Elizabeth M. Spiers, PhD *Weston Howland Jr. Postdoctoral Scholar* Woods Hole Oceanographic Institution Woods Hole, MA 02543

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<u>Summary</u>

Dr. Spiers' research interests are in quantifying and constraining the *dynamic* habitability of ocean worlds in our Solar System, such as Jupiter's moon, Europa, and Saturn's moon, Enceladus. She uses system models to examine energy and chemical transport within these oceans across scales. Spiers' work will improve understanding of the habitability and evolution of ocean worlds throughout our Solar System –including Earth–, informing and providing constraints for future planetary missions, such as NASA's *Europa Clipper*.

Education

Ph.D. Earth & Atmospheric Sciences (2023), Georgia Institute of Technology	ogy Atlanta, GA
Astrobiology Graduate Certificate (2022), Georgia Institute of Technolog	y Atlanta, GA
B.S. Applied Physics (2017), Purdue University	West Lafayette, IN
B.S. Planetary Science (2017), Purdue University	West Lafayette, IN

Professional Experience & Affiliations

Postdoctoral Scholar, Woods Hole Oceanographic Institution	Oct. 2024 – Present
Professional Affiliate - NASA Europa Clipper Science Team, Radar for Europa Assessment &	
Sounding: Ocean to Near-surface (REASON)	2024 – Present
Research Associate, University of Texas Institute for Geophysics	Sep. 2023 – Sep. 2024
Research Scientist, Cornell University	May 2023– Aug. 2023
Visiting Researcher, University of Texas Institute for Geophysics	Feb. 2023 – Sep. 2023
Graduate Student Affiliate - NASA Europa Clipper Science Team, Radar for Europa	
Assessment & Sounding: Ocean to Near-surface (REASON)	2018 – 2023

Awards & Honors

- 2024: Weston Howland Jr. Postdoctoral Scholarship; WHOI, \$94,000
- 2023: Travel Award; Outer Planets Assessment Group (OPAG) November Meeting, \$1,000
- 2023: Schmidt Science Fellow Nominee Georgia Institute of Technology
- 2022: Travel Award; Outer Planets Assessment Group (OPAG) June Meeting, \$1,000
- 2018: Science Communication Fellow; Science ATL Atlanta Science Festival, \$600
- 2016: Jandos Scholar, Purdue University, \$5,000
- 2013-2017: Purdue Presidential Scholarship, Purdue University, \$10,000/year

Professional Service

 Session Chair – "Chemical Cycling in Ocean Worlds", Astrobiology Science Conference (2024)
 Session Chair – "Building a Cross-Disciplinary Understanding of Ocean Worlds: Habitability at the Dawn of the Europa Clipper Mission", Astrobiology Science Conference (2024) Session Chair – "Comparative Planetary Oceanography: Ocean Science & Technology Across the Solar System", Ocean Sciences Meeting (2024)
Social & Conference Chair, Future Leaders of Ocean Worlds (2024)
Module Co-lead – "Biogeochemical Cycles of Earth & Ocean Worlds", 1rst Annual Retreat, NASA Network for Ocean Worlds (2023)
Workshops Chair, Future Leaders of Ocean Worlds (2023)
Lead & Co-Founder, Future Leaders of Ocean Worlds (2022)
Space & Planetary Science Representative, Georgia Tech EAS Graduate Students (2017-2020)

Cruise Participation

R/V Atlantis & ROV JASON (July 15 – Aug. 2, 2024) Cleft Segment, Juan De Fuca Ridge

Public Outreach & Other Service

Co-host – Georgia Tech's Mars Perseverance Landing Watch Party (Feb. 2021)
Atlanta Science Tavern - "Searching for Habitable Planets: Europa" (Nov. 2019)
Science ATL Blog – "Atlanta's Living History: - Old Growth Forests in the City" (Oct. 2019)
Science Showcase at Ponce City Farmer's Market – "Light Pollution in Atlanta" (Oct. 2018)

Teaching Experience

2023, Spring: Grader, EAS 4307/6307 – "Physics of Planets", Georgia Tech
2022, Fall: Teaching Assistant, EAS 1601 - "Habitable Planet", Georgia Tech
2020, Fall: Lecture TA, EAS 1601 - "Habitable Planet", Georgia Tech
2019, Fall: Tutor, Georgia Tech Athletics
2018, September: Substitute Lecturer, EAS 1601 - "Habitable Planet", Georgia Tech
2018, Fall: Teaching Assistant, EAS 1601 - "Habitable Planet", Georgia Tech
2018, Fall: Teaching Assistant, EAS 1601 - "Habitable Planet", Georgia Tech

<u>5 Most Relevant Publications</u>

h-index = 6; total citations = 73

- Vance S. D., Craft K., Shock E., et al. (incl. Spiers E. M.) (2023) Habitability Science with Europa Clipper. Space Science Reviews. 219 (8), 81. <u>https://doi.org/10.1007/s11214-023-01025-2</u>
- Spiers E. M. & Schmidt B. E. (2023). Variable Salinity and Hydrogen Production in Europa's Ocean. Journal of Geophysical Research – Planets. 128 (11), e2023JE008028. <u>https://doi.org/10.1029/2023JE008028</u>
- Lawrence J.D., Mullen A. D., et al. (incl. Spiers E. M.) (2023). Subsurface Science and Search for Life in Ocean Worlds. *Planetary Science Journal*. 4(2), 22. <u>https://doi.org/10.3847/PSJ/ACA6ED</u>
- 4. **Spiers E. M.,** et al. (2021). Tiger: Feasibility Study for a New Frontiers Enceladus Habitability Mission. *Planetary Science Journal, 2(5), 195. <u>https://doi.org/10.3847/PSJ/ac19b7</u>*
- Bryson F. E. et al. (incl. Spiers E. M.) (2020). Vertical Entry Robot for Navigating Europa (VERNE): Mission concept and system design. In AIAA ASCEND 2020 (p. 4061) <u>https://doi.org/10.2514/6.2020-4061</u>