

ADAM V. SUBHAS

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Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution
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EDUCATION

Ph.D. Geochemistry *September 2011 - May 2017*

California Institute of Technology

Thesis title: Chemical Controls of Calcite Dissolution Kinetics in Seawater.

Advisors: Jess F. Adkins and William M. Berelson (USC)

B.S. Chemistry, biochemistry concentration *September 2005 - May 2009*

Haverford College

GPA: 3.8

WORK EXPERIENCE

Assistant Scientist *April 2019 - Present*

Woods Hole Oceanographic Institution

Department of Marine Chemistry and Geochemistry

Postdoctoral Scholar *October 2017 - April 2019*

Woods Hole Oceanographic Institution

mentors: Matt Long, Dan McCorkle, Ann McNichol

· At the National Ocean Sciences Accelerator Mass Spectrometry Facility

Postdoctoral Investigator *May 2017 - August 2017*

California Institute of Technology

advisors: Jess Adkins and Will Berelson

Laboratory Technician *September 2009 - August 2011*

California Institute of Technology

Supervisor: Jess Adkins

PUBLICATIONS AND PATENTS

Subhas, A.V., McCorkle, D., Quizon, A., McNichol, A., Long, M.: Selective Preservation of Coccolith Calcite in Ontong-Java Plateau Sediments. *Under review in Paleoceanography and Paleoclimatology.*

Naviaux, J.D., **Subhas, A.V.**, Dong, S., Rollins, N.E., Liu, X., Berelson, W.M., Adkins, J.F., Byrne, R.H., 2019: Calcite Dissolution Rates in Seawater: Lab vs. In Situ Measurements and Inhibition by Organic Matter. *Marine Chemistry*, 215, 103684.

Subhas, A.V., Berelson, W.M., Dong, S., Rollins, N.E., Adkins, J.F., 2019: The Carbonic Anhydrase Activity of Sinking and Suspended Particles in the North Pacific Ocean. *in press at Limnology and Oceanography.*

Dong, S., Berelson, W.M., Rollins, N.E., **Subhas, A.V.**, Naviaux, J.D., Celestian, A.J., Liu, X., Turaga, N., Kemnitz, N.J., Byrne, R.H., Adkins, J.F., 2019: Aragonite Dissolution Kinetics and Calcite/Aragonite Ratios in Sinking and Suspended Particles in the North Pacific. *Earth and Planetary Science Letters*, 515, 1-12.

Naviaux, J., **Subhas, A.V.**, Rollins, N.E., Adkins, J.F., Berelson, W.M., 2019: Temperature Dependence of Calcite Dissolution Kinetics in Seawater. *Geochimica et Cosmochimica Acta*, 246, 363-384.

Subhas, A.V., Adkins, J.F., Erez, J., Ziveri, P., Langer, G., Rollins, N.E., Berelson, W.M., 2018: The dissolution kinetics of biogenic calcites in seawater and a possible role of magnesium and organic carbon. *Marine Chemistry*, 205, 100-112

- Dong, S., **Subhas, A.V.**, Rollins, N.E., Naviaux, J., Adkins, J.F., Berelson, W.M., 2018: A Kinetic Pressure Effect on Calcite Dissolution in Seawater. *Geochimica et Cosmochimica Acta*, 238, 411-423
- Subhas, A.V.**, Berelson, W.M., Rollins, N.E., Adkins, J.F., Erez, J. Method and Apparatus for CO₂ sequestration. *United States Patent 9,988,653*
- Subhas, A.V.**, Adkins, J.F., Erez, J., Rollins, N.E., Berelson, W.M., 2017: Catalysis and Chemical Mechanisms of Calcite Dissolution in Seawater, *Proceedings of the National Academy of Sciences*, 114(31), 8175-8180
- Haynes, L.L, Honisch, B., Dyez, K., Eggins, S., Holland, K., Rosenthal, Y., Fish, C., **Subhas, A.V.**, 2017: Calibration of the B/Ca proxy in the planktic foraminifer *O. universa* to Paleocene seawater conditions, *Paleoceanography*, 32
- Subhas, A.V.**, Rollins, N.E., Berelson, W.M., Dong, S., Erez, J. Adkins, J.F., 2015: Novel Determination of the Dissolution Kinetics of Inorganic Calcite in Seawater. *Geochimica et Cosmochimica Acta*, 170, 51-68
- Thiagaragan, N., **Subhas A.V.**, Southon, J.R., Eiler, J.M., Adkins, J.F., 2014: Abrupt pre-Bolling-Allerod warming and circulation changes in the deep ocean. *Nature* 511(7507), 75-78
- Paris, G., Sessions, A.L., **Subhas, A.V.**, Adkins, J.F., 2013: Measurement of $\delta^{34}\text{S}$ and $\Delta^{33}\text{S}$ in small amounts of dissolved sulfate. *Chemical Geology* 345, 50-61
- Thiagarajan, N., Gerlach, D., Roberts, M.L., Burke, A., McNichol, A., Jenkins, W.J., **Subhas, A.V.**, Thresher, R.E., Adkins, J.F. 2013: Movement of deep-sea coral populations on climatic timescales. *Paleoceanography* 28(2), 227-236
- Subhas, A.V.**, Whealdon, J., Schrier, J., 2011: Predicting organic thin-film transistor carrier type from single molecule calculations. *Computational and Theoretical Chemistry* 966, 70-74

FELLOWSHIPS, GRANTS, AND AWARDS

Grants

- NSF-OCE, Chemical Oceanography: *Measuring Biogenic Calcite and Aragonite Solubilities and Reaction Rates by Paired Lab and Field Saturometry*. 2019
- Robert A. James and Anne K. James Foundation: *Assessing the Preservation of Chemical Signatures in Foraminiferal Shells*. 2018
- Caltech Innovation Initiative: *Development of a Device to Sequester Anthropogenic CO₂*. 2015
- BSF Prof. Rahamimoff Travel Grant: *Travel funding between the U.S. and Israel for Foraminiferal Culturing*. 2013

Fellowships

- Woods Hole Oceanographic Institution / National Ocean Sciences Accelerator Mass Spectrometry Facility Postdoctoral Scholarship. 2017-2019
- Resnick Sustainability Institute Graduate Fellowship. 2015-2017
- NSF Graduate Research Fellowship. 2012-2015

Awards

- Magna Cum Laude. 2009
- Phi Beta Kappa. 2009
- Eagle Scout. 2005

FIELD EXPERIENCE

Research cruises

- R/V Kilo Moana. Station ALOHA. *10 days, June 2019*
- R/V Walton Smith. Lee Stocking Island, Bahamas. *21 days, May 2019*
- R/V Kilo Moana. Honolulu, HI to Seward, AK. *30 days, August 2017*
- R/V Yellowfin. San Pedro Basin. *2 days, June 2015*
- R/V Thomas Thompson, Southern Ocean. *33 days, December 2008*

Other Fieldwork

- Marine calcifier culturing at the IUI in Eilat, Israel. *Winters 2013, 2014*
- Mapping field assistant, Mormon Mountains, Nevada. *Spring 2012*

TEACHING EXPERIENCE

Teaching

- Teaching Assistant, Caltech ESE102: Earth's Oceans. *2012-2015*
- Guest Lecture, Biomineralization. USC GEOL-601. *Spring 2014*
- Co-Instructor, Caltech GE191: The U-Series Decay Chain. Co-taught with Stephen Cox and Ken Farley. *Winter 2013*

Mentoring and Outreach

- Guest Student Mentor, WHOI. Alex Quizon, Williams College class of 2021. *Summer 2018*
- Outreach Educator, Caltech Tectonics Observatory. *2011-2012*

INVITED TALKS

- Gordon Research Conference in Chemical Oceanography *July 2019*
- Comer Climate Conference *October 2018*
- NOSAMS Advisory Board Meeting *September 2018*
- Lamont-Doherty Earth Observatory Guest Seminar *May 2018*
- WHOI Marine Chemistry and Geochemistry Seminar *October 2017*
- University of Washington School of Oceanography Guest Seminar *September 2017*
- Caltech Environmental Science and Engineering Seminar *March 2017*
- Harvard ClimaTea Symposium *November 2016*
- Picarro, Inc. Webinar Series *Fall 2015*
- Princeton University Environmental Geology and Geochemistry Seminar *Fall 2015*
- Koshland Integrated Natural Science Center Board of Trustees Meeting *Winter 2009*