







Andrew A. Zaffos, Ph.D.

✉ azaffos@arizona.edu

Employment History

- 2024 –  **Program Officer**, Division of Research, Innovation, Synergies, and Education, Geosciences Directorate, National Science Foundation.
- 2017 –  **Senior Research Scientist** Chief of Geoinformatics Division, Arizona Geological Survey, University of Arizona.

Education




- 2015 – 2017  **Postdoctoral Researcher, University of Wisconsin-Madison** Geoinformatics.
- 2010 – 2014  **Ph.D., University of Cincinnati** Geology.
- 2008 – 2010  **M.Sc. University of Georgia** Geology.
- 2004 – 2010  **B.A. College of William and Mary** Economics.

National Science Foundation Activities



- Programs  **GEO/RISE: Collaborations in Artificial Intelligence and Geosciences** Lead Program Officer.
-  **GEO/RISE: Geoscience Open Science Ecosystem** Supporting Program Officer.
-  **EDU/DRL: Data Science Corps** Supporting Program Officer.
-  **CISE/OAC: Training-based Workforce Development for Advanced Cyberinfrastructure** Supporting Program Officer.
-  **CISE/OAC: Cyberinfrastructure for Sustained Scientific Innovation** Supporting Program Officer.
-  **TIP/TI: Pathways to Enable Open-Source Ecosystems** Supporting Program Officer.
- Groups  **GEO-CI Working Group** Chair.
-  **AI and Education Working Group** Member.
-  **CI Steering Committee** Member.
-  **AI Steering Committee** Member.

Research Activities

Leading Role

- 2020 – 2025  **Projects for design, development, and maintenance of global fossil data systems** National Science Foundation, \$1,304,019.00
- 2018 – 2025  **Projects for digital data preservation of Arizona Geological Survey maps and publications** U.S. Geological Survey, \$1,007,740.48
- 2019 – 2023  **Projects for design, development, and maintenance of machine-learning and data systems for geothermal data** Department of Energy, \$662,102.34

Supporting Role

- 2022 – 2025  **Digital preservation of Arizona oil and gas well data** Arizona Department of Environmental Quality, \$612,509
- 2019 – 2026  **Projects for carbon utilization and storage in the Western United States** Department of Energy, \$498,537.00

Research Activities (continued)

2022 - 2024	■	Establishing a Virtual Arizona Earthquake Clearinghouse platform for a safer, more resilient Arizona Federal Emergency Management Agency, \$75,505.60
2017 - 2019	■	Flyover Country, a mobile app for geoscience outreach, data discovery, and visualization National Science Foundation, \$139,026.00
2016-2018	■	Arizona Military and Energy Land Use Plan Department of Defense, \$217,456
2015-2016	■	Leveraging the Paleobiology Database for Research, Education, Mentorship, and Interoperability National Science Foundation, \$71,673.00

Research Publications

Journal Articles

- 1 S. Boulila, S. Peters, D. Müller, A. Zaffos, J. Farkaš, and B. Haq, "A tectonically driven 60 million-year biogeochemical redox cycle paces marine biodiversity," *Nature Communications Earth and Environment*, in review.
- 2 B. D. Barnes, J. A. Sclafani, and A. Zaffos, "Dead clades walking are a pervasive macroevolutionary pattern," *Proceedings of the National Academy of Sciences*, vol. 118, no. 15, e2019208118, 2021.
- 3 A. Zaffos, S. Finnegan, and S. E. Peters, "Plate tectonic regulation of global marine animal diversity," *Proceedings of the National Academy of Sciences*, vol. 114, no. 22, pp. 5653–5658, 2017.
- 4 C. E. Brett, A. Zaffos, and A. I. Miller, "Niche conservatism, tracking, and ecological stasis," *Evolutionary theory: A hierarchical perspective*, pp. 282–306, 2016.
- 5 A. Zaffos and A. I. Miller, "Cenozoic latitudinal response curves: Individualistic changes in the latitudinal distributions of marine bivalves and gastropods," *Paleobiology*, vol. 41, no. 1, pp. 33–44, 2015.
- 6 A. Zaffos and S. M. Holland, "Abundance and extinction in ordovician–silurian brachiopods, cincinnati arch, ohio and kentucky," *Paleobiology*, vol. 38, no. 2, pp. 278–291, 2012.
- 7 S. M. Holland and A. Zaffos, "Niche conservatism along an onshore-offshore gradient," *Paleobiology*, vol. 37, no. 2, pp. 270–286, 2011.

Conference Proceedings

- 1 J. Thomka, L. J. Lacherez, A. Zaffos, and R. Lewis, "Are bifurcated pirasocrinid crinoid tegmen spines the result of a normal growth process or a pathological response to predation-induced damage? preliminary statistical results," in *Geological Society of America Abstracts*, 2024.
- 2 A. Zaffos, M. Camp, and C. Richardson, "Geomapmaker: The arizona geological survey's esri arcgis pro toolbar for efficiently developing gems-compliant geologic maps," in *Geological Society of America Abstracts*, 2022.
- 3 E. Currano, C. Cleveland, D. Contrearas, *et al.*, "Introducing pbot, the integrative paleobotany portal," in *Geological Society of America Abstracts*, 2021.
- 4 M. Conway, C. Liuzzo, A. C. Bartels, *et al.*, "Arizona geological survey's outsized impact on arizona's economy 2019," in *Geological Society of America Abstracts*, 2020.
- 5 B. D. Barnes, J. A. Sclafani, and A. Zaffos, "Zombies of the phanerozoic: How prevalent are dead clades walking?" In *Geological Society of America Abstracts*, 2019.
- 6 S. E. Peters, J. J. Czaplewski, J. M. Husson, and A. Zaffos, "Getting it all on the map: Aggregating and exposing geological information in a space-rock scaffolding," in *American Geophysical Union, AGU*, 2018.

- 7 E. Ito, A. Zaffos, V. Syverson, I. Ross, and S. Peters, "Identifying, cross-referencing, and extracting dark data using geodeepdive," in *Digital Data in Biodiversity Research Conference*, 2017.
- 8 S. Peters, V. Syverson, A. Zaffos, J. Husson, I. Ross, and J. Czaplewski, "Extending the reach and resolution of the paleobiology database with computational and data infrastructures," in *Geological Society of America Abstracts*, 2017.
- 9 A. Zaffos and S. E. Peters, "Reassessing our expectations for marine latitudinal biodiversity gradients in modern and ancient systems," in *Geological Society of America Abstracts*, 2017.
- 10 S. Hartman, D. Lovelace, B. Linzmeier, *et al.*, "Mechanistic physiological modelling and geographic distribution of late triassic tetrapods," in *Society of Vertebrate Paleontology Annual Meeting*, 2016.
- 11 A. Zaffos, S. E. Peters, and S. Finnegan, "Plate-tectonic regulation of biodiversity and continental endemism," in *Geological Society of America Abstracts*, 2016.
- 12 S. Peters, J. Husson, J. Czaplewski, and A. Zaffos, "Macrostrat: Towards a common data infrastructure to support deep time earth systems science," in *Geological Society of America Abstracts*, 2015.
- 13 A. Zaffos, S. Peters, J. Husson, and J. Czaplewski, "A comparative estimate of different biodiversity curves and comments on the links between rock availability and biodiversity," in *Geological Society of America Abstracts*, 2015.
- 14 A. Zaffos, S. Peters, and S. McMullen, "Empirical patterns of geographic range size expansion and contraction in marine invertebrates and terrestrial animals are well predicted by a random walk," in *Geological Society of America Abstracts*, 2015.
- 15 A. Zaffos, "A numerical model of gradient change and its implications for empirical data," in *Geological Society of America Abstracts*, 2014.
- 16 A. Zaffos, C. E. Brett, and A. I. Miller, "The persistence of ecological gradients: What do we really know?" In *Geological Society of America Abstracts*, 2014.
- 17 A. Zaffos, "Latitudinal preferences in cenozoic mollusks: A change from conservatism to dynamism with the passage of time," in *Geological Society of America Abstracts*, 2011.
- 18 A. Zaffos, "Brachiopod abundance and extinction in the late ordovician and early silurian: Background effects during a mass extinction," in *Geological Society of America Abstracts*, 2010.
- 19 A. Zaffos, M. Bonnette, M. Christie, J. Lunze, A. Pryor, and K. Layou, "Implications of beta: Diversity partitioning during miocene-pliocene background extinction," in *Geological Society of America Abstracts*, 2008.

Reports

- 1 M. Camp, C. Richardson, and A. Zaffos, *The AZGS GeoMapMaker toolbar: An ArcGIS Pro toolbar for efficiently developing GeMS-compliant geologic maps*. Arizona Geological Survey, 2022.
- 2 A. Zaffos, *A High-Throughput Computing Infrastructure to Generate Custom, Open Community Geothermal Datasets*. Arizona Geological Survey, 2022.
- 3 A. Zaffos, *Report on the deployment of the National Geothermal Data System 2.0*. USDOE Geothermal Data Repository (United States); Arizona Geological Survey, 2020.
- 4 A. Zaffos, *Velociraptor: fossil analysis. In R Package Version 1.1.0*. <https://CRAN.R-project.org/package=velociraptor>, 2019.
- 5 S. Peters, I. Ross, J. Czaplewski, *et al.*, *A new tool for deep-down data mining*. Eos, 2017.
- 6 C. E. Brett, A. Zaffos, G. C. Baird, and A. J. Bartholomew, *Fossil beds, facies gradients and seafloor dynamics in the Middle Devonian Moscow Formation, western New York*. New York State Geological Association, 2013, pp. 68–101.

Leadership

Community Service

- 2023 - 2024
 - **Geological Society of America: Geoinformatics Division**, Chair and Vice-Chair.
 - **Arizona Earthquake Clearinghouse**, Chair.
 - **Arizona Council on Earthquake Safety**, Member.
- 2018 - 2024
 - **Arizona Geographic Information Council**, Data Committee.
- 2018 - 2022
 - **Collaborative Database Effort for Geology**, Member.
- 2018 - 2020
 - **USGS Data Management Working Group for Geological Surveys**, Member.
- 2016 - 2018
 - **ePANDDA Working Group**, Member.
- 2017
 - **EarthRates Community Priorities and Planning**, Member.
 - **Data Refuge Madison**, Member.
- 2011 - 2013
 - **Boy Scouts of America, Geology Merit Badge Counselor**, Instructor.

Awards and Achievements

- 2023
 - **Staff Award for Excellence**, Awarded by the University of Arizona College of Science.