

April N. Abbott

<https://aprilabbott.wordpress.com>

Employment

- **Coastal Carolina University** 2021-present
Assistant Professor, Department of Marine Science
- **BushBlitz** May – August 2021
Outreach and Education Coordinator
- **Macquarie University** 2016-2021
Assistant Professor/Lecturer, Department of Earth & Planetary Sciences
- **Collaborative Australian Postgraduate Sea Training Alliance Network (CAPSTAN)**
Director; Curriculum Development & Voyage Planning 2017-2020

Education

- **Ph.D.** (Ocean, Earth, and Atmospheric Science), Oregon State University 2016
 - **Graduate Certificate** (College and University Teaching) 2014
- **M.S.** (Geological Sciences), University of Minnesota Duluth 2011
- **B.S.** (Geoscience and Asian Studies), William Smith College 2009

Peer-Reviewed Publications

**graduate student and **undergraduate student under my supervision at time of research project*

- Han S.*, Löhr S.C., **Abbott A.N.**, Baldermann A., Farkaš J., McMahon W., Milliken KL, Rafiei M., Wheeler C., and Owen M. (2022) Earth System Science applications of next-generation SEM-EDS automated mineral mapping. *Frontiers in Earth Science*, 10.956912, doi: 10.3389/feart.2022.956912
- Du J., Haley B.A., Mix A.C., **Abbott A.N.**, McManus J., and Vance D. (2022) Reactive-transport modeling of neodymium and its radiogenic isotope in deep-sea sediments: the roles of authigenesis, marine silicate weathering and reverse weathering. *Earth and Planetary Science Letters*, **596**, 117792, doi: 10.1016/j.epsl.2022.117792
- Han S.*, Löhr S.C., **Abbott A.N.**, Baldermann A., Voight M., and Yu B. (2022) Authigenic clay mineral evidence for restricted, evaporitic conditions during the emergence of the Ediacaran Doushantou Biota. *Communications Earth and Environment*, **3**, 165, doi: 10.1038/s43247-022-00495-6
- **Abbott A.N.**, Löhr S., Payne A.**, Kumar H.**, and Du J. (2022) Widespread lithogenic control of marine authigenic neodymium isotope records? Implications for paleoceanographic reconstructions. *Geochimica et Cosmochimica Acta*, **319**, 318-336, doi: 10.1016/j.gca.2021.11.021
- Arthur, B.T., Roberts, D., Rae, B., Marrison, M., McCleary, H., **Abbott, A.**, and Musso, B. (2021) Ocean outreach in Australia: How a national research facility is engaging with community to improve scientific literacy. *Frontiers in Environmental Science* special issue 'Science, Marine Observations and Society: Pathways to Improve Public Engagement and the Science-Policy Nexus,' **9**, 610115
- Janssen, D.J., Rickli, J., **Abbott, A.N.**, Ellwood, M.J., Twining, B.S., Ohnemus, D.C., Nasemann, P., Gilliard, D., Jaccard, S.L. (2021) Release from biogenic particles, benthic fluxes, and deep water circulation control Cr and $\delta^{53}\text{Cr}$ distributions in the ocean interior. *Earth and Planetary Science Letters*, **574**, doi: 10.1016/j.epsl.2021.117163

- **Abbott, A.N.,** Löhr, S., and Trethewy, M.** (2019), Are clay minerals the primary control on the oceanic rare earth element budget? *Frontiers in Marine Science*, 6, **504**, doi: 10.3389/fmars.2019.00504
- **Abbott, A.N.** (2019) A benthic flux from calcareous sediments results in non-conservative neodymium behavior during lateral transport: A study from the Tasman Sea. *Geology*, doi: 10.1130/G45904.1
- Haley, B., Du, J., **Abbott, A.N.**, McManus, J. (2017), The impact of benthic processes on rare earth element and neodymium isotope distributions in the oceans. *Frontiers in Marine Science*, 4, **426**, doi: 10.3389/fmars.2017.00426
- **Abbott, A.N.**, Haley, B., and McManus, J. (2016) The impact of Sedimentary Coatings on the Diagenetic Nd Flux. *Earth and Planetary Science Letters*, **144**, 217-227. doi: 10.1016/j.epsl.2016.06.001
- Johnson, T.C., Werne, J.P., Brown, E.T., **Abbott, A.**, Berke, M., Steinman, B.A., Halbur, J., Contreras, S., Grosshuesch, S., Deino, A., Lyons, R.P., Scholz, C.A., Schouten, S., and Sinninghe Damsté, J.S. (2016). A progressively wetter climate in southern East Africa over the past 1.3 million years. *Nature*, **537**, 220-224. doi 10.1038/nature19065
- **Abbott, A.N.**, Haley, B.A., Tripathi, A.K., and Frank, M. (2016) Constraints on ocean circulation at the Paleocene-Eocene Thermal Maximum from neodymium isotopes. *Climates of the Past*, **12**. doi:10.5194/cp-12-837-2016
- **Abbott, A.N.**, Haley, B., and McManus, J. (2015) Bottoms up: Sedimentary control of the deep North Pacific Ocean's ϵ Nd signature. *Geology*, **43**, 1035-1038. doi: 10.1130/G37114.1
- **Abbott, A.N.**, Haley, B.A., Tripathi, A.K., and Frank, M. (2015) Constraints on ocean circulation at the Paleocene-Eocene Thermal Maximum from neodymium isotopes. *Climates of the Past Discussions*, **11**, 2557-2583. doi:10.5194/cpd-11-2557-2015
- **Abbott, A.N.**, Haley, B., McManus, J., and Reimers, C., (2015) The sedimentary source of dissolved rare earth elements to the ocean. *Geochimica et Cosmochimica Acta*, **154**, 186-200. doi 10.1016/j.gca.2015.01.010

Courses Taught (CCU)

- Marine Geology (MSCI 304 & Lab)
- Marine Chemistry (MSCI 305 & Lab)
- Applications of Isotope Geochemistry (CMWS 642)
- Student Research (MSCI 397/399/497/499)

Select Funding, Recognition, & Honors

- | | |
|--|----------------|
| • National Science Foundation, RISE #2148481 | 2022-2025 |
| <i>Collaborative Proposal: The benthic influence on North Atlantic Deep Water ϵNd signatures</i> | \$349,370 |
| • Australia New Zealand IODP Legacy Funding | 2019-2020 |
| a) <i>Sediment provenance influence on Nd records of ocean circulation</i> | \$9,996 |
| b) <i>Massive subaerial volcanism associated with OAE2</i> | \$9,900 |
| • The Oceanographic Society Early Career Researcher Award | Awarded 2021 |
| • Australian Award in University Teaching | Nominated 2019 |
| • Review Editor for Frontiers In (Marine Biogeochemistry) | Selected 2019 |

Ship Time Summary

- **Completed:** 231 days since 2010 across 13 cruises
 - 1 voyage as alternate chief scientist
 - 1 as director of CAPSTAN
 - 2 as invited geochemist
 - 2 as primary investigator
 - 7 cruises with students
- **Funded (upcoming):** 45 days in the North Atlantic

Research Student Supervision

- **Supervisor:** 2 PhD (1 completed, 1 current; 2 publications), 3 masters (all completed; 1 publication)
- **Committee:** 1 PhD (current), 2 masters (1 completed, 1 current),
- **Undergraduates:** 20 total (17 completed, 3 current; 3 publications)

Professional Societies

- **American Geophysical Union** *Member since 2008*
- **Geological Society of America** *Member since 2010*
- **The Geochemical Society** *Member since 2014*
- **The Oceanographic Society** *Member since 2015*
- **Australian Marine Science Association** *Member since 2018*
- **European Geophysical Union** *Member since 2019*