

Phoebe A. Cohen
Associate Professor of Geosciences
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Education:

- Ph.D. (2010) Harvard University. Department of Earth and Planetary Sciences. Dissertation: Investigations of Enigmatic Neoproterozoic Eukaryotes
Advisor: Andrew H. Knoll
- B.A. with distinction (2002) Cornell University College of Arts and Sciences
Major: Science of Earth Systems

Professional Experience:

- Chair (2021 - 2024) Department of Geosciences, Williams College
- Associate Professor (2018 -) Department of Geosciences, Williams College
- Assistant Professor (2012 - 2018) Department of Geosciences, Williams College
- Education and Outreach Lead (2010 - 2013) MIT NASA Astrobiology Team.
- Postdoctoral Associate (2010 - 2012) Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology. Advisor: Roger E. Summons.
- Assistant to the Director (2002-2004) Paleontological Research Institute

Awards & Grants:

- National Science Foundation Grant “Collaborative Research: RUI: Exploring early metazoan reef evolution through a multi-scale approach”. 2023-2025
- *Using Carbon Isotopes in Astrobiology: Origin of Life and beyond* teaching activity accepted into the Teach the Earth Exemplary Teaching Activity collection at the Science Education Resource Center
- National Science Foundation Grant “Sustaining URGE (Unlearning Racism in Geosciences)”, Collaborator, 2021-2022.
- Geological Society of America Geobiology & Geomicrobiology Division Post-Tenure Award, 2021.

- National Science Foundation Grant “Collaborative Research: RUI: "CSI Devonian" - testing Late Devonian ocean anoxia proxies across different paleoenvironments", Co-I, 2021-2024
- National Science Foundation Grant “Collaborative Research: RUI: Using Organic Carbon Isotopes of Single Microfossils to Illuminate Proterozoic Eukaryotic Ecosystems”, Lead PI, 2019-2021
- Sherman Fairchild Grant to support Data Science Bootcamp for Williams College faculty, 2019-2020.
- American Chemical Society Petroleum Research Fund “Building a High Resolution Record of Organic-Walled Microfossils In Upper Devonian Shales: Paleoenvironmental and Ecological Implications” 2016-2019
- Geological Society of America Gladys W. Cole Memorial Research Award, “Exploring the Taxonomy and Functional Morphology of the Enigmatic ca. 800 Ma Apatitic Scale Microfossils from Yukon, Canada” 2016-2017
- Best Paper, Journal of Paleontology, 2012, awarded at the 2013 Annual Meeting of the Geological Society of America
- Geological Society of America Subaru Outstanding Woman in Science Award, 2012
- NASA Astrobiology Institute Grant, “Foundations of Complex Life: Evolution, Preservation and Detection on Earth and Beyond” (Co-I and Education and Outreach team member), 2013-2019
- NASA Astrobiology Education and Public Outreach Grant: ‘A Traveling Astrobiology Exhibit: Combining Youth Engagement with Public Outreach’; 2011
- Paleontological Society Education and Outreach Grant Award: ‘Telling Your Story: Facilitating Relationships between Geoscientists and K-12 Classrooms’; 2010
- Derek Bok Excellence in Teaching Award, Harvard University, 2009
- Paleontological Society Gould Student Research Award, 2008
- Cushman Foundation Loeblich and Tappan Student Research Award, 2008
- National Science Foundation Graduate Fellowship, 2005-2008

Professional Publications: * denotes current or former undergraduate author

- ▶ Roest-Ellis, S., Richardson, J. A., Phillips, B. L., Mehra, A., Webb, S. M., Cohen, P. A., et al. (2023). Tonian carbonates record phosphate-rich shallow seas. *Geochemistry, Geophysics, Geosystems*, 24, e2023GC010974. <https://doi.org/10.1029/2023GC010974>
- ▶ Pippenger, Kate*, Lucas Estrada, David S. Jones, Phoebe A. Cohen. Appalachian Basin mercury enrichments during the Late Devonian Kellwasser Events and comparison to global records in review at *Palaeogeography, Palaeoclimatology, Palaeoecology*.

- ▶ Cohen, Phoebe A., Robin B. Kodner (2021) The earliest history of eukaryotes: integrating biological and geological data. *Trends in Ecology and Evolution*. <https://doi.org/10.1016/j.tree.2021.11.005>
- ▶ Cohen, Phoebe A., Christopher Junium, Ezekiel King Philips*, Ben Uveges (2021) Carbon cycle dynamics and ecology revealed by the carbon isotopic composition of single organic microfossils during the Late Devonian Biotic Crisis. *Geobiology*. <https://doi.org/10.1111/gbi.12482>
- ▶ Agic, H., & Cohen, P. A. (2021). Non-pollen palynomorphs in deep time: unravelling the evolution of early eukaryotes. *Geological Society, London, Special Publications*, 511, SP511–2020–223.
- ▶ Boyer, Diana, Aaron Martinez, Scott Evans, Phoebe Cohen, Emily Haddad, Katherine Pippenger*, Gordon Love, Mary Droser. (2021). Living on the edge: the impact of protracted oxygen stress on life in the Late Devonian. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 110226.
- ▶ Cohen, Phoebe A., Vizcaíno, Maoli*, and Anderson, Ross (2020) Oldest fossil ciliates from the Cryogenian glacial interlude reinterpreted as possible red algal spores. *Palaeontology*, doi: 10.1111/pala.12497
- ▶ Liljestrands FL, Knoll AH, Tosca NJ, Cohen PA, Macdonald FA, Peng Y, Johnston D. (2020) The triple oxygen isotope composition of Precambrian chert. *Earth and Planetary Science Letters*.1;537:116167. [doi: 10.1016/j.epsl.2020.116167](https://doi.org/10.1016/j.epsl.2020.116167)
- ▶ Topaz CM, Ciocanel V, Cohen P, Ott M, Rodriguez N. Institute for the Quantitative Study of Inclusion, Diversity, and Equity (QSIDE). *Notices Amer Math Soc*. 2020 Feb 1;67(02):1–6.
- ▶ Abigail Kelly*, Phoebe Cohen, and Diana Boyer (2019) TINY KEYS TO UNLOCKING THE KELLWASSER EVENTS: DETAILED CHARACTERIZATION OF ORGANIC WALLED MICROFOSSILS ASSOCIATED WITH EXTINCTION IN WESTERN NEW YORK STATE. *Palaios*. 34 (2): 96-104.
- ▶ Cohen, P., Lockwood, R., & Peters, S. (2018). *Integrating Macrostrat and Rockd into Undergraduate Earth Science Teaching* (Elements of Paleontology). Cambridge: Cambridge University Press. doi:10.1017/9781108681445
- ▶ Lockwood, R., Cohen, P., Uhen, M., & Ryker, K. (2018). *Utilizing the Paleobiology Database to Provide Educational Opportunities for Undergraduates* (Elements of Paleontology). Cambridge: Cambridge University Press. doi:10.1017/9781108681667

- ▶ P. A. Cohen, L. A. Riedman (2018) It's a protist-eat-protist world: recalcitrance, predation, and evolution in the Tonian–Cryogenian ocean. *Emerging Topics in Life Sciences*. 5, ETL20170145–8.
- ▶ B. T. Uveges, C. K. Junium, D. L. Boyer, P. A. Cohen, J. E. Day (2018) Biogeochemical controls on black shale deposition during the Frasnian-Famennian biotic crisis in the Illinois and Appalachian Basins, USA, inferred from stable isotopes of nitrogen and carbon. *Palaeogeography, Palaeoclimatology, Palaeoecology*.
- ▶ Cohen, Phoebe A., Spencer Irvine*, Justin V. Strauss. (2017) Vase-shaped Microfossils from the Tonain Callison Lake Formation of Yukon, Canada: Taxonomy, Taphonomy, and Stratigraphic Paleobiology. *Palaeontology*. 60(5), 883-701, doi: 10.1111/pala.12315
- ▶ Paul F. Hoffman, Dorian S. Abbot, Yosef Ashkenazy, Douglas I. Ben, Phoebe A. Cohen, Grant M. Cox, Jessica R. Creveling, Yannick Donnadieu, Douglas H. Erwin, Ian J. Fairchild, David Ferreira, Jason C. Goodman, Galen P. Halverson, Malte F. Jansen, Guillaume Le Hir, Gordon D. Love, Francis A. Macdonald, Adam C. Maloof, Gilles Ramstein, Brian E. J. Rose, Catherine V. Rose, Eli Tziperman, Aiko Voigt, Stephen G. Warren. (2017) Climate dynamics of Snowball Earth and Cryogenian geology–geobiology. *Science Advances* 3, e1600983.
- ▶ Cohen, Phoebe A., Nicholas Tosca, Alan D. Rooney, Mukul Sharma, and Justin V. Strauss (2017) Controlled hydroxyapatite biomineralization in an ~810 million year old unicellular eukaryote. *Science Advances* 3, e1700095.
- ▶ Cohen, Phoebe A. and Francis Macdonald (2015) The Proterozoic Record of Eukaryotes *Paleobiology*. 41(4), 610-632.
- ▶ Cohen, Phoebe A., Francis Macdonald, Sara Pruss, Emily Matys, and Tanja Bosak (2015). Fossils of Putative Marine Algae from the Cryogenian Glacial Interlude of Mongolia. *Palaios* 30 (3) 238-247.
- ▶ Cohen, Phoebe A., and Andrew H. Knoll (2012) Scale Microfossils from the mid Neoproterozoic Fifteenmile Group, Yukon. *Journal of Paleontology* 86 (5), 775-800
- ▶ Wilson, J.P., Grotzinger, J.P., Fisher, W.W., Hand, K.P, Jensen, S., Knoll, A.H., Abelson, J., Metz, J.M., McLoughlin, N., Cohen, P.A., and M.M. Tice. (2012) Deep-Water Incised Valley Deposits at the Proterozoic-Cambrian Boundary in Southern Namibia Contain Abundant *Treptichnus pedum*. *Palaios* 27, 252-273
- ▶ Cohen, Phoebe A., J. William Schopf, Nicholas J. Butterfield, Anatoliy Kudryavtsev, & Francis Macdonald, (2011) Phosphate biomineralization in mid-Neoproterozoic protists. *Geology* v. 39, no. 6, p. 539-542, doi:10.1130/G31833.1

- ▶ Macdonald, Francis A., and Phoebe A. Cohen. (2011) The Tatonduk inlier, Alaska–Yukon border. In: Arnaud, E., Halverson, G., and Shields, G. Eds., *The Geological Record of Neoproterozoic Glaciations*, *Geological Society of London Memoir*, London.
- ▶ Willman, Sebastian and Phoebe A. Cohen. 2011. Ultrastructural Approaches to the Microfossil Record: Assessing Biological Affinities by use of Transmission Electron Microscopy. In: *Quantifying the Evolution of Early Life* (Laflamme, M., Schiffbauer, J.D., and Dornbos, S.Q., Eds.) Springer, 462 p.
- ▶ Macdonald, F.A., Schmitz, M.D., Crowley, J.L., Roots, C.F., Jones, D.S., Maloof, A.C., Strauss, J.V., Cohen, P.A., Johnston, D.T., and Schrag, D.P., 2010, Calibrating the Cryogenian: *Science*, v. 327, no. 5970, p. 1241-1243.
- ▶ Macdonald, F.A., Cohen, P.A., Dudas, F.O., and Schrag, D.P., 2010, Early Neoproterozoic scale microfossils in the lower Tindir Group of Alaska and the Yukon Territory: *Geology* (Boulder), v. 38, no. 2, p. 143-146.
- ▶ Cohen, Phoebe A., A.H. Knoll and R.B. Kodner. (2009) Large spinose microfossils in Ediacaran rocks as resting stages of early animals. *Proceedings of the National Academy of Sciences*. v. 106, p. 6519 – 6524
- ▶ Cohen, Phoebe A. Bradley, A., Knoll, A.H., Grotzinger, J.P., Jensen, S., Abelson, J., Hand, K., Love, G., Metz, J., McLoughlin, N. and Meister, P. (2009) Tubular Macrofossils from the Ediacaran Nama Group, Namibia. *Journal of Paleontology* v. 83, p. 110-122.
- ▶ Allmon, W.D. and Phoebe A. Cohen (2008). Palaeoecological significance of turritelline gastropod-dominated assemblages from the mid-Cretaceous (Albian-Cenomanian) of Texas and Oklahoma, USA. *Cretaceous Research* v. 29, 65-77
- ▶ Knoll, A.H., Javaux, E.J., Hewitt, D., & Cohen, P.A. (2006). Eukaryotic organisms in Proterozoic oceans. *Philosophical Transactions - Royal Society of London. Biological Sciences*, v. 361, n. 1470 p. 1023-1038.

Recent Outreach and DEI Activities:

- Co-facilitated National Association of Geosciences Teacher (NAGT) workshop “Towards a more inclusive geosciences: Teaching strategies and policies to support all students”, April 14th, 2022.
- Founding co-organizer of URGE: Unlearning Racism in Geosciences community-wide reading group 2020-2021, and Williams College URGE Pod leader, 2021.

- Contributing writer, editor, and exhibit designer for Daring to Dig: Women in American Paleontology exhibit at the Museum of the Earth / Paleontological Research Institution.
- Hosted and contributed to Science in the (Virtual) Pub: Women in Paleontology to celebrate the opening of Daring to Dig: Women in American Paleontology exhibit at the Museum of the Earth / Paleontological Research Institution.

Recent Service to the Profession:

- Board Member, Paleontological Research Institution and the Museum of Earth, term 2022 - 2028.
- Member of Geological Society of America Culture Task Force 2020
- Paleontological Society Council Member-at-large, 2019-2021
- Inaugural member of the Paleontological Society Ethics Committee, 2019-2022
- Member of the editorial board for Elements of Paleontology, 2018 - 2021
- Member of Paleobiology Database Executive Committee, 2017-2020
- Co-organizer for Paleontological Society Short Course on paleontological education at the undergraduate level at the Geological Society of America Meeting, Fall 2018
- Topical editor for the Paleontological Research Institution's "Teacher Friendly Guide to Climate Change" and "Introduction to Paleobiology and the Fossil Record" (2nd edition)