

## Sarah Sheffield

### *Curriculum Vitae*

Department of Earth Sciences  
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### Research Interests

My research interests focus on understanding the evolutionary history of life by using Paleozoic echinoderms as a model group. Current projects include: (1) understanding the homologous elements of echinoderm skeletons to better understand evolutionary relationships; (2) determining the phylogenetic relationships of major groups of echinoderms; (3) using phylogenetic hypotheses to uncover biogeographical, paleoecological and paleoclimatological patterns throughout the Paleozoic; (4) finding new localities of echinoderm fossils in under sampled geographic areas in order to better understand the diversity of life in the Paleozoic; and (5) identifying shifts needed in science to become a more inclusive and equitable community.

### Education

- 2017      Ph.D. Geology, The University of Tennessee, Knoxville. May 2017. Advisor: Dr. Colin Sumrall. Dissertation: Homology and Phylogeny of the Diploporita (Blastozoa: Echinodermata).
- 2013      M.S. Geological Sciences, Auburn University. August 2013. Advisor: Dr. Ronald Lewis. Thesis: The Ontogeny and Systematics of Pennsylvanian Cladid Crinoid *Erisocrinus*
- 2011      B.S. Geological Sciences (Paleobiology), University of North Carolina at Chapel Hill. August 2011. Advisor: Dr. Joseph Carter

### Professional Appointments

- 2024—      Assistant Professor, Binghamton University, Department of Earth Sciences
- 2019– 2023      Assistant Professor, University of South Florida, School of Geosciences
- 2017– 2019      Visiting Instructor of Sedimentology and Paleobiology, The University of South Florida, School of Geosciences
- 2015—2017      Graduate Teaching Assistant, University of Tennessee, Department of Earth and Planetary Sciences
- 2013– 2015      Graduate Research Assistant, University of Tennessee, Department of Earth and Planetary Sciences
- 2011– 2013      Graduate Teaching Assistant, Auburn University, Department of Geosciences
- 2011– 2012      Graduate Research Assistant, Auburn University Department of Geosciences
- 2010– 2011      Undergraduate Teaching Assistant, University of North Carolina, Department of Geological Sciences

## Grants

### Active Grants

2023 NSF Collaborative grant: Paleozoic echinoderms as model systems for the study of evolutionary modes: \$800,000 (**\$296, 211** Lead PI S. Sheffield's portion).

### External grants awarded (Total including active: \$318,478)

\* denotes outreach/community-oriented grants

2021 Geological Society of America's E-an Zen Geoscience Outreach Grant (**\$1,500**)\*  
2021 Paleontological Society's Outreach grant (**\$2,500**)\*  
2021 Western Interior Paleontological Society Outreach grant (**\$1,000**)\*  
2020 Paleontological Society's Outreach grant (**\$1,535**; declined due to COVID-19)\*  
2019 Arthur James Boucot Early Career Research Grant: Paleontological Society (**\$4,075**)  
2016 J. Thomas Dutro Jr. Paleontological Research Institution Student Research Grant (**\$500**)  
2016 SEPM Student Conference Presentation Award (**\$300**)  
2016 Geological Society of America Student Research Grant (**\$1,875**)  
2016 Dry Dredgers Paleontological Research Award (**\$700**)  
2016 James R. Welch Scholarship: Association of Applied Paleontological Sciences (**\$1,000**)  
2016 Society for the Study of Evolution: Outreach Grant (**\$442**)\*  
2015 Gary N. Lane Student Research Grant: The Paleontological Society (**\$800**)  
2015 SEPM Student Research Grant (**\$800**)  
2015 Schuchert and Dunbar Grants-in-Aid Program (**\$650**)  
2014 STEPPE Award for International Paleontological Congress 4 (**\$2,500**)  
2014 Dry Dredgers Paleontological Research Award. (**\$450**)  
2014 SEPM Student Research Grant (**\$800**)  
2012 Geological Society of America Student Research Grant (**\$1,250**)

### Internal grants awarded (\$14,495)

2021 USF Publications Council Funding award for open access article (**\$1,395**)  
2020 STEER (Systemic Transformation through Evidence-Based Education Reform) grant (**\$1,000**)  
2015 Ready For The World Proposal, The Deep Origins of Humanity: Darwin Day (**\$5,000**)\*  
2015 UT Programming and Allocation Committee: Darwin Day (**\$7,100**)\*

## Publications

### Peer reviewed articles:

^Denotes student researcher

\*Co-first author

**Sheffield, S.L.**, Ausich, W.I., *In prep.* Blastozoans from Ordovician-Silurian strata of Anticosti Island, Québec, Canada (Late Ordovician–Early Silurian) with description of a new hemicosmitoid. Canadian Journal of Earth Sciences. [Expected submission: Fall 2023]

Cook, M.L.^, Ryan, J.G., Bebeau, C.M.^, **Sheffield, S.L.**, Rodgers, M. *In revision.* Broadening Participation in Field-Based STEM Disciplines: Examining the Affective Domain of

19. Hill, S.A.<sup>^</sup>, **Sheffield, S.L.**, Gibson, W.B., Bissett, D., *In review*. Silurian diploporans (Blastozoa: Echinodermata) from North America: implications for morphological and biogeographical patterns. *Journal of Paleontology*.
18. Cook, M.L., Ricchezza, V.J., Ryan, J.G., Vacher, H.L., **Sheffield, S.L.** 2024. Changing habits of mind: A phenomenological view of geologic numeracy. *Journal of Geoscience Education*. <https://doi.org/10.1080/10899995.2023.2293614>
17. Hernandez Gomez, N.J.\*<sup>^</sup>, Melendez, L.E.\*<sup>^</sup>, Lopic, W.A., **Sheffield, S.L.**, Lewis, R.D. 2023. Examining the ontogeny of the Pennsylvanian cladid crinoid *Erisocrinus typus*. *Journal of Paleontology*, p. 1–8. [doi:10.1017/jpa.2023.41](https://doi.org/10.1017/jpa.2023.41)
16. Sumrall, C.D., **Sheffield, S.L.**, Bauer, J.E., Thompson, J.R., Waters, J.A. 2023. A review and evaluation of homology hypotheses in echinoderm paleobiology: *Elements of Paleontology*: Cambridge University Press, p. 1–45. [doi:10.1017/9781009397155](https://doi.org/10.1017/9781009397155).
15. **Sheffield, S.L.**, Limbeck, M.R.<sup>^</sup>, Bauer, J.E., Hill, S.A.<sup>^</sup>, Nohejlová, M., 2022. A review of blastozoan echinoderm respiratory structures: *Elements of Paleontology*: Cambridge University Press, p. 1–92. <https://doi.org/10.1017/9781108881821>
14. **Sheffield, S.L.**, Lam, A.R., Phillips, S.F.<sup>^</sup>, Deline, B. 2022. Morphological dynamics and response following the dispersal of Ordovician–Silurian diploporan echinoderms to Laurentia: *Contributions From The Museum Of Paleontology, University Of Michigan*, v. 9, p. 123–140.
13. Ali, H., **Sheffield, S.L.**, Bauer, J.E., et al. [19 authors in total], 2021. A twenty-point action plan for anti-racism in 2020: *Nature Communications*, v. 12, p. 1–6. <https://www.nature.com/articles/s41467-021-23936-w.pdf>
12. **Sheffield, S.L.**, Cook, M.L.<sup>^</sup>, Ricchezza, V.J., Rocabado, G.A.<sup>^</sup>, Akiwumi, F.A., 2021. Perceptions of scientists held by US students can be broadened through inclusive classroom interventions: *Communications: Earth and Environment*. <https://www.nature.com/articles/s43247-021-00156-0>
11. Lam, A.R.\*<sup>^</sup>, **Sheffield, S.L.\***, Matzke, N.J., 2021. Estimating dispersal and evolutionary dynamics in diploporan blastozoans (Echinodermata) across the Great Ordovician Biodiversification Event): *Paleobiology*, v. 47, p. 198–220. <https://doi.org/10.1017/pab.2020.24>.
10. Deline, B., Thompson, J.R., Smith, N.S., Zamora, S., Rahman, I.A., **Sheffield, S.L.**, Ausich, W.I., Kammer, T.W., Sumrall, C.D., 2020. Evolution and development at the origin of a phylum: *Current Biology*, v. 30, p. 1672–1679. [doi.org/10.1016/j.cub.2020.02.054](https://doi.org/10.1016/j.cub.2020.02.054).
9. Lam, A.R., Bauer, J.E., Frass, S., **Sheffield, S.L.**, Limbeck, M.R., Borden, R.M., Thompson-Munson, M., Fraas, A.J., Hils, J.M., Muskelly, C.E., and Hartshorn, K.R., 2019, Making sense of climate change and evolution in a digital age: communicating science to the public via blogs, web pages, and social media platforms: *Journal of STEM Outreach*, v. 2, p. 1–8. <https://doi.org/10.15695/jstem/v2i1.05>
8. **Sheffield, S.L.**, Sumrall, C.D., 2019, The phylogeny of the Diploporita (Blastozoa: Echinodermata). *Journal of Paleontology*, v. 93, p. 740–752. [doi.org/10.1017/jpa.2019.2](https://doi.org/10.1017/jpa.2019.2)
7. **Sheffield, S.L.**, Sumrall, C.D., 2019. The evolutionary relationships of early echinoderms: reinterpretations based on the ambulacral systems of *Eumorphocystis*. *Palaeontology*, v. 62, p. 163–173. [doi.org/10.1111/pala.12396](https://doi.org/10.1111/pala.12396)
6. **Sheffield, S.L.**, Ausich, W.I., Sumrall, C.D., 2018, New Hirnantian diploporitans from Anticosti Island: *Canadian Journal of Earth Sciences*, v. 55, p. 1–7.

5. **Sheffield, S.L.**, Bauer, J.E., 2017. Darwin Day in Deep Time: Promoting evolutionary science through paleontology: Evolution: Education and Outreach, v. 10, p. 1–10.  
<https://doi.org/10.1186/s12052-017-0073-3>
4. **Sheffield, S.L.**, Sumrall, C.D., 2017, Generic revision of the Holocystitidae (Diploporita: Echinodermata) based on universal elemental homology: Journal of Paleontology, v. 91, p. 755–766. <https://doi.org/10.1017/jpa.2016.159>
3. **Sheffield, S.L.**, 2015, A brief history and revision of the cladid crinoid *Sinocrinus*. Palaeoworld, v. 24, p. 460–469. <https://doi.org/10.1016/j.palwor.2015.05.007>
2. **Sheffield, S.L.**, Sumrall, C.D., 2015, A reinterpretation of the oral plating patterns of the *Holocystites* Fauna (Diploporita: Echinodermata). In Zamora, S. and Rábano, I. (eds.), *Progress in Echinoderm Palaeobiology*, Cuadernos del Museo Geominero, 19. Instituto Geológico y Minero de España, Madrid, p. 159–162.
1. Sumrall, C.D., Deline, B., Colmenar, J., **Sheffield, S.L.**, Zamora, S., 2015, New data on late Ordovician (Katian) echinoderms from Sardinia, Italy. In Zamora, S. and Rábano, I. (eds.), *Progress in Echinoderm Palaeobiology*, Cuadernos del Museo Geominero, 19. Instituto Geológico y Minero de España, Madrid, p. 175–178.

#### Non-peer reviewed publications

3. Bauer, J.E., **Sheffield, S.L.**, Waters, J.A., and Sumrall, C.D. 2022. Echinoderm model systems, homology, and phylogenetic inference: comment and reply to Paul (2021). Acta Palaeontologica Polonica. <https://app.pan.pl/article/item/app009562021.html>.
2. **Sheffield, S.L.**, 2019, Fossil Focus: Diploporitans: Palaeontology Online, v. 9, p. 1–7.
1. Luque, J., Agić, H., Anderson, E.P., Dahl, R., Donovan, M., Field, D.J., Fronimos, J., Hodges, M., Motz, G., Roney, R.O., Saupe, E.E., **Sheffield, S.L.**, Tackett, L.S., Tashman, J., Wawrzyniak, Z., 2015, Diversity in all its forms: IPC4 as an invaluable opportunity for STEPPE grant recipients: GSA Today, v. 5, p. 24–25.

#### **Abstracts and Conference Presentations:**

\* Denotes presenter; ^Denotes student researcher

- Sheffield, S.L.**, Limbeck M.R., Bauer, J.E., Wagner, P., Wright, A., 2024. Exploring rates of change and modes of evolution in blastozoan echinoderms. North American Paleontological Convention.
- Harris, O. B.\*^, **Sheffield, S.L.**, Lam, A.R., Bauer, J.E., Deline, B., Lamsdell, J.C., 2023. Connecting early Paleozoic echinoderm diversity dynamics to shifting climate patterns. Geological Society of America, Abstracts with Programs.
- Vantoorenburg, H.N.\*^, Orman, S.^, Anderson, L.^, Eccles, J.^, **Sheffield, S.L.**, Bauer, J.E., 2023, Paleoeology of epizoans on the Middle Devonian brachiopod *Paraspirifer bonnockeri*. Geological Society of America, Abstracts with Programs.
- Vantoorenburg, H.N.\*^, Eccles, J.^, Orman, S.^, Anderson, L.^, **Sheffield, S.L.**, Bauer, J.E., 2023, Characterization and evaluation of epizoans on the Middle Devonian *Paraspirifer*. 4<sup>th</sup> Palaeontological Virtual Congress.
- Sheffield, S.L.**, Limbeck M.R., Bauer, J.E., Wagner, P., Wright, A., 2023. Exploring rates of change and modes of evolution in blastozoan echinoderms. Geological Society of America, Abstracts with Programs.
- Harris, O. B.\*^, **Sheffield, S.L.**, Lam, A.R., Bauer, J.E., Deline, B., Lamsdell, J.C., Exploring extinction and origination patterns in early Paleozoic echinoderms, 2023, 4<sup>th</sup> Palaeontological Virtual Congress.

- Hill, S.A.\*<sup>^</sup>, **Sheffield, S.L.**, Rahman, I.A., 2022, A study of diploporan echinoderm feeding strategies using computational fluid dynamics. Geological Society of America, Abstracts with Programs.
- Eccles, J.\*<sup>^</sup>, Orman, S.<sup>^</sup>, Anderson, L.<sup>^</sup>, Vantoorenburg, H.N.<sup>^</sup>, Bauer, J.E., **Sheffield, S.L.**, 2022, Examining morphological variation as a result of encrustation. Geological Society of America, Abstracts with Programs.
- Lam, A.R.\*<sup>^</sup>, Bauer, J.E., Daemmer, L.K., **Sheffield, S.L.**, Barclay, K.M., Bolger, L., Lundgren, L., Slater, E., 2022, Initiatives, social media research, and collaborations to advance education outreach and science communication in the geosciences - updates from Time Scavengers. Geological Society of America, Abstracts with Programs.
- Vantoorenburg, H.N.\*<sup>^</sup>, Eccles, J.\*<sup>^</sup>, Orman, S.<sup>^</sup>, Anderson, L.<sup>^</sup>, Bauer, J.E., **Sheffield, S.L.**, 2022, Exploring Epibiont Encrustation Patterns: a case study with *Paraspirifer bownockeri*. Geological Society of America, Abstracts with Programs.
- Harris, O. B.\*<sup>^</sup>, **Sheffield, S.L.**, Lam, A.R., Bauer, J.E., Deline, B., Lamsdell, J.C., Alfred, S.<sup>^</sup>, Botwin, M.<sup>^</sup>, Hill, S.A.<sup>^</sup>, McCain, K.M.<sup>^</sup>, Melendez, L.E.<sup>^</sup>, Schieler, J.N.<sup>^</sup>, Vantoorenburg, H.N., 2022, Exploring origination and extinction patterns in early Paleozoic echinoderms. Geological Society of America, Abstracts with Programs.
- Cook, M.L.\*<sup>^</sup>, Ryan, J.J., **Sheffield, S.L.**, 2022, Experiential learning in the geosciences: impacts on student affective domain. Undergraduate Field Experiences Research Network: 2022 annual meeting.
- Sheffield, S.L.\*<sup>^</sup>**, Lam, A.R., Deline, B., Bauer, J.E., Lamsdell, J.E., Harris, O.B.<sup>^</sup>, 2022, Investigating Evolutionary Dynamics of Paleozoic Echinoderms: Geological Society of America, Abstracts with Programs.
- Bauer, J.E.\*<sup>^</sup>, Lam, A.R., Dämmer, L.K., **Sheffield, S.L.**, Barclay, K.M., Bolger, L., Favaro, A., Ocon, S., 2022, New Initiatives to Increase Participation in the Geosciences through Networking and Communication: Geological Society of America, Abstracts with Programs.
- Vantoorenburg, H.N.\*<sup>^</sup>, Andersen, L. A.<sup>^</sup>, **Sheffield, S.L.**, Bauer, J.E., 2022, Paleoeological trends in epibiont placement on Silica Shale brachiopods: Geological Society of America, Abstracts with Programs.
- Hernandez Gomez, N. J.\*<sup>^</sup>, Melendez, L.E.\*<sup>^</sup>, **Sheffield, S.L.**, 2022, Examining the ontogeny of the Pennsylvanian cladid crinoid *Erisocrinus*: Geological Society of America, Abstracts with Programs.
- Cook, M.L.\*<sup>^</sup>, Ryan, J.J., Sheffield, S.L., 2022, Experiential learning in the geosciences: impacts on student affective domain. Undergraduate Field Experiences Research Network: 2022 annual meeting.
- Limbeck, M.R.\*<sup>^</sup>, Lopic, W.A.<sup>^</sup>, Lam, A.R., Bauer, J.E., **Sheffield, S.L.**, Daemmer, L., Barclay, K.M., 2021, Time Scavengers: a digital learning platform's adaptations to increased need for online learning resources: Geological Society of America, Abstracts with Programs.
- Bauer, J.E.\*<sup>^</sup>, Anderson, L.<sup>^</sup>, Vantoorenburg, H.<sup>^</sup>, **Sheffield, S.L.**, 2021, Virtual collaborative research projects using U-M's online repository of fossils: Geological Society of America, Abstracts with Programs.
- Hill, S.A.\*<sup>^</sup>, **Sheffield, S.L.**, Rahman, I.A., 2021. A study of diploporan echinoderm feeding and respiration using computational fluid dynamics: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\*<sup>^</sup>**, Phillips, S.F.<sup>^</sup>, Lam, A.R., Deline, B. 2021, Evolutionary biogeography and paleoecology of diploporan echinoderms across the Ordovician–Silurian boundary: Geological Society of America, Abstracts with Programs.

- Cook, M.L.\*^, Ricchezza, V.J., Rocabado, G.A.^, **Sheffield, S.L.** 2020, Scientist of the Week: Assessing the effects of diverse representation in STEM classrooms: Geological Society of America, Abstracts with Programs.
- Lam, A.R.\*, **Sheffield, S.L.**, Matzke, N.J., 2020, Estimating dispersal and evolutionary dynamics in diploporan blastozoans (Echinodermata) across the Great Ordovician Biodiversification Event: IGCP-653 Meeting, The Onset of the Great Ordovician Biodiversification Event. Keynote lecture.
- Sheffield, S.L.\***, Ricchezza, V.J., 2020, Measuring the effects of diverse representation in STEM classrooms: Earth Educators Rendezvous, Abstracts.
- Kruse, S.\*, Downs, C.M., Gallant, E., Germa, A., Ippolito, Juster, T., McIlrath, J., **Sheffield, S.L.**, Walker, L. 2020, A collaborative textile record of climate change: the Tempestry Project in Tampa, Florida, USA: American Geophysical Union, Abstracts.
- Limbeck, M.R.\*., Bauer, J.E., Lam, A.R., **Sheffield, S.L.**, 2020, Time Scavengers: reaching the public through science blogs and determining what content performs best on social media platforms: Geological Society of America, Abstracts with Programs.
- Phillips, S.F.\*^, **Sheffield, S.L.**, Deline, B., 2020: Morphological evolution within holocystitid diploporitans: Geological Society of America, Abstracts with Programs [postponed: COVID-19].
- Lam, A.R.\*, **Sheffield, S.L.**, Matzke, N.J., 2020, Paleobiogeography of the early Paleozoic echinoderms across the Great Ordovician Biodiversification Event: Geological Society of America, Abstracts with Programs.
- Schram, B.M.\*^, **Sheffield, S.L.**, 2020, Using visual media to engage high schoolers in earth sciences: Geological Society of America, Abstracts with Programs [postponed: COVID-19].
- Sheffield, S.L.\***, Ricchezza, V., 2019, “Scientist of the week”: introducing diverse scientists into introductory geology courses: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Lam, A.R., Matzke, N.J., 2019, A global biogeographical analysis of blastozoan echinoderms across the Great Ordovician Biodiversification Event: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Bantel, T.E., Bissett, D.L., Cooper, D., Gibson, W.B., 2019, Advances in understanding echinoderm paleobiology: collaborations with avocational paleontologists: North American Paleontological Conference, Riverside, CA, Abstracts.
- Lam, A.R.\*, Bauer, J.E., Muskelly, C. O., Borden, R. M., Hils, J. M., Desai, D., Limbeck, M. R., Fraass, A., **Sheffield, S. L.**, Thompson-Munson, M., Fraass, S., and Hartshorn, K., 2019, Twelve to tango: Avocational and professional partnerships to increase public understanding of paleontology through informal pages, blogs, and social media platforms. North American Paleontological Conference, Riverside, CA, Abstracts.
- Sheffield, S.L.\***, Bauer, J.B., Limbeck, M.R., Bright, J.A., Bantel, T.E., 2018, Quantitatively assessing gross morphology of holocystitid diploporitans (Blastozoa: Echinodermata): Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Lam, A.R., Bauer, J.B., 2018, Making geology accessible through engaging blogs: using photos to bring the outdoors in: Geological Society of America, Abstracts with Programs.
- Bauer, J.E.\*, Lam, A.R., Fraass, S., Fraass, A.J., Hartshorn, K.R., Borden, R.M., Muskelly, C.O., **Sheffield, S.L.**, T-M, M., Hils, J.M., Limbeck, M.R., 2018, Time scavengers: a collaborative endeavor to disseminate complex science to increase public literacy on climate change and evolution: Geological Society of America, Abstracts with Programs.

- Sheffield, S.L.\***, Sumrall, C.D., 2018, Unusual preservation of Silurian holocystitids (Diploporita: Blastozoa): implications for understanding evolutionary trends: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Bauer, J.E., Sumrall, C.D., Rahman, I.A., Synchrotron-based tomographic evaluation of *Eumorphocystis* (Diploporita: Echinodermata) and its use in understanding morphology and ontogeny: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Sumrall, C.D., 2017, The phylogeny of the Diploporita: Geological Society of America, Abstracts with Programs.
- Bauer, J.E.\*, Lam, A.R., Bryant, R.M., Fraass, A.J., Golder, K.B., Hartshorn, K.R., Limbeck, M.R., **Sheffield, S.L.**, 2017, Time scavengers: a collaborative website for exploring climate change and evolution through scientists' experiences: Geological Society of America, Abstracts with Programs.
- Johnson, S.R.^\*, **Sheffield, S.L.**, 2017, Ontogenetic and systematic study of *Eucystis* (Diploporita: Echinodermata): Geological Society of America Southeastern Section, Abstracts with Programs.
- Godkin, R.S.^\*, **Sheffield, S.L.**, 2017, A growth study of Ordovician *Sphaeronites* (Diploporita: Echinodermata): Geological Society of America Southeastern Section, Abstracts with Programs.
- Sheffield, S.L.\***, Sumrall, C.D., 2016: The evolutionary relationships of early echinoderms: reinterpretations based on the ambulacral systems of *Eumorphocystis*: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Ausich, W.I., Sumrall, C.D., 2016: New Ordovician-age *Holocystites* from Anticosti Island, Quebec: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Sumrall, C.D., 2015: Uncovering the Diversity and Biogeography of Silurian Diploporitans: New Data from Missouri, USA: Geological Society of America, Abstracts with Programs.
- Buongiorno, J., **Sheffield, S.L.\***, O'Meara, B., 2015: The University of Tennessee's effort to improve evolution education in Knoxville, TN: Geological Society of America, Southeastern Meeting, Abstracts with Programs.
- Sheffield, S.L.\***, Sumrall, C.D., 2015: Re-interpreting the ambulacral system of *Eumorphocystis*, an Ordovician diploporan: 1<sup>st</sup> Annual Women in Stem Symposium, The University of Tennessee.
- Zamora, S., Colmenar, J., Deline, B., **Sheffield, S.L.**, Sumrall, C.D.\*, 2014: New Data on Late Ordovician echinoderms from Sardinia, Italy: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Sumrall, C.D., 2014: A re-evaluation of *Holocystites* (Diploporita: Echinodermata): Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Sumrall, C.D., 2014: A re-interpretation of the ambulacral system of *Eumorphocystis* and its bearing on the evolution of early crinoids: 4<sup>th</sup> International Paleontological Congress, Abstracts.
- Sheffield, S.L.\***, Sumrall, C.D., 2013: A revision of the systematics of the genus *Sinocrinus* (Crinoidea): North American Paleontological Conference, Abstracts.
- Sheffield, S.L.\***, Lewis, R.D., 2013: A re-evaluation of the systematics of the genus *Erisocrinus*: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Lewis, R.D., Zachos, L.G., 2013: The morphology of *Erisocrinus typus*: a study using ArcGIS©: Geological Society of America, Abstracts with Programs.
- Sheffield, S.L.\***, Zachos, L.G., Lewis, R.D., 2012: A morphometric study of *Erisocrinus* (Crinoidea) using ArcGIS©: Geological Society of America, Abstracts with Programs.

## Honors

### External honors

- 2020 Fellow of the Geological Society of America
- 2020 Presidential Citation, American Geophysical Union. Awarded to authors of the [Call for a Robust Anti-Racism Plan for The Geosciences](#), a petition that has garnered over 25,000 signatures
- 2019 National Geological Society of America's Donald and Carolyn Biggs Earth Science Teaching Award

### Internal honors

- 2021 USF Undergraduate Teaching Excellence award, university-wide.
- 2021 USF STEER (Systemic Transformation of Education through Evidence-based Reforms) STEM Education Award, university-wide
- 2017 Excellence in Teaching, Department of Earth and Planetary Sciences, University of Tennessee
- 2016 Outreach Award, Department of Earth and Planetary Sciences, University of Tennessee
- 2015 Gene Tipton Graduate Student Award, University of Tennessee
- 2015 Outreach Award, Department of Earth and Planetary Sciences, University of Tennessee
- 2015 Rock Solid Award, Department of Earth and Planetary Sciences, University of Tennessee
- 2013 Masters Student Research Award, Auburn University College of Science and Mathematics, Auburn University
- 2008 Waffle House Essay Contest winner
- 2007-2011 Carolina Covenant Scholar (full tuition), University of North Carolina

## Research Experiences and Relevant Skills

### Research Experiences

- 2013 Carbonate petrology; understanding chemistry and formation of “herringbone cement”; petrology, isotope analysis, and cathodoluminescence analysis
- 2012 Participant in Imperial Barrel Award, Oil Exploration Program with Shell, Exxon
- 2011– 2012 ArcGIS© for quantifying shape change in fossils
- 2011– 2012 Studied foraminifera deformation in response to oil contamination under the Gulf Research Initiative
- 2011 Vertebrate paleontology field work in Bighorn Basin, Wyoming with New Jersey State Museum.
- 2009 Participant in Educational Research in Radio Astronomy (ERIRA); learned to operate radio telescope and process data at Green Bank Observatory, WV.

### Relevant Language Skills

Conversational Italian

Intermediate fluency in American Sign Language

## Conference Sessions and Workshops

### Chaired Conference Sessions

- 2022 National Geological Society of America Meeting: Exploring the Mechanisms of Morphological Change: J.C. Lamsdell, S.L. Sheffield, J.E. Bauer, A.R. Lam.
- 2022 Southeastern/North Central Joint Meeting: Under the (Ancient) Sea: Marine Life from the Coastal Plains to the Great Plains: C.C. Visaggi, S.L. Sheffield
- 2021 American Geophysical Union, New Orleans, LA: Innovative approaches in geoscience education via university-K12 partnerships: J. Buongiorno, A. Steen, S.L., Sheffield
- 2020 Earth Educator's Rendezvous, Palo Alto, CA (Virtual): Broadening Participation and Teacher & Faculty Development: S. Sheffield
- 2019 Geological Society of America Annual Meeting, Phoenix, AZ: Paleobiogeographic and Paleoeological Trends in the Fossil Record: S.L. Sheffield, J.E. Bauer.
- 2016 Geological Society of America Annual Meeting, Denver, CO: Fossils and Phylogenies: Troubles and Triumphs: S.L. Sheffield, J.E. Bauer, A.R. Lam
- 2014 International Palaeontological Congress 4, Mendoza Argentina: Lower Paleozoic Fauna: S. Sheffield

#### Workshops Led/co-organized

- 2016 National Science Teachers Association Meeting, Nashville, TN: Teaching Evolution without Tears: Lessons from Darwin Day.
- 2016 Paleontology in the Classroom: K-12 Workshop hosted through The University of Tennessee

#### Workshops Attended

- 2019 NSF-hosted Writing Workshop in Diversity Initiatives in the Geosciences
- 2019 Workshop for Early Career Geoscience Faculty (weeklong course hosted by SERC)
- 2019 Phylogenetic Paleobiology (National GSA)
- 2018 Pedagogy and Technology in the Modern Paleontology Classroom (National GSA)
- 2014 Stratigraphic Paleobiology Short Course (International Paleontological Congress 4)

### **Collegiate Teaching**

#### Undergraduate Courses

BU: Introduction to Planet Earth

USF: Stratigraphy and Paleontology, History of Life, Sedimentary Petrology, Introduction to Earth Science

UTK: Historical Geology

#### Graduate Courses

USF: Principles of Paleontology

USF: Methods and Applications in Paleobiology

USF: Increasing access to the Geosciences

#### Student Mentoring

##### Graduate Students (as thesis/dissertation supervisor)

Elizabeth Altier. 2023– Present

Ohav Harris, M.S. 2023–2024 (University of South Florida);

Ph.D. 2024– Present (Binghamton University)

Stephen Hill, M.S. 2020–2022 (University of South Florida)

#### Graduate Students (as committee member)

Thea Barbelet, M.S. 2024–Present, Binghamton University  
Gretl King, Ph.D. 2024–Present, Binghamton University  
Jeanette deCuba, Ph.D. 2024–Present, Binghamton University  
Ravi Koorapati, Ph.D. 2024–Present, Binghamton University  
Gabrielle Scrogam, M.S. 2022–Present, University of South Florida  
Jonathan Major, Ph.D. 2021–Present, University of South Florida  
Alexander Favaro, M.S. 2021–Present, West Virginia University  
Christy Bebeau, Ph.D. Graduated 2024; USF Geosciences  
Eda Okan Kilic, M.S. Graduated 2022; USF Geosciences  
Faith Frings, M.S. Graduated 2022; USF Integrative Biology  
Samantha Ocon, M.S. Graduated 2022; West Virginia University  
Meghan Cook, Ph.D. Graduated 2021; USF Geosciences

#### Undergraduate students

-Project: Finite element modeling of Pennsylvanian crinoids: **Karla Rodriguez** and **Nathan Baker**  
-Project: Faunal analysis of Mississippian-age sediments of the midcontinent USA: **Taylor Rand**  
-Project: Microfossil communities of Ordovician rocks of the Benboldt Formation, TN: **Trevor Belcher**  
-Project: Growth of epibionts in the Silica Shale: **Haley Vantoorenburg**  
-Project: Paleocology of Crystal River Eocene Echinoderms: **Kaleb Smallwood**  
-Project: Echinoderm growth patterns. **Noel Hernandez, Lisette Melendez**  
-Project: Science Communication. **Mia Borja; Baron Hoffmeister, Kailey McCain, McKenna Dyjak, Lisette Melendez**  
-Project: Paleooceanographic reconstructions using foraminiferal diversity (co-supervised with Dr. Adriane Lam): **Haley Coe**.  
-Project: Biogeography of Echinodermata. **Lisette Melendez, Haley Vantoorenburg, Ohav Harris, Noel Hernandez, Max Botwin, Alexander Favaro, Soraya Alfred, Jamie Schieler**.  
-Project: Digitizing fossil collections/3D fossil models, **Haley Vantoorenburg**  
-Project: Introducing historical geology education to K-12 students. **Bethany Schram**  
-Project: Understanding the ontogenetic patterns of *Sphaerionites* (Echinodermata: Diploporita); utilizing non-landmark classification. **Russell Godkin**  
-Project: Ontogenetic study of *Encystis* (Echinodermata: Diploporita). **Sarah Johnson**  
-Ontogenetic growth and systematic study of *Erisocrinus* (Echinodermata: Crinoidea). **Andrew Besu**

#### **Academic service**

##### Professional

Journal reviewer: Journal of the Geological Society; Journal of Geoscience Education; GSA Books; Paleobiology; Communications Earth & Environment; Geology; Spanish Journal of Paleontology; Palaeontology; Geologica Acta; Bulletin of Geosciences; Journal of Paleontology; Palaeoworld; Estonian Journal of Earth Sciences; Palaeogeography Palaeoclimatology Palaeoecology; Contributions from the Museum of Paleontology University of Michigan.

2024– Co-chair of Association for Women Geoscientists' Winnifred Goldring Award Committee  
2022: Authored article on tips for new faculty, posted on The American Chemical Society's Polymer Chemistry division:

<https://macro-poly-pmse.org/professional-development/early-career-researchers/managing-the-many-tasks-in-academic-jobs/>

2020: Coauthored petition for anti-racism in the geosciences

(<https://www.change.org/p/geoscientists-call-for-a-robust-anti-racism-plan-for-the-geosciences>)

2020: Co-planned panel on anti-racism for 2020's annual GSA based on above petition

2020: NSF postdoctoral fellowship panel participant/reviewer

2020: Geoscience education division Biggs Earth Science Education Award selection committee

2018– Sepkoski grant selection committee: Paleontological Society

#### University Service and Outreach

#### Leadership Roles

2022– 2023 Chair of DEI Committee for USF School of Geosciences

2014– 2016 Darwin Day UT: Lead Organizer of cross-departmental graduate and undergraduate volunteer event. Planned weeklong lecture series, field trips, numerous public outreach events, etc. Funded through personally obtained grants. Annual attendance approximately 1,000 students and community members

#### Select University Service

2024– Graduate Committee member, Binghamton University

2022–2023 Organized AdvanceGEO Implicit Bias and Microaggression workshop and Bystander Intervention workshop for USF Geosciences

2022 Reviewer for USF Undergraduate teaching awards

2018– 2022 Darwin Day at USF: coordinating events, speaker invitations; developing outreach education material

2021 Guest lectured to clinical psychology seminar course on aspects of DEI in academia

2021 Guest lectured to seminar course on the history of geology through the lens of diversity, equity, and inclusion

2021 USF Geoscience Graduate Student Organization guest speaker on academic CVs.

2020 USF Library “100<sup>th</sup> Anniversary of the 19<sup>th</sup> Amendment” collaborative website participant; wrote biographies of trailblazing women scientists (to be published online; date TBD)

2020–2023 Member of School of Geoscience's DEI committee

2020 Organized “Picture a Scientist” viewing and discussion about sexism in STEM fields

2020 Co-organized student focused lunches with SACNAS to discuss diversity and inclusion in geosciences with guest faculty

2020 Guest lectured to multiple departments on best practices for diversity statements in academic job applications

2020 Organized “Sci-comm Write-A-Thon” for graduate students at USF

2019– 2020 Undergraduate Program Committee: Departmental Service

2019– 2022 USF Faculty and Staff Giving Campaign Committee

2017– 2018 Developed and organized educational materials for “fossil boxes”, distributed to over 100 Knox County Classrooms

2016– 2017 Peer mentor for undergraduate women in STEM in student-run group (Pipeline), particularly first generation and underrepresented minority college students

2016 Event Planner for Tennessee State Science Olympiad tournament (Fossils)

2013– 2014 Darwin Day UT: Head of Advertising. Advertised Darwin Day via newspaper, television, internet, and other media outlets

- 2014 McClung Museum Earth Science Day: Staffed fossil identification booth
- 2013– 2016 McClung Museum: Teach short lessons on fossil and geologic history of Tennessee to local elementary and middle school students

#### Select Community Engagement

- 2022 Panelist for American Geoscience Institute’s webinar “Overcoming Pandemic-related Impacts in the Geosciences”
- 2022 Hosted Virtual Science Communication Internship for undergraduate students, in collaboration with [Time Scavengers](#).
- 2021– Faculty advisor for the Tampa Bay Fossil Club
- 2021 Provided morphological interpretations for paleoart interpretations for PBS Eons episode (<https://www.youtube.com/watch?v=5GdkQJN1XZs>)
- 2020 Participant in University of Florida’s Scientist in Every Florida School program, broadcast to Title I schools in multiple Florida counties.  
<https://www.youtube.com/watch?v=Kc4Yr9njexA&feature=youtu.be>
- 2020 Participant in “Skype a Scientist Live” to provide science education for students unable to attend school during COVID-19; broadcast live to 500 people  
(<https://www.youtube.com/watch?v=uU8gJNt6qUY>)
- 2017– 2020 Participant in Skype-a-Scientist Program, connecting scientists with K-12 classrooms and US penitentiaries via video calling across the U.S.
- 2017– Contributor and editor of Wikipedia. Example of authored page:  
<https://en.wikipedia.org/wiki/Diploporita>
- 2016– Frequent contributor and editor of Time Scavengers (blog about teaching climate change and evolution for general public): [timescavengers.org](https://timescavengers.org). All authored articles can be found here: <https://timescavengers.blog/tag/sarah-sheffield/>
- 2013– 2016 Knox County Public Schools: Visited multiple elementary, middle, and high school science classrooms as a guest lecturer on fossils, evolution, and geology

#### Invited Talks

##### Professional

- 2024 University of Minnesota, Duluth, Department of Geological Sciences
- 2024 Evos Seminar Series, SUNY Binghamton, Department of Anthropology
- 2024 Colgate University, Department of Earth and Environmental Sciences
- 2024 Saint Angelo State University, Department of Geosciences
- 2024 University of Texas at San Antonio, Department of Earth and Planetary Sciences
- 2023 SUNY Fredonia, Department of Geology and Environmental Sciences
- 2023 University of Nebraska Lincoln, Department of Earth and Atmospheric Sciences
- 2022 SUNY Binghamton, Geology and Environmental Sciences Department
- 2022 Maryville College, Department of Biology
- 2022 Palaeo(PERCs), international virtual lecture series
- 2022 University of California, Santa Barbara, Geology Department
- 2021 The Annual Paleontological Society Short Course: Echinodermata
- 2021 University of Wisconsin, Milwaukee, Geology Department
- 2021 Rutgers University Geology Museum Open House
- 2020 James Madison University, Geosciences Department
- 2020 Southeastern Louisiana University, Biological Sciences Department
- 2019 College of Charleston, Department of Geology
- 2019 University of Tennessee, Chattanooga, Department of Biology, Geology, and Environmental Sciences

- 2018 University of Florida, Geosciences Department
- 2018 University of South Florida, Geosciences
- 2017 University of Illinois, Urbana-Champaign, Department of Geology
- 2017 Sam Houston State University, Environmental and Geosciences Department
- 2017 University of South Florida, Integrative Biology Department

### Community

- 2022–2023 Organized annual USF Student Research Showcase for the Tampa Bay Fossil Club
- 2022 Museum of Science and Industry (Tampa, FL): Using the Past to Understand our Future
- 2020 Dry Dredgers (Cincinnati, OH): Evolutionary patterns in Paleozoic echinoderms [virtual]
- 2020 Rutgers University’s “Ask A Geologist” Seminar [virtual]
- 2020 University of Michigan’s Museum of Paleontology “Friends of the Museum” lecture: The Evolution of Early Echinoderms [virtual]
- 2020 Path to the Future (program for high school students): research scientist as a career [virtual]
- 2020 National Honor Society, Brooks DeBartolo Collegiate High School: Using the Past to Understand our Future
- 2020 Tampa Bay Fossil Club: Unraveling the evolutionary relationships of echinoderms
- 2017 Knoxville Gem and Mineral Society: The Diploporitan Dispute: Understanding the Evolution of the Early Echinoderms
- 2016 Dry Dredgers (Cincinnati, OH): The Evolution of the Early Echinoderms
- 2016 Knoxville Gem and Mineral Society. Darwin Day UT: Advancing Science Education in the Knoxville Community

### **Media attention and interviews**

- 2024 BingU News Feature.  
<https://www.binghamton.edu/news/story/4742/sea-star-research-explores-the-diversity-of-shapes-among-ancient-echinoderms>
- 2022 Boundless Bulls Feature.  
<https://www.usf.edu/news/boundless-bulls/faculty-staff/sarah-sheffield.aspx>
- 2021 Visit Florida.  
<https://www.visitflorida.com/en-us/florida-beaches/blowing-rocks-preserve.html>
- 2021 USF College of Arts and Sciences.  
<https://www.usf.edu/arts-sciences/hub/accomplishments/geological-society-of-america-induction.aspx>
- 2019 Calling Earth podcast:  
[http://callingearth.lib.usf.edu/calling-earth-017-sarah-sheffield-paleontologist\\_10/11/2019](http://callingearth.lib.usf.edu/calling-earth-017-sarah-sheffield-paleontologist_10/11/2019)
- 2019 Fantastic Women in Science:  
<https://www.jacquesummers.com/fantastic-women-in-science/january-04th-2019>
- 2018  
<https://www.buzzfeednews.com/article/juliareinstein/rate-my-professors-hotness-chili-pepper-sexist.6/28/2018>
- 2016 Knoxville News Sentinel: “Birthday bash for biologist teaches evolution”. 2/11/2016.  
<http://www.knoxnews.com/news/local/birthday-bash-for-biologist-teaches-evolution-2b5aa1e1-a001-2bd7-e053-0100007f26dc-368687061.html>
- 2016 The Daily Beacon: “Ancient crocodiles highlighted in Darwin Day lecture”. 2/8/2016

- [http://m.utdailybeacon.com/news/ancient-crocodiles-highlighted-in-darwin-day-lecture/article\\_5be01a04-cccc-11e5-a850-8bc283db9530.html?mode=jqm](http://m.utdailybeacon.com/news/ancient-crocodiles-highlighted-in-darwin-day-lecture/article_5be01a04-cccc-11e5-a850-8bc283db9530.html?mode=jqm)
- 2015 Times Free Press: “UT Knoxville students plan 4-day celebration of Darwin”. 2/7/2015.
- <http://www.timesfreepress.com/news/breakingnews/story/2015/feb/07/ut-knoxville-students-plan-4-day-celebration-darwin/287138/>
- 2015 Knoxville News Sentinel: “Evolving party: UT celebrates Darwin’s birthday”. 2/10/ 2015.
- <Http://www.knoxnews.com/news/local/evolving-party-ut-celebrates-darwins-birthday-ep-924620425353577201.html?autoplay=true>
- 2015 Knoxville News Sentinel: “Celebrating Charles Darwin at the McClung Museum”. 2/10/2015. [https://www.youtube.com/watch?v=iTwOR4\\_2WBs](https://www.youtube.com/watch?v=iTwOR4_2WBs)
- 2015 “The Daily Beacon: Puppets Promote Darwin’s Work, Evolutionary Education”. 2/10/2015. [http://www.utdailybeacon.com/news/article\\_f1c3107c-af53-548c-bfb0-712676a2943b.htm](http://www.utdailybeacon.com/news/article_f1c3107c-af53-548c-bfb0-712676a2943b.htm)

### **Professional Training**

- 2022: IRB Training course: Social/Behavioral investigators and key personnel (training valid through 2025)
- 2021: USF Muma’s College of Business: Diversity, Equity, and Inclusion training (14-hour course with certificate)
- 2020: USF’s Students with Disabilities Ally training
- 2019: Mental health training (Kognito: At-Risk for Faculty & Staff)
- 2019-2020: USF’s SafeZone training for LGBTQ+ allyship (4-part course)
- 2019: USF’s UnDocuALLY training for undocumented students
- 2018: NOLS Wilderness First Aid training (valid through 2020)

### **Professional Societies**

- The Geological Society of America (Fellow)
- The Paleontological Society
- Association of Women Geoscientists
- Society for Sedimentary Geology