

# Emma Reed, Ph.D.

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## Education

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<b>Ph.D., Geosciences</b> , Global Change Minor, University of Arizona	2021
<b>M.S., Geosciences</b> , University of Arizona	2016
<b>B.A., Science of Earth Systems</b> ( <i>Magna cum laude</i> ) & <b>B.A., English</b> , Cornell University	2014

## Fellowships

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<b>NSF Graduate Research Fellowship</b>	2016 – 2021
<b>Boston University Dean's Fellowship</b>	2016
<b>NASA/University of Arizona Space Grant Fellowship</b>	2015 – 2016
<b>NSF East Asia &amp; Pacific Summer Institute Fellowship</b>	2015

## Scholarships & Awards

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<b>UA Global Change GIDP Scholarship</b>	2021
<b>Galileo Circle Scholarship</b>	2016, 2020
<b>ChevronTexaco Geology Scholarship</b>	2019
<b>Best Overall Presentation</b> , GeoDaze Symposium, U. Arizona	2019
<b>First Place Lightning Talk</b> , Earth Week, U. Arizona	2019
<b>Carson Scholarship in Science Communication</b>	2019
<b>Australia-Americas PhD Research Internship Program</b>	2018
<b>Geological Society of America Student Research Grant</b>	2017
<b>R. Wilson Thompson Scholarship</b>	2015
<b>AGI Harriet Evelyn Wallace Scholarship</b>	2015 – 2016
<b>Paul S. Martin Scholarship</b>	2014
<b>Einhorn Discovery Grant</b>	Spring, Fall 2013
<b>Arts &amp; Sciences Undergraduate Research Fund</b>	Spring, Fall 2013
<b>Michael W. Mitchell Prize</b>	2013
<b>Martijn Zwart Prijs</b>	2013
<b>New York State Scholarship for Academic Excellence</b>	2010 – 2014

## Research Experience

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<b>Tropical Climate &amp; Coral Reefs Lab</b> Postdoctoral Researcher Graduate Assistant	Boston University; University of Arizona 2021 – present 2016 – 2021
<b>Australian Institute of Marine Science</b> Visiting Researcher	Townsville, QLD, Australia 2015, 2018
<b>Paleoclimate Variability Lab</b> Graduate Assistant	University of Arizona 2014 – 2016
<b>Makauwahi Cave Reserve</b> Honors Thesis Research	Kaua'i, HI Summer 2013, 2014
<b>Paleontological Research Institution</b> Assistant to the Director of Collections	Ithaca, NY 2012 – 2014
<b>Alaskan Glacier Research</b> Undergraduate Research Assistant	Cornell University Fall 2013

## Publications

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- Reed E.V.**, Thompson D.M., Anchukaitis K.J. *Coral-based Sea Surface Salinity Reconstructions and the Role of Observational Uncertainties in Inferred Variability and Trends*. In review at *Paleoceanography and Paleoclimatology*.
- Reed E.V.**, Thompson D.M., Cole J.E., Dettman D., Vetter L., McGee D., Snyder M., Sayani H., Tudhope A. *Coral Paleoclimate Reconstructions Reveal Shifts of the West Pacific Intertropical Convergence Zone during the 20th Century*. In preparation for submission.
- Thompson D.M., McCulloch M., Cole J.E., **Reed E.V.**, D'Olivo J., Dyez K., Lofverstrom M., Lough J.M., Cantin N.E., Tudhope A.W., Cheung A.H., Vetter L., Edwards R.L. Marginal reefs under stress: Physiological limits render Galápagos corals susceptible to warming and acidification. In press at *AGU Advances*.
- Reed E.V.**, Thompson D.M., Lough J.M., Cole J.E., Cantin N.E., Cheung A.H., Tudhope A., Vetter L., Jimenez G., Edwards R.L. 2021. *Impacts of Coral Growth on Geochemistry: Lessons from the Galápagos Islands*. *Paleoceanography and Paleoclimatology* 36 (4). DOI: <https://doi.org/10.1029/2020PA004051>

**Reed E.V.**, Cole J.E., Lough J.M., Cantin N.E. 2019. *Linking climate variability and growth in coral skeletal records from the Great Barrier Reef*. *Coral Reefs* 38 (1): 29-43. DOI: <https://doi.org/10.1007/s00338-018-01755-8>

## Presentations

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- (talk) **Reed E.V.**, Thompson D.M., Anchukaitis K.J. *Coral-based Sea Surface Salinity Reconstructions and the Role of Observational Uncertainties in Inferred Variability and Trends*. AGU Fall Meeting, December 2021.
- (invited) **Reed E.V.** *Extracting climate variability from coral archives through improved interpretations of geochemical proxies*. Brown University Department of Earth, Environmental and Planetary Sciences, October 2020.
- (poster) **Reed E.V.**, Thompson D.M., Cole J.E., Vetter L., Dettman D., McGee D., Snyder M., Sayani H., Tudhope A. *ENSO's Impact on the Pacific Intertropical Convergence Zone: New Insights from a Network of Pacific Coral Records*. AGU Fall Meeting, December 2019.
- (poster) **Reed E.V.**, Thompson D.M., Cole J.E., Vetter L., Dettman D., McGee D., Snyder M., Sayani H., Tudhope A. *The Pacific Intertropical Convergence Zone reconstructed from coral paleoclimate records*. US CLIVAR Workshop on Water Isotopes and Climate, October 2019.
- (talk) **Reed E.V.**, Thompson D.M., Vetter L., Lough J.M., Cantin N.E., Snyder M. *West Pacific rain belt variability recorded in corals from the Marshall Islands*. GeoDaze Symposium, University of Arizona, Spring 2019.
- (poster) **Reed E.V.**, Thompson D.M., Cole J.E., Lough J.M., Vetter L., Snyder M., Jimenez G., Tudhope S., Larry Edwards R., Cantin N.E. *Improving coral climate reconstructions using density records: a case study from the Galápagos Islands*. AGU Fall Meeting, December 2018.
- (talk) **Reed E.V.**, Thompson D.M., Cole J.E., Lough J.M., Vetter L., Snyder M., Jimenez G., Tudhope S., Larry Edwards R., Cantin N.E. *The good, the bad, and the ugly: assessing impact of skeletal density and transect quality on geochemistry in sub-fossil corals from the Galápagos Islands*. Goldschmidt, August 2018.
- (poster) **Reed E.V.**, Cole J.E., Lough J.M. *Linking climate variability and coral health through Great Barrier Reef Coral Records*. Poster presented at the International Coral Reef Symposium, June 2016.
- (talk) **Reed E.V.**, Cole J.E., Lough J.M. *Linking climate variability and coral health through Great Barrier Reef Coral Records*. GeoDaze Symposium, University of Arizona, 2016.

(poster) **Reed E.V.**, Dietl G.P., Burney D.A., Pigott Burney L. *Invasive rat predation recorded in fossil endemic snails at Makauwahi Cave, Kaua'i*. GSA Annual Conference, 2014.

(poster) **Reed E.V.**, Dietl G.P., Burney D.A., Pigott Burney L. *Invasive rat predation recorded in fossil endemic snails at Makauwahi Cave, Kaua'i*. Island Biology, 2014.

## Teaching Experience

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<b>Oceanography</b> (GEOS 212)	University of Arizona
Teaching Assistant	Fall 2020

<b>Introduction to Climate &amp; Earth System Science</b> (ES 107)	Boston University
Teaching Fellow	Spring 2017
Grader	Fall 2017

<b>Ocean Science</b> (GEOS 412A,B)	University of Arizona
Teaching Assistant	Spring 2015

<b>Life on Earth</b> (GEOS 170C)	University of Arizona
Teaching Assistant	Fall 2014

<b>Introduction to Dutch</b> (DUTCH 1210)	Cornell University/Yale University
Teaching Assistant, Pilot Distance Learning Program	Fall 2012

## Popular Science Writing

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**Reed, E. V.** "Yokwe to the Marshall Islands." July 29, 2021. [Terrain.org](https://terrain.org/).

**Reed, E. V.** "Unearthing the Life in Soils at Biosphere 2." Dec. 17, 2015. [Planet Experts](https://planetexperts.com/).

**Reed, E. V.** "How we live forever." Sep. 30, 2015. [Zocalo Magazine](https://zocalomagazine.com/).

**Reed, E. V.** "No, the 'hiatus' doesn't disprove global warming." [SciView Fall 2015](https://sciview.org/).

## Outreach & Communication Experience

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<b>Science Café: "What can corals tell us about climate change?"</b>	U. Arizona
Speaker	November 2019

<b>Association for Women Geoscientists, Southern Arizona Chapter</b>	U. Arizona
Vice President	2019 – 2020

<b>Department of Geosciences Outreach Program</b>	University of Arizona
Volunteer	2014 – 2016, 2018 –

<b>Biosphere 2 Ocean Sciences</b>	Biosphere 2, AZ
Volunteer	2020
Curriculum Developer, Teacher, and Writer	2015 – 2016

<b>Earth &amp; Environment Science Communication Workshop</b>	Boston University
Lead Organizer	Spring 2018

<b>NSF Expert Witness Training Academy</b>	Mitchell Hamline School of Law, MN
Participant	Summer 2016

<b>Makauwahi Cave Reserve</b>	Kaua'i, HI
Volunteer	Summer 2013, 2014

<b>ReefTeach</b>	Kona, HI
Volunteer	Spring 2013

<b>Expanding Your Horizons</b>	Cornell University
Project Coordinator	2011, 2012

## Field Experience

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Fossil coral coring and water sampling, Marshall Islands	2018
CTD instrumentation and water sampling, Stellwagen Bank NMS (MA)	2016
Coral ecology surveys and marine instrumentation, Marshall Islands	2016
ReefCheck ecology surveys, Catalina Island (CA) and Boston (MA)	2016
Paleoecological excavations, Makauwahi Cave, Kaua'i (HI)	2013, 2014
Biogeochemistry sampling and monitoring, Kamuela (HI)	2013
Field program in Earth and Environmental Systems, Hawai'i	2013

## Additional Skills

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- Python (preferred), including NumPy, SciPy, Pandas, Jupyter, Scikit-Learn, and Xarray
- MATLAB, R, Java, Photoshop, Illustrator, MS Office
- AAUS Scientific Diver, PADI/NAUI Rescue Diver, NAUI Nitrox certification
- First Aid, CPR & O<sub>2</sub> certified