

MICHAEL A. KIPP

Division of Earth and Climate Sciences, Nicholas School of the Environment, Duke University
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POSITIONS	Assistant Professor , Division of Earth and Climate Sciences, Duke University	2024–
	Postdoctoral Scholar , Division of Geological and Planetary Sciences, Caltech	2019–2023
	Visiting Researcher , Research School of Earth Sciences, Australian National University	2018
EDUCATION	Ph.D. , Earth & Space Sciences and Astrobiology, University of Washington	2019
	B.S. , Biological Sciences, University of Notre Dame	2014
	B.A. , Classics (Latin concentration), University of Notre Dame	2014
AWARDS	Scialog Fellow	2026
	NSF CAREER Award	2025
	Top 5% Instructor, Trinity College of Arts & Sciences, Duke University	2024
	Agouron Institute Geobiology Postdoctoral Fellowship	2019
	Johnston Award (highest research honor in Earth & Space Sciences), University of Washington	2019
	NSF Graduate Research Fellowship	2015
	Astrobiology Fellowship, University of Washington	2014
FUNDING	Research grants (\$1,174,883 external funding to Duke)	
	NASA Exobiology (Co-I; \$725,955 total; \$149,430 to Duke)	2026–2028
	<i>“Drilling down: Resolving Spatial and Temporal Environmental Change across the Great Oxygenation Event”</i>	
	NSF CAREER, Marine Geology & Geophysics (PI; \$915,453)	2025–2030
	<i>“Calibrating selenium isotopes as tracers of nutrient and redox dynamics in past and present marine environments”</i>	
	Dean’s Research Venture, Nicholas School of the Environment (PI; \$140,000)	2024–2026
	<i>“Stable isotopes as a biomarker for heat stress”</i>	
	ACS Petroleum Research Fund (PI; \$110,000)	2024–2026
	<i>“Using Ca and Mg isotopes to track diagenetic pathways involved in sedimentary phosphorus enrichment”</i>	
	Student grants & travel awards	
	Early Career Collaboration Award, NASA Astrobiology Institute (\$5,000)	2023
	Seed Grant, Center for Evolutionary Science, California Institute of Technology (\$20,000)	2021
	Lewis & Clark Fund for Exploration in Astrobiology, American Philosophical Society (\$4,600)	2019
	Student Research Grant, Geological Society of America (\$1,800)	2019
	Harrison Scholarship, Tobacco Root Geological Society (\$500)	2019
	Ellis L. Yochelson Award, Paleontological Society Student Research Grant (\$1,200)	2018
	NSF Graduate Research Opportunities Worldwide Award (\$5,000)	2017
	“Inquisitive Graduate Student” Award, UW Earth & Space Sciences (\$2,000)	2016
	Summer Environmental Research Fellowship, University of Notre Dame (\$8,500)	2013
	Undergraduate Research Comprehensive Summer Grant, University of Notre Dame (\$2,000)	2013
TEACHING	University of Washington	
	ESS 213, Evolution of the Earth	2017
	ESS 101, Introduction to Geology	2015
	Duke	
	ECS 509, Paleoclimate	2024–
	ECS 508, Isotope Geochemistry	2025–
	ECS 240, Chemistry of the Earth	2026–
INTERESTS	isotope biogeochemistry, Earth history, astrobiology, metallomics	

43. **Schaffer A, Williams GDZ, Dwyer GS, Hyland EG, Wong JL, Osterberg JS, Schultz TF, **Kipp MA**. (2026). Environmental and vital effects on lithium isotopes and trace element ratios in biogenic carbonates: Insights from an estuarine salinity gradient. *Geochimica et Cosmochimica Acta*. In press. doi:10.1016/j.gca.2026.06.025
42. †Tu C, Meixnerova J, Smith B, Stüeken EE, Buick R, Tino CJ, **Kipp MA**. (2026). Evaluating the roles of alkalinity, evaporation, and basin hydrology in phosphorite deposition. *Earth and Planetary Science Letters*. 690, 120180. doi:10.1016/j.epsl.2026.120180
41. Razonale DP, Sanderson K, Lee C, ‡Grigoryan R, **Kipp MA**, Shafiee RT, Melton H, Tacail T, Tissot FLHT. (2026). Investigating apparent drivers of urinary Ca isotope variability in a sample population. *Metallomics*. 18, mfag017. doi:10.1093/mtomcs/mfag017
40. Crockford PW, Sugiyama I, **Kipp MA**, Hao J, Nelson L, Hemingway J, Wimmer S, Fahkraee M. (2026). Revisiting the greatness of Earth's great oxidation. *Communications Earth and Environment*. 7, 348. doi:10.1038/s43247-026-03518-8
39. ‡Grigoryan R, Swenson W, Field MP, De Silva MC, Strasma A, Jayasundara N, **Kipp MA**. (2026). Automated methods for multi-isotopic analysis of major cations in biological samples: Application to chronic kidney disease of unknown etiology. *Analytical and Bioanalytical Chemistry*. 418, 1497-1510. doi:10.1007/s00216-025-06309-w
38. **Kipp MA** and Alcott LJ. (2026). "Phosphorus bioavailability." In: *The Archean Earth*. p. 433-443. doi:10.1016/B978-0-323-95547-8.00029-X
37. Farrell UC, (151 authors including **Kipp MA**), Lau KV, Planavsky NJ, Johnston DT, Sperling EA. (2026). The Sedimentary Geochemistry and Paleoenvironments Project Phase 2 Data Release: An open data resource for the study of Earth's environmental history. *Chemical Geology*. 123311. doi:10.1016/j.chemgeo.2026.123311
36. Becker-Kerber B, Brocks JJ, Archilha N, Rodella C, Petkov V, Azevêdo E, Pimentel T, Garcia R, Petts D, Czas J, Ardakani O, Chappaz A, Albuquerque A, Ortega-Hernández J, Lerosey-Aubril R, **Kipp MA**, Johnson BW, Thoury M, Oliveira C, Pimentel H, Freitas R, Vicentim F, Borges L, Almer J, Park JS, Polo C, Kerber G, Mouro L, Figueiredo M, Prado G, Ahmed S, Basei M. (2025). The rise of lichens during the colonization of terrestrial environments. *Science Advances*. 11, eadw7879. doi:10.1126/sciadv.adw7879
35. Bubphamanee K, **Kipp MA**, Meixnerova J, Stüeken EE, Ivany LC, Bartholomew A, Algeo TJ, Brocks JJ, Dahl TW, Kinsley J, Tissot FLH, Buick R. (2025). Mid-Devonian ocean oxygenation enabled the expansion of animals into deeper-water habitats. *Proceedings of the National Academy of Sciences*. 122, e2501342122. doi:10.1073/pnas.2501342122
34. **Kipp MA**, *Piccirillo L, Peters D. (2025). High precision selenium isotope analysis using a Nu Sapphire collision-reaction cell MC-ICP-MS. *Journal of Analytical Atomic Spectrometry*. 40, 2792-2802. doi:10.1039/D5JA00247H
33. Saper L, Liu Y, **Kipp MA**, Burney D, Ma C, Tissot FLH, Young E, Farley KA, Eiler JM. (2025). Chemical, isotopic (O, He, U), and petrological characteristics of a slowly cooled enriched gabbroic shergottite, Northwest Africa 13134. *Meteoritics and Planetary Science*. 60, 1119-1150. doi:10.1111/maps.14345
32. **Kipp MA**, Gao A, Adkins JF, Tissot FLH. (2024). ²³⁸U/²³⁵U in deep-sea corals reflects limited expansion of seafloor anoxia in last ice age. *Geochemical Perspectives Letters*. 33, 32-37. doi:10.7185/geochemlet.2449
31. Tissot FLH, Cleveland D, Grigoryan R, **Kipp MA**, Shafiee RT, Miaou E, Chunduri R, Melton H, Tacail T, Razonale D. (2024). Magnitude and timescales of Ca isotope variability in human urine: Implications for bone mass balance monitoring. *Metallomics*. 16, mfae050. doi:10.1093/mtomcs/mfae050

30. Sosa ES, Bucholz CE, Hernandez-Montenegro JD, Rodriguez-Vargas A, **Kipp MA**, Tissot FLH. (2024). Garnet clinopyroxenite formation via amphibole-dehydration in continental arcs: Evidence from Fe isotopes. *Earth and Planetary Science Letters*. 648, 119050. doi:10.1016/j.epsl.2024.119050
29. Hernandez-Montenegro JD, Bucholz CE, Sosa ES, **Kipp MA**, Tissot FLH. (2024). Iron isotope geochemistry during partial melting of metapelites and the generation of strongly peraluminous granites: A case study of the Neoarchean Ghost Lake batholith. *Geochimica et Cosmochimica Acta*. 380, 112-130. doi:10.1016/j.gca.2024.07.016
28. Remirez MN, Gilleaudeau GJ, Gan T, **Kipp MA**, Tissot FLH, Kaufman AJ, Parente M. (2024). Carbonate uranium isotopes record global expansion of marine anoxia during the Toarcian Ocean Anoxic Event. *Proceedings of the National Academy of Sciences*. 121, e2406032121. doi:10.1073/pnas.2406032121
27. Hill RC, Wang Z, Williams GDZ, Polyak V, **Kipp MA**, Asmerom Y, Vengosh A. (2024). Reconstructing the depositional environment and diagenetic modification of global phosphate deposits through integration of uranium and strontium isotopes. *Chemical Geology*. 662, 122214. doi:10.1016/j.chemgeo.2024.122214
26. Sosa ES, Bucholz CE, Hernandez-Montenegro JD, **Kipp MA**, Tissot FLH, Jackson JM, Ratschbacher BC, Mahlburg Kay S, Kay RW. (2024). Lower crustal control in the iron isotope systematics of plutonic xenoliths from Adak Island, Central Aleutians, with implications for arc magma geochemistry. *Geochimica et Cosmochimica Acta*. 377, 1-18. doi:10.1016/j.gca.2024.05.026
25. Li H, **Kipp MA**, Kim SL, Kast ER, Eberle JJ, Tissot FLH. (2024). Exploring uranium isotopes in shark teeth as a paleo-redox proxy. *Geochimica et Cosmochimica Acta*. 365, 158-173. doi:10.1016/j.gca.2023.11.034
24. **Kipp MA**, Stüeken EE, Strömberg CAE, Brightly WH, Arbour VM, Erdei B, Hill RS, Johnson K, Kvaček J, McElwain JC, Miller IM, Slodownik M, Vajda V, Buick R. (2024). Nitrogen isotopes reveal independent origins of N₂-fixing symbiosis in extant cycad lineages. *Nature Ecology & Evolution*. 8, 57-69. doi:10.1038/s41559-023-02251-1
23. **Kipp MA**. (2023). Carbon cycling: How much life has ever existed on Earth? *Current Biology*. 33, R1153-R1155. doi:10.1016/j.cub.2023.09.041
22. Bowyer FT, Krause AJ, Song Y, Huang KJ, Fu Y, Shen B, Zhu XK, **Kipp MA**, van Maldegem LM, Brocks JJ, Shields GA, Mills BJW, Poulton SW. (2023). Biological diversification linked to environmental stabilization following the Sturtian Snowball glaciation. *Science Advances*. 9, eadf9999. doi:10.1126/sciadv.adf9999
21. Kulenguski JT, Gilleaudeau GJ, Kaufman AJ, Goepfert TJ, **Kipp MA**, Tissot FLH, Pitts AD, Pierantoni P, Evans MN, Elrick M. (2023). Carbonate uranium isotopes across Cretaceous OAE 2 in southern Mexico: New constraints on the global spread of marine anoxia and organic carbon burial. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 111756. doi:10.1016/j.palaeo.2023.111756
20. **Kipp MA**. (2022). A double-edged sword: The role of sulfate in anoxic marine phosphorus cycling through Earth history. *Geophysical Research Letters*. 49, e2022GL099817. doi:10.1029/2022GL099817
19. **Kipp MA**, Li H, Ellwood M, John S, Middag R, Adkins J, Tissot FLH. (2022). ²³⁸U, ²³⁵U and ²³⁴U in seawater and deep-sea corals: A high-precision reappraisal. *Geochimica et Cosmochimica Acta*. 336, 231-248. doi:10.1016/j.gca.2022.09.018
18. Baziotis I, Ma C, Guan Y, Ferriere L, Xydous S, Hu J, **Kipp MA**, Tissot FLH, Asimow P. (2022). Shock history and unique evidence of aqueous alteration in the Kakowa (L6) ordinary chondrite. *Scientific Reports*. 12, 5520. doi:10.1038/s41598-022-09465-6
17. **Kipp MA** and Tissot FLH. (2022). Inverse methods for consistent quantification of seafloor anoxia using uranium isotope data from marine sediments. *Earth and Planetary Science Letters*. 577, 117240. doi:10.1016/j.epsl.2021.117240 | code: github.com/m-kipp/d238U-inverse-model
16. Meixnerova J, Blum JD, Johnson MW, Stüeken EE, **Kipp MA**, Anbar AD, Buick R. (2021). Mercury abundance and isotopic composition indicate subaerial volcanism prior to the end-Archean “whiff” of oxygen. *Proceedings of the National Academy of Sciences*. 118, e2107511118. doi:10.1073/pnas.2107511118

15. Farrell UC, (99 authors including **Kipp MA**), Planavsky NJ, Lau KV, Johnston DT, Sperling EA. (2021). The Sedimentary Geochemistry and Paleoenvironments Project. *Geobiology*. 19, 545–556. doi:10.1111/gbi.12462
14. Aubineau J, El Albani A, Chi Fru E, **Kipp MA**, Ikouanga JN, Bekker A. (2021). Benthic redox conditions and nutrient dynamics in the 2.1 Ga Franceville Sub-basin. *Precambrian Research*. 360, 106234. doi:10.1016/j.precamres.2021.106234
13. Krissansen-Totton J, **Kipp MA**, Catling DC. (2021). Carbon cycle inverse modeling suggests large changes in fractional organic burial are consistent with the carbon isotope record and may have contributed to the rise of oxygen. *Geobiology*. 19, 342–363. doi:10.1111/gbi.12440
12. **Kipp MA**, Krissansen-Totton J, Catling DC. (2021). High organic burial efficiency is required to explain mass balance in Earth's early carbon cycle. *Global Biogeochemical Cycles*. 35, e2020GB006707. doi:10.1029/2020GB006707
11. Stüeken EE and **Kipp MA**. (2020). *Selenium Isotope Paleobiogeochemistry* (Elements in Geochemical Tracers in Earth System Science). Cambridge University Press. doi:10.1017/9781108782203.
10. **Kipp MA**, Lepland A, Buick R. (2020). Redox fluctuations, trace metal enrichment and phosphogenesis in the ~2.0 Ga Zaonega Formation. *Precambrian Research*. 343, 105716. doi:10.1016/j.precamres.2020.105716
9. **Kipp MA**, Algeo TJ, Stüeken EE, Buick R. (2020). Basinal hydrographic and redox controls on selenium enrichment and isotopic fractionation in Paleozoic black shales. *Geochimica et Cosmochimica Acta*. 287, 229–250. doi:10.1016/j.gca.2019.12.016
8. **Kipp MA**, Stüeken EE, Gehringer MM, Sterelny K, Scott JK, Forster PI, Strömberg CAE, Buick R. (2020). Exploring cycad foliage as an archive of the isotopic composition of atmospheric nitrogen. *Geobiology*. 18, 152–166. doi:10.1111/gbi.12374
7. **Kipp MA**, Stüeken EE, Yun M, Bekker A, Buick R. (2018). Pervasive aerobic nitrogen cycling in the surface ocean across the Paleoproterozoic Era. *Earth and Planetary Science Letters*. 500, 117–126. doi:10.1016/j.epsl.2018.08.007
6. Koehler MC, Buick R, **Kipp MA**, Stüeken EE, Zaloumis J. (2018). Transient surface ocean oxygenation recorded in the ~2.66-Ga Jeerinah Formation, Australia. *Proceedings of the National Academy of Sciences*. 115, 7711–7716. doi:10.1073/pnas.1720820115
5. **Kipp MA** and Stüeken EE. (2017). Biomass recycling and Earth's early phosphorus cycle. *Science Advances*. 3, eaao4795. doi:10.1126/sciadv.aao4795
4. Koehler MC, Stüeken EE, **Kipp MA**, Buick R, Knoll AH. (2017). Spatial and temporal trends in Precambrian nitrogen cycling: A Mesoproterozoic offshore nitrate minimum. *Geochimica et Cosmochimica Acta*. 198, 315–337. doi:10.1016/j.gca.2016.10.050
3. **Kipp MA**, Stüeken EE, Bekker A, Buick R. (2017). Selenium isotopes record extensive marine suboxia during the Great Oxidation Event. *Proceedings of the National Academy of Sciences*. 114, 875–880. doi:10.1073/pnas.1615867114
2. Stüeken EE, **Kipp MA**, Koehler MC, Schwieterman E., Johnson B., Buick R. (2016). Modeling pN_2 through geologic time: Implications for planetary climates and atmospheric biosignatures. *Astrobiology*. 16, 949–963. doi:10.1089/ast.2016.1537
1. Stüeken EE, **Kipp MA**, Koehler MC, Buick R. (2016). The evolution of Earth's biogeochemical nitrogen cycle. *Earth Science Reviews*. 160, 220–239. doi:10.1016/j.earscirev.2016.07.007

FIRST-AUTHOR
CONFERENCE
ABSTRACTS

24. **Kipp MA**, et al. (46 co-authors). (2026). Reading the record of past ocean (de-)oxygenation: challenges and opportunities. Goldschmidt. *Keynote talk*.
23. **Kipp MA**, Winters G, Tu C, Sreenivas B, Bekker A. (2026). Controls on phosphorus burial in the Precambrian ocean: New insights from the Paleoproterozoic Aravalli Supergroup, India. Astrobiology Science Conference. *Talk*.
22. **Kipp MA**, Hall G, Khodabakhchian M, Carvalho M, Grajales A, Johnson BW, Purcell A, Purdue C. (2025). Isotopic Insights into the Evolution of Plant-Microbial Nitrogen-Fixing Symbioses. GSA Connects. *Invited Talk*.
21. **Kipp MA**, Piccirillo L, Peters D. (2025). Selenium isotope analysis using a Nu Sapphire collision cell MC-ICP-MS. Goldschmidt. *Poster*.
20. **Kipp MA**. (2024). A double-edged sword: The role of sulfate in anoxic marine phosphorus cycling through Earth history. Goldschmidt. *Invited Talk*.
19. **Kipp MA**, Stüeken EE, Strömberg CAE, Brightly WH, Arbour VM, Erdei B, Hill RS, Johnson K, Kvaček J, McElwain JC, Miller IM, Slodownik M, Vajda V, Buick R. (2024). Nitrogen isotopes in fossil organic matter as a proxy for symbiotic nitrogen fixation. International Organization of Palaeobotany Congress. *Talk*.
18. **Kipp MA**, Stüeken EE, Strömberg CAE, Buick R. (2022). Nitrogen isotopes in fossilized foliage: A new tool in terrestrial paleoecology. Gordon Research Conference – Geobiology. *Invited Poster*.
17. **Kipp MA**, Stüeken EE, Algeo TJ, Brocks J, Dahl TW, Kinsley J, Tissot FLH, Buick R. (2022). A shale-hosted selenium isotope record of Paleozoic ocean oxygenation. Goldschmidt. *Talk*.
16. **Kipp MA** and Tissot FLH. (2021). Robustly quantifying marine anoxia using uranium isotope data from ancient marine sediments. Goldschmidt (Virtual). *Talk*.
15. **Kipp MA**, Krissansen-Totton J, Catling DC. (2020). The early Earth productivity paradox. AGU Fall Meeting (Virtual). *Talk*.
14. **Kipp MA**, Lepland A, Buick R. (2020). Phosphorites as fingerprints of Earth system oxygenation: A Paleoproterozoic case study. Goldschmidt (Virtual). *Invited Talk*.
13. **Kipp MA**, Buick R, Lepland A. (2020). A multi-proxy perspective on Earth's early phosphorus cycle. International Geological Congress. *Talk*. [Conference cancelled]
12. **Kipp MA**, Algeo TJ, Buick R. (2019). Patterns of selenium isotope variability within and among Phanerozoic black shales. Goldschmidt. *Poster*.
11. **Kipp MA**. (2019). Electron acceptors, nutrient recycling and biological productivity prior to the Great Oxidation Event. Astrobiology Science Conference. *Poster*.
10. **Kipp MA**. (2019). Causes and consequences of high burial efficiency in the Archean ocean. Geobiology Conference. *Poster*.
9. **Kipp MA**, Koehler MC, Buick R. (2018). Deciphering controls on C/N ratios in ancient marine sedimentary rocks. AGU Fall Meeting. *Poster*.
8. **Kipp MA** and Stüeken EE. (2018). The role of remineralization in Archean phosphorus limitation. Goldschmidt. *Talk*.
7. **Kipp MA**, Buick R, Lepland A. (2017). Marine redox structure at the culmination of the Great Oxidation Event: Insights from the Zaonega Formation, Russia. AGU Fall Meeting. *Poster*.
6. **Kipp MA**, Stüeken EE, Buick R, Bekker A. (2017). Redox landscape of the Paleoproterozoic oceans: Implications for early eukaryotic evolution. GSA Annual Meeting. *Talk*.
5. **Kipp MA**, Stüeken EE, Buick R, Bekker A. (2017). A quantitative framework for the interpretation of nitrogen isotope data in ancient marine sedimentary rocks. Astrobiology Science Conference. *Talk*.
4. **Kipp MA**, Stüeken EE, Buick R, Strömberg CAE, Sterelny K. (2016). Nitrogen isotopes in modern and fossilized cycad leaves: Evolutionary & geological implications. GSA Annual Meeting. *Poster*.

3. **Kipp MA**, Stüeken EE, Bekker A, Buick R. (2016). Selenium isotopes as a proxy for deep-ocean redox state during the Paleoproterozoic Lomagundi Event. Goldschmidt. *Talk*.
2. **Kipp MA**, Stüeken EE, Koehler MC, Buick R. (2015). Evolution of the nitrogen biogeochemical cycle on Earth: Implications for other planets. Astrobiology Science Conference. *Poster*.
1. **Kipp MA**, West WE, Jones SE. (2013). Positive feedbacks in global biogeochemistry: Methane emissions from freshwater lakes. GSA Annual Meeting. *Talk*.

INVITED SEMINARS	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	2026
	Virginia Tech, Department of Geosciences	2026
	PAGES Past Ocean Oxygen Workshop	2025
	Nu Instruments, Sapphire MC-ICP-MS Webinar	2025
	NASA LIFE Seminar Series	2025
	University of Maryland, Department of Geology	2025
	University of North Carolina, Department of Earth, Marine and Environmental Sciences	2025
	Elemental Scientific Inc., Goldschmidt Conference Workshop	2025
	NC State University, Department of Marine, Earth and Atmospheric Sciences	2024
	University of Wisconsin – Madison, Department of Geoscience	2024
	Duke University, Integrated Toxicology & Environmental Health Program	2024
	University of Notre Dame, Department of Biological Sciences	2023
	University of Texas at Austin, Jackson School of Geosciences	2023
	Tulane University, Department of Earth and Environmental Sciences	2023
	Duke University, Division of Earth and Climate Sciences	2023
	Rice University, Department of Earth, Environmental and Planetary Sciences	2023
	UNLV, Department of Geoscience	2023
	UCLA, Department of Earth, Planetary & Space Sciences	2022
	UC – Riverside, Astrobiology Program	2022
	Pal(a)eoPERCS (Paleo Early Career Seminar series)	2022
	Virtual Seminars in Precambrian Geology	2021
	University of Utah, Department of Geology & Geophysics	2021
	California Institute of Technology, GeoClub	2021
	UC – Riverside, Department of Earth and Planetary Sciences	2020
	University of Washington, Astrobiology Program	2019
	Australian National University, Paleobiogeochemistry research group	2018
	University of Washington, Paleo Lunch	2018
	Northwest Geological Society	2017
	NASA Astrobiology Institute, Alternative Earths Team	2017

FIELDWORK	Ifremer, Brest, France (1 week), drillcore sampling	2025
	Monga National Park, Australia (1 week), plant biogeochemistry	2024
	Kingston Range, CA, USA (1 week), stromatolitic carbonates & glacial diamictites	2018
	Geoscience Australia, Canberra, ACT, Australia (1 week), drillcore sampling	2018
	US Geological Survey, CO, USA (1 week), drillcore sampling	2018
	Phosphoria Formation, ID & WY, USA (2 weeks), phosphatic shales	2017
	Paleoproterozoic Onega Basin, Karelia, Russia (2 weeks), various sed. & igneous rocks	2017
	Norwegian Geological Survey, Trondheim, Norway (1 week), drillcore sampling	2016
	R/V Thomas G Thompson, Strait of Juan de Fuca (3 days), oceanographic cruise	2014
	National Bison Range, MT, USA (5 weeks, 9 weeks), terrestrial ecology	2012/2014
	Notre Dame Environmental Research Center, WI, USA (10 weeks), aquatic ecology	2013
	UNESCO World Heritage Site Butrint, Albania (7 weeks), archaeological excavation	2012

MENTORING

PhD Advisor

Laura Piccirillo (2024–) | Grace Hall (2025–)

Postdoc Advisor

Chenyi Tu (2025–)

Senior Thesis Advisor

Maya Khodabakhchian (2025)

Graduate Committee

Hannah Wudke (MS, 2026)

Robert Hill (PhD, 2026)

Tian Xu (PhD, expected 2027)

Louis Lu (PhD, expected 2028)

Hana Kawashima (PhD, expected 2029)

Yanan Cheng, UNC (PhD, expected 2029)

Daniella Trujillo Hassan (PhD, expected 2029)

COMMUNITY ACTIVITIES

Duke University Service

Advisory Committee, Shared Materials Instrumentation Facility (2025–)

Faculty Search Committee, Earth and Climate Sciences (2026)

Peer Review

Editorial board: *Geochemical News* (2026–)

Journal reviewer: *AGU Advances* | *American Journal of Science* | *Biogeosciences* | *Chemical Geology* | *Communications Earth & Environment* | *Current Biology* | *Earth & Planetary Science Letters* | *Earth Science Reviews* | *Frontiers in Earth Science* | *Geobiology* | *Geochimica et Cosmochimica Acta* | *Geology* | *Geophysical Research Letters* | *Global and Planetary Change* | *GSA Bulletin* | *International Journal of Earth Sciences* | *Limnology and Oceanography* | *Nature* | *Nature Communications* | *Nature Ecology & Evolution* | *Nature Geoscience* | *Nature Microbiology* | *New Phytologist* | *Paleoceanography and Paleoclimatology* | *Precambrian Research* | *Proceedings of the National Academy of Sciences (USA)* | *Science Advances*

Proposal reviewer (ad hoc & panel): NSF Earth Sciences (EAR) | NSF Ocean Sciences (OCE) | ACS Petroleum Research Fund | Israel Science Foundation (ISF) | NASA FINESST | American Philosophical Society

Conferences & Workshops

Session Convener: Astrobiology Science Conference (2019) | Geobiology Conference (2019)

Goldschmidt (2018–2021, 2023) | Gordon Geobiology (2022) | Geological Society of America (2017)

Workshop Organizer: PO2 Workshop (Notable Hypoxic Events of the Geologic Past), Raleigh, NC (2025)

Collision-Reaction Cell Applications in MC-ICP-MS, Durham, NC (2026)

Outreach

Summer Research Mentor, Caltech SURF Fellows Program (2023) | Summer Research Mentor, Caltech WAVE Fellows Program (2022) | Summer Research Mentor, Caltech Summer Research Connection (2022)

Guest Lecture, Muir High School Environmental Science Academy (2022) | Summer Research Mentor, i-STEM Scholars (2021) | Public Lecture, *Explore Caltech* (2020) | Lab Demonstrator, Astrobiology Primer, AbSciCon (2019) | Public Lecture, *Astronomy on Tap*, Seattle (2018) | Astrobiology Curriculum Advisor, Everett Public Schools (2018) | Guest Lecture, Lakewood High School Astrobiology Field Trip (2016) | Course Designer & Saturday Program Instructor, UW Robinson Center for Young Scholars (2014)