Shanan E. Peters

University of Wisconsin-Madison, Department of Geoscience
1215 W. Dayton St., Madison, WI 53706
email: peters@geology.wisc.edu, website: http://strata.geology.wisc.edu, @shanan.peters

Education:

Ph.D. The University of Chicago, Geology and Paleontology Dissertation: "Evenness, richness, and the Cambrian-Paleozoic faunal transition in North America" Advisor: Michael Foote

B.S. Denison University, Geology and Biology, Honors, Summa Cum Laude
Honors Thesis: "Paleoecology of the Waldron Shale (Wenlockian) of southeastern Indiana"
Advisor: Kennard Bork

Positions:

2022-pres.	Professor, University of Wisconsin-Madison
2015-2022	Dean L. Morgridge Professor, University of Wisconsin-Madison
2013-2015	Associate Professor, University of Wisconsin-Madison
2014.01-06	Visiting Blaustein Professor, Stanford University
2007-2013	Assistant Professor, University of Wisconsin-Madison
2006-2008	Research Associate, University of Michigan, Museum of Paleontology
2003-2006	Visiting Assistant Professor and Michigan Society Fellow, University of Michigan and University of Michigan Department of Geological Sciences and Museum of Paleontology

Academic Honors and Awards:

2021	Geological Society of America Fellow
2014	Paleontological Society Fellow
2014.10	Charles Schuchert Award, Paleontological Society
2014.01	Blaustein Fellowship, Stanford University, Dept. of Geological and Environmental Sci.
2012.07	NSF CAREER award
2010.10	2009 Best Paper Honorable Mention. Peters, S.E., et al. 2009. *Palaios* 24:290-302.
2010.04	James Lee Wilson Medal, SEPM, Society for Sedimentary Geology
2007.12	Hodson Award, Palaeontological Association
1999	EPA STAR Graduate Fellowship, NSF Graduate Fellowship
1998	Kirtly F. Mather Award for Excellence in the Geological Sciences, Denison University
1998	Phi Beta Kappa, Sigma Xi Inductee

Teaching Awards:

Honored Instructor, University Housing, University of Wisconsin-Madison
Fall Semester 2019, 2018, 2017, 2016, 2015, 2012, 2011, 2010
Spring Semester 2016

Publications:

Research Articles: (reprints and links at http://strata.geology.wisc.edu, Google Scholar)

73. Peters, S.E., D. Quinn, J.M. Husson, R.R. Gaines. 2022. Macrostratigraphy: insights into cyclic and secular evolution of the Earth-life system. *Ann. Rev. Ear. Plan. Sci.* 50. doi:10.1146/annurev-earth-032320-081427.
72. Emmings, J.F., S.W. Poulton, J. Walsh, K.A. Leeming, I. Ross, S.E. Peters. 2022. Pyrite mega-analysis reveals modes of anoxia through geologic time. *Science Advances* 8(11):eabj5687. doi:10.1126/sciadv.abj5687.
71. Chen, G., Q. Cheng, S.E. Peters, C.J. Spencer, M. Zhao. 2022. Feedback between surface and deep processes: insight from time series analysis of sedimentary record. *Earth and Planetary Science Letters* 579:117352, doi:10.1016/j.epsl.2021.117352.
70. Segessenman, D.C., and Peters, S.E. 2022. Macrostratigraphy of the Ediacaran System in North America, *in* Whitmeyer, S.J., Williams, M.L., Kellett, D.A., and Tikoff, B., eds., Laurentia: Turning Points in the Evolution of a Continent: *Geological Society of America Memoir* 220, p. 1–26, doi:10.1130/2022.1220(21).

69. Peters, S.E., C.R. Walton, J.M. Husson, D. Quinn, O. Shorttle, B.C. Keller, R.R. Gaines. 2021. Igneous rock area and age in continental crust. *Geology* 49(10):1235-1239. doi:10.1130/G49037.1
68. Peters, S.E. and D.B. Rowley. 2021. Long-term evolution of Earth's continental surface elevation. *EarthArXiv,* doi:10.31223/X59608.
67. Goring, S., et al. 2021. A model workflow for GeoDeepDive: locating Pliocene and Pleistocene ice-rafted debris. *EarthArXiv,* doi:10.31223/X54312.
66. Lipp, A.G. et al. 2021. The composition and weathering of the continents over geologic time. *Geochemical Perspectives Letters* 17:21-26. doi:doi:10.7185/geochemlet.2109.
65. Xie, A., A. Carlsson, J. Mohoney, R. Waleffe, S.E. Peters, T. Rekatsinas, S. Venkataraman. 2021. Demo of Marius: a system for large-scale graph embeddings. *Proceedings of the VLDB Endowment* 14:2759-2762. doi:10.14778/3476311.3476338.
64. Husson, J.M., B.L. Linzmeier, K.M. Kitajima, A. Ishida, A.C. Maloof, B. Schoene, S.E. Peters, J.W. Valley. 2020. Large isotopic variability at the micron-scale in 'Shuram' excursion carbonates from South Australia. *Earth & Planetary Science Letters* 538:116211. doi:10.1016/j.epsl.2020.116211.
63. Barnes, B.D., J.M. Husson, S.E. Peters. 2020. Authigenic carbonate burial in the Late Devonian–Early Mississippian Bakken Formation (Williston Basin, USA). *Sedimentology* 67:2065-2094. doi:10.1111/sed.12695
62. Keller, C.B., J.M. Husson, R.N. Mitchell, W.F. Bottke, T.M. Gernon, P. Boehnke, E.A. Bell, N.L. Swanson-Hysell, S.E. Peters. 2019. Neoproterozoic glacial origin for the Great Unconformity. *Proc. Nat. Academy Sci. U.S.A.* 116(4):1136-1145. 201804350. doi:pnas.1804350116
61. Keating-Bitonti, C.R., and S.E. Peters. 2019. Influence of increasing carbonate saturation in Atlantic bottom water during the late Miocene. *Palaeogeography, Palaeoclimatology, Palaeoecology* 518:134-142. doi:10.1016/j.palaeo.2019.01.006
60. Gee, C.T., P.M. Sanders, S.E. Peters, M.T. El-Hennawy, M.S.M. Antar, I.S. Zalmout, P.D. Gingerich. 2019. Fossil burrow assemblage, not mangrove roots: reinterpretation of the main whale-bearing layer in the late Eocene of Wadi Al-Hitan, Egypt. *Palaeodiversity and Palaeoenvironments* 99(2):143-158. doi:10.1007/s12549-018-0337-0
59. Cohen, P.A., R. Lockwood, S.E. Peters. 2018. Integrating Macrostrat and Rockd into undergraduate Earth Science Teaching. *Elements of Paleontology* doi:10.1017/9781108681445
58. Linzmeier, B.J., N.H. Landman, S.E. Peters, R. Kozdon, K. Kitajima, J.W. Valley. 2018. Ion microprobe–measured stable isotope evidence for ammonite habitat and life mode during early ontogeny. *Paleobiology* 44(4):684-708. doi:10.1017/pab.2018.21
57. Husson, J.M., and S.E. Peters. 2018. Nature of the sedimentary rock record and its implications for Earth system evolution. *Emerging Topics in Life Sciences* 2(2):125-136. doi:10.1042/ETLS20170152
56. Peters, S.E., and J. Husson. 2018. We need a global comprehensive stratigraphic database: here's a start. *The Sedimentary Record* 16:4-9. doi:10.2110/sedred.2018.1
55. Peters, S.E., J.M. Husson, J. Czaplewski. 2018. Macrostrat: a platform for geological data integration and deep-time Earth crust research. *Geochemistry, Geophysics, Geosystems* 19:1393-1409. doi:10.1029/2018GC007467
54. Marsicek, J., Goring, S., Marcott, S., Meyers, S.E. Peters, Ross, I., Singer, B., and Williams, J.W. 2018, Automated Extraction of Spatiotemporal Geoscientific Data from the Literature using GeoDeepDive, *PAGES Magazine* 26(2):70. doi:10.22498/pages.26.2.70
53. Zaffos, A., S. Finnegan, and S.E. Peters. 2017. Plate tectonic regulation of marine animal diversity. *Proc. Nat. Academy Sci. U.S.A.* 114(22):5653–5658 doi:10.1073/pnas.1702297114
52. Peters, S.E., J.M. Husson, J. Wilcots. 2017. Rise and fall of stromatolites in shallow marine environments. *Geology* 45:487-490 doi:10.1130/G38931.1
51. Peters, S.E., and J.M. Husson. 2017. Sediment cycling on continental and oceanic crust. *Geology* 45:323-326. doi:10.1130/G38861.1
50. Husson, J.M., S.E. Peters. 2017. Atmospheric oxygenation driven by unsteady growth of the continental sedimentary reservoir. *Earth and Planetary Science Letters* 460:68-75. doi:10.1016/j.epsl.2016.12.012
49. Linzmeier, B.J., R. Kozdon, S.E. Peters, J.W. Valley. 2016. Oxygen isotope variability within *Nautilus* shell growth bands. *PLoS One* 11(4):e0153890. doi:10.1371/journal.pone.0153890

48. Nelsen, M.P., W.A. DiMichele, S.E. Peters, C.K. Boyce. 2016. Delayed fungal evolution did not cause the Paleozoic peak in coal production. *Proc. Nat. Academy Sci. U.S.A.* 113:2442-2447. doi:10.1073/pnas.1517943113.
47. Peters, S.E. and M. McClennen. 2016. The Paleobiology Database application programming interface. *Paleobiology* 27:1-7. doi: 10.1017/pab.2015.39
46. Fraass, A.J., D.C. Kelly, S.E. Peters. 2015. Macroevolutionary history of the planktic foraminifera. *Annual Review of Earth and Planetary Sciences* 43:5.1-5.28. doi:10.1146/annurev-earth-060614-105059.
45. Varela, S., J. González-Hernández, L. F. Sgarbi, C. Marshall, M.D. Uhen, S.Peters and M. McClennen. 2015. paleobioDB: an R-package for downloading, visualizing and processing data from the Paleobiology Database. *Ecography* 38:001-007. doi: 10.1111/ecog.01154
44. Peters, S.E. C. Zhang, M. Livny, and C. Ré. 2014. A machine reading system for assembling synthetic paleontological databases. *PLoS One* 9(12) e113523. doi: 10.1371/journal.pone.0113523
43. Fan, Y., S. Richard, R.S. Bristol, S.E. Peters, et al. 2014. DigitalCrust: A 4D data system of material properties for transforming research on crustal fluid flow. *Geofluids* doi: 10.1111/gfl.12114.
42. Zhang, C., V. Govindaraju, J. Borchardt, T. Foltz, C. Ré, S. Peters. 2013. GeoDeepDive: Statistical inference using familiar data-processing languages. ACM SIGMOD 2013, New York, New York.
41. Peters, S.E., D.C. Kelly, and A. Fraass. 2013. Oceanographic controls on the diversity and extinction of planktonic foraminifera. *Nature* 493:398-401. doi:10.1038/nature11815.
40. Stowe, K.A., C.G. Hochwender, K. Fleck, N. Duvall, D. Lewkiewicz, S. Trimble, S. Peters. 2013. Costs of glucosinolates in *Brassica rapa*: Are they context dependent? *Open Journal of Ecology* 3:185-195. doi:10.4236/oje.2013.32022.
39. Aswasereelert, W., S.R. Meyers, A.R. Carroll, S.E. Peters, M.E. Smith, and K.L. Feigl. 2013. Basin-scale cyclostratigraphy of the Green River Formation, Wyoming. *GSA Bulletin* 125:216-228. doi:10.1130/B30541.1.
38. Halevy, I., S.E. Peters, and W.W. Fischer. 2012. Sulfate burial constraints on the Phanerozoic sulfur cycle. *Science* 337:331-334. doi:10.1126/science.1220224.
37. Peters, S.E. and R.R. Gaines. 2012. Formation of the 'Great Unconformity' as a trigger for the Cambrian Explosion. *Nature* 484:363-366. doi:10.1038/nature10969.
36. Finnegan, S. N.A Heim, S.E. Peters, and W.W. Fischer. 2012. Climate change and the selective signature of the Late Ordovician mass extinction. *Proceedings of the National Academy of Sciences U.S.A.* 109(18):6829–6834. doi:10.1073/pnas.1117039109.
35. Peters, S.E. and D.P. Loss. 2012. Storm and fair-weather wave bases: a relevant distinction? *Geology* 40:511-514. doi: 10.1130/G32791.1
34. Gingerich, P.D., I.S. Zalmout, M.S.M. Antar, E.M. Williams, A.E. Carlson, D.C. Kelly, and S.E. Peters. 2012. Reply: Large-scale glaciation and deglaciation of Antarctica during the late Eocene. *Geology* 40:E255. doi:10.1130/G33046Y.1.
33. Hannisdal, B. and S.E. Peters. 2011. Phanerozoic Earth system evolution and marine biodiversity. *Science* 334:1121-1124. doi: 10.1126/science.1210695.
32. Peters, S.E. and N.A. Heim. 2011. Macrostratigraphy and macroevolution in marine environments: testing the common-cause hypothesis. *In*, A. McGowan and A.B. Smith, eds. Comparing the geologic and fossil records: implications for biodiversity studies. *Special Publication of the Geological Society of London* 358:95-104. doi: 10.1144/SP358.7
31. Crampton, J.S., M. Foote, R.A. Cooper, A.G. Beu, and S.E. Peters. 2011. The fossil record and spatial structuring of environments and biodiversity in the Cenozoic of New Zealand. *In*, A. McGowan and A.B. Smith, eds. Comparing the geologic and fossil records: implications for biodiversity studies. *Special Publication of the Geological Society of London* 358:105-122. doi: 10.1144/SP358.8.
30. Finnegan, S., S.E. Peters, and W.W. Fischer. 2011. Late Ordovician-Early Silurian selective extinction patterns in Laurentia and their relationship to climate change. *In* J.C. Gutiérrez-Marco, I. Rábano, and D. Garcia-Bellido, eds. Ordovician of the World. *Cuadernos del Museo Geominera* 14:155-159.
29. Heim, N.A. and S.E. Peters. 2011. Regional environmental breadth predicts geographic range and longevity in fossil marine genera. *PLoS One* 6:(5) e18946; doi:10.1371/journal.pone.0018946
28. Peters, S.E., and N.A. Heim. 2011. Stratigraphic distribution of marine fossils in North America. *Geology* 39:259-262; doi: 10.1130/G31442.1.
27. Meyers, S.R. and S.E. Peters. 2011. A 56 million year rhythm in North American sedimentation during the Phanerozoic. *Earth and Planetary Science Letters* 303:174-180. doi:10.1016/j.epsl.2010.12.044

26. Heim, N.A. and S.E. Peters. 2011. Covariation in macrostratigraphic and macroevolutionary patterns in the marine record of North America. *GSA Bulletin* 123:620-630.
25. Peters, S.E., A.E. Carlson, D.C. Kelly, and P.D. Gingerich. 2010. Large-scale glaciation and deglaciation of Antarctica during the late Eocene. *Geology* 38:723-726.
24. Wilson, J.A., D.M. Mohabey, S.E. Peters, and J.J. Head. 2010. Predation upon hatchling dinosaurs by a new snake from the Late Cretaceous of India. *PLoS Biology* 8(3).
23. Hannisdal, B.J., and S.E. Peters. 2010. On the relationship between macrostratigraphy and geological processes: quantitative information capture and sampling robustness. *The Journal of Geology* 118:111-130.
22. Peters, S.E., and N.A. Heim. 2010. The geologic completeness of paleontological sampling in North America. *Paleobiology* 36:61-79.
21. Adrain, J.M., S.E. Peters, S.R. Westrop. 2009. The Marjuman (Upper Cambrian) trilobite *Cedarina* Lochman: thoracic morphology, systematics, and new species from western Utah and eastern Nevada, USA. *Zootaxa* 2218:35-58.
20. Wilkinson, B.H., B.J. McElroy, S.E. Kesler, S.E. Peters, and E.D. Rothman. 2009. Global geologic maps are tectonic speedometers—rates of rock cycling from area-age frequencies. *Geological Society of America Bulletin* 121:760-779.
19. Peters, S.E., M.S. Antar, I.S. Zalmout, P.D. Gingerich. 2009. Sequence stratigraphic control on preservation of late Eocene whales and other vertebrates at Wadi Al-Hitan, Egypt. *Palaios* 24:290-302.
18. Peters, S.E. 2008. Macrostratigraphy and its promise for paleobiology. Pp. 205-232 *in* P.H. Kelley and R.K. Bambach, eds. From evolution to geobiology: research questions driving paleontology at the start of a new century. *The Paleontological Society Papers*, Vol. 14.
17. Peters, S.E. 2008. Environmental determinants of extinction selectivity in the fossil record. *Nature* 454:626-629.
16. Alroy, J., M. Aberhan, D.J. Bottjer, M. Foote, F.T. Fürsich, P.J. Harries, A.J.W. Hendy, S.M. Holland, S.C. Ivany, W. Kiessling, M.A. Kosnik, C.R. Marshall, A.J. McGowan, A.I. Miller, T.D. Olszewski, M.E. Patzkowsky, S.E. Peters, L. Villier, P.J. Wager, N. Bonuso, P.S. Borkow, B. Brenneis, M.E. Clapham, L.M. Fall, C.A. Ferguson, V.L. Hanson, A.Z. Krug, K.M. Layou, E.H. Leckey, S. Nürnberg, C.M. Powers, J.A. Sessa, C. Simpson, A. Tomasovych, C.C. Visaggi. 2008. Phanerozoic trends in the global diversity of marine invertebrates. *Science* 321:97-100.
15. Peters, S.E. and W.I. Ausich. 2008. A sampling-adjusted macroevolutionary history for Ordovician-Early Silurian crinoids. *Paleobiology* 34:104-116.
14. Peters, S.E. 2007. The problem with the Paleozoic. *Paleobiology* 33:165:181.
13. Bailey, C.M., S.E. Peters, J. Morton, N.L. Shotwell. 2007. The Mechum River Formation, Virginia Blue Ridge: A record of Neoproterozoic and Paleozoic tectonics in southeastern Laurentia. *American Journal of Science* 307:1-22.
12. Peters, S.E. 2006. Genus richness in Cambrian-Ordovician benthic marine communities in North America. *Palaios* 21:580-587.
11. Peters, S.E. 2006. Genus extinction, origination and the durations of sedimentary hiatuses. *Paleobiology* 32:387-407.
10. Peters, S.E. 2006. Macrostratigraphy of North America. *Journal of Geology* 114:391-412. doi:10.1086/504176.
9. Peters, S.E. 2005. Geologic constraints on the macroevolutionary history of marine animals. *Proceedings of the National Academy of Sciences U.S.A.* 102:12326-12331.
8. Ausich, W.I, and S.E. Peters. 2005. A revised macroevolutionary history for Ordovician-Early Silurian crinoids. *Paleobiology* 31:538-551.
7. Peters, S.E. 2004. Relative abundance of Sepkoski's evolutionary faunas in Cambrian-Ordovician deep subtidal environments in North America. *Paleobiology* 30:543-560.
6. Peters, S.E. 2004. Evenness of Cambrian-Ordovician benthic marine communities in North America. *Paleobiology* 30:325-346.
5. Peters, S.E. and M. Foote. 2002. Determinants of extinction in the fossil record. *Nature* 416:420-424.
4. Peters, S.E. and M. Foote. 2001. Biodiversity in the Phanerozoic: a reinterpretation. *Paleobiology* 27:583-601.
3. Peters, S.E., and K.B. Bork. 1999. Species abundance models: an ecological approach to inferring paleoenvironment and resolving paleoecological change in the Waldron Shale (Silurian). *Palaios* 14:234-245.

2. Peters, S.E., and K.B. Bork. 1998. Secondary tiering on crinoids from the Waldron Shale (Silurian: Wenlockian) of Indiana. *Journal of Paleontology* 32:887-894.
1. Bailey, C.M., and S.E. Peters. 1998. Glacially influenced sedimentation in the Late Neoproterozoic Mechum River Formation, Blue Ridge province, Virginia. *Geology* 26:623-626.

Other Publications**:**

19. Korves, T., et al. 2021. The COVID-19 Therapeutic Information Browser. *Proceedings of the BioCreative VII Challenge Evaluation Workshop*.
18. Farrell, U.C. et al. 2021. The Sedimentary Geochemistry and Paleoenvironments Project. *Geobiology* 2021:00:1-12. doi:10.1111/gbi.12462.
17. Mehra, A. et al. 2021. Curation and analysis of global sedimentary geochemical data to inform earth history. *GSA Today*, p. 1-6. doi:10.1130/GSATG484A.1.
16. Peters, S.E. 2019. Commentary: Taxonomic diversity during the Phanerozoic. In S.K. Lyons, A.K. Behrensmeyer, P.J. Wagner (Eds.), *Foundations of Paleoecology* (p. 265). Chicago, Illinois: University of Chicago Press.
15. Goswami, A., J. McGrath, S. Peters, T. Rekatsinas. 2019. Fine-grained object detection over scientific document images with region embeddings. *arXiv*:1910.12462.
14. Park Boush, L., K. Lehnert, A. Myrbo, A. Noren, S. Peters, B. Singer, J. Williams. 2017. What's Your Delta? EarthRates--A New NSF Funded Research Coordination Network for Linking Scales Across the Sedimentary Crust. *The Sedimentary Record* 15(4):4-8. doi:10.2110/sedred.2017.4
13. Peters, S.E., I. Ross, J. Czaplewski, A. Glassel, J. Husson, V. Syverson, A. Zaffos, and M. Livny. 2017. A new tool for deep-down data mining. *Eos*, 98, https://doi.org/10.1029/2017EO082377
12. Chan, M.A., S.E. Peters, B. Tikoff. 2016. The future of field geology, open data sharing, and cybertechnology in Earth science. *The Sedimentary Record* 14:4-10.
11. Peters, S.E. C. Zhang, M. Livny, and C. Ré. 2014. A machine-compiled macroevolutionary history of Phanerozoic life. *ArXiv Preprint*:1406.2963.
10. Peters, S.E., C. Ré, M. Livny, C. Zhang, V. Govindarau, M. McClennen, J.J. Czaplewski. 2014. Brining paleontology's "dark data" to light. The Paleontological Society Special Publications 13:4-6.
9. Noren, A., J. Brigham-Grette, K. Lehnert, S. Peters, J. Williams, E. Ito, D. Anderson, E. Grimm. 2014. Cyberinfastructure for paleogeoscience. Pp 50-56 In A.S. Cohen and D.M. Zur. Continental Scientific Drilling WorkshopSeries: Report 2013.
8. Peters, S.E. 2014. The Paleobiology Database Release PBDB Navigator. *Priscum* 21(1):1-2.
7. Gaines, R.R. and S.E. Peters. 2013. The geological mystery that triggered animal evolution. *New Scientist* 218:30-31.
6. Peters, S.E. 2013. Back to bedrock for paleobiology. *Trends in Ecology and Evolution* 28:452-453. doi:10.1016/j.tree.20013.01.020.
5. Gurnis, M., L. Flesch, D. Okaya, S. Peters, D. Walker, T. Ahern, F. Boler, R. Arrowsmith. 2012. A preliminary strategic plan for EarthScope cyberinfrastructure. EarthScope Cyberinfrastructure Subcommittee White Paper Report.
4. Peters, S.E., M. Livny, K. Squire, J. Williams, B. Hibbard, P. Kishor, P. McLaughlin, S. Millar, T. Whittaker, N. Wiegand, and T. Millar. 2011. Towards a new distributed platform for integrative geoscience: an EarthCube design approach and prototype plan. NSF EarthCube white paper report.
3. Gurnis, M., L. Flesch, D. Okaya, S. Peters, D. Walker, T. Ahern, and F. Boler. 2011. EarthCube lessons, opportunities and challenges from EarthScope. NSF EarthCube white paper report.
2. Gurnis, M., S.E. Peters, and M. Huber. 2011. Paleogeographic and plate tectonic reconstructions: critical components linking the evolution of the solid, fluid, and living Earths. NSF EarthCube white paper report.
1. Peters, S.E. 2008. A geologist questions a grand theory. *Nature* 456:5.

Professional Meeting Abstracts:

112. Walton, C.R., O. Shorttle, F.E. Jenner, S. Peters. 2022. Did sediment accumulation reshape crustal nutrient inventories. 2022 Goldschmidt Conference.
111. Kwan, W.-Y., Kaufman, S., LeVay, L.J., Fraas, A.J., Peters, S.E. Sessa, J.A., 2022. Creating a reproducible data standardization workflow using Jupyter Notebooks. EarthCube Annual Meeting. Proceedings Contribution 134.

110. LeVay, L.J., Fraass, A.J., Peters, S., Sessa, J.A., Kaufman, S., Kwan, W.-Y., 2022, Geologic data standardization for database entry: preparing diverse datasets for hosting and accessibility. 2022 EarthCube Annual Meeting, La Jolla, California, USA, 14-16 June.
109. Quinn, D.P., S.E. Peters, I.A. Ross. 2022. Building a spatial index of orbital Mars science using machine-reading approaches. 53rd Lunar and Planetary Science Conference. Contribution No. 2678, 2022, id.2952.
108. Lehnert, K., et al. 2021. Linking data systems into a collaborative pipeline for geochemical data from field to archive. EGU General Assembly Conference Abstracts. EGU21-13940.
107. Quinn, D., et al. 2021. Implementing the Sparrow laboratory data system in multiple subdomains of geochronology and geochemistry. EGU General Assembly Conference Abstracts, EGU21-13832.
106. Segessenmen, D., S.E. Peters. 2020. Macrostratigraphy of the Ediacaran System of North America. Geological Society of America Abstracts with Programs. Vol 52, No. 6. doi: 10.1130/abs/2020AM-359637.
105. Quinn, D.P. et al. 2020. The Sparrow laboratory information management system: a tool for connecting geochemical data to context and community. Geological Society of America Abstracts with Programs. Vol 52, No. 6. doi: 10.1130/abs/2020AM-359460.
104. Fraass, A.J. L.J. LeVay, J.A. Sessa, S.E. Peters, W. Kwan, K. Rozanitis, W.N. Naw, P. O'Brien. 2020. eODP: adapting existing database structures to work with scientific ocean drilling data. Geological Society of America Abstracts with Programs. Vol 52, No. 6. doi: 10.1130/abs/2020AM-357130.
103. Keller, C.B., J.M. Husson, R. Mitchell, W.F. Bottke, T. Gernon, P. Boehnke, E.A. Bell, N. Swanson-Hysell, S.E. Peters. 2019. Quantitative evidence for a Neoproterozoic glacial origin of the Great Unconformity. AGU Fall Meeting.
102. Emmings, J., J. Walsh, D. Condon, I. Ross, S. Poulton, S. Peters. 2019. Text mining reveals ocean redox events. In: The Micropalaeontology Society AGM 2019 Biostratigraphy: a 21st Century Science, British Geological Survey, Keyworth, 13-14 Nov. 2019.
101. D. P. Quinn et al. 2019. Sparrow: a data management system and cyberinfrastructure component targeted at geochronology laboratories. GSA Annual Meeting, Phoenix, AZ.
100. LeVay, L.J., A.J. Fraass, J.A. Sessa. 2019. Extending Ocean Drilling Pursuits [eODP]: Making Scientific Ocean Drilling Data Accessible Through Searchable Databases. AGU Fall Meeting.
99. Husson, J., B.J. Linzmeier, M. Sliwinski, K. Kitajima, A. Ishida, A.C. Maloof, B. Schoene, S.E. Peters, J.W. Valley. 2018. Large carbon isotopic variability at the micron-scale in "Shuram" excursion carbonates from South Australia. AGU Fall Meeting.
98. Peters, S.E., J. Czaplewski, J. Husson. 2018. Getting it all on the map: aggregating and exposing geological information in a space-rock scaffolding. AGU Fall Meeting.
97. Czaplewski, J., S.E. Peters. 2018. Repurposing geoscientific data for mobile use with Rockd. Geological Society of America Abstracts 50
96. Peters, S.E., J. Czaplewski, J.M. Husson. 2018. Macrostrat: a platform for aggregating, relating, and using geological data and information. Geological Society of America Abstracts 50.
95. Barnes, B.D., J. Zambito, S.E. Peters. 2017. A multi-proxy geochemical approach to identifying the Hangenberg crisis in the Bakken Formation, Williston Basin, USA. Geological Society of America Abstracts 48.
94. Sliwinski, M., A. Ishida, K. Kitajima, B.C. Schreiber, A. Denny, B. Barnes, M. J. Spicuzza, S.E. Peters, J.W. Valley. 2017. Beyond conventional: gleaning deeper insights into dolomitization of the Bakken petroleum system through in-situ c- and o-isotope microanalysis. Geological Society of America Abstracts 48.
93. Peters, S.E., V.J.P. Syverson, A. Zaffos, J. Husson, I. Ross, J. Czaplewski. 2017. Extending the reach and resolution of the Paleobiology Database with computational and data infrastructures. Geological Society of America Abstracts 48.
92. Linzmeier, B.J., N.H. Landman, J.A. Sessa, S.E. Peters, I.J. Orland, K. Kitajima, R. Kozdon, J.W. Valley. 2017. Using in situ geochemistry to investigate the depth habitat of ammonites. Geological Society of America Abstracts 48.
91. Syverson, V., and S.E. Peters. 2017. The quantitative footprint of natural history collections and specimens in the scientific literature. Geological Society of America Abstracts 48.
90. Zaffos, A, and S.E. Peters. 2017. Reassessing our expectations for marine latitudinal biodiversity gradients in modern and ancient systems. Geological Society of America Abstracts 48.
89. Peters, S.E., and J.J. Czaplewski. 2017. Macrostrat: an integrative environment for leveraging geological maps and linked data resources. Geological Society of America Abstracts 48.
88. Peters, S.E. and J.J. Czaplewski. 2017. Leveraging geologic maps in a multi-scale interactive environment. USGS-AASG Digital Mapping Techniques Workshop Series. Minneapolis.
87. Ito, E.T., Zaffos, A., Syverson, V.J., Ross, I.A., and S.E. Peters. 2017. Identifying, cross-referencing, and extracting dark data using GeoDeepDive. Digital Data in Biodiversity Research Conference, Ann Arbor, MI.
86. Husson, J.M. and S.E. Peters. 2016. Shifting locus of carbonate sedimentation and the trajectory of Paleozoic pCO_2. AGU Fall Meeting, San Francisco.
85. Peters, S.E., J.M. Husson, I. Ross, J.J. Czaplewski. 2016. Macrostrat and GeoDeepDive: a platform for geological data integration and deep-time research. AGU Fall Meeting, San Francisco.
84. Liu, C., S.E. Peters, I. Ross, J.J. Golden, R.T. Downs, R.M. Hazen. 2016. Reconstructing the evolution of first-row transition metal minerals by GeoDeepDive. AGU Fall Meeting, San Francisco.

83. Zaffos, A., S.E. Peters, and S. Finnegan. 2016. Plate-tectonic regulation of biodiversity and continental endemism. Geological Society of America Abstracts with Programs 48:7. doi: 10.1130/abs/2016AM-283298
82. Linzmeier, B.J., J.A. Sessa, I.J. Orland, N.H. Landman, S.E. Peters, J.W. Valley. 2016. Stable isotope investigation of early ontogeny in Upper Cretaceous Owl Creek Formation ammonites. Geological Society of America Abstracts with Programs. 48:7. doi: 10.1130/abs/2016AM-286961
81. Linzmeier, B.J., J.A. Sessa, I.J. Orland, N.H. Landman, S.E. Peters, J.W. Valley. 2016. Stable isotope investigation of early ontogeny in Upper Cretaceous Owl Creek Formation ammonites. Geological Society of America Abstracts 48(7).
80. Husson, J., S.E. Peters. 2015. Modes of continental sediment storage and the history of atmospheric oxygen. AGU Fall Meeting, San Francisco.
79. Peters, S.E., M. Livny, I. Ross, J. Husson. 2015. GeoDeepDive: towards a machine reading-ready digital library and information integration resource. AGU Fall Meeting, San Francisco.
78. Peters, S.E., J. Husson. 2015. Phanerozoic growth of the epicontinental sedimentary reservoir: implications for long-term sea level change. AGU Fall Meeting, San Francisco.
77. Wilcots, J., J. Husson, S.E. Peters. 2015. Stromatolite distribution in space and time: a machine-reading assisted quantitative analysis. Geological Society of America Abstracts 47.
76. Peters, S.E., J. Husson, R.R. Gaines. 2015. A great divide: the physical stratigraphic record of earth systems changes at the dawn of animals. Geological Society of America Abstracts 47.
75. Peters, S.E., C. Zhang, I. Ross, M. Livny. 2015. PaleoDeepDive: towards an automated system for paleontological data discovery and retrieval from the published literature. Geological Society of America Abstracts 47.
74. Zaffos, A., S.E. Peters, S. McMullen. 2015. Empirical patterns of geographic range size expansion and contraction in marine invertebrates and terrestrial mammals are well predicted by a random walk. Geol Soc. of America Abstracts 47
73. Husson, J., and S.E. Peters. 2015. Macrostratigraphic constraints on the global carbon cycle. Geol. Soc. Am. Abs. 47.
72. Peters. S.E. Preliminary macrostratigraphic analysis of Precambrian sedimentation in Laurentia. Strati2015, Graz.
71. Zaffos, A., S.E. Peters, J. Husson, J. Czaplewski. 2015. A comparative estimate of different biodiversity curves and comments on the link between rock availability and biodiversity. Geological Society of America North Central Section.
70. Husson, J., S.E. Peters, J. Czaplewski. 2015. Macrostratigraphic constraints on the global carbon cycle. Geological Society of America North Central Section.
69. Peters, S.E., J. Husson, J. Czaplewski, A. Zaffos. 2015. Macrostrat: towards a common data infrastructure to support deep time Earth systems science. Geological Society of America North Central Section.
68. Boyce, K.C. and S.E. Peters. 2014. Fungal evolution is not relevant to the Carboniferous peak in coal deposition. Geological Society of America Abstracts 46(6).
67. Haddad, E., S. Finnegan, S.E. Peters. 2014. Selective survivorship in the Late Devonian: insights into extinction drivers from integrated analysis of macroevolutionary and macrostratigraphic patterns. Geological Society of America 46(6).
66. Peters, S.E., J. Czaplewski, and S. Finnegan. 2014. Paleogeographic boundary conditions for Phanerozoic biodiversity analysis: a quantitative framework. Geological Society of America Abstracts 46(6).
65. Peters, S.E. and D.B. Rowley. 2013. The present-day elevations of ancient marine shelf sediments and long-term rates of sediment accumulation. Geological Society of America Abstracts 45(7).
64. Turner, M. M. Gurnis, J. Cannon, X. Qin, S.E. Peters, P. Kishor, J. Czaplewski. 2013. Cyberinfrastructure for plate tectonic reconstructions. Geological Society of America Abstracts 45(7).
63. Gaines, R.R., S.E. Peters, E. Hammarlund, D.E.G. Briggs, C. Qi, X. Hou, S.E. Gabbot, D.E. Canfield. 2013. The Early Phanerozoic 'taphonomic window.' Geological Society of America Abstracts 45(7).
62. Heim, N.A., S.E. Peters, J.L. Payne, J. Saltzman. 2013. The role of paleogeographic data services in improving paleobiological education and research. Geological Society of America Abstracts 45(7).
61. Linzmeier, B., N. H. Landman, R. Kozdon, S.E. Peters. 2013. Oxygen isotope evidence of habitat change during early ontogeny in Cretaceous *Hoploscaphites*. Geological Society of America Abstracts 45(7).
60. Gaines, R. and S.E. Peters. 2013. Transient ocean chemistry during the Cambrian Explosion. Geol. Soc. Lyell Meeting.
59. Kishor, P., N. Heim, S.E. Peters and M. McClennen. 2012. Earth-Base: a free and open source, RESTful Earth sciences platform. Fall Meeting AGU.
58. Heim, N.A., P. Kishor, M. McClennen and S.E. Peters. 2012. Earth-Base: testing the temporal congruency of paleontological collections and geologic maps of North America. Fall Meeting AGU.
57. Metcalfe, K.S., R.R. Gaines, and S.E. Peters. 2012. Evidence for elevated flux of iron to the early Phanerozoic ocean. Geological Society of America Abstracts 44.
56. Gaines, R.R. and S.E. Peters. 2012. Strange brew: pervasive patterns of unusual chemical sedimentation and transient ocean chemistry at the dawn of the Phanerozoic. Geological Society of America Abstracts 44.
55. Peters, S.E. and N.A. Heim. 2012. Identifying stratigraphic cyclicity at the scale of continents and basins. Geological Society of America Abstracts 44.
54. Heim, N.A., and S.E. Peters. 2012. There is no Phanerozoic rock record bias. Geological Society of Am. Abstracts 44.
53. Foltz, T., J. Borchardt, and S.E. Peters. 2012. Stratigraphic covariation in carbonate sedimentology and stable carbon isotopes: evidence for sea level-linked carbon cycling during the Sauk Transgression? Geological Society of America Abstracts 44.

52. Tofte, M., S.E. Peters, and R.R. Gaines. 2012. Sedimentary petrology of the Sauk Sequence on the transcontinental arch: testing the smoking GUn. Geological Society of America Abstracts 44.
51. Halevy, I., S.E. Peters, and W. Fischer. 2012. Stratigraphic constraints on critical fluxes in the Phanerozoic sulfur cycle. Goldschmidt Conference Abstracts.
50. Doebbert, A., T. Lamaskin, S.E. Peters, S.R. Meyers, and A. Carroll. 2011. A new confidence-limits based method for comparing detrital zircon U-Pb age distributions. Geological Society of America Abstracts Abstracts 43.
49. Finnegan, S., S.E. Peters, N.A. Heim, and W.W. Fischer. 2011. Macrostratigraphic and macroecological determinants of extinction risk during the Ordovician mass extinction. Geological Society of America Abstracts Abstracts 43.
48. Heim, N.A., D. Rook, and S.E. Peters. 2011. Macrostratigraphy and the non-marine fossil record of North America. Geological Society of America Abstracts 43.
47. Peters, S.E. 2011. Macrostratigraphy: a quantitative framework for testing the causes and consequences of mass extinctions. Geological Society of America Abstracts 43.
46. Hannisdal, B. and S.E. Peters. 2011. Phanerozoic Earth system evolution and marine biodiversity. Geological Society of America Abstracts 43.
45. Peters, S.E. and R.R. Gaines. 2011. The Great Unconformity: a smoking GUn for the Cambrian Explosion? Geological Society of America Abstracts 43.
44. Gaines, R.R. and S.E. Peters. 2011. Seawater chemistry and the decline of Burgess Shale-type preservation. Geological Society of America Abstracts 43.
43. Finnegan, S., S.E. Peters, and W.W. Fischer. 2011. Late Ordovician-Early Silurian selective extinction patterns in Laurentia and their relationship to climate change. 11th. Intl. Symp. on the Ordovician System.
42. Rook, D.L., N.A. Heim, J. Marcot, and S.E. Peters. 2011. Contrasting patterns of rock and biotic diversity in the marine and terrestrial fossil records of North America. Society of Vertebrate Paleo. Annual Meeting.
41. Crampton, J.S., M. Foote, R.A. Cooper, A.G. Beu, and S.E. Peters. 2010. Fossil biases and biodiversity: common cause role of spatial structuring. Geoscience Society of New Zealand Misc. Pub. 129, 74.
40. Fraass, A., S.E. Peters, and D.C. Kelly. 2010. Statistical evidence for selectivity in the planktic foraminifera. International Symposium on Foraminifera Abstracts Volume with Program, p. 86-87.
39. Loss, D.P., and S.E. Peters. 2010. Storm and normal wavebases: a relevant distinction? GSA Abstracts 42.
38. Rook, D.L., N.A. Heim, and S.E. Peters. 2010. What are we missing? Geological completeness of paleontological sampling in the terrestrial Cenozoic of North America. Society of Vertebrate Paleontology Annual Meeting Abstracts with Programs.
37. Meyers, S.R. and S.E. Peters. 2010. A 56 million year rhythm in North American sedimentation during the Phanerozoic. Geological Society of America Abstracts 42(5).
36. Heim, N.A., and S.E. Peters. 2010. Global distribution predicts regional geographic range and longevity in marine genera of North America. Geological Society of America Abstracts 42(5).
35. Keating-Bitonti, C., D.C. Kelly, S.E. Peters, and K. Billups. 2010. Influence of North Atlantic deep water on global carbon cycling during the Late Miocene. Geological Society of America Abstracts 42(5).
34. Fraass, A.J. and S.E. Peters. 2010. Statistical evidence for selectivity in the planktic foraminifera. Geological Society of America Abstracts 42(5).
33. Peters, S.E., D.C. Kelly, and A. Fraass. 2010. Deep-sea macrostratigraphy and the macroevolution of planktic foraminifera. Geological Society of America Abstracts 42(5).
32. Linzmeier, B., S.E. Peters, R. Kozdon, R. H. Mapes, and J.W. Valley. 2010. Resolving depth migration in Nautilus macromphalus by ion microprobe analysis of $\delta^{18}O$. Geological Society of America Abstracts 42(5).
31. Peters, S.E. 2010. Macrostratigraphy and macroevolution in marine environments: testing the common-cause hypothesis. Lyell Symposium, IPC, London (invited keynote address).
30. Peters, S.E., and N.A. Heim. 2009. The stratigraphic distribution of fossils within gap-bound sedimentary rock packages. Geological Society of America Abstracts with Programs 41.
29. Peters, S.E., and N.A. Heim. 2009. The geological completeness of paleontological sampling in North America. North American Paleontological Convention Abstracts with Programs 41.
28. Heim, N.A., and S.E. Peters. 2009. Macrostratigraphy and the North American Fossil Record: The Stratigraphic Distribution of Fossils within Gap-Bound Sediment Packages. N. American Paleontol. Conv.
27. Frass, A., D.C. Kelly, and S.E. Peters. 2009. Macroevolution of the planktonic foraminifera. North American Paleontological Convention Abstracts with Programs.
26. McLaughlin, P.I., S.E. Peters, and N. Emerson. 2009. Stratapendium, a community-based, interactive web archive for geological data. GSA Abstracts with Programs v. 41(4).
25. Peters, S.E. and N.A. Heim. 2009. Macrostratigraphy and the North American fossil record: rocks and fossils in time and space. GSA Abstracts with Programs v. 44(4).
24. Wasereelert, W. S.E. Peters, K. L. Feigl, and A. R. Carroll. 2008. Macrostratigraphy of the Lacustrine Wilkins Peak Member, Green River Formation, WY, USA. GSA Abstract with Programs 40.
23. Peters, S.E. 2007. Are Sepkoski's evolutionary faunas evolutionary lithofacies? GSA Abstracts Programs.
22. Peters, S.E. and B. Hannisdal. 2007. The effect of depositional sequence asymmetry on origination and extinction rates: insights from modeling. Geological Society of America Abstracts with Programs 39.

21. Ausich, W.I. and S.E. Peters. 2007. Standardized sampling of Ordovician-Early Silurian crinoids: macroevolution and the end-Ordovician extinctions. Geological Society of America Abstracts Programs 39.
20. Abrajevitch, A., B. Oliva, S. Peters, A. Beehr, and R. Van der Voo. 2006. Paleomagnetic results from Late Pennsylvanian marls and Early Permian red paleosols of the Dunkard Group, Ohio and West Virginia, U.S.A. American Geophysical Union Fall Meeting.
19. Peters, S.E. and M. Foote. 2006. Carbonates, siliciclastics and the evolution of faunal composition. Second International Paleontological Congress Proceedings, Beijing.
18. Ausich, W.I. and S.E. Peters 2006. Ordovician crinoid faunas from Ohio. GSA Abstracts with Programs 38.
17. Peters, S.E. 2005. Closing the gap: mass extinctions and the durations of sedimentary hiatuses. GSA Abstracts with Programs 36.
16. Wall, P. D., L. C. Ivany, B. H. Wilkinson, and S. Peters. 2005. The effect of sedimentary rock outcrop area on estimates of marine Phanerozoic diversity. GSA Abstracts with Programs 36.
15. Ausich, W.I., W. Kammer, and S.E. Peters. 2005. Data accuracy for geoinformatics: the state of taxonomic databases and the need for protocols. NAPC, Nova Scotia.
14. Peters, S.E. 2004. New quantitative analyses of the stratigraphic record: implications for paleobiology. GSA Abstracts with Programs 35.
13. Ausich, W.I. and S.E. Peters. 2004. New and refined data on Ordovician to Early Silurian crinoids yield a revised macroevolutionary history. GSA with Programs 35.
12. Peters, S.E. 2003. Recognized globally, manifested locally: Sepkoski's evolutionary faunas in North American Cambrian-Ordovician benthic assemblages. GSA Abstracts with Programs 35.
11. Peters, S.E. 2002. Evenness, richness, and the Cm-Pz faunal transition. GSA Abstracts Programs 34.
10. Peters, S.E. 2001. The evenness and richness components of taxonomic diversity. GSA Abstracts 33.
9. Peters, S.E. and M. Foote. 2001. Large-scale heterogeneity in the stratigraphic record: a significant source of bias in global diversity estimates. Paleobios 21 supplement to no. 2, p.102.
8. Hochwender, C. G., K.A. Stowe, S. Trimble, and S. Peters. 1998. Benefit and cost of defense in *Brassica rapa*. Ecological Society of America Annual Meeting Abstracts, p.71.
7. Bailey, C.M, and S.E. Peters. 1997. Structure and depositional setting of the late Neoproterozoic Mechum River Formation, Blue Ridge Province, VA. Geological Society of America Abstracts with Programs, 9:3.
6. Peters, S.E., and K.B. Bork. 1997. Fresh-water arthropods and Neuropteris preserved in ironstone concretions: A new lagerstätte from the Permian of Ohio. The Ohio Journal of Science vol. 97, no. 2, p. 39.
5. Peters, S.E., and K.B. Bork. 1997. Hitch-hiking in Silurian seas: well preserved crinoids and associated epibionts from the Waldron Shale (Silurian; Wenlockian) of southeastern Indiana. Geological Society of America Abstracts with Programs vol 29, no. 4.
4. Peters, S.E. 1996. Paleoecological succession in the Waldron Shale. Ohio Journal of Science vol. 96, no. 2.
3. Peters, S.E. 1995. Cornulitid occurrences on *Paraspirifer bownockeri*: implications for Spiriferacea current-systems. Geological Society of America Abstracts with Programs vol. 27, no. 7, p. 382.
2. Peters, S.E. 1995. Morphologic variation in the cornulitids from the Waldron and Silica Shales. The Ohio Journal of Science vol. 95, no. 2, p. 28.
1. Peters, S.E. 1994. Cornulitids from the Waldron and Silica Shales: polyphyletic or diverse epizoans. Geological Society of America Abstracts with Programs vol. 26, no. 7, p. 487.

Databases and Software Infrastructure:

1. Macrostrat (https://macrostrat.org): a relational geospatial database describing rocks and sediments in Earth's upper crust.
2. Rockd (https://rockd.org): a mobile application for field-based geological observation and discovery.
3. xDD (https://xdd.wisc.edu): a digital library and machine reading system designed to enable algorithmic location and extraction of data in the published scientific literature.
4. Friends of the U. of Michigan Museum of Paleontology Archive (http://michiganbasinfossils.org)
5. Paleobiology Database lead of IT team (https://paleobiodb.org)
6. Sepkoski's Online Genus Database (http://strata.geology.wisc.edu/jack)

Research Grants and Fellowships (PI and Co-PI status):

2022-24 DARPA ASKEM: "Large-scale Application of Neural Structured Learning to Accelerate Knowledge Extraction and Discovery" (Co-PI).

2021-22 USGS CDI: "Connecting digital publications to actionable databases and USGS workflows via xDD and UW-COSMOS" (PI).

2020-23 NSF ICER-EarthCube: "EarthCube Data Capabilities: Solutions for Paleobotany: a web client hosting novel content and its integration with existing databases" (Co-PI, lead institution Wyoming).

2020-23 NSF Geoinformatics 1948831: “Collaborative Research: Geoinformatics: Facility: Paleobiology Database: Preserving and Presenting Ancient Data for Future Research,” (PI, lead institution George Mason).

2019-23 NSF 1928362: "EarthCube Science-Enabling Data Capabilities: Collaborative Proposal: Extending Ocean Drilling Pursuits [eODP]: Microfossils and Stratigraphy” Co-P.I.

2019-21 New Zealand Academy Catalyst Fund: “Automated computer data aggregation techniques in New Zealand Earth sciences.” Co-PI (with Crampton, Vict. Univ, Wellington).

2018-21 DARPA-PA-18-02-AIE-FP-019 “Curating Earth systems models from scientific publications,” PI (Co-PIs Rekatsinas, Livny; Computer Science)

2019-21 DOE-FOA-0001956: “A high-throughput computing infrastructure for generating custom, open community geothermal datasets,” (P.I., lead institution Univ. Az).

2018-21 USGS CDI: “Knowledge Extraction Algorithms (KEA): Turning Literature Into Data” PI (co-PI Livny, Computer Science)

2017-22 NSF EarthCube-1740694: “Collaborative Proposal: EarthCube Integration: Geochronology Frontier at the Laboratory-Cyberinformatics Interface,” Co-P.I. (lead P.I. Singer, UW-Madison)

2015-17 NSF “Collaborative Research: ABI Development: Building Interoperable Cyberinfrastructure at the Interface between Paleogeoinformatics and Bioinformatics”. Co-P.I.

2014-17 NSF ICER-1440312: “EarthCube Building Blocks: Collaborative Proposal: Digital Crust – A 4D Exploratory Environment for Earth Science Research and Learning.” Co-P.I.

2013-18 NSF ACI-1343760: “EarthCube Building Blocks: A Cognitive Computer Infrastructure to Support Geoscience,” P.I.

2012-13 NSF “EAGER COLLABORATIVE: Bringing Together Computational and Linguistic Methods to Extract 'Dark' Geosciences Data for the EarthCube Framework.” Co-P.I.

2012-13 NSF “EAGER: Service-based integration platform for EarthCube.” Co-P.I.

2012-19 NSF EAR-1150082 “CAREER: Towards a high-resolution quantification of the N. American rock record: leveraging field data, citizen science, and education for macrostratigraphy.” P.I.

2010-16 NSF EAR-0949416 Geoinformatics: “Leveraging the PaleoDB for Research, Education, Mentorship, and Interoperability.” P.I.

2008-11 NSF, EAR-0819931 Sedimentary Geology and Paleobiology: “Macrostratigraphy and macroevolution in N. America: a test of the common cause hypothesis.” P.I.

2008-10 USGS Contract Award: “Macrostratigraphy of North America.” P.I.

2008-09 UW-Extension Innovation grant

2007-09 American Chemical Society Petroleum Research Fund Research Grant – Type G “A section-based approach to quantifying the geologic record.” P.I.

2006-07 NSF EAR-0544941 Sedimentary Geology and Paleobiology “Constraining geological and macroevolutionary patterns & processes in the Phanerozoic”, P.I.

2003-06 Michigan Society of Fellows Postdoctoral Fellowship

2003 Ohio State University Postdoctoral Fellowship (declined)

2002 Doolittle Research Grant, University of Chicago

2000 Paleontological Society Grant-in-Aid of Student Research

2000 Sigma Xi Grant-in-Aid of Research

2000 Hinds Fund Research Grant, The University of Chicago

1999-02 U.S. Environmental Protection Agency, Science To Achieve Results Graduate Fellowship

1999 National Science Foundation, Graduate Fellowship (declined)

1997 Denison University Research Fund Grant award

1994-98 Denison University Faculty Full Scholarship for Achievement

Invited Symposia Keynotes and Lectures (selected):

2020.11.02 DOE 3-day Community of Interest Workshop on Future Scientific Methodologies

2019.08.05 Gordon Research Conference: Timing, Tempo and Drivers of Biotic Evolution

2019.02.25 Harvard University EPS Lecture

2018.11.04 Pardee Keynote Symposium, Geological Society of America, Indianapolis

2018.05.12 Universität Erlangen−Nürnberg Lecture

2018.05.07 GFZ Potsdam Lecture

2018.05.02 British Geological Survey Lecture

2018.06.06 Invited talk: 4D Workshop: Deep-time Data Driven Discovery and the Evolution of Earth, D.C.

2017.10.25 Pardee Keynote Symposium, Geological Society of America, Seattle
2017.08.24 Halliburton STEPS Distinguished Lecture, Houston TX
2017.02.23 Continental Margins II Lecture, Rice Univ. (http://earthscience.rice.edu/iress/)
2016.03.09 Lyell Symposium lecture, London, UK
2016.02.04 Gordon Research Conference: Geobiology, Galveston, TX
2015.11.02 Pardee Keynote Symposium, Geological Society of America, Baltimore
2014.12.10 Keynote Address, Deep-Time Data Workshop, San Francisco, CA
2014.02.15 Keynote Address, North American Paleontological Convention, Gainesville, FL
2013.05.14 EarthScope National Meeting Plenary Talk
2011.10.01 Keynote, multidisciplinary approaches to mass extinctions, GSA national meeting, Minneapolis
2010.06.30 Keynote Lecture, Lyell Symposium, International Palaeontological Congress, London
2010.05.15 Yale University, Frontiers in Paleontology and Geomicrobiology Lecture
2007.10.01 Natural History Museum, London, First Inaugural Earth Perspectives Lecture Keynote Address

University and Professional Service (selected):
2022-pres Paleontological Society Ethics Committee
2021-pres GSA Geoinformatics Division Vice Chair
2021 L&S CIO planning committee
2021 UW Origins of Life Cluster Hire Committee member
2020-21 EarthRates Committee member and 2021 Workshop committee
2020-pres Paleontological Society Schuchert Award Selection Committee
2019-pres Deep-Time Digital Earth (DDE) Science Committee, Grant review committee
2015-pres UW-Madison Center for Climatic Research Core Member
2013-pres Paleobiology Database IT lead
2019-20 UW-Madison Dept. Geoscience Faculty Senator
2019-20 Co-Chair Analytical Paleobiology Workshop
2019 OVCRGE Research Data Storage Initiative Committee
2018-19 Dept. of Geoscience Diversity and Inclusion Committee faculty liaison
2016-20 Dept. of Geoscience Council
2015-19 AGU IT Advisory Task Force
2015-18 Faculty Senator (alternate)
2016-18 Office of the Vice Chancellor for Research & Graduate Education Fall Competition Committee
2015-18 North American Commission on Stratigraphic Nomenclature, GSA Representative
2016-2017 Undergraduate Committee Chair
2015 SEPM Ballot Committee
2011-2015 EarthScope Cyberinfrastructure subcommittee
2013.10 Co-Organizer, Geochronology EarthCube Domain Workshop
2013.02 Steering Committee, Paleogeosciences EarthCube Domain Workshop
2011-2013 STEPPE Advisory Committee, Director Search Committee
2010-2013 Advisor, Student PaleoClub, Dept. Geoscience, UW-Madison
2004-2007 Editor, *Paleobiology* Matters of the Record
2004-2006 University of Michigan Distinguished Dissertation Awards selection committee

Courses Regularly Taught:
Geo875 Intro. to Sequence Stratigraphy (1 credit)
Geo731 Carbonate Geology (2 credits)
Geo690 Wasatch-Uinta Geology Field Camp (6 credits)
Geo875 Sedimentary Geology and Paleobiology Seminar (1 credit)
Geo457 Advanced Field Methods, White Lake Mapping Course (2 credits)
Geo431 Sedimentology and Stratigraphy Laboratory (1 credit)
Geo430 Sedimentology and Stratigraphy Lecture (3 credits)
Geo376 Conducted Week-long Undergraduate Field Course (1-2 credit)
Geo204 Geologic Evolution of the Earth (4 credits)
Geo110 Evolution and Extinction (4 credits)

Supervised Students:

2021-pres Evgeny Mazko (Ph.D.): Macrostratigraphy of Russian Platform
2020-pres Committee member and advisor on ML techniques, Julia Wilcots (Ph.D. MIT)
2019-pres Co-Advisor, Shan Ye (Ph.D.): Cretaceous macrostratigraphy and data science
2018-pres Co-Advisor, Aaron Kuffner (Ph.D.): vertebrate paleontology and stratigraphic paleobiology
2017-22 Daniel Segessenmen (Ph.D.): Macrostratigraphy of the Ediacaran System in North America.
2013-20 Co-Advisor, Scott Hartman (Ph.D.): vertebrate paleoecology and evolution.
2015-17 Advisor: Ben Barnes (M.S.): isotopic signature of authigenic Late Devonian carbonate cements
2012-17 Advisor, Sharon McMullen (Ph.D.): "Stratigraphic paleobiology in non-marine basins."
2009-17 Co-Advisor, Ben Linzmeier (Ph.D.): "Depth migratory behavior in *Nautilus macromphalus* as recorded by $\partial^{18}O$ of shell aragonite." (M.S. defense date 15 November, 2011).
2011-13 Advisor, Tim Foltz (M.S.): "Sequence stratigraphic, geochemical, and petrographic analysis of the Sauk Sequence, Bob Marshall Wilderness, Montana." (now in private industry)
2008-12 Advisor, David Lovelace (Ph.D.): "Paleontology, paleosols, and paleoenvironments of the Triassic Chugwater Group." (now research scientists at UW-Madison Geology Museum)
2008-11 Co-Advisor, Caitlin Keating-Bitonti (M.S.): "The influence of North Atlantic deepwater on the global carbon cycle during the Late Miocene." (now a Ph.D.student at Stanford).
2008-10 Co-Advisor, Erin Fenlon (M.S.): "Goldilocks' bivalves: evolution on three spatiotemporal scales." (now working in private sector).
2008-09 Co-Advisor, Andy Fraass (M.S): "The macroevolutionary history of the planktonic foraminifera." (now Ph.D. student U.Mass. at Amherst).

Undergraduate senior thesis and research students:
2019 Afiqah Ahmad Rafi: macrostratigraphy analysis of southeastern Asia
2017-18 Jarret Smith: Comparative macrostratigraphic analysis of Souther American basins
2016-17 Erika Ito: GeoDeepDive data extraction and Macrostrat geologic map integration
2015 Julia Wilcots: Stromatolite distribution in space and time: a machine-reading assisted quantitative analysis
2012-13 Jackson Borchardt: sedimentary petrology and geochemistry of the Cambrian Sauk Sequence in the Bob Marshall Wilderness, Montana
2011-12 Marshall Tofte: "Sedimentary petrology of the Cambrian Sauk sequence in northern Illinois."
2009-10 Angeline Catena: "Provenance analysis of the Chugwater Group, Wyoming"
2008-09 Neal Auchter: "Late Cretaceous to Recent macrostratigraphy of New Zealand"

Supervised Postdoctoral Fellows and Academic Staff
2021-pres Casey Idzikowski, Research Specialist
2020-pres Daven Quinn, Research Scientist
2018-20 Daven Quinn, postdoc
2012-pres Michael McClennen, programmer
2016-17 Valerie Syverson, postdoc
2015-17 Andrew Zaffos, postdoc
2014-17 Jon Husson, postdoc
2013-19 John J. Czaplewski, programmer
2011-15 Puneet Kishor, programmer
2008-12 Noel Heim, postdoc