Cohen Lab: Cohen CV

Anne L. Cohen
Associate Scientist with Tenure

ADDRESS Clark Laboratory 118 and Office 118A, Department of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA, 02543, USA

TELEPHONE Office 508 289 2958; Lab 508 289 3857; Marine Calcification/Culture Lab 508 289 4836

EMAIL acohen@whoi.edu

RESEARCH AREAS

Climate Change, Ocean Acidification, Coral Reefs, Biomineralization, Geochemistry of Biominerals

EDUCATION

PhD (December, 1993) University of Cape Town, South Africa

B.S. Honors (1988) University of Cape Town

B.S. (1987) University of Cape Town (Marine Biology, Archaeology; minor in Oceanography)

PhD Thesis Title: "A Holocene Sea Surface Temperature Record in Mollusc Shells from the Coast of Southern Africa"

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

PROFESSIONAL HISTORY

2011- : Associate Scientist with Tenure, WHOI

2004-2011: Research Specialist, WHOI

1999-2004: Research Associate III, WHOI

1996-1998: Post-Doctoral Investigator, Boston University Marine Program

1994-1995: Post-Doctoral Fellow, WHOI

MEDALS AND AWARDS

1997: Oliver Davies Medal (for outstanding contributions from a young South African scientist)

CURRENT LAB GROUP

research assistant/lab manager

- Kathryn Rose – Research Associate 2

post-docs and graduate students

- Kathryn Shamberger (WHOI Post-Doctoral Fellow: 2011-2013)
- Elizabeth Drenkard (MIT-WHOI Joint Program in Oceanography: 2009-2014)
- Hannah Barkley (MIT-WHOI Joint Program in Oceanography: 2011-2016)
- Alice Alpert (MIT-WHOI Joint Program in Oceanography: 2011-2016)
- Thomas deCarlo (MIT-WHOI Joint Program in Oceanography: 2012-2017)

prior post-docs and graduate students

- Neal Cantin, WHOI Post-Doctoral Investigator (2008-2011)
- Justin Ries, WHOI Post-Doctoral Fellow (2006-2008)
- Rinat Gabitov, WHOI-RPI Post-Doctoral Fellow (2005-2006)
- Michael Holcomb, MIT-WHOI Joint Program in Oceanography (2004-2009)
- Casey Saenger, MIT-WHOI Joint Program in Oceanography (2004-2009)
- Sara Bosshart MIT-WHOI Joint Program in Oceanography: (2010-2012)

summer/winter fellow and interns

- 2012: Chris Kelly (Summer Student Fellow, Lafeyette College)
- 2012: Akemi Berry (Winter Fellow, Oberlin College)
- 2012: Gail Schwietermann (Winter Fellow, Oberlin College)
- 2011: Alice Zicht (Winter Fellow, Oberlin College)
- 2011: Thomas deCarlo (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 Massachussets: advised jointly with Hanu Sing AOPE)

guest/high school students

- 02/2013: Quinn Cobban, Falmouth Academy (Science Fair Project)
- 09/2012: Raisa Hernandez Pacheco, University of Puerto Rico
- 01/2012: Victoria Morgan, SEA Student, Cornell University
- 03/2012: Elizabeth Derse-Crook, University of Santa Cruz
    - 07-08/ 2012: Claire Gallagher (Princeton University)
    - 07-08/2012: Kascia White (Bermuda Institute of Ocean Sciences)
    - 01-12/2011: Luis Vásquez-Bedoya (UNAM, Mexico)
    - 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

- Meredith White (Biology)
- Meagan Gonneea (Chemistry)

PAPERS IN REVIEW*students and post-docs

*Shamberger, K.F, Cohen, A.L. Golbuu, Y., McCorkle D.C., Lentz S. Diverse Coral Communities in Naturally Acidified Waters of a

Derse-Crook, E., Cohen, A.L., Rebolledo-Vieyra, M., Hernandez, L., Paytan., A. Reduced calcification and lack of acclimatization by coral colonies growing in areas of persistent natural acidification. *PNAS*

*Saenger, C.S, Z.A. Wang, G.A. Gaetani, A.L. Cohen, J.M. Lough. Magnesium isotope variability in scleractinian corals: Temperature dependence and kinetic vital effects. *Geochemica et Cosmochimica Acta*.

*Cantin, N.E., Cohen, A.L., Tarrant, A., Arruda, J and Ketten, D. Interspecific variability in the coral calcification response to rising ocean temperatures on a central Red Sea reef. *Plos1*

PUBLISHED PAPERS * students and post-docs

Kaplan, MB, Mooney AT, McCorkle DC, Cohen AL Adverse effects of elevated CO_2 on early development of squid (*Doryteuthis pealeii*). *Plos 1, in press.*

*Drenkard, E., Cohen, A.L., McCorkle D.C., de Putron S.J., Zicht, A., Starzcak, V. (2013) The Impact of Heterotrophic Feeding on the Coral Calcification Response to Ocean Acidification. *Coral Reefs,* DOI 10.1007/s00338-013-1021-5

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

*White MM, McCorkle DC, Mullineaux LS, Cohen AL (2013) Early Exposure of Bay Scallops (*Argopecten irradians*) to High CO_2 Causes a Decrease in Larval Shell Growth. PLoS ONE 8(4): e61065. doi:10.1371/journal.pone.0061065

*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)

*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.

*Holcomb, M., Cohen, A. L., and McCorkle, D. C. (2012) ,An investigation of the calcification response of the scleractinian coral *Astrangia poculata* to elevated pCO_2 and the effects of nutrients, zooxanthellae and gender, *Biogeosciences*, 9, 29-39, doi:10.5194/bg-9-29-2012.

Karnauskas, K.B. and Cohen, A.L. (2012), Equatorial refuge amid tropical warming. *Nature Climate Change*, 2012; DOI: 10.1038/nclimate1499

*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

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.

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

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

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.

*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 ?7Li, Li/Ca, and Mg/Ca analyses of synthetic aragonites, *Geochem. Geophys. Geosyst.,* 12, Q03001, doi:10.1029/2010GC003322.

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

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.

*Ries J.B., Cohen A.L. andMcCorkle D.C. (2010), The zooxanthellate temperate coral *Oculina arbuscula* exhibits a nonlinear calcification response to pCO_2-induced ocean acidification. Coral Reefs, DOI 10.1007/s00338-010-0632-3.

*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

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).

*Ries J.B., Cohen A.L. and McCorkle D.C. (2009), Marine calcifiers exhibit mixed responses to CO_2-induced ocean acidification. Geology, no. 12; p. 1131–1134; doi: 10.1130/G30210A.

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.

*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

*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, l11703, doi:10.1029/2009gl038677

*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, doifinder/10.1038/ngeo552

*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.

* 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.

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

*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.

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.

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

*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

*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.

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.

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

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.

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

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.

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

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

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

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

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

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

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.

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.

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

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) Journal of Marine Research, 53:231-248

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

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

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,

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

REPORTS

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.

ADVISORY COMITTEES/WORKING GROUPS

- · *Science Steering Committee (SSC) for theIntergovernmental Panel on Climate Change (IPCC) Workshop on Impacts of Ocean Acidification on Marine Biology and Ecosystems.*

(Product: 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).

- *Center for Ocean Solutions Working Group on Corals and Climate Change*, Okeanos Foundation; hosted by Stanford University.
- *Science Panelist for thePacific Islands Coral Science Workshop*, sponsored by NOAA Pacific Fisheries Center. Local Lead: Dr. Michael Seki, Deputy Director, PIFSC; Chair, Dr. Robert Detrick, Director, OAR.

(Product: 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**, T**erry 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).**

(Product: NOAA Pacific Islands Corals Science WorkshopReport is posted here: http://www.nmfs.noaa.gov/stories/2012/07/docs/report_noaa_pacific_islands_corals_science_workshop.pdf)

- *Invited Speaker for the Coral Reef Ocean Acidification Monitoring Portfolio Workshop*, NOAA Ocean Acidification Program.
- *Invited Speaker for the Workshop on Understanding Ocean Acidification impacts on the resiliency and restoration of Florida Keys Coral Reefs*. Hosted by Mote Marine Laboratory.

EDITORIAL ACTIVITIES

Associate Editor, Geochimica et Cosmochimica Acta (2006-2010)

Associate Editor, JGR Biogeosciences (2004-2006)

REVIEWER

I review manuscripts for Science, Nature, Paleoceanography, Geology, Geophysical Research Letters, G-Cubed, EPSL, Coral Reefs, Science, Palaios, Journal of Archeological Science, Chemical Geology, American Mineralogist, Journal of Experimental Marine Biology and Ecology, Geochemica et Cosmochimica Acta, Marine Geoscience Letters.

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, and The South African Foundation for Research Development.

HIGH-LEVEL REVIEWS

Intergovernmental Panel on Climate Change, 5th Assessment Report (AR5) WGII

SESSION CHAIR/CO-CHAIR

- 2012: 12th International Coral Reef Symposium, Cairns, Australia. *Mini-Symposium: 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: *Frontiers in Biomineralization Research: Processes, Geochemical Signatures and Responses to Global Change*, American Geophysical Union, Fall Meeting, San Francisco, CA
- 2006: *Frontiers in Biomineralization Research: Processes and signatures in natural and model systems,* American Geophysical Union, Fall Meeting, San Francisco, CA
- 2004: *Biomineralization and the Geochemistry of Biogenic Minerals,* American Geophysical Union, Fall Meeting, San

Francisco, CA

- 2004: *Biomineralization,* Goldschmidt Conference, Copenhagen, Denmark
    - 2002: *Geochemistry of Biogenic Minerals,*Goldschmidt Conference, Davos, Switzerland

INVITED TALKS (2009-)

- 2/21/2013: *2013 Fischer Lecture, Roanoke College*, Roanoke, VI
- 12/13/2012: *Northeast Aquaculture Conference & Exposition*, Milford, Connecticut.
    - 12/7/2012: *American Geophysical Union, Fall Meeting*, San Francisco, CA.
    - 10/25/2012: *Understanding Ocean Acidification impacts on the resiliency and restoration of the Florida Keys*, Mote Marine Laboratory, Sarasota FL.
    - 10/11/ 2012: *DOEI/OCCI trustee committee,* WHOI, Woods Hole, MA
    - 09/11/2012: *Ocean Science Journalism Program*, WHOI, Woods Hole, MA
    - 08/28/2012: *Coral Reef Ocean Acidification Monitoring Portfolio Workshop*, Fort Lauderdale, FL.
    - 08/08/2012: *Ocean Acidification Public Event*, Redfield Auditorium, Woods Hole, MA.
    - 06/19/2012: *Pacific Islands Fisheries Science Center, Honolulu*, HI.
    - 06/18/2012: *Pacific Islands Coral Listing Science Workshop*, Honolulu HI.
    - 06/13/2012: *Science of the Halmahera Sea*, Workshop, Jakarta, Indonesia.
    - 06/08/2012: *Summer Lecture Series*, WHOI Woods Hole MA.
    - 04/12/2012: *New England Aquarium Lowell Public Lecture*, New England Aquarium, Boston, MA.
    - 03/27/2012: *Palauan House of Delegates*, Palau International Coral Reef Center, Palau.
    - 10/23/2011: *Pew Fellows Program in Marine Conservation Annual Meeting*, Key Largo, Florida.
    - 09/13/2011: *Woods Hole Oceanographic Institution Short Course for BP*, Woods Hole, MA.
    - 09/7/2011: *American Fisheries Society Annual Meeting*, Seattle, WA.
    - 07/07/2011: *Woods Hole Climate Fair*, Redfield Auditorium, Woods Hole, MA.
    - 06/15/2011: *National Network for Ocean and Climate Change Interpretation* (*NNOCCI*) , Woods Hole MA.
    - 06/06/2011: *Okeanos Foundation/Stanford University, Center for Ocean Solutions Working Group on Corals and Climate Change*, Honolulu, HI.
    - 05/9/2011: *Institute of Marine and Coastal Sciences*, Rutgers University, NJ.
    - 2/2/2011: *Vetlesen Lecture, The State of Our Oceans*. University of Rhode Island, Graduate School of Oceanography, Providence, RI.
    - 01/19/2011: *Synthesis Plenary: Intergovernmental Panel on Climate Change Workshop on Impacts of Ocean Acidification on Marine Biology and Ecosystems*, Okinawa, Japan.
    - 10/29/2010: *MIT Knight Journalism Fellows*, Woods Hole MA.
    - 09/27/2010: *Distinguished Lecture Series,* University of Wyoming
    - 08/30/2010: *NOAA Fisheries Ocean Acidification Research Workshop*, Seattle, WA
    - 07/21/2010: *25th Anniversary Ocean Studies Board meeting*, Erik Johnsson Center, Woods Hole, MA
    - 06/20/2010: Plenary Lecture: *Ion partitioning in low temperature aqueous systems: from fundamentals to applications in climate proxies and environmental geochemistry.* European Mineralogical Union School, University of Oviedo, Spain
    - 03/8/2010: *Ocean Acidification Instrumentation and Research Needs Workshop*, Sponsored By Cooperative Institute for Ocean Exploration, Research, and Technology (CIOERT), St Petersburg Florida
    - 2/22/2010: *Ocean Sciences Meeting*, Portland, Oregon
    - 12/17/2009: *Using Small-Scale Observations to Answer Big Questions in Earth Sciences: Advances From 30 Years of Ion Microprobe Analysis*, Fall AGU, San Francisco, CA
    - 07/25/2009: *Research Center for Environmental Changes, Academia Sinica*, Taipei, Taiwan
    - 05/13/2009: *University of Princeton Environmental Geology and Geochemistry Seminar Series*, Princeton, NJ.
    - 04/7/2009: *Environmental Sciences Seminar Program, University of Virginia*, Charlottesville, VA
    - 02/22/2009: *Dept. of Earth & Environmental Science, University of Pennsylvania*, PA

- 12/12/2011: *Geosciences Department, University of Cape Town*, Cape Town, South Africa
- 11/6/2011: *North East Coral Reef Science Salon*, Woods Hole MA.

MEETING ABSTRACTS (2006-)

Invited Cohen A.L. and Drenkard E.J. (2012) Pacific Circulation and the Resilience of its Equatorial Reefs, AGU Fall Meeting, 3-7 December, San Francisco, CA.

*Drenkard E. J., Cohen A. L., McCorkle D. C., dePutron S. J., Starczak V. R., Zicht A. E. (2012) Feeding modulates the impact of ocean acidification on coral calcification.12th International Coral Reef Symposium, Cairns, Australia

*Bosshart S.A., Cohen A.L., Oppo D.W. and Henson S.A. (2012) Assessing the dominant controls on coral growth: implications for

*Barkley, H.C., Cohen, A.L. Golbuu, Y., Mcleod, E., and Salm R. (2012). Corals in highly variable environments are more resilient to ocean warming. International Coral Reef Symposium, Cairns, Australia.

*Shamberger K. E. F., Cohen A. L., McCorkle D. C., Golbuu Y., Lentz S. J. (2012) Natural acidification of coral reef communities in the western Pacific warm pool. 12th International Coral Reef Symposium, Cairns, Queensland, Australia.

Hernández-Pacheco R., Cohen A.L., and Hernández-Delgado E.A. (2012) Are skeletal growth parameters predictors of coral thermal stress tolerance? International Coral Reef Symposium, Cairns, Queensland, Australia.

Gonneea, M.E., Cohen A.L. and Charette, M.A. (2012) Coral barium incorporation: implications for proxy applications. American Geophysical Union Fall Meeting, San Francisco, CA.

Gaetani, GA, and Cohen, AL, (2012), What skeleton composition tells us about coral biomineralization. *Abstracts of the 12th International Coral Reef Symposium*, 115-116.

Widman Jr. J. C., L. Milke, A. Cohen and D. C. McCorkle (2012) Effects of Elevated pCO2 on Atlantic Surfclam, *Spisula solidissma,* Larvae. National Shellfisheries Association Seattle WA.

Saenger, C, Thiagarajan, N., Felis, T., Lough, J., Holcomb, M., Gaetani, G., Cohen, A. L., Affek, H. P. and Wang Z. (2012). Clu

Derse E.D., Cohen A.L., Rebolledo-Vieyra M., Hernandez-Terrones L., Potts D. and Paytan A. (2011) Calcification of a common Caribbean coral under extreme conditions of natural acidification. American Geophysical Union Fall Meeting, San Francisco, CA.

*Drenkard E. J., Cohen A. L., McCorkle D. C., dePutron S. J., Zicht A. E., Shamberger, K (2011) Feeding modulates the impact of elevated CO2 on the skeletal growth of an Atlantic coral. The American Society of Limnology and Oceanography, Aquatic Sciences Meeting, San Juan, Puerto Rico.

*Drenkard E. J., Cohen A. L., McCorkle D. C., dePutron S. J., Starczak V. R., Zicht A. E. (2011) Feeding enhances skeletal growth and energetic stores of an Atlantic coral under significantly elevated CO_2. American Geophysical Union Fall Meeting, San Francisco, CA.

*Saenger, CP, Wang, Z, Affek, HP, Cohen, AL; Felis, T, Gaetani, GA, Holcomb, M, Lough, J, and Thiagarajan, N, (2011), Evaluating clumped isotope and Rayleigh-based, multi-element paleothermometers in corals. Abstract PP41A-1726 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

*Saenger, C, Wang, Z., Affek, H. P. Cohen, A. Felis, T., Gaetani, G. A., Holcomb, M., Lough, J., Thiagarajan, N. (2011). Evalua

Gaetani, GA, and Cohen, AL, (2011), A biomineralization approach to developing climate proxies. *Abstracts of the 21st Biennial Conference of the Coastal and Estuarine Research Foundation*, 74.

*Barkley, H.C., Cohen, A.L., de Putron S., Davis, C., and Pacala S. (2011). Establishing links between basin-scale climate variability and the growth of Atlantic corals: an experimental investigation. American Society of Limnology and Oceanography Aquatic Sciences Meeting, San Juan, Puerto Rico.

Wang, Z, Gaetani, GA, Liu, C, Hu, P, and Cohen, AL, (2011), The effect of nucleation and crystal growth on isotope fractionation. Abstract PP51E-07 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Karnauskas K.B., and Cohen A.L. (2011) Equatorial refuge amidst tropical warming. World Climate Research Programme (WCRP) Open Science Conference (OSC), Denver, CO.

Gaetani, GA, and Cohen, AL, (2010), Insights into coral biomineralization from aragonite precipitation experiments. Abstracts of the *13th International Conference on Experimental Mineralogy, Petrology, and Geochemistry*.

*DeCarlo T., Gaetani G.A., Cohen A.L., Zinke J. and Grove C. (2011) Rayleigh-Based Multi-Element (RBME) Coral Paleothermometry: New Developments and Applications. American Geophysical Union Fall Meeting, San Francisco, CA.

*Cantin N., Cohen A.L. , Karnauskus K., Tarrant A., McCorkle D.C., Saenger C.P., Lohman P. (2010) Coral growth declines as temperatures rise in the central Red Sea. Ocean Sciences Meeting February 22-26, 2010 Portland, Oregon, USA

*Bedoya L., Cohen A.L. , Blanchon P. (2010) Last Interglacial (MIS-5e) SSTs estimated from annual growth bands in the massive coral *Siderastrea siderea* (Ellis & Solander, 1786). Ocean Sciences Meeting February 22-26, 2010 Portland, Oregon, USA

*Saenger, C, Wang, Z., Lough, J., Cohen, A. L. (2010). Magnesium isotope variability in aragonitic corals: a new paleothermomet

Wang, Z, Liu, C., Gaetani, GA, and Cohen, AL, (2010), Mg isotope fractionation between aragonite and seawater. Abstract PP11A-1417 presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec.

Gaetani, GA, and Cohen, AL, (2010), Extracting ocean temperatures from deep sea coral skeletons using a new Rayleigh-based, multi-element thermometer. *Eos, Transactions American Geophysical Union*, 91, Ocean Sciences Meeting Supplement Abstract PA23A-06.

Sayani, H.R., Cobb, K. M., Cohen, A. L., Elliott, W. C., Nurhati, I. S., Rose, K. A., and Zaunbrecher, L. K. (2010) Effects of diagenesis on paleoclimate reconstructions from modern and young fossil corals. Goldshmidt Geochemistry COnference 2010, Knoxville, TN.

Invited Cohen A.L., McCorkle D.C., de Putron S. (2010) Why corals care about ocean acidification: the role of nutrition. Ocean Sciences Meeting February 22-26, Portland, OR

McCorkle D.C., Cohen A.L., *Sogin E.M., *Pinard M., Rose KA. (2010) The impact of elevated CO_2 on initial calcification by the bay scallop (*Argopectin irradians*). Ocean Sciences Meeting February 22-26, 2010 Portland, Oregon, USA

Holcomb, M., Cohen, A.L., and McCorkle, D.C. (2010) Effects of ocean acidification on the temperate coral Astrangia poculata. Euro ISRS symposium, Wageningen, Netherlands.

Holcomb, M., Cohen, A.L., and McCorkle, D.C., (2010) Gender bias in the impact of ocean acidification on corals. Ocean Sciences Meeting Portland, OR

De Putron S., Cohen A.L. , McCorkle D.C., Rose KA, Dillon A. (2010) Coral calcification responds to seawater saturation state, not to bicarbonate ion concentration. Ocean Sciences Meeting February 22-26, 2010 Portland, Oregon, USA

Invited Cohen A.L. , McCorkle D.C., de Putron S. (2009) Why corals are about ocean acidification: Insights from Ion Microprobe Analyses of Coral Crystals. American Geophysical Union Fall Meeting, San Francisco.

Sayani, H.R., Cobb, K. M., Cohen, A. L., Elliott, W. C., Nurhati, I. S., Rose, K. A., and Zaunbrecher, L. K. (2009) Effects of diagenesis on paleoclimate reconstructions from modern and young fossil corals. American Geophysical Union Fall Meeting, San Francisco, CA.

Saenger C.P., Cohen A.L., Oppo D.W., Carilli J. and Halley R.B. (2009) A coral-based reconstruction of Atlantic sea surface temperature trends and variability since 1552. American Geophysical Union Fall Meeting, San Francisco.

*Ries, J.B., Cohen, A.L., McCorkle, D.C. (2009). The varied responses of marine biocalcifiers to pCO2-induced ocean acidification. Skidaway Institute of Oceanography Symposium on Chemical Oceanography, Abstract no. 10.

*Ries, J.B., Cohen, A.L., McCorkle, D.C. (2008). Marine biocalcifiers exhibit mixed responses to CO2-induced ocean acidification. International Coral Reef Symposium, Abstract 25-8, 229.

*Ries, J.B., Cohen A.L., McCorkle D.C. (2008) Effects of CO2-driven reductions in seawater $CaCO_3$ saturation state on aragonitic and low-to-high Mg calcitic marine invertebrates and algae. 2008 Ocean Sciences Meeting · 2-7 March, Orlando, Florida, USA

*Ries, J.B., McCorkle, D.C., Cohen, A.L. (2008). Effects of pCO2-driven reductions in seawater CaCO3 saturation state on the biomineralization of aragonitic and low-to-high Mg calcitic marine invertebrates and algae. Eos Transactions AGU, Ocean Sciences Joint Meeting, OS003, Abstract 2884.

Cohen A.L., Jachowski N., Jones R., Smith S.R. (2008) Declining calcification rates of Bermudan brain corals over the past 50 y

De Putron S., Cohen A.L., McCorkle D.C. (2008) Effect of seawater saturation state on early skeletal development in two Atlanti

Cohen A.L., McCorkle D.C., *Petitt, R., *Holcomb M.C., Ries, J.B. (2007) Dissolution of Cool-Water Corals in Under-Saturated Seawater. 9th International Conference on Paleoceanography

Cohen A.L., McCorkle D.C., de Putron, S. (2007) The Impact of Seawater Saturation State on Early Skeletal Development in Larval Corals: Insights into Scleractinian Biomineralization. Fall AGU, 2007

Wang Z., Cohen A.L., Gabitov R.I., Gaetani G.A., Hart S.R. (2006) Temperature dependent Mg isotope fractionation in corals. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract PP13C-07

Invited Cohen A.L., Gaetani G.A., Gabitov R. (2006). From Crystals to Climate: Applying Geochemical Principles to understanding PaleoProxies. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract V32B-01

Gaetani G.A., Cohen A.L. (2006) Calculating paleotemperatures from the elemental composition of coral skeleton: A new approach

Gaetani G.A., Cohen A.L. (2006). The Physicochemical Origin of Trace Element Vital Effects in Coral Skeleton. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract B21D-02

Invited Cohen A.L.,*Holcomb M.C., McCorkle D.C., Hutter J. (2006) An Experimental Investigation of Coral Mineralization: understanding the calcification response to ocean acidification. IGBP-SCOR Fast Track Initiative (FTI) "Ocean Acidification" Lamont-Doherty Earth Observatory of Columbia University (http://igbp-scor.pages.unibe.ch/fti06AbstractVolume.pdf)

Cohen A.L., Gaetani G.A. (2006) Compositional variability in the cold-water coral Lophelia pertusa is driven by temperature and

Cohen A.L., *Saenger C.P. (2006). Tropical Atlantic SSTS at the Last Glacial Maximum derived from Sr/Ca ratios of fossil coral. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract U13A-0808

*Saenger C.P., Cohen A.L., Oppo D.W., Hubbard D. (2006) Wishing upon a mountainous star: Sr/Ca and 18O-based Caribbean temperat

*Saenger C.P., Cohen A.L., Oppo D.W., Hubbard D. (2006) Tropical North Atlantic Coral-Based Sea Surface Temperature and Salinity Reconstructions From the Little Ice Age and Early Holocene. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract PP31A-1735

*Holcomb M.C., Cohen A.L., Hutter J., Hirth G., Gabitov R. (2006). Comparison of fine scale growth structures in coral skeletons and abiogenic aragonite. Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract B13B-1077

*Goodkin N., Hughen K., Cohen A.L., Curry W.B., Doney S. (2006) The North Atlantic Oscillation Reconstructed at Bermuda for 220 Years Using Sr/Ca Ratios in *Diploria labyrinthiformis* (brain coral). Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract PP42A-01

*Gabitov R.I., Cohen A.L., Gaetani G.A, Holcomb M.C., Watson E.B. (2006) Investigating the impact of crystal growth rate on ele

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