

CURRICULUM VITAE

ANNE L. COHEN

Associate Scientist with Tenure

Climate and Paleo Group
Clark Laboratory 118, mailstop 23
Woods Hole Oceanographic Institution
Woods Hole, MA, 02543
USA

EDUCATION

Ph.D, University of Cape Town, South Africa, December 1993.

Thesis Titled: “*A Holocene Sea Surface Temperature Record in Mollusc Shells from the Coast of Southern Africa*”

Advisors: Professor Nikolaas van der Merwe, Peabody Museum, Harvard University and Archaeometry Laboratory, UCT and Professor George Branch, Department of Zoology, UCT.

External Examiner: Professor Nicholas Shackleton, Cambridge University

B.Sc.Hons (*Class Medalist*), 1987, University of Cape Town, South Africa

B.Sc. (*Class Medalist*), 1986, University of Cape Town, South Africa

PROFESSIONAL EXPERIENCE

- Woods Hole Oceanographic Institution, Associate Scientist with Tenure (2011-), Research Specialist (2004-2011), Research Associate (1999-2004)
- Boston University Marine Program Post-Doctoral Investigator (1996-1998)
- Woods Hole Oceanographic Institution Post-Doctoral Fellow (1994-1995)
- University of Cape Town, National Research Council Graduate Student Fellow (1988-1993)

PROFESSIONAL AFFILIATIONS

American Geophysical Union
International Society for Coral Reef Studies

RESEARCH FOCUS

Coral Reefs
Coral Reef Resilience
Climate Change
Biomineralization
Paleoceanography
Geochemistry of Biominerals

CURRENT LAB GROUP

Kathryn Rose, Research Associate 3, Lab Manager.
Michael Fox, WHOI Post-doctoral Scholar

Nathaniel Mollica, Graduate Student, MIT-WHOI Joint Program in Oceanography
Mariyah Galochkina, Graduate Student, MIT-WHOI Joint Program in Oceanography
Andre Briscoe, Guest Student
David Feagins, WHOI Summer Student Fellow
Claire Zobel, High School Guest student

ACADEMIC HONORS AND NOMINATIONS

- Nominated: JMK Innovation Prize (2019)
- Nominated: Pew Fellowship in Marine Conservation (2009)
- Ocean Life Institute (OLI) Fellowship, Woods Hole Oceanographic Institution, 2003-2006
- Oliver Davies Medal (South Africa) “*For outstanding contributions from a young South African scientist*”, 1997
- Woods Hole Oceanographic Institution Post-Doctoral Fellowship, 1994-1995
- Graduate Student Fellowship, National Research Council, South Africa, 1988-1993
- Class Medalist (top of honors class), University of Cape Town, 1987
- Class Medalist (top of graduating class), University of Cape Town, 1986

MAJOR INITIATIVES

SUPER REEFS ([HTTPS://SUPERREEFS.WHOI.EDU/](https://superreefs.whoi.edu/))

SUPER CORAL ZOOS ([HTTPS://SUPERREEFS.WHOI.EDU/SUPER-CORAL-ZOOS/](https://superreefs.whoi.edu/super-coral-zoos/))

CORAL CATALYST ([HTTPS://WWW.WHOI.EDU/PARTNERSHIP/CATALYST](https://www.whoi.edu/partnership/catalyst))

NAMED, KEYNOTE AND FEATURED LECTURES

- 24th September 2019: INVITED SPEAKER: *Super Reefs*. Ministry of Science and Technology (MOST) Delegation, Woods Hole
- 13th April 2019: INVITED SPEAKER: *Super Reefs*. Department of Oceanography Seminar Series, University of Cape Town
- 25th April 2019: FEATURED SPEAKER: Glenn and Susan Buckley Lecture in Environmental Geology, University of Illinois at Urbana-Champaign
- 14th June 2019: KEYNOTE SPEAKER: *Super Reefs of the South China Sea*. Ocean Affairs Council, Kaohsiung, Taiwan
- 17th December 2018: SPEAKER, Super Reefs Workshop, Aquarium of the Pacific
- 9-12th October 2018: INVITED Public Lecture: *Super Reefs*. Aquarium of the Pacific, Long Beach, California (<https://www.youtube.com/watch?v=aABGxhavo38>)
- 27-29th November 2018: INVITED SPEAKER: *Super Reefs*. National Geographic Headquarters, DC.
- 09/28/2018: KEYNOTE SPEAKER: *Super Reefs*. Kiribati Vision 20: Achieving Climate resilience and sustainable development, United Nations General Assembly, UN Headquarters, New York City.
- 09/05/2017: KEYNOTE SPEAKER, Taiwan Ministry of Science & Technology (MOST), Forum on the South China Sea, Taipei, Taiwan
- 06/08/2017: FEATURED SPEAKER: *Super Reefs*. The Ocean Conference, United Nations Headquarters, New York City.

- 04/28/2017: FEATURED SPEAKER, SYMBIOFEST, University of Georgia.
- 10/28/2016: FEATURED SPEAKER: “*Our Changing Oceans*” Radcliffe Institute for Advanced Study at Harvard, 2016 Science Symposium, Harvard, Mass.
- 08/30/2016: PERSPECTIVE LECTURE, International Conference on Paleoceanography, Utrecht.
- 10/5/2015: KEYNOTE SPEAKER: *Ocean Acidification*, US State Department - Our Ocean Conference, Valparaiso, Chile.
- 09/03/2013: KEYNOTE SPEAKER, 11th International Conference on Paleoceanography, Barcelona.
- 08/26/2013: KEYNOTE SPEAKER, THE GOLDSCHMIDT CONFERENCE, Florence, Italy
- 05/3/2013: FEATURED SPEAKER, NATIONAL ACADEMIES OF SCIENCES AND ENGINEERING OCEAN ACIDIFICATION SYMPOSIUM: *Toward a Sustainable 21st Century*, Irvine, California.
- 2/21/2013: FEATURED SPEAKER, FISCHER LECTURE, Roanoke College.
- 11/21/2013: FEATURED SPEAKER, ANNUAL SAGAN NATIONAL COLLOQUIUM (SNC) ON CLIMATE CHANGE AND ITS IMPACTS, Ohio Wesleyan University, Delaware.
- 2/2/2011: FEATURED SPEAKER, VETLESEN LECTURE, *The State of Our Oceans*. University of Rhode Island, Graduate School of Oceanography, Providence.
- 06/23/2010: PLENARY SPEAKER, EUROPEAN MINERALOGICAL UNION SCHOOL (Ion partitioning in low temperature aqueous systems: from fundamentals to applications in climate proxies and environmental geochemistry), Oviedo Spain.

EXTERNAL PROFESSIONAL ACTIVITIES

Congressional Testimony

House Resources Subcommittee on Fisheries Conservation, Wildlife and Oceans Oversight Hearing on the Coral Reef Conservation Act of 2000, Executive Order 13089, and the Oceanic Conditions Contributing to Coral Reef Decline, June 27, 2002 (Summary of hearings: http://www.agiweb.org/gap/legis107/oceans.html#6_27_02)

Intergovernmental Panel on Climate Change

Science Steering Committee for the Workshop on Impacts of Ocean Acidification on Marine Biology and Ecosystems. Okinawa, Japan, 2011

Contributing Author, The IPCC Workshop Report on Impacts of Ocean Acidification on Marine Biology and Ecosystems. Eds: Christopher B. Field, Vicente Barros, Thomas F. Stocker, Qin Dahe, Katharine J. Mach, Gian-Kasper Plattner, Michael D. Mastrandrea, Melinda Tignor, Kristie L. Ebi. Published by: IPCC Working Group II Technical Support Unit, Carnegie Institution, Stanford, California, USA

Expert Reviewer, IPCC Fifth Assessment Report (AR5) Working Group II Contribution to the Fifth Assessment Report: Climate Change 2014 - Impacts, Adaptation, and Vulnerability

Science Advisor

Ecosystem Science and Management Working Group of the NOAA Scientific Advisory Board, 2016- (<http://sab.noaa.gov/WorkingGroups/StandingWorkingGroups.aspx>)

2017 Assessment of the Rock Islands Southern Lagoon World Heritage Site for the IUCN World Heritage Outlook Assessment of Natural World Heritage Sites (<http://www.worldheritageoutlook.iucn.org/explore-sites/wdpaid/555547992>).

National Network for Oceans and Climate Change Interpretation (NNOCCI)

82 Corals Roundtable to assess extinction risk of 82 coral species to climate change, NOAA Pacific Fisheries Center, Honolulu. Local Lead: Dr. Michael Seki, Deputy Director, NOAA PIFSC; Chair, Dr. Robert Detrick, Director, NOAA OAR.

Center for Ocean Solutions Working Group on Corals and Climate Change, Okeanos Foundation; hosted by Stanford University. Contributing Author: Consensus Statement on Climate Change and Coral Reefs. Jim Barry, Dan Barshis, Peter Brewer, Ann F. Budd, Margaret Caldwell, Anne Cohen, Larry Crowder, Rob Dunbar, Yimnang Golbuu, Ove Hoegh-Guldberg, Terry Hughes, Les Kaufman, Mark Kirkpatrick, Kristy Kroeker, John N. Kittinger, Stephen Monismith, Steve Palumbi, John Pandolfi, Adina Paytan, Robert H. Richmond, C. Brock Woodson.
(http://www.icrs2012.com/Consensus_Statement.htm).

Review Panels

Pacific Island Fisheries Science Center, Ecosystem Science Program Review, Honolulu Hawaii (04/04-04/08/2016)

NSF Site Review, Long Term Ecological Research Program Mid-term Site Review, Moorea Coral Reef, Moorea, Tahiti (07/11-12/2013)

NSF Ocean Sciences Postdoctoral Research Fellowship (OCE-PRF) Program (03/15/2013)

High Level Presentations

Resources Subcommittee on Oceans, Fisheries Conservation and Wildlife of the U.S. House of Representatives. "Coral Death and Ocean Warming: Unprecedented Increases in the Last Two Decades," Washington DC, (2002)

Mr Scott Lockledge, Presidents Science Advisory Wing "Coral Reefs under 21st Century Climate Change", in Woods Hole, MA

Mr John Prescott, Deputy Prime Minister U.K "Climate Impacts on Coral Reefs" in Woods Hole, MA

PUBLICATIONS *=students and post-docs

- 1) Steven. J. Lentz, **Anne L. Cohen**, Kathryn E. F. Shamberger, Hannah Barkley. Observations and a Model of Net Calcification Declines in Palau's Largest Coral Reef Lagoon between 1992 and 2015, *JGR Oceans under review*
- 2) Gabriela A. Farfan, Amy Apprill, **Anne Cohen**, Thomas M. DeCarlo, Jeffrey E. Post, Rhian G. Waller, Colleen M. Hansel. Crystallographic and chemical signatures in coral skeletal aragonite. *Nature Communications, submitted*
- 3) *Rivera Hanny, **Cohen L. Anne**, Baums Iliana, Thompson Janelle. Extreme reefs yield thermally tolerant corals that maintain bleaching resistance in new habitats. *Science Advances, submitted.*
- 4) E. C. Reid, S. J. Lentz, T. M. DeCarlo, **A. L. Cohen**, and K. A. Davis. Physical processes determine spatial structure in water temperature and residence time on a wide reef flat. *JGR Oceans, submitted*
- 5) Weifu Guo, Rohit Bokade, **Anne L Cohen**, Nathaniel R Mollica, Muriel Leung, and Russell E Brainard. Ocean Acidification has Impacted Coral Growth on Indo-Pacific Reefs, *Geophysical research Letters, under revision.*

- 6) Doo S, Kaeloha A, Andersson AJ, **Cohen A**, Hicks TL, et al. (2020) The challenges of detecting and attributing ocean acidification impacts on marine ecosystems. *ICES J. Mar. Sci.* doi: 10.1093/icesjms/fsaa094
- 7) Davis, K. A., Arthur, R. S., Reid, E. C., Rogers, J. S., Fringer, O. B., DeCarlo, T. M., & **Cohen, A. L.** (2020). Fate of internal waves on a shallow shelf. *Journal of Geophysical Research: Oceans*, 125, e2019JC015377. <https://doi.org/10.1029/2019JC015377>
- 8)* Sims, Z.C., **Cohen, A.L.**, Luu, V.H. et al. (2020) Uptake of groundwater nitrogen by a near shore coral reef community on Bermuda. *Coral Reefs* 39: 215. <https://doi.org/10.1007/s00338-019-01879-5>
- 9) Vargas-Angel, Bernardo & Huntington, Brittany & Brainard, Russell & Venegas, Roberto & Oliver, Thomas & Barkley, Hannah & Cohen, Anne. (2019). El Niño-associated catastrophic coral mortality at Jarvis Island, central Equatorial Pacific. *Coral Reefs*. 10.1007/s00338-019-01838-0.
- 10)*Rodriguez, L. G., **Cohen, A. L.**, Ramirez, W. , Oppo, D. W., Pourmand, A. , Edwards, R. L., Alpert, A. E. and Mollica, N. (2019), Mid-Holocene, Coral-Based Sea Surface Temperatures in the Western Tropical Atlantic. *Paleoceanography and Paleoclimatology*, 34: 1234-1245. doi:10.1029/2019PA003571
- 11)*Nathaniel R. Mollica, **Anne L. Cohen**, Celina Scott-Beuchler, Elizabeth Drenkard, Hanny E. Rivera, Sangeeta Mangubhai, Randi D. Rotjan, Andrew Solow, Russell E. Brainard, George Lohmann, Charles Young, Hannah C. Barkley, Thomas M. DeCarlo, Alice Alpert, Jessica Carilli, Kathryn Pietro. *Coral Reefs* (2019). Skeletal records of bleaching reveal different thermal thresholds of Pacific coral reef assemblages. *Coral Reefs*. <https://doi.org/10.1007/s00338-019-01803>.
- 12) Reid, E. C., DeCarlo, T. M., **Cohen, A. L.**, Wong, G. T., Lentz, S. J., Safaie, A. , Hall, A. and Davis, K. A. (2019), Internal waves influence the thermal and nutrient environment on a shallow coral reef. *Limnol Oceanogr.* doi:10.1002/lno.11162
- 13)*Barkley, Hannah C., **Anne L. Cohen**, Russell E. Brainard, Nathaniel R. Mollica, Hanny E. Rivera, Elizabeth J. Drenkard, Charles W. Young, Bernardo Vargas-Ángel, Pat Lohmann, Thomas M. DeCarlo, Alice E. Alpert, Kevin C. Lino, Thomas A. Oliver, Victoria H. Luu (2018). Repeat bleaching of a central Pacific coral reef over the past six decades (1960–2016) *Nature Communications Biology* volume 1, Article number: 177
- 14)*Wang, Xingchen Tony, **Anne L. Cohen**, Victoria Luu, Haojia Ren, Zhan Su, Gerald H. Haug, Daniel M. Sigman (2018) Natural forcing of the North Atlantic nitrogen cycle in the Anthropocene. *Proceedings of the National Academy of Sciences* Oct 2018, 115 (42) 10606-10611; DOI: 10.1073/pnas.1801049115
- 15)*Drenkard, E. J., **Cohen, A. L.**, McCorkle, D. C., de Putron, S. J., Starczak, V. R., & Repeta, D. J. (2018). Juveniles of the Atlantic coral, *Favia fragum* (Esper, 1797) do not invest energy to maintain calcification under ocean acidification. *Journal of Experimental Marine Biology and Ecology* <https://doi.org/10.1016/j.jembe.2018.07.007>
- 16)*Mollica, N.R., Weifu Guo, **Anne L. Cohen**, Kuo-Fang Huang, Gavin L. Foster, Andy Solow (2018), Ocean Acidification Impedes Coral Calcification by Reducing Skeletal

Density. Proceedings of the National Academy of Sciences Jan 2018, 201712806; DOI: 10.1073/pnas.1712806115

- 17) Prouty, N. G., **Cohen, A.**, Yates, K. K., Storlazzi, C. D., Swarzenski, P. W., & White, D. (2017). Vulnerability of coral reefs to bioerosion from land-based sources of pollution. *Journal of Geophysical Research: Oceans*, 122. <https://doi.org/10.1002/2017JC013264>
- 18)* Shamberger K., Lentz, S., **Cohen A.**, (2017) Low and Variable Ecosystem Calcification in a Coral Reef Lagoon under Natural Acidification. *Limnology and Oceanography*, doi:10.1002/lno.10662
- 19) Russell E. Brainard, Thomas Oliver, Michael J. McPhaden, **Anne Cohen**, Roberto Venegas, Adel Heenan, Bernardo Vargas-Ángel, Randi Rotjan, Sangeeta Mangubhai, Elizabeth Flint, Susan A. Hunter (2017) Ecological Impacts of the 2015/16 El Niño in the Central Equatorial Pacific, *BAMS* DOI:10.1175/BAMS-D-17-0128.1
- 20) Pan, Xiaojun, George T. F. Wong, Thomas M DeCarlo; Jen-Hua Tai, **Anne L. Cohen**. (2017) Validation of satellite nighttime sea surface temperature in the shallow waters at the Dongsha Atoll. *Terrestrial, Oceanic and Atmospheric Sciences (TAO)*, DOI: 10.3319/TAO.2017.03.30.01
- 21) Gonnee, M., **Cohen, A.L.**, DeCarlo T.M. and Charette, M. Relationship between water and aragonite barium concentrations in aquaria reared juvenile corals. *Geochimica et Cosmochimica Acta*, <https://doi.org/10.1016/j.gca.2017.04.006>
- 22) Ren Haojia, Yi-Chi Chen, Xingchen T. Wang, George T.F. Wong, **Anne Cohen**, Thomas M. DeCarlo, Mira A. Weigand, Horng-Sheng Mii, and Daniel M. Sigman (2017). 21st Century Rise in Anthropogenic Nitrogen Deposition on a Remote Coral Reef, *Science* <https://doi.org/10.1126/science.aal3869>
- 23)* DeCarlo T.M. and **Cohen A.L.** (2017) The origin of density banding in *Porites* coral skeletons. *Coral Reefs*, doi:10.1007/s00338-017-1566-9
- 24)* DeCarlo, T.M., **Cohen, A.L.** et al., (2017) Mass coral mortality under local amplification of 2 °C ocean warming. *Scientific Reports*, 7, 44586; doi: 10.1038/srep44586 (2017)
- 25)* Alpert, A. E., **A. L. Cohen**, D. W. Oppo, T. M. DeCarlo, G. A. Gaetani, E. A. Hernandez-Delgado, A. Winter, and M. E. Gonnee (2017), 20th century warming of the tropical Atlantic captured by Sr-U paleothermometry, *Paleoceanography*, 32, doi:10.1002/2016PA002976.
- 26)* DeCarlo, T. M., **A. L. Cohen**, G. T. F. Wong, F.-K. Shiah, S. J. Lentz, K. A. Davis, K. E. F. Shamberger, and P. Lohmann (2017), Community production modulates coral reef pH and the sensitivity of ecosystem calcification to ocean acidification, *J. Geophys. Res. Oceans*, 122, doi:10.1002/2016JC012326.
- 27) Barkley Hannah C., **Anne L. Cohen**, Daniel C. McCorkle, Yimnang Golbuu (2017), Mechanisms and thresholds for pH tolerance in Palau corals, *Journal of Experimental Marine Biology and Ecology*, 489, doi: 10.1016/j.jembe.2017.01.003.
- 28)* Barkley H.C. and **Cohen, A.L.** (2016) Skeletal records of community-level bleaching in *Porites* corals on Palau, *Coral Reefs*, 10.1007/s00338-016-1483-3

- 29)*DeCarlo, T. M., G. A. Gaetani, **A. L. Cohen**, G. L. Foster, A. E. Alpert, and J. A. Stewart (2016), Coral Sr-U thermometry, *Paleoceanography*, 31, doi:10.1002/2015PA002908.
- 30)# Wang, X. T., D. M. Sigman, **A. L. Cohen**, D. J. Sinclair, R. M. Sherrell, K. M. Cobb, D. V. Erler, J. Stolarski, M. V. Kitahara, H. Ren. (2016) Influence of open ocean nitrogen supply on the skeletal $\delta^{15}\text{N}$ of modern shallow-water scleractinian corals. *Earth and Planetary Science Letters*, 125-132. (2016) doi: 10.1016/j.epsl.2016.02.032
- 31) Peter J. Edmunds, Steeve Comeau, Coulson Lantz, Andreas Andersson, Cherie Briggs, **Anne Cohen**, Jean-Pierre Gattuso, John M. Grady, Kevin Gross, Maggie Johnson, Erik B. Muller, Justin B Ries, Sylvie Tambutté, Eric Tambutté, Alex Venn, and Robert C. Carpenter (2016) Integrating the Effects of Ocean Acidification across Functional Scales on Tropical Coral Reefs *BioScience*, April 6, doi:10.1093/biosci/biw023
- 32) Karnauskas, K. B., **A. L. Cohen**, and J. M. Gove (2016) Mitigation of Coral Reef Warming Across the Central Pacific by the Equatorial Undercurrent: A Past and Future Divide. *Nature Sci. Rep.* 6, 21213; doi: 10.1038/srep21213 (2016)
- 33)* Alpert, A, **Anne L. Cohen**, Delia W. Oppo, Jamison M. Gove, and Charles W. Young (2016). Comparison of equatorial Pacific sea surface variability and trends with Sr/Ca records from multiple corals, *Paleoceanography*, 6 FEB 2016 | DOI: 10.1002/2015PA002897.
- 34) Karnauskas, K. B., **A. L. Cohen**, and E. J. Drenkard, (2015) Comment on “Equatorial Pacific coral geochemical records show recent weakening of the Walker Circulation” by J. Carilli et al. *Paleoceanography*, 30(5), 570–574, doi: 10.1002/2014PA002753.
- 35) Alin, S.R., R.E. Brainard, N.N. Price, J.A. Newton, **A. Cohen**, W.T. Peterson, E.H. DeCarlo, E.H. Shadwick, S. Noakes, and N. Bednaršek. (2015). Characterizing the natural system: Toward sustained, integrated coastal ocean acidification observing networks to facilitate resource management and decision support. *Oceanography* 28(2):92–107, <http://dx.doi.org/10.5670/oceanog.2015.34>.
- 36)* Barkley, H.C., **Cohen, A.L.**, Golbuu, Y., Starczak, V.R., Shamberger, K.E.F., and DeCarlo, T.M. (2015) Changes in coral reef communities across a natural gradient in ocean acidification, *Science Advances*, 2015;1:e1500328
- 37)* DeCarlo T.M, Gaetani G.A., Holcomb M.C. and **Cohen A.L.** (2015) Experimental determination of factors controlling U/Ca of aragonite precipitated from seawater: implications for interpreting coral skeleton, *Geochemica et Cosmochimica Acta* 162:151–165
- 38)* DeCarlo, T.M., **A. L. Cohen**, H. C. Barkley, Q. Cobban, C. Young, K. E. Shamberger, R. E. Brainard, Y. Golbuu. (2015) Coral macrobioerosion is accelerated by ocean acidification and nutrients. *Geology*, 2015; 43 (1): 7 DOI: 10.1130/G36147.1
- 39)# Wang, X. T., D. M. Sigman, **A. L. Cohen**, D. J. Sinclair, R. M. Sherrell, M. A. Weigand, D. V. Erler, H. Ren. Isotopic composition of skeleton-bound organic nitrogen in reef-building symbiotic corals: A new method and proxy evaluation at Bermuda. *Geochimica et Cosmochimica Acta*, 148, 179-190, (2015). doi: 10.1016/j.gca.2014.09.017
- 40)* Shamberger, K. E. F., **A. L. Cohen**, Y. Golbuu, D. C. McCorkle, S. J. Lentz, and H. C.

- Barkley (2014), Diverse coral communities in naturally acidified waters of a Western Pacific Reef, *Geophys. Res. Lett.*, 41, doi:10.1002/2013GL058489.
- 41)#White, M.M., L.S. Mullineaux, D.C. McCorkle and A.L. Cohen (2014) Elevated pCO₂ during fertilization of the bay scallop *Argopecten irradians* reduces larval survival but not subsequent shell size, *Marine Ecology Progress Series* 498:173-186. doi:10.3354/meps10621
- 42)Gabitov, R. I., A. K. Schmitt, M. Rosner, K. D. McKeegan, G. A. Gaetani, A. L. Cohen, E. B. Watson, and T. M. Harrison (2011), In situ $\delta^7\text{Li}$, Li/Ca, and Mg/Ca analyses of synthetic aragonites, *Geochem. Geophys. Geosyst.*, 12, Q03001, doi:10.1029/2010GC003322.
- 43)Saenger, C.S, Z.A. Wang, G.A. Gaetani, A.L. Cohen, J.M. Lough (2013) The influence of Temperature and Vital Effects on Magnesium isotope variability in *Porites* and *Astrangia* corals, *Chemical Geology* 360-361, 105-117
- 44)*Drenkard, E., **Cohen, A.L.**, McCorkle D.C., de Putron S.J., Zicht, A., Starczak, V. (2013) The Impact of Heterotrophic Feeding on the Coral Calcification Response to Ocean Acidification. *Coral Reefs*, DOI 10.1007/s00338-013-1021-5
- 45)*Holcomb, M., **Cohen, A.L.**, McCorkle, D.C. (2013) An evaluation of staining techniques for marking daily growth in scleractinian corals. *Journal of Experimental Marine Biology and Ecology*, 440(126 – 131)
- 46)Wang, Zhengrong, Glenn Gaetani, Chao Liu, **Anne Cohen**. (2013) Oxygen isotope fractionation between aragonite and seawater: Developing a novel kinetic oxygen isotope fractionation model, *Geochimica et Cosmochimica Acta*, Volume 117, 15 September 2013, Pages 232-251, ISSN 0016-7037, 10.1016/j.gca.2013.04.025.
- 47)Wang, Z; Hu, P; Gaetani, G; Liu, C; Saenger, C; **Cohen, A**; Hart, S. (2013) Experimental calibration of Mg isotope fractionation between aragonite and seawater. *Geochimica et Cosmochimica Acta* vol. 102 p. 113-123
- 48)#Kaplan MB, Mooney TA, McCorkle DC, **Cohen AL** (2013) Adverse Effects of Ocean Acidification on Early Development of Squid (*Doryteuthis pealeii*). *PLoS ONE* 8(5): e63714. doi:10.1371/journal.pone.0063714
- 49)#White MM, McCorkle DC, Mullineaux LS, **Cohen AL** (2013) Early Exposure of Bay Scallops (*Argopecten irradians*) to High CO₂ Causes a Decrease in Larval Shell Growth. *PLoS ONE* 8(4): e61065. doi:10.1371/journal.pone.0061065
- 50)#Derse-Crook, E., **Cohen, A.L.**, Rebolledo-Vieyra, M., Hernandez, L., Paytan., A. (2013) Reduced calcification and lack of acclimatization by coral colonies growing in areas of persistent natural acidification. *PNAS*, 110(27), 11044-11049. doi/10.1073/pnas.1301589110.
- 51)*Vásquez-Bedoya, L. F., **A. L. Cohen**, D. W. Oppo, and P. Blanchon (2012), Corals record persistent multidecadal SST variability in the Atlantic Warm Pool since 1775AD, *Paleoceanography*, doi:10.1029/2012PA002313.
- 52)*Holcomb, M., **Cohen, A. L.**, and McCorkle, D. C. (2012) ,An investigation of the calcification response of the scleractinian coral *Astrangia poculata* to elevated pCO₂ and the effects of nutrients, zooxanthellae and gender, *Biogeosciences*, 9, 29-39,

doi:10.5194/bg-9-29-2012.

- 53)Karnauskas, K.B. and **Cohen, A.L.** (2012), Equatorial refuge amid tropical warming. *Nature Climate Change*, 2012; DOI: 10.1038/nclimate1499
- 54)#Bednaršek, N, Tarling, GA, Bakker, DCE, Fielding, S, **Cohen, A**, Kuzirian, A, McCorkle, D, Lézé, B and Montagna, R (2012), Description and quantification of pteropod shell dissolution: a sensitive bioindicator of ocean acidification. *Global Change Biology*, 18 (7). pp. 2378-2388. ISSN 13541013
- 55)De Putron S., McCorkle D.C., **Cohen A.L.** and Dillon, A. (2011). The impact of seawater saturation state and bicarbonate ion concentration on coral calcification, *Coral Reefs*, 30(2) 321-328, DOI: 10.1007/s00338-010-0697-z.
- 56)Pandolfi, J.M., Connolly, S.R., Marshall, D.J., **Cohen A.L.**, (2011), Projecting coral reef futures under global warming and ocean acidification, *Science*, DOI:10.1126/science.1204794
- 57)#Sayani H., Cobb K., **Cohen A.L.** , Crawford E., Nurhati I., Rose R., Zaunbrecher L (2011), Effects of Diagenesis on Paleoclimate Reconstructions from Modern and Young Fossil Corals, *Geochimica et Cosmochimica Acta*, 75 (21) 6361-6373
- 58)Gaetani G.A., **Cohen A.L.**, Wang Z.A. and Cruisius, J. (2011), A Rayleigh-based, multi-element approach to coral paleothermometry, *Geochimica et Cosmochimica Acta*, 75(7) 1920-1932.
- 59)*Gabitov, R.I., Schmitt, A.K., Rosner, M., McKeegan, K.D., Gaetani, G.A., **Cohen, A.L.**, Watson, E.B., and Harrison T.M. (2011), In situ $\delta^7\text{Li}$, Li/Ca, and Mg/Ca analyses of synthetic aragonites, *Geochem. Geophys. Geosyst.*, 12, Q03001, doi:10.1029/2010GC003322.
- 60)*Cantin N.C., **Cohen, A.L.**, Karnauskus K., Tarrant A.M, McCorkle D.C. (2010), Coral growth declines as temperatures rise in the central Red Sea, *Science*, 2010;329(5989):322-325
- 61)**Cohen A.L.** and Gaetani G.A. (2010), Ion Partitioning and the Geochemistry of Coral Skeletons: Solving the Mystery of the “Vital Effect”. IN: “*On partitioning in low temperature aqueous systems: from fundamentals to applications in climate proxies and environmental geochemistry*” Editors: Manolo Prieto and Heather Stoll, European Mineralogical Union, Notes in Mineralogy, Volume 10 Chapter 11, pp 377–397.
- 62)*Ries J.B., Cohen A.L. and McCorkle D.C. (2010), The zooxanthellate temperate coral *Oculina arbuscula* exhibits a nonlinear calcification response to $p\text{CO}_2$ -induced ocean acidification. *Coral Reefs*, DOI 10.1007/s00338-010-0632-3.
- 63)*Holcomb M.C., McCorkle D.C., **Cohen A.L.** (2010), Long-term effects of nutrient and CO_2 enrichment on the temperate coral *Astrangia poculata* (Ellis and Solander 1786), *Journal of Experimental Marine Biology and Ecology*, 386 (2010) 27–33
- 64)**Cohen A.L.** and *Holcomb M.C (2009), “Why Corals Care about Ocean Acidification: Uncovering the Mechanism”. IN: *The Future of Ocean Biogeochemistry in a High CO_2 World*, Editors: Scott Doney, Victoria Fabry, Barney Balch and Richard Feely, *Oceanography*, 22(4).

- 65)*Ries J.B., **Cohen A.L.** and McCorkle D.C. (2009), Marine calcifiers exhibit mixed responses to CO₂-induced ocean acidification. *Geology*, no. 12; p. 1131–1134; doi: 10.1130/G30210A.
- 66)**Cohen A.L.**, McCorkle D.C., de Putron S., Gaetani G.A., Rose K.A. (2009), Compositional and morphological changes in the skeletons of juvenile corals reared in acidified seawater: insights into the biomineralization response to ocean acidification, *Geochem. Geophys. Geosyst.*, 10, Q07005, doi:10.1029/2009GC002411.
- 67)*Holcomb M.C., **Cohen A.L.**, Gabitov R.I., Hutter J. (2009), Compositional and morphological features of aragonite precipitated experimentally from seawater and biogenically by corals, *Geochimica Cosmochimica Acta* 73: 4166-4179 doi:10.1016/j.gca.2009.04.015
- 68)*Saenger C.P., Chang P., Oppo D.W., **Cohen A.L.** (2009), Tropical Atlantic climate response to low-latitude and extratropical sea-surface temperatures anomalies: a Little Ice Age perspective, *Geophysical Research Letters*, Vol. 36, 111703, doi:10.1029/2009gl038677
- 69)*Saenger C.P., **Cohen A.L.**, Oppo D.W., Halley R. and Carilli, J. (2009), Atlantic sea surface temperature trends and variability since 1552, *Nature Geoscience*, doi:10.1038/ngeo552
- 70)*Saenger C.P., **Cohen A.L.**, Oppo D.W. and Hubbard D. (2008), Interpreting sea surface temperature from strontium/calcium ratios in *Montastrea* corals: Link with growth rate and implications for proxy reconstructions, *Paleoceanography*, Vol. 23, PA3102, doi:10.1029/2007PA001572.
- 71)Gabitov RI, Gaetani G.A., Watson EB, **Cohen A.L.** , Ehrlich HL (2008), Experimental determination of growth rate effect on U⁶⁺ and Mg²⁺ partitioning between aragonite and fluid at elevated U⁶⁺ concentration, *Geochemica et Cosmochimica Acta*, v. 70, p. 4617-4634.
- 72)**Cohen, A.L.** and Thorrold SR (2007), Recovery of temperature records from slow-growing corals by fine scale sampling of skeletons, *Geophys. Res. Lett.*, 34, L17706, doi:10.1029/2007GL030967
- 73)#Goodkin NF, Hughen KA, **Cohen A.L.** (2007), Multicoral calibration of Sr/Ca and growth rate to sea surface temperature, *Paleoceanography*, 22, PA1214, doi:10.1029/2006PA001312.
- 74)**Cohen A.L.**, Gaetani G.A., Lundälv T, Corliss BH and George RY (2006), Compositional variability in a cold-water scleractinian, *Lophelia pertusa*: New insights into “vital effects”, *Geochem. Geophys. Geosyst.*, 7, Q12004, doi:10.1029/2006GC001354.
- 75)Gaetani G.A., **Cohen A.L.** (2006), Element partitioning during precipitation of aragonite from seawater: a framework for understanding paleoproxies, *Geochemica et Cosmochimica Acta*, 70, 4617-4634
- 76)#Goodkin N.F., Hughen K.A., **Cohen A.L.**, Smith S.R. (2005), The Little Ice Age at Bermuda from a Growth-Dependent Calibration of Coral Sr/Ca, *Paleoceanography*, 20, PA4016, doi:10.1029/2005PA001140
- 77)*Bond Z.A., **Cohen A.L.** , Smith S.R., Jenkins W.J.J. (2005), Growth and composition of

- high-Mg calcite in the skeleton of a Bermudian gorgonian (*Plexaurella dichotoma*): Potential for paleothermometry, *Geochem. Geophys. Geosyst.*, 6, Q08010, doi:10.1029/2005GC000911.
- 78) **Cohen A.L.** and Hart S.R. (2004), Deglacial sea surface temperatures of the western tropical Pacific: A new look at old coral, *Paleoceanography*, 19, PA4031, doi:10.1029/2004PA001084.
- 79) **Cohen A.L.** and Reves-Sohn R.A. (2004), Tidal Modulation of Sr/Ca in a Pacific Reef Coral. *Geophysical Research Letters*. Vol. 31, No. 16, L16310
- 80) **Cohen A.L.**, Smith S.R., McCartney M.S., van Etten J. (2004), How Brain Corals Record Climate: An Integration of Skeletal Structure, Growth and Chemistry in *Diploria labyrinthiformis* on Bermuda. *Marine Ecology Progress Series* 271:147-158.
- 81) Cleveland R.A., **Cohen A.L.**, Roy R., Singh H., Szabo T. (2004), Imaging Coral II: Using Ultrasound to Image Coral Skeleton, *Subsurface Sensing Technologies and Applications* 5(1): 43 - 61
- 82) **Cohen A.L.** and McConnaughey T.A. (2003), A Geochemical Perspective on Coral Mineralization. In: *Biomineralization*. Dove PM, Weiner S, deYoreo JJ (Eds) *Reviews in Mineralogy and Geochemistry* Vol. 54 pp 151-187.
- 83) **Cohen A.L.**, *Owens K.E., Layne G.D., Shimizu N. (2002), The Effect of Algal Symbiosis on the Accuracy of Sr/Ca paleotemperatures from Coral. *Science*, 296 (5566):331-333
- 84) **Cohen A.L.**, Layne G.D., Hart S.R., Lobel P.S. (2001), Kinetic control of skeletal Sr/Ca in a symbiotic coral: implications for the paleotemperature proxy. *Paleoceanography*, 16(1): 20-26
- 85) **Cohen A.L.** and McCartney M.S. (1999), Seasonally-Resolved records of Oceanic Surface Conditions in Brain Corals from Bermuda. In: Papers on Atlantic Climate Variability, Atlantic Climate Change Program, Office of Global Programs, NOAA
- 86) **Cohen A.L.** and Hart S.R. (1997), The Effect of Colony Topography on Climate Signals in Coral Skeleton. *Geochemica et Cosmochimica Acta*, 61(18):3905-3912
- 87) Hart S.R., **Cohen A.L.**, Ramsay P.B. (1997), Microscale analysis of Sr/Ca and Ba/Ca in Porites. IN: Lessios, H. A., Macintyre, I.G. (eds). *Proceedings of the 8th International Coral Reef Symposium* 2:1707-1712
- 88) **Cohen A.L.**, Lobel P.S., Tomasky G.L. (1997), A Coral Bleaching Event on Johnston Atoll, north-central Pacific. *Biological Bulletin*, 193:276-279
- 89) Ramsay P.J. and **Cohen A.L.** (1997), Coral paleoclimatology research on the Southeast African Shelf. IN: Lessios, H. A., Macintyre, I.G. (Eds). *Proceedings of the 8th International Coral Reef Symposium* 2:1731-1734.
- 90) Hart S.R. and **Cohen A.L.** (1996), Sr/Ca in Corals: An Ionprobe Study of Annual Cycles and Microscale Coherence with Other Trace Elements. *Geochemica et Cosmochimica Acta*, 60:3075-3084.
- 91) **Cohen A.L.** and Tyson P.D. (1995), Holocene Sea Surface Temperatures on the South Coast of Africa: Implications for Terrestrial Climate and Rainfall. *The Holocene*, 5(3):304-312

- 92) Schumann E.H., **Cohen A.L.**, Jury M.R. (1995), Coastal sea surface temperature variability along the south coast of Africa and the relation to regional climate. *Journal of Marine Research*, 53:231-248
- 93) **Cohen A.L.** (1993), Oceanic Records of Climate Change. News and Views from the Fourth International Conference on Paleoceanography. *South African Journal of Science*, 89:258-259
- 94) **Cohen A.L.**, Parkington J.E., Brundrit G.B., van der Merwe N.J. (1992), A Holocene marine climate record in mollusc shells from the southwest African coast. *Quaternary Research* 38:379-85
- 95) **Cohen A.L.** and Branch G.M. (1992), Geographic changes in the structure and mineralogy of the shell of *Patella granularis* along the coast of South Africa: implications for palaeotemperature assessments. *Paleoecology, Palaeogeography and Palaeoclimatology*,
- 96) **Cohen A.L.** (1988) Isotopic and mineralogical variation in the shells of recent marine molluscs from the western Cape coast of South Africa. *South African Journal of Science*, 84(11):917-918

PUBLISHED REPORTS

- Cohen A.L.**, Trautwein S, Schubel J., (2019). Aquarium Preservation of Climate Resilient Corals. Report from the First Workshop for the Aquarium Preservation of Climate Resilient Corals, Aquarium of the Pacific, Long Beach, California.
- Cohen A.L.** and Andersson A. (2011) Synthesis Plenary IV-2: Impacts of ocean acidification for individual organisms: the state of knowledge, key uncertainties, and the way forward, In: *The IPCC Workshop Report on Impacts of Ocean Acidification on Marine Biology and Ecosystems*. Eds: Christopher B. Field, Vicente Barros, Thomas F. Stocker, Qin Dahe, Katharine J. Mach, Gian-Kasper Plattner, Michael D. Mastrandrea, Melinda Tignor, Kristie L. Ebi. Published by: IPCC Working Group II Technical Support Unit, Carnegie Institution, Stanford, California, USA.
- Munday P. and **Cohen A.L.** (2011) Spatial and temporal scales of variability and rates of change. In: *The IPCC Workshop Report on Impacts of Ocean Acidification on Marine Biology and Ecosystems*. Eds: Christopher B. Field, Vicente Barros, Thomas F. Stocker, Qin Dahe, Katharine J. Mach, Gian-Kasper Plattner, Michael D. Mastrandrea, Melinda Tignor, Kristie L. Ebi. Published by: IPCC Working Group II Technical Support Unit, Carnegie Institution, Stanford, California, USA.

PAST POST-DOCS AND GRADUATE STUDENTS

- Hannah Barkley, MIT-WHOI Joint Program in Oceanography (2011-2016); now at NOAA, Honolulu, Hawaii.
- Alice Alpert, MIT-WHOI Joint Program in Oceanography (2011-2016); now at US State Department
- Thomas DeCarlo, MIT-WHOI Joint Program in Oceanography (2012-2016); now at University of Hawaii
- Elizabeth Drenkard, MIT-WHOI Joint Program in Oceanography (2009-2014); now at Geophysical Fluid Dynamics Laboratory
- Kathryn Shamberger, WHOI Post-Doctoral Fellow (2011-2013); now at Texas A&M, College

Station

Neal Cantin, WHOI Post-Doctoral Investigator (2008-2011); now at Australian Institute of Marine Science

Justin Ries, WHOI Post-Doctoral Fellow (2006-2008); now at Northeastern University

Rinat Gabitov, WHOI-RPI Post-Doctoral Fellow (2005-2006); now at Mississippi State University

Michael Holcomb, PhD. MIT-WHOI Joint Program in Oceanography (2004-2009); now at University of Western Australia

Casey Saenger, PhD. MIT-WHOI Joint Program in Oceanography (2004-2009); now at University of Washington

Sara Bosshart, Msc. MIT-WHOI Joint Program in Oceanography: (2010-2012); Journal Manager for the scientific journal Frontiers

SUMMER/WINTER FELLOW AND INTERNS

2019: Laura Dissly, Northeastern University (Guest student)

2019: Ellen Park, Cornell University (WHOI SSF)

2018: Ashley Davis, University of South Carolina (WHOI SSF)

2017: Celina Scott-Beuchler, Cornell University (WHOI Summer Student Fellow)

2016: Alyssa Soucy, University of Massachusetts Lowell; Tacey Hicks, Montana State University

2015: Zoe Sims, Princeton University

2014: Cailan Sugano, University of California, Santa Barbara (WHOI Summer Student Fellow)

2013: Jacqueline Grey, St Lawrence University, (WHOI Summer Student Fellow)

2012: Chris Kelly, Lafayette College (WHOI Summer Student Fellow)

2012: Akemi Berry, Oberlin College (WHOI Winter Fellow)

2012: Gail Schwietermann, Oberlin College (WHOI Winter Fellow)

2011: Alice Zicht Oberlin College (WHOI Winter Fellow)

2011: Thomas deCarlo (WHOI Summer Student Fellow, University of San Diego)

2011: Alyssa McKenna (Summer Student Fellow, Mount Holyoke: advised jointly with Hanu Sing AOPE)

2009: Melissa Pinard (Summer Student Fellow, Morgan State University)

2007: David Spofforth, National Oceanography Center, Southampton (WHOI-NOC exchange student)

2006: Nicholas Jachowski (Summer Student Fellow SSF, University of Stanford)

2003: Nicole Nichols, (Summer Student Fellow, University of Massachusetts: advised jointly with Hanu Sing AOPE)

GUEST/HIGH SCHOOL STUDENTS

05/2015-2018: Louis Rodriguez, University of Puerto Rico

07/2015: Rachel Beir (Buckingham, Browne and Nichols High School, Cambridge MA)

06/2014: Yew Aun Quek (Science University of Malaysia)

06/2014: Amanda Conner (Eckerd College)

02/2013: Quinn Cobban, Falmouth Academy (Science Fair Project)

09/2012: Raisa Hernandez Pacheco, University of Puerto Rico (PhD research)
01/2012: Victoria Morgan, SEA Student, Cornell University
03/2012: Elizabeth Derse-Crook, University of Santa Cruz (PhD research)
07-08/ 2012: Claire Gallagher, Princeton University (senior thesis research)
07-08/2012: Kascia White, Bermuda Institute of Ocean Sciences (senior thesis research)
01-12/2011: Luis Vásquez-Bedoya, UNAM, Mexico (PhD thesis research)
02/2008-02/2009: Ryan Petitt, Falmouth Academy (Science Fair Project)
07-08/2007: Alexandra Pogue (Whitman College)
07-08/ 2002: Kate Owens (University of Chicago)
07-08/2001: Jackie van Etten (Bridgewater State College)
07-08/2008: Emilia Sogin (Brown University)

THESIS COMMITTEES

Gabriela Farfan (WHOI, Chemistry)
Tony Wang (Princeton)
Hanny Rivera (WHOI, Biology)
Casey Zakroff (WHOI, Biology)
Meagan Gonnea (WHOI, MC&G)
Meredith White (WHOI, Biology)

International Training Workshops

Lecturer, Intergovernmental Oceanographic Commission, Sub-Commission for the Western Pacific (IOC-WESTPAC), Training for Research and Monitoring of the Ecological Impacts of Ocean Acidification on Coral Reef Ecosystems, Phuket, Thailand, 19-21 January 2015

Lecturer, Sixth WESTPAC Summer School on Monsoon Onset Monitoring and its Social & Ecosystem Impacts (MOMSEI Summer School-VI), Phuket, Thailand, 26-30 October 2015

Editorial Service

Associate Editor, *Geochimica et Cosmochimica Acta* (2006-2010)
Associate Editor, *JGR Biogeosciences* (2004-2006)

Session Chair/co-chair

2017: Fall AGU, New Orleans, USA. *PP013 "Development and Application of Coral Proxies for Ocean Change"*

2016: 13th International Coral Reef Society Conference, Honolulu, Hawaii
"Coral Reef Structural Dynamics and Complexity: Accretion versus Bioerosion and dissolution"

2014: American Geophysical Union, Fall Meeting, San Francisco, CA
"Biogenic Carbonates: From Biocalcification to Geochemical Proxies"

2013: American Geophysical Union, Fall Meeting, San Francisco, CA
"The Carbonate System Chemistry of Coastal Ecosystems: Physical, Chemical and Biological Drivers".

- 2012: 12th International Coral Reef Symposium, Cairns, Australia.
“Mechanisms of Calcification”
- 2011: American Society of Limnology and Oceanography, San Juan Puerto Rico.
“Frontiers in ocean acidification research: Responses of marine carbon cycling and ecosystems to ocean acidification”
- 2007: American Geophysical Union, Fall Meeting, San Francisco, CA
“Frontiers in Biomineralization Research: Processes, Geochemical Signatures and Responses to Global Change”
- 2006: American Geophysical Union, Fall Meeting, San Francisco, CA
“Frontiers in Biomineralization Research: Processes and signatures in natural and model systems”
- 2004: American Geophysical Union, Fall Meeting, San Francisco, CA
“Biomineralization and the Geochemistry of Biogenic Minerals”
- 2004: Goldschmidt Conference, Copenhagen, Denmark
“Biomineralization”
- 2002: Goldschmidt Conference, Davos, Switzerland
“Geochemistry of Biogenic Minerals”

INSTITUTIONAL ACTIVITIES

- Department of Geology and Geophysics Faculty Hiring Committee Climate Search (2019)
- WHOI Communications/Development Advisory Committee (2017-)
- Department of Geology and Geophysics Faculty Hiring Committee Climate Search (2016)
- Department of Geology and Geophysics Faculty Mentorship Committees: Kristopher Karnauskas, Weifu Guo, Sloan Coates
- National Ion Microprobe Facility Advisory Committee (2012-2014)

EDITORIAL ACTIVITIES

- Associate Editor, *Geochimica et Cosmochimica Acta* (2006-2010)
- Associate Editor, *JGR Biogeosciences* (2004-2006)

JOURNAL REVIEWER

I review manuscripts for *Science*, *Nature*, *Paleoceanography*, *Geology*, *Geophysical Research Letters*, *G-Cubed*, *EPSL*, *Coral Reefs*, *Science*, *Palaaios*, *Journal of Archeological Science*, *Chemical Geology*, *American Mineralogist*, *Journal of Experimental Marine Biology and Ecology*, *Geochimica et Cosmochimica Acta*, *Marine Geoscience Letters*, *Proceedings of the National Academy of Sciences*, *Ecology*, *Nature Scientific Reports*, *Plos 1*

I review research proposals for NSF (ATM, CO, BO, MG&G, P2C2 and Career Advance awards), NOAA (Office of Global Programs and Ocean Exploration Initiatives), The National Undersea Research Council, The NERC Research Fellowship Scheme (UK), The German-Israeli Foundation for Scientific Research and Development, The MacArthur Foundation, EUROCORES Programme EuroMARC, The South African Foundation for Research Development and NOAA Seagrant.