

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:

- 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 “Using Organic Carbon Isotopes of Single Microfossils to Illuminate Proterozoic Eukaryotic Ecosystems”, Lead PI, 2019-2021 (\$79,585)
- 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 (\$70,000)
- 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 (\$8,000)
- 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 (\$150,856)
- 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

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

Liljestrand 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.

Boyer, Diana, Aaron Martinez, Scott Evans, Phoebe Cohen, Emily Haddad, Katherine Pippenger*, Gordon Love, Mary Droser. Living on the edge: the impact of protracted oxygen stress on life in the Late Devonian. *In review at Palaeogeography, Palaeoclimatology, Palaeoecology*

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.

Short Courses and Professional Workshops:

- Co-Organized Northeast Geobiology Meeting (125 participants) at Amherst College, March 2019.
- Organized “Social Mindfulness for STEM+” workshop as part of Williams College TeachWeek 2019
- Co-Organizer and speaker, Paleontological Society Short Course, "Pedagogy and Technology in the Modern Paleontology Classroom”, November 3rd, 2018, Indianapolis IN.
- Co-Leader, Paleobiology and Earth History Educational Hack-a-thon, March 2018, Bethesda, MD.

- Working with Diverse Students on Societally Relevant Geoscience Issues webinar, InTeGrate SERC program, May 11th, 2016.
- Invited member to NASA / NSF / Smithsonian Institution workshop: “Beyond Habitability: Life and the Early Earth”, August 2014
- Sedimentary Geology, Time, Environment, Paleontology, Paleoclimate, and Energy Program (STEPPE) short course; “Biological and Environmental Transitions During the Neoproterozoic and Paleozoic”, February, 2014 at Smith College.
- Invited member to “Scientific drilling and the Evolution of the Earth System: Climate, Biota, Biogeochemistry, and Extreme Events,” NSF funded workshop, Norman OK, May 17-19, 2013
- NAGT/NSF On the Cutting Edge Workshop for Early Career Geoscience Faculty, June 10-15, 2012
- Geological Society of America short course 521 Virtual Field Experiences in Geoscience Education (presenter). 2011.
- Geological Society of America short course 508 Education Research I: Conducting Qualitative Geoscience Education Research, 2010. (participant)
- Geological Society of America short course 518. Education Research II: Conducting Quantitative Geoscience Education Research, 2010. (participant)
- Agouron Institute, Advanced Geobiology Field course (Namibia), June 2006. (participant)
- USC Wrigley / Agouron Institute International Geobiology course, June-July 2005. (participant)

Field Work:

- Devonian of Upstate New York, June 2018 (with Kate Pippenger '20 and Lucas Estrada '19)
- Devonian of Upstate New York, June 2015 (with Henry Barker '18 and Abby Kelly '16)
- Devonian of Upstate New York, June 2014 (with Kelly Tellez '17 and Mary Ignatiadis '16)
- Neoproterozoic Fifteenmile Group, The Yukon Territory, June 2014 (with Laura Stamp '16)
- Lower Paleozoic of Western Newfoundland, July 2013.
- Neoproterozoic Fifteenmile Group, The Yukon Territory, June-July 2012.
- Shark Bay, Western Australia, June 2011.
- Flinders Range, Ediacaran localities, Southern Australia, April 2010.
- Neoproterozoic Fifteenmile Group, Alaska and The Yukon Territory, June 2007
- Ediacaran Nama Group, Namibia, June 2006.
- Ordovician Beaverfoot Formation, Canadian Rockies, September 2005.

Teaching Experience:

- GEOS 106, Being Human in STEM, Fall 2019
- GEOS 101, Co-Evolution of Earth and Life, Williams College, Fall 2012, 2013, 2014, 2016, 2018, 2019
- GEOS 311, Geobiology, Williams College, Fall 2014
- GEOS 212, Paleobiology, Williams College, Spring 2013, 2014, 2015, 2017, 2019
- GEOS 312T, Mass Extinctions, Williams College, Spring 2014, 2018
- GEOS 411, Geobiology Senior Seminar, Williams College, Fall 2016, 2018
- Instructor, Astrobiology, MIT Independent Activities Period, January 2012
- Head Teaching Fellow, Paleobiological Perspectives on Ecology and Evolution, Harvard University Department of Organismic and Evolutionary Biology, Spring 2009.
- Teaching Fellow, Dinosaurs and Their Relatives, Harvard University Core Program, Spring 2008.
- Teaching Fellow, History of the Earth, Harvard University Department of Earth and Planetary Sciences, Spring 2006.
- Teaching Fellow, Environmental Risks & Disasters, Harvard University Core Program, Fall 2006.
- Teaching Assistant, Paleobiology, Cornell University Department of Earth and Atmospheric Sciences, Fall 2003.
- Teaching Assistant, Hawaii Earth Science Field Course, Cornell University Department of Earth and Atmospheric Sciences, January 2002.

Recent Education and Outreach Activities:

- Book reviewer for The Bearded Lady Project: Changing the Face of Women in Science, Columbia University Press.
- Introductory talk on “What’s Paleontology Really About?” for Science on the Screen showing of Jurassic Park, Images Cinema, Williamstown MA, May 13th, 2017.
- Participated in Greylock Talks series at Greylock High School, March 13th, 2017 – “Mass Extinctions: A Brief History of Life’s Worst Moments”
- Produced and hosted 6-episode podcast on women in science “[Female of the Species](#)”, 2016
- Organized and spoke at science communication storytelling event [The Story Collider, Williams College](#), April 15th, 2016; organized and ran accompanying science storytelling workshop for Williams College students April 16th, 2016.
- Ran three hour program for Berkshire county middle school girls in STEM program on paleontology, August 2nd 2016.

- Wrote script for TED Ed video on Fossilization: <http://ed.ted.com/lessons/how-to-fossilize-yourself-phoebe-a-cohen>
- Student blogs about the geological histories of their hometowns for GEOS 101: <http://sites.williams.edu/geos101/>
- Invited panelist, *Ancient Earth, Alien Earths: What Old Earths Can Tell Us About Planets Around Other Stars*, NASA Headquarters & NASA TV, August 20, 2014

Service to the Profession:

- Member of Geological Society of America Culture Task Force 2020
- Elected to the Paleontological Society Council as Member-at-large, 2019-2021
- Inaugural member of the Paleontological Society Ethics Committee, 2019-
- Member of the editorial board for *Elements of Paleontology*, 2018 -
- Elected 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)
- Host and organizer, Fall 2016 all-hands meeting of MIT NASA Astrobiology Team
- Panel reviewer for the National Science Foundation *Sedimentary Geology and Paleontology*, Fall 2015
- Member, Cornell University Department of Earth and Atmospheric Sciences Advisory Board, 2013-2016
- Paleontological Society Representative to the Geological Society of America Annual Meeting Joint Technical Program Committee, 2013-2014
- Paleontological Society Social Media Coordinator, 2012-2016
- Paleontological Society Education and Outreach Committee member, 2010 - present
- Paleontological Society Communications Committee member, 2011 - present
- Topical Session Organizer, Geological Society of America Annual Meeting, 2014: The Tonian-Cryogenian World
- Reviewer for *Proceedings of the National Academy of Science*, *Precambrian Research*, *Geology*, *Palaios*, *Alcheringa*, *Journal of Paleontology*, *Nature Geoscience*, *Nature Communications*, and *Geobiology*.
- Ad hoc Grant reviewer for the National Science Foundation, Petroleum Research Fund, NASA, Paleontological Society Education grants

