

Jonathan Paul Wilson

Associate Professor and Chair of Environmental Studies, Haverford College
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Education

Harvard University (Cambridge, Massachusetts) Ph.D., Earth and Planetary Sciences	2009
Johns Hopkins University (Baltimore, Maryland) B.A., Computer Science and Earth and Planetary Sciences	2003

Academic Appointments

Chair, Department of Environmental Studies	2019–Present
Associate Professor of Environmental Studies Department of Environmental Studies, Haverford College	2018–Present
Associate Professor of Biology and Environmental Studies Department of Environmental Studies, Haverford College Department of Biology, Haverford College	2018
Assistant Professor of Biology and Environmental Studies Department of Biology, Haverford College Department of Environmental Studies, Haverford College	2011–2018
Director, Environmental Studies Program Haverford College	2012–2013, 2016–2018
Postdoctoral Scholar in Geobiology Division of Geological and Planetary Sciences, California Institute of Technology (Caltech)	2010–2011
O K Earl Postdoctoral Scholar in Geology Division of Geological and Planetary Sciences, Caltech	2009–2011
Research Associate National Museum of Natural History, Smithsonian Institution	2019–2021
Research Associate Department of Botany, Academy of Natural Sciences of Drexel University	2018–2021
Visiting Associate Professor of Geology Department of Geology, Colorado College	2018

Peer-Reviewed Publications

1. **Jonathan P. Wilson**, Joseph D. White, Isabel P. Montañez, William A. DiMichele, Jennifer C. McElwain, Christopher J. Poulsen, Michael T. Hren (2020). Carboniferous plants break the mold. *New Phytologist*, v. 227(3), p. 667–679. <http://dx.doi.org/10.1111/nph.16460>
2. Joseph D. White, Isabel P. Montañez, **Jonathan P. Wilson**, Christopher J. Poulsen, Jennifer C. McElwain, William A. DiMichele, Michael T. Hren, Sophia Macarewich, Jon D. Richey, and William J. Mattheus. Paleo-BGC to simulate the dynamic response of Late Carboniferous plants to elevated O₂ and aridification. Accepted, *American Journal of Science*.

3. Kadan Lottick, Silvia Susai, Sorelle A. Friedler, **Jonathan P. Wilson** (2019). Energy Usage Reports: Environmental awareness as part of algorithmic accountability. Workshop on Tackling Climate Change with Machine Learning at the 33rd Conference on Neural Information Processing Systems (NeurIPS 2019), Vancouver, Canada. <https://arxiv.org/abs/1911.08354v2>
4. Ruggero Vigliaturo, Damaris Kehrlí, Patxi Garra, Alain Dieterlen, Gwenaëlle Trouvé, Volker Dietze, **Jonathan P. Wilson**, and Reto Gieré (2019). Opaline phytoliths in *Miscanthus sinensis* and its cyclone ash from a biomass-combustion facility. *Industrial Crops and Products*, v. 139, 111539.
5. Mélanie Tanrattana, Jean-Francois Barczi, Anne-Laure Decombeix, Brigitte Meyer-Berthaud, **Jonathan P. Wilson** (2019). A new approach for modelling water transport in fossil plants. *IAWA Journal*, v. 40(3), p. 466–487.
6. **Jonathan P. Wilson**, Isabel P. Montañez, Joseph D. White, William A. DiMichele, Jennifer C. McElwain, Christopher J. Poulsen, Michael T. Hren (2017). Tansley Review: Dynamic Carboniferous tropical forests: new views of plant function and potential for physiological forcing of climate. *New Phytologist*, v. 215(4), p. 1333–1353.
7. Isabel P. Montañez, Jennifer C. McElwain, Christopher J. Poulsen, Joseph D. White, William A. DiMichele, **Jonathan P. Wilson**, Galen Griggs, Michael T. Hren (2016). Linked shifts in glacial-interglacial CO₂, climate, and terrestrial carbon cycling during Earth's last icehouse. *Nature Geoscience*, v. 9, p. 824–828 (*published November 2016*).
 Highlighted in: Timothy S. Meyers (2016). CO₂ and late Palaeozoic glaciation. *Nature Geoscience*, v. 9 p. 803–804.
8. **Jonathan P. Wilson** (2016). Evolutionary trends in hydraulic conductivity after land plant terrestrialization: From *Psilophyton* to the present. *Review of Palaeobotany and Palynology*, v. 227 p. 65–76.
9. Jarmila Pittermann, **Jonathan P. Wilson**, Timothy J. Brodribb (2016). Plant water transport and clade diversification: Examples from extinct and extant taxa. *Encyclopedia of Evolutionary Biology*, v. 4 p. 358–366.
10. Jennifer C. McElwain, Isabel P. Montañez, Joseph D. White, **Jonathan P. Wilson**, Charilaos Yiotis (2016). Was atmospheric CO₂ capped at 1000 p.p.m. over the past 300 million years? *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 444 (4) p. 653–658.
11. Elizabeth Trembath-Reichert, **Jonathan P. Wilson**, Shawn E. McGlynn, Woodward W. Fischer (2015). 400 million years of silica biomineralization in land plants. *Proceedings of the National Academy of Sciences*, v. 112 (17) p. 5449–5454.
 Highlighted in: Daniel J. Conley and Joanna C. Carey (2015). Silica cycling in geologic time. *Nature Geoscience*, v. 8 p. 431–432.
12. **Jonathan P. Wilson**, Joseph D. White, Jennifer C. McElwain, William DiMichele, Christopher Poulsen, Michael Hren, Isabel P. Montañez (2015). Reconstructing extinct plant water use for understanding vegetation-climate feedbacks: Methods, synthesis, and a case study using the Paleozoic Era medullosan seed ferns. *Paleontological Society Papers*, v. 21 p. 167–195.
13. **Jonathan P. Wilson** (2013). Modeling 400 million years of plant hydraulics. *Paleontological Society Papers*, v. 19 p. 1–20.
14. A. Hope Jahren, Brian A. Schubert, Leszek Marynowski and **Jonathan P. Wilson** (2013). The carbon isotope organic geochemistry of Early Ordovician rocks from the Annascaul Formation, County Kerry. *Irish Journal of Earth Sciences*, v. 31 p. 1–12.
15. Taylor S. Feild and **Jonathan P. Wilson** (2012). Evolutionary voyage of the angiosperm vessel: Comparative xylem hydraulic innovation and its significance for early angiosperm success. *International Journal of Plant Sciences*, v. 173 p. 596–609.
16. **Jonathan P. Wilson** and 11 others (2012). Deep-water incised valley deposits at the Ediacaran-Cambrian boundary in southern Namibia contain abundant Treptichnus pedum. *Palaios*, v. 27(4) p. 252–273.

17. **Jonathan P. Wilson** and Woodward W. Fischer (2011). Geochemical support for a climbing habit within the Paleozoic seed fern genus *Medullosa*. *International Journal of Plant Sciences*, v. 172(4) p. 586–598.
18. **Jonathan P. Wilson** and Woodward W. Fischer (2011). Hydraulics of *Asteroxylon mackiei*, an early Devonian vascular plant, and the early evolution of water transport tissue in terrestrial plants. *Geobiology*, v. 9 p. 121–130.
19. **Jonathan P. Wilson** and 18 others (2010). Geobiology of the Late Paleoproterozoic Duck Creek Formation, Western Australia. *Precambrian Research*, v. 179(1-4) p. 135–149.
20. **Jonathan P. Wilson** and Andrew H. Knoll (2010). A physiologically explicit morphospace for tracheid-based water transport in modern and extinct seed plants. *Paleobiology*, v. 36(2) p. 335–355.
21. **Jonathan P. Wilson**, Andrew H. Knoll, N. Michele Holbrook, Charles R. Marshall (2008). Modeling fluid flow in *Medullosa*, an anatomically unusual Carboniferous seed plant. *Paleobiology*, v. 34(4) p. 472–493.
22. P. Cohen, A. Bradley, A. H. Knoll, J. P. Grotzinger, S. Jensen, J. Abelson, K. Hand, G. Love, J. Metz, N. McLoughlin, P. Meister, R. Shepard, M. Tice, **Jonathan P. Wilson** (2009). Tubular Compression Fossils from the Ediacaran Nama Group, Namibia. *Journal of Paleontology*, v. 83(1) p. 110–122.

Manuscripts in revision, review, or in preparation:

23. Christopher J. A. Skrodzki, Bernd Zechmann, Joseph D. White, Jennifer C. McElwain, Isabel P. Montañez, Christopher J. Poulsen, William A. DiMichele, **Jonathan P. Wilson**, and Michael T. Hren. *Huperzia lucidula* physiology in response to increased atmospheric oxygen and pressure. In revision.
24. **Jonathan P. Wilson**, Gregory Miraglia, Woodward W. Fischer. Physiological limits of the Gondwanan seed plant *Glossopteris* and Permian-Triassic extinction selectivity on land. Manuscript in preparation.
25. **Jonathan P. Wilson**, Gabriel Oppler '17, Liz Reikowski '17, Charles Marquardt '16, Remmy Chen '16. Evolution of hydraulic conductivity in early-diverging vascular plants and seed plants. Manuscript in preparation.

Peer-reviewed book reviews, correspondence, and other publications:

26. **Jonathan P. Wilson** (2009). Green Life Through Time: Review of Taylor, Taylor, and Krings' *Paleobotany: The Biology and Evolution of Fossil Plants*, 2nd ed. *Science*, v. 325 p. 36. Citations: 1.
27. Jennifer C. McElwain, Isabel P. Montañez, Joseph D. White, **Jonathan P. Wilson**, Charilaos Yiotis (2017). Reply to comment on "Was atmospheric CO₂ capped at 1000 p.p.m. over the past 300 million years?" *Palaeogeography, Palaeoclimatology, Palaeoecology*.

Non-peer-reviewed publications:

28. **Jonathan P. Wilson** (2017). The reality of climate change. Essay for the Koshland Integrated Natural Science Center, Haverford College.
29. **Jonathan P. Wilson** and Karin L. Louzada (2006). Field Trip Guidebook to the Geology of Newfoundland and Nova Scotia. Available upon request.

Leadership Positions

Elected positions: Faculty Representative to the Haverford College Board of Managers (2019–2021); Alternate to Academic Council, the promotion and tenure committee (2019–2020; 2020–2021); Faculty Affairs and Planning Committee, the faculty leadership committee (2019–2021)

Appointed positions: Faculty-Staff Covid-19 Academic Continuity Presidential Advisory Group (2020); Bi-College Covid-19 Continuity Planning Group (2020); Honorary Degrees Committee (2019–2021); Working Group on Benefits (2019–2021)

Selected Professional Activities

Conference Session Co-organizer: North American Paleontological Congress (2019); European Palaeobotany and Palynological Congress (2018); Geological Society of America (2017, 2014); Botanical Society of America (2016); International Organisation of Palaeobotany Congress, Salvador, Brazil (2016)

Referee: *American Journal of Botany; Annals of Botany; Carnets de Géologie: Notebooks on Geology; Functional Ecology; Geobiology; Geochimica et Cosmochimica Acta; Gondwanan Research; International Association of Wood Anatomists (IAWA) Journal; International Journal of Plant Sciences; New Phytologist; Palaeogeography, Palaeoclimatology, Palaeoecology; Palaios; Paleobiology; Paleontological Society Papers; Precambrian Research; Proceedings of the National Academy of Sciences; Review of Palaeobotany and Palynology; Science; Science of the Total Environment*

External Reviewer, Strategic Planning: Institute of Earth, Ocean and Atmospheric Sciences, Rutgers University

Professional Talks (*denotes keynote*, * denotes invited talk, *denotes undergraduate student*)

2019:

1. **Jonathan P. Wilson***. Hydraulic conductivity and constraints among Paleozoic plants. North American Paleontological Congress, Riverside, CA.

2018:

2. **Jonathan P. Wilson***. Paleoenvironmental insights from the structure and function of extinct plants. University of Pennsylvania, Philadelphia, PA.
3. **Jonathan P. Wilson***. Evolution of silica biomineralization in terrestrial plants. University of Pennsylvania, Philadelphia, PA.
4. **Jonathan P. Wilson***. Ecophysiology of extinct plants. Smithsonian Botanical Symposium, Washington, D.C.
5. **Jonathan P. Wilson***. Paleoenvironmental insights from the structure and function of extinct plants. Academy of Natural Sciences, Philadelphia, PA.
6. **Jonathan P. Wilson***. Paleoenvironmental insights from the structure and function of extinct plants. Department of Geology, Colorado College.
7. **Jonathan P. Wilson***. Paleoenvironmental insights from the structure and function of extinct plants. Department of Geosciences, Baylor University.
8. **Jonathan P. Wilson***. Paleoenvironmental insights from the structure and function of extinct plants. Smith Lecture, Department of Earth and Environmental Sciences, University of Michigan.

2017:

9. **Jonathan P. Wilson***. Reanimating extinct plants. Delivered at Japanese–American–German Frontiers of Science symposium, Bad-Neuenahr, Germany.
10. **Jonathan P. Wilson**, Elizabeth Trembath-Reichert, Shawn E. McGlynn, Woodward W. Fischer. A geobiological perspective on the evolution of silica biomineralization in plants. Delivered at Annual Meeting of the Geological Society of America, Seattle, WA.
11. **Jonathan P. Wilson***. Structure and function in extinct plants: the early history of water transport. Institute of Earth, Ocean, and Atmospheric Sciences, Rutgers University.
12. **Jonathan P. Wilson***. Structure and function in extinct plants: the early history of water transport. Department of Biology, Humboldt State University.

2016:

3. **Jonathan P. Wilson***, Remmy Chen, Charles Marquardt, Gregory M. Miraglia, Deana Rauh, Gabriel Oppler, Elizabeth Reikowski. Hydraulic variability among Paleozoic plants: convergence, coordination, and conundrums. Delivered at XIV International Organisation of Palaeobotany Congress, Salvador, Brazil.
4. **Jonathan P. Wilson***, Isabel P. Montañez, Joseph D. White, Jennifer C. McElwain, William A. DiMichele, Christopher J. Poulsen, Michael T. Hren. Structure and function in the dynamic Carboniferous tropical forests: a new perspective on Paleozoic plant function and physiological forcing of climate. Delivered at Annual Meeting of the Geological Society of America, Denver, CO.
5. **Jonathan P. Wilson***. Modeling and quantification of vascular networks. Gordon Conference on Multiscale Plant Vascular Biology, Newry, ME.
6. **Jonathan P. Wilson***, Elizabeth Trembath-Reichert, Shawn E. McGlynn, Woodward W. Fischer. A molecular and geobiological perspective on the evolution of plant biomineralization. Delivered at Annual Meeting of the Botanical Society of America, Savannah, GA.
7. **Jonathan P. Wilson***. Great adaptations and mass extinctions: evolutionary insights from the physiology of extinct plants. Colorado College.
8. **Jonathan P. Wilson***. Great adaptations and mass extinctions: evolutionary insights from the physiology of extinct plants. Franklin and Marshall College.

2015:

10. **Jonathan P. Wilson***. Reconstructing the physiology and biomechanics of extinct plants. 8th Plant Biomechanics Meeting, Nagoya, Japan.
11. **Jonathan P. Wilson***. Unconventional approaches to the study of extinct plants: case studies in the evolution of water transport and silica biomineralization. Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA.
12. **Jonathan P. Wilson***. Unconventional approaches to the study of extinct plants: case studies in the evolution of water transport and silica biomineralization. Department of Biology, University of Pennsylvania.
13. **Jonathan P. Wilson***, Brigitte Meyer-Berthaud, Evan Walser-Kuntz. Water transport and biogeography of the Late Devonian tree, *Archaeopteris (Callixylon)*. Delivered at Annual Meeting of the Geological Society of America, Baltimore, MD.
14. **Jonathan P. Wilson***, Joseph D. White, Jennifer C. McElwain, William A. DiMichele, Christopher J. Poulsen, Michael T. Hren, Isabel P. Montañez. Reconstructing extinct plant water use for understanding vegetation-climate feedbacks: Methods, synthesis, and a case study using the Paleozoic Era medullosan seed ferns. Delivered at Annual Meeting of the Geological Society of America, Baltimore, MD.
15. **Jonathan P. Wilson***. Great adaptations and mass extinctions: evolutionary insights from the physiology of extinct plants. BotAnique et bioinforMatique de l'Architecture des Plants (AMAP), Montpellier, France.
16. **Jonathan P. Wilson***. Great adaptations and mass extinctions: evolutionary insights from the physiology of extinct plants. Department of Integrative Biology, University of California, Berkeley.

2014:

16. **Jonathan P. Wilson**, Gregory M. Miraglia, Woodward W. Fischer. Physiology of *Glossopteris*, a circumpolar seed plant from the Permian Period, and implications for the terrestrial record of the Permian-Triassic mass extinction. Delivered at Annual Meeting of the Geological Society of America, Vancouver, BC.
17. **Jonathan P. Wilson***. Mass extinctions and great adaptations: evolutionary insights from the study of extinct plants. Department of Biology, St. Joseph's University.
18. **Jonathan P. Wilson***. Hydraulic strategies in early-diverging vascular plants and seed plants. Delivered at the 9th European Palaeobotany and Palynology Conference, Padua, Italy.
19. **Jonathan P. Wilson***. Ecological and evolutionary insights from the study of fossil plants. Department of Ecological and Evolutionary Biology, University of Connecticut.

2013:

20. **Jonathan P. Wilson***. Modeling 400 million years of plant hydraulics. Delivered at Annual Meeting of the Geological Society of America, Denver, CO.
21. **Jonathan P. Wilson***. A geobiological perspective on the evolutionary history of silicon accumulation in terrestrial plants. Department of Paleobiology, Smithsonian Institution.

2012:

22. **Jonathan P. Wilson***. Mathematical and geochemical approaches to the physiology and biomechanics of Paleozoic plants. Delivered at 13th Annual International Organisation of Palaeobotany Congress, Tokyo, Japan.
23. **Jonathan P. Wilson***. Mathematical and geochemical approaches to the physiology and biomechanics of Paleozoic plants. Department of Biology, University of Pennsylvania.

2011:

24. **Jonathan P. Wilson***. 400 million years of plant hydraulics. Department of Plant Biology, University of Pennsylvania.
25. **Jonathan P. Wilson***. Ecological and evolutionary insights from the study of fossil plants. Department of Biology, Bryn Mawr College.
26. **Jonathan P. Wilson***. 400 million years of plant hydraulics. Rancho Santa Ana Botanic Garden, Claremont, CA.
27. **Jonathan P. Wilson***. Environmental and evolutionary insights from the study of fossil plants. Department of Geological and Environmental Sciences, Stanford University.
28. **Jonathan P. Wilson***, Woodward W. Fischer. Physiological limits of the Late Paleozoic seed plant Glossopteris and selectivity during the Permian-Triassic mass extinction. Delivered at 8th Annual Southern California Geobiology Symposium, Los Angeles, CA.

2010:

29. **Jonathan P. Wilson***. Reconstructing environmental history through the physiology of fossil plants. Jet Propulsion Laboratory, Pasadena, CA.
30. **Jonathan P. Wilson***. Ecological and evolutionary insights from the physiology of fossil plants. Department of Biology, Haverford College.
31. **Jonathan P. Wilson*** and Woodward W. Fischer. Geochemical support for a climbing habit in the Paleozoic seed fern genus Medullosa. Delivered at Annual Meeting of the Geological Society of America, Denver, CO.
32. **Jonathan P. Wilson***. Ecological and evolutionary insights from the physiology of fossil plants. Division of Geological and Planetary Sciences, Caltech.
33. **Jonathan P. Wilson***. Ecological insights from the physiology of fossil plants. Department of Earth and Planetary Sciences, Washington University in St. Louis.

2005–2009:

34. **Jonathan P. Wilson***. Reanimating extinct plants. Public lecture for Science for the Public, Boston, MA. (2009)
35. **Jonathan P. Wilson***. Reconstructing the physiology of extinct plants using mathematical modeling. Biological Networks Modeling Center, Caltech. (2009)
36. **Jonathan P. Wilson***. Estimating fossil plant crown size using scaling laws. Delivered at 2009 Leaf Summit, Smithsonian Institution. (2009)
37. **Jonathan P. Wilson***. Reconstructing the physiology of extinct plants. Department of Paleobiology, Smithsonian Institution. (2009)
38. **Jonathan P. Wilson***. Reconstructing the physiology of extinct plants. Department of Earth Sciences, Oxford University. (2009)

39. **Jonathan P. Wilson***. Reconstructing the physiology of extinct plants. CIRAD AMAP: botAnique et bioinforMatique de l'Architecture des Plantes, Montpellier, France. (2008)
40. **Jonathan P. Wilson***, A. H. Knoll, N. M. Holbrook. Hydraulics of Medullosa, an anatomically unusual Carboniferous seed plant. Delivered at International Organisation of Palaeobotany Congress VIII, Bonn, Germany. (2008)
41. **Jonathan P. Wilson**. A model for assimilation and transpiration in fossil plants. Delivered at Annual Meeting of the Geological Society of America, Houston, TX. (2008)
42. **Jonathan P. Wilson**, N. M. Holbrook, A. H. Knoll. A physiological interpretation of the Late Paleozoic seed plant Medullosa. Delivered at Annual Meeting of the Botanical Society of America, Chicago, IL. (2007)
43. **Jonathan P. Wilson**, A. H. Knoll. A physiologically explicit morphospace for water transport in vascular plants. Delivered at Annual Meeting of the Geological Society of America, Philadelphia, PA. (2006)
44. **Jonathan P. Wilson**, N. M. Holbrook, C. R. Marshall, A. H. Knoll. Modeling fluid flow in an extinct seed plant. Delivered at Annual Meeting of the Geological Society of America, Salt Lake City, UT. (2005)

Selected Posters

1. Kadan Lottick, Silvia Susai, Sorelle A. Friedler, **Jonathan P. Wilson**. Energy Usage Reports: Environmental awareness as part of algorithmic accountability. Workshop on Tackling Climate Change with Machine Learning at the 33rd Conference on Neural Information Processing Systems (NeurIPS 2019), Vancouver, Canada. (2019)
2. **Jonathan P. Wilson***. Reanimating extinct plants. Delivered at Japanese–American–German Frontiers of Science symposium, Bad-Neuenahr, Germany. (2017)
3. **Jonathan P. Wilson**, Nicholas M. Munves. Silica bodies in conifer foliage: results of a common-garden experiment and implications for the history of the terrestrial silica cycle. Presented at the Annual Meeting of the Geological Society of America, Seattle, WA. (2017)
4. **Jonathan P. Wilson**, Elizabeth Trembath-Reichert, Shawn McGlynn, Woodward W. Fischer, Christine Quake, Aaron Levine. A Geobiological Perspective On The Evolutionary History Of The Terrestrial Silica Cycle. Presented at the Northeastern Geobiology Symposium, New Haven, CT. (2014)
5. **Jonathan P. Wilson**, Woodward W. Fischer. Quantitative Hydraulic Models Of Early Land Plants Provide Insight Into Middle Paleozoic Terrestrial Paleoenvironmental Conditions. Presented at the Annual Meeting of the American Geophysical Union, San Francisco, CA. (2010)
6. **Jonathan P. Wilson**, and four others. The Evolutionary History of Water Transport in Living and Fossil Plants. Presented at 7th Annual Southern California Geobiology Symposium, Pasadena, CA. (2010)
7. **Jonathan P. Wilson** and 18 others. Geobiology of the Late Paleoproterozoic Duck Creek Dolomite, Western Australia. Presented at Annual Meeting of the Geological Society of America, Houston, TX. (2008)

Field Work and Courses

Field course: Trinidad and Tobago	2017, 2018, 2020
Field course: Yunnan, China	2019
Field research: Art and the Environment in the Setō Inland Sea, Japan	2019
Field research: Carboniferous plants of Colorado and New Mexico	2012–Present
Field research: Paleoproterozoic geobiology and microfossils of Western Australia	2007
Field research: Neoproterozoic trace fossils of Namibia	2006
Tropical Botany: Fairchild Tropical Botanic Garden, Florida	2004
Field school: Yellowstone-Bighorn Research Association, Montana	2002
Field research: Early Ordovician palynology, Dingle Peninsula, SW Ireland	2001, 2002

Teaching and Advising Experience

Senior Thesis Projects Supervised at Haverford College:

Lily Bennett	Physiological response of <u>Ginkgo biloba</u> to elevated CO ₂	2019–2020
Natalia Amaral	Leaf microbiome of <u>Theobroma cacao</u> (chocolate)	2017–2018
Brian Keller	Paleoecology of Carboniferous plants	2017–2018
Amelia Keyser-Gibson	Leaf microbiomes of invasive and native <u>Phragmites australis</u>	2017–2018
Nick Munves	Microbial ecology of <u>Ficus</u> species' leaves	2017–2018
Jessica Smart	Physiology of the extinct sphenopsid <u>Sphenophyllum</u>	2017–2018
Audra Devoto	Microbial ecology of <u>Ficus</u> species' leaves	2016–2017
Ariel Dineen	Water use in <u>Welwitschia mirabilis</u>	2016–2017
Charlie Hale	Leaf microbiomes of invasive and native <u>Phragmites australis</u>	2016–2017
Gabriel Oppler	Physiology of Carboniferous Period tree ferns and seed plants*	2016–2017
Liz Reikowski	Physiology of Carboniferous Period sphenopsids*	2016–2017
Remmy Chen	Physiological trends within Carboniferous Period medullosans*	2015–2016
Deana Rauh	Gas exchange variability among <u>Sphenophyllum</u> species*	2015–2016
Isabella Muratore	Insect herbivory upon Carboniferous Period plants	2015–2016
Evan Walser-Kuntz	Delimiting ecotypes of <u>Archaeopteris</u> species	2015–2016
Charlie Marquardt	Root hydraulic conductivity in <u>Cordaites</u> *	2015–2016
Marie Greaney	PIN1 and the origins of leaves in ferns	2013–2014
Aaron Levine	Silicon accumulation by vascular plants: NIP2	2013–2014
Gregory Miraglia	<u>Glossopteris</u> hydraulics and the P/T extinction*	2013–2014
Minna Yoshikawa	Foliar water uptake in <u>Welwitschia mirabilis</u>	2013–2014
Katherine Bigay	Stomatal size increases with high [CO ₂]	2012–2013
Kim Carlomagno	A new bacterial species isolated from pine needles	2012–2013
Sarah Crist	PIN1 and the origins of leaves in ferns	2012–2013
Christine Quake	Silicon accumulation by vascular plants: NIP2	2012–2013
Kelsey Capron	Hydraulic path length in leafless plants	2011–2012
Emily Dutrow	Effect of herbivory on photosynthetic rate	2011–2012
Anna Rayne	Stomatal response to high [CO ₂] and water stress	2011–2012
Rebecca Tobet	<u>Sphenophyllum</u> hydraulics and biomechanics*	2011–2012

* Denotes work published or in manuscript form

Selected Courses at Haverford College:

- ENVS & Biology 118/318: Plants and People/Economic Botany
(Combined majors/nonmajors course on the coevolution of plants and human societies.)
- Biology 314: Photosynthesis
(Lecture course on the evolutionary history of photosynthesis, from fossils to biochemistry.)
- Biology 200: Cellular and Molecular Biology
(Introductory lecture and laboratory course for molecular biology majors with emphasis on insights from evolutionary history, including phylogenetics and plant biophysics.)
- Biology 300: Laboratory in Molecular Biology and Biochemistry
(Research laboratory course exploring the diversity of plant microbiomes using culture-independent and culture-dependent methods.)
- Biology 413: Senior Research Tutorial in Plant Biology and Evolution
(Supervised research with a lab of four to six advanced undergraduate students.)
- ENVS 397: Senior Seminar in Environmental Studies
(Interdisciplinary, project-based, team-taught course for advanced undergraduate students.)
- ENVS 101: Case Studies in Environmental Issues
(Interdisciplinary introductory course in Environmental Studies focused on case studies from contemporary environmental problems, including agriculture, water, and energy.)

Selected Courses Taught at Other Institutions:

Colorado College, Invertebrate Paleontology 2018

Selected Guest Lectures:

Haverford College, Biomechanics 2018
 Haverford College, Introduction to Peace, Justice, and Human Rights 2018
 Haverford College, Art and the Environment in East Asia 2017
 Colorado College, Historical Geology 2016
 Bryn Mawr College, Paleobiology 2011–2016
 Bryn Mawr College, Evolution 2011–2018
 Haverford College, Nature/Culture 2015
 Haverford College, Imagining the Arctic 2014
 Haverford College, Religion, America, and the Science of Life 2013
 Caltech, Introduction to Geobiology 2010
 Pomona College, History of the Biosphere 2010
 Caltech, Earth and the Biosphere 2010
 Harvard University, Biology of Plants 2008, 2009
 Smith College, Paleontology and Evolution 2007, 2008

Sophomore Advising Coordinator

Winthrop House, Harvard College 2008–2009

Resident Tutor in Earth and Planetary Sciences

Winthrop House, Harvard College 2007–2009

Visiting Researcher in Plant Physiology

Institute of Molecular Biology, University of Copenhagen 2003

Grant Support and Awards

Tri-Co Philadelphia Engagement Grant 2020
 Responsible Computer Science Challenge, Mozilla Foundation 2019
 Diversity and Inclusion Course Development Grant 2019
 Center for Peace and Global Citizenship, Koshland Integrated Natural Science Center: Study Tour–Field Botany in Trinidad and Tobago 2019
(\$27,000 grant for undergraduate research travel)
 The Lindback Distinguished Teaching Award, Christian R. and Mary F. Lindback Foundation 2018
(Award for teaching excellence given to one faculty member every other year)
 “Collaborative Research: New Estimates of Atmospheric pCO₂ through the Paleocene-Eocene” 2018–present
 Co-PI: National Science Foundation, Paleo Perspectives on Climate Change [P2C2]
(EAR 1804974: \$783,000 total, \$112,000 research grant to Wilson)
 Kavli Fellow, Frontiers of Science 2017
(One of 30 American scientists selected for the Japanese-American-German Fellowship of Science by the National Academy of Sciences)
 Center for Peace and Global Citizenship, Koshland Integrated Natural Science Center, Hurford Humanities Center: Study Tour–Field Botany in Trinidad and Tobago 2017
(\$29,000 grant for undergraduate research travel)
 Koshland Integrated Natural Science Center 2017
(\$6,000 grant for undergraduate research travel)
 uBiome Microbiome Research Award: *Ficus* Phyllospheres, Nigeria and United States 2016
(\$100,000 research grant)
 Center for Peace and Global Citizenship, Koshland Integrated Natural Science Center: Study Tour–Field Botany in Trinidad and Tobago 2016

<i>(\$27,000 grant for undergraduate research travel)</i>	
LI-COR Environmental Education Fund Award	2012
<i>(\$30,000 research grant; \$30,000 equipment grant)</i>	
San Andreas Visiting Fellow, The Huntington Library, Art Collections, and Botanical Gardens	2010–2011
Deland Award for Research, Arnold Arboretum	2008
Geological Society of America Travel Award	2008
International Organisation of Palaeobotany Travel Award	2008
Certificates of Distinguished Teaching, Harvard University	2005, 2006, 2007

Selected College and Departmental Service at Haverford College

Search Committee, Department of Environmental Studies: Environmental Social Sciences	2017–2018
Search Committee, Department of Environmental Studies: Environmental Humanities	2017–2018
Search Committee, Department of Economics: Environmental Economics	2017–2018
Council for Sustainability and Social Responsibility	2016–present
Search Committee, Department of Economics: Environmental Economics	2016–2017
Faculty advisor, Haverfarm	2016–present
Faculty representative, Premedical/Prehealth Committee	2016
Search Committee, Department of Biology: Biochemistry	2015–2016
Search Committee, Department of Economics: Environmental Economics	2012–2013
Search Committee, Department of Anthropology: Environmental Anthropology	2012–2013
Tri-College Environmental Studies Committee	2011–present
Steering Committee, Luce Initiative on Asian Studies and the Environment	2012–2018
Faculty representative, Committee for Environmental Responsibility	2012–2013
Study Abroad Advisor, Department of Biology	2012–2017

Professional Affiliations

Geological Society of America, International Organisation of Palaeobotany, International Association of Wood Anatomists, Botanical Society of America, American Geophysical Union, Yellowstone-Bighorn Research Assn.