Civilization, Washington State University
- Spring 2016: Anthropology 201: Art and Society, Washington State University
- Spring 2016: Agent-based modeling, an introduction. A 2-day workshop at the Computer Approaches in Archaeology Conference. Oslo.
- Fall 2015: Anthropology 201: Art and Society, Washington State University
- Summer 2015: Anthropology 201: Art and Society, Washington State University
- Spring 2015: Anthropology 130: Great Discoveries in Archaeology, Washington State University
- Summer 2013: Simulation multi-agents. A 3-day workshop at the Université de Franche-Comté, France.
- Spring 2013: Anthropology 101: General Anthropology (A Four Fields Approach), Washington State University
- Fall 2012: Anthropology 101: General Anthropology (A Four Fields Approach), Washington State University

GRADUATE STUDENT ADVISEES

- 2020-present Evan Holt, Ph.D. student. Utah State University.
- 2019-present Stan Rhodes, Ph.D. candidate. Utah State University.
- 2020-present Mariella Black, M.S. Student. Utah State University. Co-advisor w/Chris Leucke.

GRADUATE AND UNDERGRADUATE RESEARCH SUPERVISION

- 2017-2020 Richard Bankoff, Ph.D. student. The Pennsylvania State University. Ecological Dynamics of Madagascar.
- 2017-2018 Kevin Rosenfeld, Ph.D. student. The Pennsylvania State University. An agent-based model of the evolution of fertility signals in primates.
- 2017-2018 Sydney Bird, B.A. student. The Pennsylvania State University. Compiling food web data for Martu.
- 2016 Morgan Dock, B.A. student. Washington State University. Evidence for Blood in Paleolithic Cave Paintings.
- 2015 Colin Christiansen, M.A. student. Washington State University. Processes of Depopulation in Lattes, France: A study using ArcGIS.
- 2014 Carolyn Wason, B.A. student. Eastern University. Changing Pastoral Economies in Northern Mongolia: An ethnographic study from the Targan Nuur Archaeology Project.

INVITED SYMPOSIA & PLENARY

- 2021 BIOCHANGE Seminar, Aarhus University Center for Biodiversity Dynamics in a Changing World. December 8.
- 2021 The Center for the Dynamics of Social Complexity & NIMBioS Autumn Seminar and Webinar Series: Celebrating the 150th anniversary of The Descent of Man. “Modern Lessons of applying Socio-Environmental Modeling to the Archaeological Record.” November 16.
- 2021 SITE Santa Fe Public Lecture Series. “Human Migrations in Deep Time.” October 18.
- 2021 Humboldt Days: Human Biogeography and Understanding the Spatial Distribution of People, Cultures, and Languages. Netherlands. September 16.
- 2021 The Complexity of Sustainability: The Built Environment. April 8.
- 2021 Leibniz Institute for Resilience Research Mainz, Theorizing Resilience & Vulnerability in Ancient Studies. January 19.
- 2020 The College of William & Mary Colloquium Series. “Placing Humans in Past Ecosystems.” October 21.
- 2020 IMSET Workshop: Knowledge Gaps in Long-Term Human Ecodynamics, “Toward a Science of Archaeoecology.” September 13.

- 2020 The Stockholm School of Economics Corona Economic Research Network, “Mask Donations in the time of COVID.” September 3.
- 2020 The Princeton Theoretical Ecology Lab, “Using Archaeological Data to Reconstruct Ecosystems of the Past.” July 8.
- 2020 The Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage, “What Happened Next? Relatively Few ‘Super-Highways’ Directed the Initial Peopling of Sahul.” May 20.
- 2020 The Women in Network Science Seminar Series, “Using the Deep-Time of Archaeology to Understand Human-Environment Interactions.” May 13.
- 2020 The Santa Fe Institute Wednesday Online Lecture Series, “Examining Complex Socio-Ecological Systems in Australia.” March 18.
- 2020 Brigham Young University Visiting Scientist Seminar Series, “Using the Deep-Time of Archaeology to Understand Human-Environment Interactions.” March 14.
- 2020 Yale University, Center for the Study of American Politics, Computational Social Science Workshop. February 17.
- 2020 Takeda Studio, “Climate Change and Human Health.” February 10.
- 2019 Cambridge Centre for Computer and Digital Archaeology. “Using the Deep-Time of Archaeology to Understand Human-Environment Interactions.” Cambridge University, United Kingdom, May 14.
- 2019 Keynote. Socio-Environmental Dynamics over the Last 15,000 Years: The Creation of Landscapes. Kiel University, Germany, March 10.
- 2019 National Socio Environmental Synthesis Center. Annapolis, MD, February 11.
- 2018 Plenary. The Great Basin Anthropological Conference, Salt Lake City, U.K. November 8.
- 2018 Plenary. The Computational Approaches in Archaeology Conference, Edinburgh, U.K. October 26.
- 2018 Plenary. InterPlanetary Festival, Santa Fe Institute. July 7. Santa Fe, NM.
- 2018 Harvard University Center for the Environment, Cambridge MA. “Reconstructing Food Webs from Archaeological Sites.” July 30.

- 2018 Center on Social Dynamics and Policy, Brookings Institution, Washington DC. "Agent-based modeling to understand the past and future." April 10.
- 2018 Colorado State University, Fort Collins, CO. "How Environmental Interactions Shaped Ancestral Pueblo Social Dynamics." February 23.
- 2018 Michigan State University, East Lansing, MI. "How Environmental Interactions Shape Social Dynamics in Archaeological Systems." February 15.
- 2017 The University of Maryland, College Park, MD. "Examining Human Impacts on Complex Networks." December 13.
- 2017 The Santa Fe Institute, Santa Fe, NM. "How Complex Adaptive Systems Approaches shed light on the depopulation of Mesa Verde." October 25.
- 2017 The Pennsylvania State University, University Park, PA. "Reconstructing Ancestral Pueblo food webs in the southwestern United States." January 20.
- 2015 San Diego State University, San Diego, CA. "Cascading Effects and Social Consequences: Food webs in the Ancestral Pueblo Southwest." November 15.
- 2015 Washington University in St. Louis, MO. "Examining Ancestral Pueblo Trophic Networks." August 28.
- 2014 The Santa Fe Institute, Santa Fe, NM. "The Principles of Complexity: Life, Scale and Civilization III." Invited discussant and speaker; Jeremy Sabloff, David Krakauer Organizers. August 30.
- 2014 The Santa Fe Institute, Santa Fe, NM. "Global Human Ecodynamics Alliance Modeling." Invited discussant and speaker; Tim Kohler, Margaret Nelson Organizers. May 31.
- 2014 Pitzer College, Claremont, CA. "Ethnography, Archaeology and Adventure in Mongolia." May 2.
- 2014 University of Southampton, Southampton, U.K. "A Tale of Two Villages, or, How Food Exchange Led to Aggregation in the American Southwest." January 21.
- 2014 University of Cambridge, Cambridge, U.K. "Aggregation and Simulation in the American Southwest." January 17.
- 2013 The Santa Fe Institute, Santa Fe, NM. "The Principles of Complexity: Life, Scale and Civilization II." Invited discussant and speaker; Jeremy Sabloff, David Krakauer Organizers. August 1.

- 2013 Université de Franche-Comté, Besançon. “Introduction à la modélisation multi-agent dans Netlogo.” May 29.

SELECT MEDIA COVERAGE

- 2021 Ancient Australian ‘superhighways’ suggested by massive supercomputing study. Science Magazine. <https://www.science.org/content/article/ancient-australian-superhighways-suggested-massive-supercomputing-study>
- 2021 New research reveals long-term changes in human nutrition. Utah Public Radio. <https://www.upr.org/post/new-research-reveals-long-term-changes-human-nutrition#stream/0>
- 2021 Agent-based modeling for archaeology can simulate the complexity of societies. Phys.org <https://phys.org/news/2021-08-agent-based-archaeology-simulate-complexity-societies.html>
- 2020 How Aboriginal Hunting and ‘Cool Burns’ Prevent Australian Wildfires. Atlas Obscura. <https://www.atlasobscura.com/articles/how-to-stop-australian-wildfires>
- 2019 Aboriginal Hunters’ Fires Help Restore an Australian Desert. New York Times. <https://www.nytimes.com/2019/02/08/science/australia-aboriginal-fires-martu.html>
- 2018 Conservatism Took Hold Here 1000 years ago, until the people fled. <https://www.washingtonpost.com/news/speaking-of-science/wp/2018/06/01/conservatism-took-hold-here-1000-years-ago-until-the-people-fled>
- 2018 How a Medieval Society Withstood Nearly 60 Years of Drought. <https://www.theatlantic.com/science/archive/2018/05/how-a-medieval-society-survived-nearly-60-years-of-drought/559616/>
- 2017 Just One New Thing Can Jostle the Food Web. <http://www.futurity.org/food-webs-1402532-2/> 4/15/2017
- 2017 Food webs entangle humans in complex relationships with animals, crops and the environment. <https://phys.org/news/2017-04-food-webs-entangle-humans-complex.html> 4/10/2017
- 2017 Climate Change: Learning from the Past. <https://www.pastemagazine.com/articles/2016/12/computers-tracking-climate-change.html> 1/5/2017

- 2016 Computer Models Find Ancient Solutions to Modern Problems.
<https://news.wsu.edu/2016/12/20/computer-models-find-ancient-solutions-modern-problems/> 12/20/2016

CONFERENCE ACTIVITY

Podium and Poster

- 2019 **Crabtree, Stefani A.** The Deep-Time of Archaeology for Understanding the Interface of Human and Ecosystem Health. Paper in symposium at 47th annual Computation Approaches and Quantitative Methods in Archaeology International Conference. Krakow, Poland.
- 2019 **Crabtree, Stefani A.** Examining Resilience and Vulnerability Among Ancestral Pueblo Food Webs. Paper in symposium: Human Interactions, Biodiversity, and Socio-ecological Dynamics in Deep Time. American Association for the Advancement of Science. Washington, DC.
- 2018 **Crabtree, Stefani A.**, Rebecca Bliege Bird. Examining Environmental Resilience Through Coupled Human-Natural Systems: A Case from Western Australia. Paper in symposium at 117th annual meeting of the American Anthropological Association. San Jose, CA.
- 2018 Rosenfield, Kevin A., **Stefani A. Crabtree**, Mary K. Shenk, Mark Shriver, Julie White, James P. Higham, Nina Jablonski, David A. Puts. The evolution of fertility signals in primates: An agent-based modeling approach. Paper in symposium at 8th annual meeting of the European Society for the study of Human Evolution. Faro, Portugal. September 14.
- 2018 **Crabtree, Stefani A.**, Rebecca Bliege Bird. Using Food Web Models to Examine Desert Networks in the American Southwest and Western Australia. Paper in symposium at 84th Annual Society for American Archaeology Meetings. Washington, DC. April 12.
- 2017 Bliege Bird, Rebecca, **Stefani A. Crabtree**. We make Country, and Country makes us: Australian Aboriginal women as architects of social and ecological networks. Paper in symposium at 116th annual meeting of the American Anthropological Association. Washington, DC. December 1.
- 2017 **Crabtree, Stefani A.**, Timothy A. Kohler. Modeling Polity Growth among Ancestral Pueblo People in Mesa Verde. Paper in symposium at 83rd Annual Society for American Archaeology Meetings. Vancouver, BC. March 30.

- 2017 **Crabtree, Stefani A.** Agent-based models of Hierarchy. Paper in symposium at 45th Annual Computation Approaches and Quantitative Methods in Archaeology International Conference. Atlanta, GA. March 14.
- 2017 **Crabtree, Stefani A.** Analyzing Trophic Networks Among the Ancestral Pueblo. Paper in symposium at 45th Annual Computation Approaches and Quantitative Methods in Archaeology International Conference. Atlanta, GA. March 15.
- 2016 **Crabtree, Stefani A.** Agent-based modeling and complexity science: the next steps in Archaeological Theory? Paper in symposium at 44th Annual Computation Approaches and Quantitative Methods in Archaeology International Conference. Oslo, Norway, March 30.
- 2015 **Crabtree, Stefani A.** Assessing Network Connectance with the Assistance of Ethnography, Archaeology and Agent-Based Modeling. Paper in symposium at 114th Annual Society for the American Anthropological Association Meetings. Denver, CO., November 16.
- 2015 **Crabtree, Stefani A.** Understanding Vulnerability and Resilience Through Archaeological Foodwebs. Paper in symposium at Conference on Complex Systems '15. Phoenix, AZ., September 28.
- 2015 **Crabtree, Stefani A.,** Simon DeDeo. How Human Perception of the Environment Influences the Abandonment Process. Paper in Ignite at Conference on Complex Systems '15. Phoenix, AZ., September 28.
- 2015 **Crabtree, Stefani A.,** R. Kyle Bocinsky, Timothy A. Kohler. Hierarchy and Tribute Flow in the American Southwest. Paper in symposium at 80th Annual Society for American Archaeology Meetings. San Francisco, CA, April 16.
- 2015 Kohler, Timothy A., R. Kyle Bocinsky, **Stefani A. Crabtree.** The Effects of Temporal Coarse Graining on Inferred Patterns of Human Movement. Paper in symposium at 80th Annual Society for American Archaeology Meetings. San Francisco, CA, April 18.
- 2014 **Crabtree, Stefani A.,** R. Kyle Bocinsky, Timothy A. Kohler. Modeling Emergence of Complex Groups on Realistic Landscapes. Principles of Complexity: Life, Scales, and Civilization III, August 2014. Santa Fe Institute, Santa Fe, NM, August 25.
- 2014 **Crabtree, Stefani A.,** Nathan T. Crabtree and Lydia Smith. Food Webs in the Ancestral Pueblo Southwest. Global Human Ecodynamics Alliance Modeling. Working Group, Santa Fe Institute, Santa Fe, NM, May 30.
- 2014 Kohler, Timothy A., **Stefani A. Crabtree,** R. Kyle Bocinsky. Emergence of Leadership in Pueblo Societies: Evolutionary Public Goods Games and Corporate

- Group Conflict in Agent-Based Models. Global Human Ecodynamics Alliance Modeling. Working Group, Santa Fe Institute, Santa Fe, NM, May 31.
- 2014 **Crabtree, Stefani A.**, Timothy A. Kohler and R. Kyle Bocinsky. The Development of Social Groups, Leadership and Inequality in the Central Mesa Verde. Paper in symposium at 79th Annual Society for American Archaeology Meetings. Austin, TX, April 26.
- 2014 Harris, Kathryn, **Stefani A. Crabtree** and William Andrefsky. The Multifunctional Lives of Points and Flakes. 79th Annual Society for American Archaeology Meetings. Austin, TX, April 25.
- 2014 Timothy A. Kohler, Kelsey Reese, **Stefani A. Crabtree**, and R. Kyle Bocinsky. Prolegomenon: VEP II, Almost in Retrospect. Paper in symposium at 79th Annual Society for American Archaeology Meetings. Austin, TX, April 26.
- 2014 **Crabtree, Stefani**. Modélisation multi-agent d'un réseau d'échanges. TransMonDyn. Lyon, France, January 19.
- 2013 Kohler, Tim A., R. Kyle Bocinsky, **Stefani A. Crabtree**, Andrew Hlynka, Lokesh Patil, Paul Lovell Hooper, Ziad Kobti. Leadership, Territoriality and Conflict in an Agentized Pueblo World in Complex-Systems Approaches to Long-Term Change. Paper in symposium at 112th Annual American Anthropological Association. Chicago, IL, November 21.
- 2013 **Crabtree, Stefani**. Interactions des spheres culturelles étrusques, grecques et gauloises entre l'âge du bronze et l'âge du fer dans le sud de la France: modélisation multi-agent d'un réseau d'échanges. Journée des doctorants en archéologie de l'Université de Franche-Comté. Besançon, France, November 10.
- 2013 **Crabtree, Stefani**, Julia K. Clark. Ger Groupers: Examining Social Interactions to a Volatile Environment in Northern Mongolia, Paper in symposium at Complex Systems in Prehistoric Research Satellite Workshop. European Conference on Complex Systems, ECCS'13. Barcelona, Spain, September 19.
- 2013 **Crabtree, Stefani**. Exchange, Alliances and Aggregation in the Village Ecodynamics Project. Presented at the 2013 Village Ecodynamics Project Presentation and Discussion of Preliminary Results. Crow Canyon, Cortez, CO, July 29.
- 2013 Kohler, Tim, **Stefani Crabtree**, Michael Berry. The Secrets of the Southwest Solved by Walkative Tree Rings. Paper in symposium at 78th Annual Society for American Archaeology Meetings. Honolulu, HI, April 4.

- 2013 **Crabtree, Stefani.** Constructing Communities: Examining Household Aggregation in the American Southwest. 78th Annual Society for American Archaeology Meetings. Honolulu, HI, April 6.
- 2013 Harris, Kathryn, **Stefani Crabtree.** A Neutral Model of Stone Raw Material Procurement.. 78th Annual Society for American Archaeology Meetings. Honolulu, HI, April 5.
- 2012 **Crabtree, Stefani** *Invited Presenter.* Studying Archaeological Foodwebs in Ancestral Puebloan Society. Paper in symposium at CUNY Human Ecodynamics Research Center 2012 Open Workshop in Sustainability Science and Education. New York, NY, October 15.
- 2012 **Crabtree, Stefani.** Exchange, Alliances and Aggregation on the Colorado Plateau. 77th Annual Society for American Archaeology Meetings. Memphis, TN, April 22.
- 2012 Reese, Kelsey M., R. Kyle Bocinsky, Kay E. Barnett, **Stefani A. Crabtree**, Elise E. Alonzi, Andrew R. Steier, Donna M. Glowacki, Timothy A. Kohler. Large, Aggregated Villages in Little Soda Canyon. 77th Annual Society for American Archaeology Meetings. Memphis, TN, April 21.
- 2012 **Crabtree, Stefani,** Lydia Smith, Timothy A. Kohler. “Trophic Interconnectedness in Southwestern Colorado: Studying Archaeological Food Webs in Ancestral Puebloan Society.” 64th annual American Association for the Advancement of Science. Vancouver, BC. February 18. *See also awards.*
- 2011 Donna Glowacki, Timothy Kohler, Kay Barnett, R. Kyle Bocinsky, **Stefani Crabtree,** Kelsey Reese, Elise Alonzi, and Andrew Steier. Large Villages in Upper Soda Canyon: an update on VEP field work.” 2011 Pecos Conference, Arizona. August 7.
- 2011 **Crabtree, Stefani,** Denton Cockburn, Ziad Kobti, Timothy A. Kohler. Archaeology Time Machine: Witnessing Social Interactions on the Pueblo Landscape through Agent-based Simulation. Paper in symposium at 76th Annual Meeting Society for American Archaeology. Sacramento, CA. April 3.
- 2011 **Crabtree, Stefani.** “There is No Such Thing as a Free Lunch: Costly Exchange in the Village Ecodynamics Project: A Network Analysis.” 64th annual Northwest Anthropological Conference. Moscow, ID. April 22.
- 2011 Kohler, Timothy A., R. Kyle Bocinsky, **Stefani Crabtree,** and Denton Cockburn. The Village Ecodynamics Project: Modeling the Deep Pueblo Past. Paper in Symposium Modeling Across Millennia: Interdisciplinary Paths to Ancient Socionatural Systems. Paper in symposium at 177th AAAS Annual Meeting, Washington, D.C. February 20.

- 2010 **Crabtree, Stefani**, Timothy Kohler. Alliance Formation and Breakdown: Networks in the Village Ecodynamics Project. 109th Annual Meeting of the American Anthropological Association. New Orleans, LA. November 19.
- 2010 **Crabtree, Stefani**, Timothy Kohler, R. Kyle Bocinsky, Ben Ford. Modeling or Simulation? Assessing settlement patterns—real and modeled—in the VEP World. Paper in symposium at 75th Annual Meeting Society for American Archaeology, St. Louis, MO. April 15.

Symposia Organized

- 2019 How human interactions with biodiversity shape socio-ecological dynamics and sustainability. American Association for the Advancement of Science. Washington D.C., February.
- 2018 Beyond Centrality: Bridging Network Approaches through Archaeological Narratives. 83rd Annual Society for American Archaeology Meetings. Washington, D.C., April.
- 2017 Data, Theory, Methods, and Models. Approaching Anthropology and Archaeology through Computational Modeling. Computer Approaches and Quantitative Applications in Archaeology. Atlanta, GA, March 15.
- 2016 Complex systems simulations in archaeology. Can You Model That? Applications of Complex Systems Simulation to Explore the Past. Computer Approaches and Quantitative Applications in Archaeology. Oslo, Norway, March 30.
- 2015 Social networks, disasters, and human resilience: perspectives from the four fields of anthropology. 114th Annual Society for the American Anthropological Association Meetings. Denver, CO., November 16.
- 2015 Simulating Social Complexity to Understand the Archaeological Past. 80th Annual Society for American Archaeology Meetings. San Francisco, CA. April 16.
- 2012 Socionatural Systems in the Northern U.S. Southwest: A Village Ecodynamics Project II Progress Report. 77th Annual Society for American Archaeology Meetings. Memphis, TN, April 21.
- 2011 Modeling Across Millennia: Interdisciplinary Paths to Ancient Socio-natural Systems. AAAS Annual Meetings. Washington, DC. February 20.

Discussant

- 2018 Anthropology's contributions to interdisciplinary graduate training, research, and education. 117th annual meeting of the American Anthropological Association. San Jose, CA.
- 2018 The nuts and bolts of agent-based modelling for archaeological science. 84th Annual Society for American Archaeology Meetings, Washington, D.C. April.
- 2017 Modeling Agro-Pastoralism in Eurasia. 83rd Annual Society for American Archaeology Meetings, Vancouver, BC. April 1.

AWARDS, HONORS AND SMALL RESEARCH GRANTS

- 2022 Hyperion Research High Performance Computing Innovation Award.
- 2019 Latin American Conference on Complex Networks, Best Paper Award.
- 2017 Penn State Postdoctoral Association Award, \$250
- 2017 Arizona Archaeological and Historical Society Award, \$500
- 2017 Computer Approaches and Quantitative Methods in Archaeology Award, \$185
- 2016 Computer Approaches and Quantitative Methods in Archaeology Award, €500
- 2016 Graduate and Professional Student Association Travel Award, \$180
- 2015 3MT: Three Minute Thesis Competition, Social Sciences Division, Washington State University, \$1000
- 2015 The Wiley Research Exposition Student Poster Award, Social Sciences, First Place, \$400
- 2014 Graduate and Professional Student Association Travel Award, \$350
- 2014 Elaine Burgess Graduate Fellowship in Anthropology. Washington State University, \$500
- 2014 Arizona Archaeological and Historical Society Travel Award, \$350
- 2014 Bourse de Mobilité Internationales des Doctorantes, Université de Franche-Comté, €1300
- 2013 NeDiMAH Workgroup "Space and Time" Grant, €600
- 2013 Washington State University Office of Research and Graduate School *Cotutelle* Grant, \$1000
- 2013 Janet L. Friedman Memorial Fellowship in Archaeology. Washington State University, \$1000
- 2013 Washington State University Office of Research and Graduate School Summer Research Grant, \$1000
- 2013 Arizona Archaeological and Historical Society Travel Award, \$350

- 2012 Don Crabtree Scholarship in Lithic Technology, \$1000
- 2012 Nicholas Michael Scoales Scholarship in Archaeology, Washington State University, \$1000
- 2012 Washington State University Association for Faculty of Women Founder's Award, \$200
- 2012 American Association for the Advancement of Science, First Place, student poster competition, Social Sciences division, \$200
- 2011 São Paulo Advanced Science School on Ecological Networks Grant, \$2000
- 2011 Santa Fe Institute Complex Systems Summer School Scholarship, \$2000
- 2011 National Science Foundation Graduate Research Fellow International Travel Grant, \$1000
- 2010 Washington State University Graduate School Travel Grant. \$450
- 2010 NSF IGERT Program in Evolutionary Modeling. *Honorable Mention.*

SERVICE TO PROFESSION

Board Member: The Coalition for Archaeological Synthesis (2021-Present)
 NOMAD Science (2020-Present)

Membership Secretary: Computer Application and Quantitative Methods in Archaeology Society.

External Reviewer: American Antiquity, Antiquity, Journal of Archaeological Science, Advances in Archaeological Practice, PLoS One, Nature Human Behaviour, People and Nature, Current Anthropology

Workshop Organizer: Santa Fe Institute, School for Advanced Research, Crow Canyon Archaeological Center

University Service

2020-2021 Ecology Center Advisory Board, Committee Member, Utah State University.

2020-2021 Strategic Planning Committee, Department of Environment and Society, Utah State University.

2020 Undergraduate Scholarship Committee, Utah State University.

2020 Hiring Committee, Department of Anthropology, Utah State University.

2020 Hiring Committee, Department of Environment and Society, Utah State University.

2020 Hiring Committee, Santa Fe Institute.

2015 Organizer: Anthropology departmental colloquia, Washington State University.

2014 Organizer: TranMonDyn visit of twelve French researchers to WSU.

- 2013 Organizer: Washington State University “Common Table: Black History Month” with Thomas Norman De Wolf and Sharon Leslie Morgan, authors of Gather at the Table.
- 2012 Anthropology Graduate Organization Scholar committee chair, 2012-2013.
- 2010 Archaeology Student Representative to Faculty, 2010-2011.

ARCHAEOLOGICAL AND ETHNOGRAPHIC FIELD EXPERIENCE

United States: Southwest (Mesa Verde National Park), Rocky Mountain West (Colorado, Wyoming), Great Plains (North Dakota, South Dakota, Eastern Montana, Wyoming), Great Basin (Eastern Oregon, Eastern Washington)

Foreign: Mongolia, France, New Zealand, Samoa, India, Vietnam, Australia

FORMAL INTERNATIONAL EDUCATION AND SCIENTIFIC SCHOOLS

- 2012-2016 Université de Franche-Comté, Besançon, France.
- 2011 Santa Fe Institute Complex Systems Summer School. Santa Fe, NM.
- 2011 São Paulo Advanced Science School on Ecological Networks. São Paulo and São Pedro, Brazil
- 2005 Hanoi Language School, Vietnam.
- 2002-2003 Université Paris IV, Sorbonne, Paris, France.

LANGUAGES

English: Native

French: Fluent (speaking, reading and writing)

Spanish, Italian, Vietnamese, Mongolian: Speaking and reading knowledge

COMPUTER SKILLS

Languages: Java, R, NetLogo

Applications: ArcGIS, QGIS, Adobe Illustrator, Photoshop

Statistical Packages: R, Stata

Modeling Frameworks: RePAST (Java), NetLogo

Operating Systems: Mac OS X, Windows

PROFESSIONAL AFFILIATIONS

Society for American Archaeology

American Association for the Advancement of Science

American Anthropological Association

Arizona Archaeological and Historical Society

