

Dr. Roy E. Price  
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### Summary

Dr. Price has extensive experience in conducting research at the crossroads between the geosphere, hydrosphere, and biosphere. His research includes topics on 1) aqueous geochemistry of hydrothermal vents, including subsurface water-rock reactions using major and minor element geochemistry, traditional and non-traditional isotopes, clumped isotopes, and geochemical modelling, 2) applying his understanding of redox chemistry and mineralogy to off-Earth environments, particularly Ocean Worlds, for a better understanding of planetary habitability, the origin of life, and astrobiology, 3) molecular and cultivation-based microbiology of hydrothermal vents, 4) groundwater quality, hydrogeochemistry, and hydrology, 5) understanding the cycling of nitrogen, phosphorous, and other contaminants of emerging concern including pharmaceuticals and personal care products, in groundwater-to-marine systems. Dr. Price also continues to advise and mentor students, from undergraduate volunteers in his laboratory to graduate students funded on his grants. His leadership experience includes being Research Coordinator for the New York State Center for Clean Water Technology, where he helped guide the direction of the Center's research efforts for the past ~3 years, as well as leading numerous, interdisciplinary, scientific research grants as PI. He is a founding member of the SoMAS Diversity, Equity and Inclusion committee, is currently the DEI Communications Officer, and contributes the efforts focused on undergraduate recruitment of underrepresented groups in STEM and the DEI website. Dr. Price has participated in or led more than 20 expeditions to shallow-sea vents from around the world, and participated in several cruises to deep-sea vents as well. He is a certified research SCUBA diver, here in the US (trained at Uni. of South Florida and Uni. of Southern California), and Europe (a European Research Diver and "Forschungstaucher" in Germany), and has ~ 600 research dives to date.

### Current Positions

**-Research Assistant Professor (with PI status)**, School of Marine and Atmospheric Sciences (SoMAS), Stony Brook University, Stony Brook, New York, USA.

### Education

- 2008: Ph.D., **Geochemistry**. University of South Florida, Tampa, FL.
- 2003: Master of Science, **Hydrogeology**. University of South Florida, Tampa, FL
- 1999: Bachelor of Science, **Geology**, University of Arkansas, Fayetteville, AR.

### Past Preparation

- Research Coordinator, New York State Center for Clean Water Technology (CCWT) at Stony Brook University. *August 2015 through August 2018.*
- Inorganic Geochemist onboard Joides Resolution, IODP Expedition Leg 366 to Mariana Forearc Convergent Margin to drill serpentinite mud volcanoes; *Dec 7, 2016 through Feb 7, 2017.*
- Visiting Researcher "*Gastwissenschaftler*" at the GEOMAR Helmholtz Centre of Ocean Research in Kiel, Germany. Hosted by Prof. Dr. Tina Treude. *October 2013 – May 2014.*
- Postdoctoral Research Associate, Dept. of Earth Sciences, University of Southern California with Dr. Jan Amend. *Oct 2010 to Oct 2013.*
- Postdoctoral Research Fellow, MARUM Center for Marine Environmental Sciences, University of Bremen, Germany. *May 2008 to Oct 2010.*

### Research Interests

- Geochemical redox evolution of hydrothermal vent fluids, particularly those related to shallow-sea hydrothermal vents, and the associated consequences (i.e., water quality, associated microbial communities and bioenergetics).
- Alkaline and other hydrothermal environments as analogs for early-Earth conditions and the origin of life.
- Environmental geochemistry, emphasizing contaminant and nutrient source, fate, flux and transport from ground water aquifers to coastal environments.

#### Notable funded Partnerships, Grants, Awards and Scholarships

##### ***Current:***

- -Stony Brook University Office of the Vice President for Research (OVPR) Seed Grant as PI: A proxy for life detection on other planetary bodies: Calcium carbonate clumped isotope geochemistry from serpentinizing environments. Starting Dec 1, 2019, ending June 30, 2021. Total amount received: \$51,143
- NASA Habitable Worlds proposal as PI: Habitability of saponite-rich hydrothermal systems of early Mars. Starting February 2020, ending January 2023. Total: \$908,904.
- Stony Brook SoMAS “Dean’s Incentive Research Grant”, which provides additional student support for the NASA Habitable Worlds research grant. Starting February 2020, ending January 2021. Total \$34,427.
- 2019-current: MICROPRONY: MICRObial ecosystem functioning in the serpentinizing-hydrothermal system of PRONY, New Caledonia, funded as Co-I. From the French National Center of Scientific Research (CNRS; NSF equivalent in France). Starting February 2020 End February 2024 (48 months) - Total €592,000 to PI, a portion of which will cover Dr. Price’s travel (2x), sample collection, and analysis of CH<sub>4</sub> clumped isotopes (final amount tbd).
- 2018-current: “Relating hydrothermal flux and seafloor features in Paleochori Bay, Milos Island (Greece) to aerial drone photographs”, Deutsche Forschungsgemeinschaft (DFG; NSF equivalent in Germany) funded project (€19,500) as Co-I.
- 2018-current: Award from to Joint Genome Institute’s Community Science Program as Co-I: “Metagenomic and metatranscriptomic analysis of fluids and chimneys from Strytan Hydrothermal Field”. Award to PI Katrina Twing and William Brazelton (University of Utah). Funds will cover sequencing costs for twelve metagenomes and six metatranscriptomes.
- 2018-current: NASA PSTAR grant “INVADER: In-situ Vent Analysis Divebot for Exobiology Research” as Co-I. Total award \$5,210,000; ~\$106,268 to Price lab for the period 8/28/18 - 8/27/21; PSTAR grants are typically for 5 years, and I anticipate an additional 2 years of funding from this grant.
- 2015-current. Grant for “Clean Water Technology Initiative” as Co-I. Bloomberg Philanthropies. Total award \$648,600, part of which covers 2 mo. of my salary and full support of my Ph.D. student Samantha Roberts. Grant is renewable, so no end date anticipated over the next several years.

##### ***Past:***

- 2017-2019: French National Center of Scientific Research (CNRS) X-Life program grant as Co-I: X-TREMOPHILE "Extremophilic microorganisms from shallow hydrothermal systems in the Aeolian archipelago using an inter-disciplinary approach combining (bio)geochemistry, microbiology (both cultural and molecular-based techniques), metagenomics/bioinformatics. Total award to PI Gael Erauso (IRD, Marseille, France) €67,000, a portion of which will cover my travel (2x), sample collection, and analysis of vent fluids and precipitates in support of the project (final amount tbd).
- U.S. Science Support Program Office grant associated with the International Ocean Discovery Program (USSSP-IODP) cruise Leg 366 and post-cruise research. End date: Feb 2020. \$76,398.2016-2017. Grant to participate as an Inorganic Geochemist on the International Ocean Discovery Program (IODP) Mariana Convergent Margin Exp. 366 aboard *JOIDES Resolution*, as PI. Nickel cycling and isotopic composition across serpentinization gradients. Total award \$85,531.

- 2014. NASA Early Career Collaboration Award funded proposal as PI: “Exploration of a shallow-sea serpentinite-hosted Lost City analog.” \$4,990.
- 2012. Center for Deep Energy Biosphere Interactions (C-DEBI) research grant “A Lost City-type hydrothermal system in readily accessible, shallow water”. Conceived and written by Price, supported by J. Amend as PI due to USC regulations. \$49,469.
- 2012. NASA Lewis and Clark Fund for Exploration and Field Research in Astrobiology funded proposal as PI: “Expanding frontiers for origin of life research: Serpentinite-hosted shallow-sea hydrothermal vents. \$5000.
- 2009. *Deutsche Forschungsgemeinschaft (DFG)* funded proposal as PI. “Carbon fixation pathways and microbial metabolism based on arsenic in the marine shallow-water hydrothermal system of Palaeochori Bay, Milos Island, Greece”. € 21,500.
- 2006. Southwest Florida Water Management District Research Grant: “Investigating the link between arsenic speciation and dissolved organic matter in Florida Keys carbonate reef sediments.” \$4000.
- 2003. Geological Society of America Alexander Sisson Award for Ph.D. research in Alaska and the Caribbean. “Shallow-sea hydrothermal vents off the coast of the Aleutian Islands”. \$3200.

#### Distinguished Achievements and Community Service

- Just invited to submit a Nature Geosciences “Perspectives” article, as coauthor with Laurie Barge at JPL, to be submitted mid-Nov 2021, with the title “*Shallow sea tidally oscillating alkaline hydrothermal vent environments for the origin of life*”.
- Invited presentation for upcoming Origins of Life Gordon Research Conference (Jan 2022), in the session “Hydrothermal Vents: Differences Between Modern and Hadean Earth”. My presentation: “Extending the submarine alkaline vent model for life’s emergence to the shallow sea”.
- Upcoming AbSciCon (May 2022) session co-convenor under theme Ocean worlds near and far. Session title “Geochemistry and Habitability of Alkaline Hydrothermal Vents on Earth and Beyond”
- One of the founding members of the Diversity, Equity, and Inclusion Committee of the SBU School of Marine and Atmospheric Sciences, "to make real progress in making SoMAS a diverse, inclusive, supportive, and accessible School."
- Invited reviewer for many scientific journals including Life, PNAS, PLoS One, Nature Geosciences, Earth Science Reviews, Nature Scientific Reports, Planetary and Space Science, Astrobiology, Marine Chemistry, Marine Geology, Applied Geochemistry, Chemical Geology, JGR Biogeosciences, and Environmental Science: Processes & Impacts, NSF proposals related to microbiology and geochemistry.
- Invited participant: ICDP/IODP Workshop, “Drilling into the New Caledonia Ophiolite”, Montpellier, France. Jan 25-27 2019. Pre-proposal submitted Jan 15, 2021 for “New Caledonia Ophiolite Land-to-Sea Drilling Project (NCDP)” as Co-I.
- Invited NASA Exobiology review panel participant, August 2018.
- Lead author on a Review Paper on marine, shallow-water hydrothermal vents. Price, R.E., and Giovannelli, 2017. A Review of the Geochemistry and Microbiology of Marine Shallow-Water Hydrothermal Vents, *Reference Module in Earth Systems and Environmental Sciences*, Elsevier, 2017. 30-May-17. doi: 10.1016/B978-0-12-409548-9.09523-3.
- Invited participant: ELSI/TDE Workshop, “Requirements for Origin of Life Field Investigations”, Tokyo, Japan. October 5-7 2016.
- Invited participant in Second Deep Carbon Observatory - Early Career Scientist Workshop, at the Centro De Vulcanologia e Avaliação de Riscos Geológicos, University of the Azores, São Miguel, 31 August-5 September 2015.

- Astrobiology Magazine article “Hydrothermal vents could explain chemical precursors to life” by Michael Schirber. June 16, 2014. <http://www.astrobio.net/extreme-life/hydrothermal-vents-explain-chemical-precursors-life/>
- Featured seminar speaker for CDEBI’s “Community College Connections Program” at (1) Los Angeles Trade & Technical College: March 27, 2013; (2) Long Beach Community College: June 12, 2013.
- Goldschmidt 2011 Session Convener: “Geochemical and microbiological research in both shallow and deep-sea hydrothermal environments” Session chaired by Roy Price & Paul Craddock.
- Invited Participant: DFG International Workshop: Research in Shallow Marine and Fresh Water Systems. May 14<sup>th</sup> – 16<sup>th</sup>, 2009. Freiberg, Germany.
- April 2004. Invited Participant: DFG 1st German - American Workshop on Biogeochemical Gradients: Microbes, Methods, and Measurements. University of Tübingen, Germany.
- 2002 American Water Resources Association Florida Section Presidents Award: Member of the Year (1st and only student recipient), following the founding and organization of the AWRA student section at USF.

#### Courses Taught

- Spring 2022. MAR 333: Coastal Oceanography. School of Marine and Atmospheric Sciences, SUNY Stony Brook.
- Fall 2016. GLY315 / ENV315: Groundwater Hydrology / Principles and Applications of Groundwater Hydrology. Department of Geosciences, SUNY Stony Brook.
- Fall 2016. GLY515 (graduate level). Introduction to Physical Hydrogeology
- Fall 2015. MAR 670.T64 Practicum in Teaching. School of Marine and Atmospheric Sciences, SUNY Stony Brook.
- Fall 2015. MAR 104 Introduction to Oceanography. School of Marine and Atmospheric Sciences, SUNY Stony Brook.
- Fall 2015. MAR 105 Introduction to Oceanography. Department of Biology. Suffolk County Community College.
- Fall 2015. GLY315 / ENV315: Groundwater Hydrology / Principles and Applications of Groundwater Hydrology. Department of Geosciences, SUNY Stony Brook.
- Fall 2015. GLY515 (graduate level). Introduction to Physical Hydrogeology
- Spring 2015. MAR 503 (graduate level). Chemical Oceanography Co-instruction
- Spring 2015. ESC101: Introduction to Physical Geology. Department of Natural Sciences. Suffolk County Community College.
- Spring 2008. GLY2010 – Section 901: Earth: Portrait of a Planet (Introduction to Geology). University of South Florida.

#### Student mentoring

*Current (All at Stony Brook University, NY; \*anticipated graduation date):*

- Arlaine Sanchez, Ph.D. Primary advisor: \*May 2024. NASA Habitable Worlds project “Habitability of saponite-rich hydrothermal systems of early Mars”.
- Kristen Burk, M.S. Primary advisor: \*May 2022. Center for Clean Water Technology supported project “Influence of temperature on increased nitrate reduction coupled to iron oxidation (NRFO) in nitrogen reducing biofilters (NRBs).

*Past:*

- Holly Rucker, M.S. Primary advisor, \*May 2021. “Habitability of Eridania Lake: An Ancient Mars Lacustrine Hydrothermal Vent, Compared to an Icelandic Analogue Fjord Site”. NASA Habitable Worlds project

- Tricia Clyde, Ph.D. Co-primary advisor, December 2020. “Pharmaceuticals and personal care products (PPCPs) removal evaluation in Nitrogen Removing Biofilters (NRBs)”. CCWT funding.
- Samantha Roberts, Ph.D. primary advisor, November 2020. “The influence of plants on nitrogen cycling in constructed wetlands”. CCWT funding.
- Zoe Smith, M.S. Primary advisor, October 2018. “Trace metal removal in innovative/alternative residential waste water treatment”. CCWT funding.
- Stivaly Paulino, M.S. thesis committee member, September 2017. “Radon tracers of submarine groundwater discharge (SGD) in Jamaica”.
- Jeanette Lee, M.S. thesis committee member, September 2017. “Phosphorous cycling in innovative/alternative residential waste water treatment”. CCWT funding.
- Jasmine Berg, M.S. thesis committee member, Washington University, St. Louis, 2011 “Microbial characterization of white mats in a hydrothermally influenced, sulfur-rich brine pool off Panarea Island”
- Katja Nitzsche, M.S. thesis committee member, University of Bremen (Germany), 2010. “Microbial diversity of hydrothermally influenced sediments off the coast of Milos Island, Greece”

### **List of Publications**

#### ***Notable “in prep” articles nearly ready for submission***

Price, R.E., Jabrane Libidi, Chelsea Sutcliffe, Barbara Sherwood Lollar, Gaël Erauso, Marianne Quéméneur, Anne Postec, Christophe Monnin, Laura Wehrmann, David Gillikan, Bénédicte Ménez, Bernard Pelletier, Eric Folcher, Tori Hoehler<sup>9</sup>, Michael Kubo, and Edward Young. In prep for *Geochemica et Cosmochemica Acta*. Clumped isotopologues reveal microbial origin despite  $d^{13}C$  enrichments: Methane cycling in the Prony Hydrothermal Field, New Caledonia.

Barge, L. and Price, R.E., in prep for *Nature Geoscience Perspectives (invited)*. Shallow sea tidally oscillating alkaline hydrothermal vent environments for the origin of life

#### ***Submitted or in revision:***

Kotopoulou, E., Godelitsas, A., Göttlicher, J., Steininger, R., **Price, R.E.**, Fike, D.A., Amend, J.P., Gilhooly III, W., Druschell, G., Nomikou, P., Gamaletsos, P., Lozios, S., submitted August 2021. Nanosized iron-sulfides from the shallow-sea hydrothermal sediments off Milos, Greece. *ASC Earth and Space Chemistry*.

Nyer\*, S.C., **Price, R.E.**, Volkenborn, N., Graffam, M., Zhu, Q., Aller, R.C. submitted August 2021, currently in review. Drivers of nitrogen dynamics in laboratory-based constructed wetlands: a closer look at plant-soil interactions. *Science of the Total Environment*.

Menzies, C., **Price, R.E.**, Ryan, J., Sissman, O., Takai, K., Wheat, J. in final revision step. 2021. Deep-Sourced Fluids and Post Deposition Reactions Within Three Serpentinite Mud Volcanoes in the Mariana Forearc: IODP Expedition 366. *Geochemica et Cosmochemica acta*.

#### ***Book Chapters***

Giovannelli, D., and **Price, R. E.**, 2019, Marine Shallow-Water Hydrothermal Vents: Microbiology, in Cochran, J. K., Bokuniewicz, H. J., and Yager, P. L., eds., *Encyclopedia of Ocean Sciences (Third Edition)*: Oxford, Academic Press, p. 353-363.

**Price, R. E.**, and Giovannelli, D., 2019, Marine Shallow-Water Hydrothermal Vents: Geochemistry, in Cochran, J. K., Bokuniewicz, H. J., and Yager, P. L., eds., *Encyclopedia of Ocean Sciences (Third Edition)*: Oxford, Academic Press, p. 346-352.

**Price, R. E.**, and Giovannelli, D., 2017, A Review of the Geochemistry and Microbiology of Marine Shallow-Water Hydrothermal Vents, Reference Module in Earth Systems and Environmental Sciences, Elsevier.  
<http://dx.doi.org/10.1016/b978-0-12-409548-9.09523-3>

#### ***Accepted or published:***

- Clyde\*, P., Brownawell, B., **Price, R.**, Venkatesan, A. in revision, Sept 2021, accepted. Occurrence and Removal of 27 PPCPs in Onsite Wastewater Treatment Systems Employing Two-Step Nitrogen Removal. *Water Research*.
- Monnin, C., Quéméneur, M., **Price, R.E.**, Jeanpert, J., Maurizot, P., Pelletier, B., submitted Jan 2021, currently in review. The chemistry of hyperalkaline springs in serpentinizing environments: 1. the composition of free gases in New Caledonia compared to other springs worldwide. *Journal of Geophysical Research – Biogeosciences*. American Geophysical Union, In press. [\(hal-03242378\)](#)
- Roberts, H., Price, R., Brombach, C., Pichler, T., accepted for publication. Mercury in the Hydrothermal Fluids and Gases in Paleochori Bay, Milos, Greece. *Marine Chemistry*. 231, 103984.
- Khimasia, A., Renshaw, C.E., **Price, R.E.**, Pichler, T., 2021. Hydrothermal flux and porewater geochemistry in Paleochori Bay, Milos, Greece. *Chemical Geology*. 571, 120188
- Gobler, C., Waugh, S., Asato, C., Clyde, P., Nyer, S., Graffam, M., Brownawell, B., Venkatesan, A., Goleski, J., **Price, R.E.**, Mao, X., Russo, F., Heufelder, G., Walker, H., 2021. Removing 80-90% of nitrogen and organic contaminants with three distinct passive, lignocellulose-based on-site septic systems receiving municipal and residential wastewater. *Ecological Engineering*. 161, 106157
- Lu, G-S., LaRowe, D., Fike, D., Druschel, G., Gilhooly III, W., **Price, R.E.**, Amend, J., 2020. Bioenergetic characterization of a shallow-sea hydrothermal vent system: Milos Island, Greece. *PLoS ONE* 15(6): e0234175. <https://doi.org/10.1371/journal.pone.0234175>.
- Jones, J-P., Firdosy, S., Barge, L., Bescup, J., Perl, S., Zhang, X., Pate A., and **Price, R.E.**, 2020. 3D Printed Minerals as Astrobiology Analogs of Hydrothermal Vent Chimneys. *Astrobiology*. <https://doi.org/10.1089/ast.2020.2260>
- Wehrmann, L.M., Lee, J.A., **Price, R.E.**, Heufelder, G., Walker, H.W., and Gobler, C.J., 2020. Biogeochemical sequestration of phosphorus in a two-layer lignocellulose-based soil treatment system. *Journal of Sustainable Water in the Built Environment*. 6 (2), 04020002
- Fryer, P., C. Geoffrey Wheat, Trevor Williams, Christopher Kelley, Kevin Johnson, Jeffrey Ryan, Walter Kurz, John Shervais, Elmar Albers, Barbara Bekins, Baptiste Debret, Jianghong Deng, Yanhui Dong, Philip Eickenbusch, Emanuelle Frery, Yuji Ichiyama, Raymond Johnston, Richard Kevorkian, Vitor Magalhaes, Simone Mantovanelli, Walter Menapace, Catriona Menzies, Katsuyoshi Michibayashi, Craig Moyer, Kelli Mullane, Jung-Woo Park, **Roy Price**, Olivier Sissmann, Shino Suzuki, Ken Takai, Bastien Walter, Rui Zhang, Diva Amon, Deborah Glickson, Shirley Pomponi. 2020. Mariana serpentinite mud volcanism exhumes subducted seamount materials: implications for the origin of life. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 378. <http://doi.org/10.1098/rsta.2018.0425>
- Sissmann, O.; **Price, R.E.**, Elvert, M.; Heuer, V.B., Prieto, X., Monnin, C., Rouchon, V., Noirez, S., Beaumont, V., Ammouïal, J., Kohler, E., Menzies, C., Ryan, R., Takai, K. 2019. Conference Paper (not peer reviewed). Abiogenic formation of H<sub>2</sub>, light hydrocarbons and other short-chain organic compounds within the serpentinite mud volcanoes of the Marianna Trench. *E3S Web of Conferences* 98, 02011. <https://doi.org/10.1051/e3sconf/20199802011> WRI-16
- Duran-Toro, V.; **Price, R.E.**; Maas, M.; Brombach, C.; Pichler, T.; Rezwan, K.; Bühring, S. (2019). Amorphous arsenic sulfide nanoparticles in a shallow water hydrothermal system. *Marine Chemistry*, 211. <https://www.sciencedirect.com/science/article/pii/S0304420318303104>
- Debret, B., Albers, E., Walter, B., **Price, R.E.**, Barnes, J., Beunon, H., Facq, S., Gillikan, D., Mattielli, M., Williams, H., (2019). Shallow forearc mantle dynamics and geochemistry: New insights from IODP Expedition 366. *Lithos*. 326-327. DOI:10.1016/j.lithos.2018.10.038

- Wheat, C.G.; Fournier, T.; Paul, C.; Menzies, C.; **Price, R.E.**; Ryan, J.; Sissman, O.; 2018. IODP Expedition 366 pore water trace element (V, Mo, Rb, Cs, U, Ba, and Li) compositions: *Data Report. Volume 366 of the Proceedings of the International Ocean Discovery Program*.
- Fryer, P., Wheat, C.G., Williams, T., and the Expedition 366 Scientists, 2018. *Mariana Convergent Margin and South Chamorro Seamount. Proceedings of the International Ocean Discovery Program, 366*: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.366.2018>
- Price, R.E.**, Boyd, E.S., Hoehler, T.M., Wehrmann, L., Bogason, E., Valtýsson, H., Örlygsson, J., Gautason, B., Amend, J. (2017) Alkaline vents and steep Na<sup>+</sup> gradients from ridge-flank basalts—Implications for the origin and evolution of life. *Geology*, v.45 (12).
- Fryer, P., Wheat, G., Williams, T., and the Expedition 366 Scientists, 2017. *Expedition 366 Preliminary Report: Mariana Convergent Margin and South Chamorro Seamount*. International Ocean Discovery Program. <http://dx.doi.org/10.14379/iodp.pr.366.2017>
- Waugh, S. **Price, R.E.**, Mao, X., Langlois, K., Roberts, S., Graffam, M., Clyde, P., Collier, J., Gobler, C., Walker, H., Garvey, J., (2017). Nitrogen-removing biofilters for on-site wastewater treatment in Long Island: Current and Prospects. *Clear Waters Journal. New York Water Environmental Association*. 47 (2), 45-48.
- Sollich, M; Yoshinaga M.Y.; Häusler, S; **Price, R.E.**; Hinrichs, K-U; Bühring, S.I. (2017). Heat stress dictates microbial lipid composition along a thermal gradient in marine sediments. *Frontiers in Microbiology*, v. 8, article 1550. doi: 10.3389/fmicb.2017.01550.
- Price, R.E.**, Breuer, C., Reeves, E., Bach, W., Pichler, T., 2016. Arsenic bioaccumulation and biotransformation in deep-sea hydrothermal vent organisms from the PACMANUS hydrothermal field, Manus Basin, PNG. *Deep Sea Research I*, 117, 95-106.
- Godelitsas, A.; **Price, R.E.**; Pichler, T.; Amend, J.; Gamaletsos, P.; Goettlicher, J., 2015. Amorphous As-sulfide precipitates from the shallow-water hydrothermal vents off Milos Island (Greece), *Marine Chemistry*. 177, 5.
- Price, R.E.**, LaRowe, D.; Italiano, F.; Savov, I.; Pichler, T.; and Amend, J.P.; 2015. Subsurface hydrothermal processes and the bioenergetics of chemolithoautotrophy at the shallow-sea vents off Panarea Island (Italy). *Chemical Geology*. 407-408.
- Engel, B.E; Hallock, P; **Price, R.E.**; and Pichler, T.; 2015. Shell dissolution in larger benthic foraminifers exposed to pH and temperature extremes: Results from an in situ experiment. *Journal of Foraminiferal Research*. 45, 2.
- Gilhooly III, W.P.; Fike, D.A.; Druschel, D.K.; Kafantaris, F-C.; **Price, R.E.**; Amend, J.P., 2014. Sulfur and oxygen isotope insights into sulfur cycling in shallow-sea hydrothermal vents, Milos, Greece. *Geochemical Transactions*. 15, 12.
- Price, R.E.**; Lewsniewski, R.; Nitsche, K; Meyerdierks, A.; Saltikov, C.; Edwards, K.; Pichler, T.; and Amend, J.P., 2013. Archaeal and Bacterial diversity in an arsenic-rich shallow-sea hydrothermal vent system undergoing phase separation. *Frontiers in Microbiology*, Special Issue “Hydrothermal Microbial Ecosystems”. 4, 158.
- Bayraktarov, E.; **Price, R.E.**; Ferdelman, T.G.; and Finster, K.; 2013. The pH and pCO<sub>2</sub> dependence of sulfate reduction in shallow submarine hydrothermal CO<sub>2</sub> – venting sediments (Milos Island, Greece). *Frontiers in Microbiology*, 4, 111.
- Price, R.E.**; Savov, I.; Planer-Friedrich, B.; Bühring, S.; Amend, J.; and Pichler, T.; 2013. Processes influencing extreme As enrichment in shallow-sea hydrothermal fluids of Milos Island, Greece. *Chemical Geology*, 348

**Price, R.E.**; London, J.; Wallschläger, D.; Ruiz-Chancho, M.J.; and Pichler, T.; 2013. Enhanced bioaccumulation and biotransformation of As in coral reef organisms surrounding a marine shallow-water hydrothermal vent system. *Chemical Geology*, 348.

Ruiz-Chancho, M.J.; Pichler, T.; and **Price, R.E.**; 2013. Arsenic occurrence and speciation in *Cyclope neritea*, a gastropod inhabiting the arsenic-rich marine shallow-water hydrothermal system off Milos Island, Greece. Special Issue: Geothermal Arsenic in *Chemical Geology*. 348.

Meyer-Dombard, D.R., **Price, R.E.**, Pichler, T., and Amend, J.P., 2012. Prokaryotic populations in heated, arsenic-rich sediments of a shallow-sea hydrothermal system, Ambitle Island, Papua New Guinea. *Geomicrobiology Journal*. 29, 1-17.

Pichler, T.; **Price, R.**; Lazareva, O.; and Dippold, A., 2011. Determination of arsenic concentration and distribution in the Floridan Aquifer System. *Journal of Geochemical Exploration*. 111(3), 84-96.

Akerman, N.; **Price, R.E.**; Pichler, T.; Amend, J.P., 2011. Energy sources for chemolithotrophs in an arsenic- and iron-rich shallow-sea hydrothermal system. *Geobiology*. 9(5), 436-445.

Karlen D.J., **Price R.E.**, Pichler T. and Garey, J.R., 2010. Changes in Benthic Macrofauna associated with a Shallow-water Hydrothermal Vent Gradient in Papua New Guinea. *Pacific Science*. 64(3), 391-404

**Price, R.E.**, and Pichler, T., 2009. Measuring toxic elements and toxicity in marine shallow-water hydrothermal systems. In: B. Merkel and M. Schipek (Editors), *Research in Shallow Marine and Fresh Water Systems*. Technische Universitaet Freiberg, Freiberg, Germany, pp. 82-86

Kopf, A., R. Apprioual, J. Blandin, J.-P. Brulport, P. Crassous, T. Fleischmann, A. Förster, G. Guyader, S. Hammerschmidt, P. Henry, R. Jacinto Silva, J. Legrand, A. Mayer, S. Pape, P. Pelleau, P. Pichavant, T. Pichler, **R.E. Price**, M. Seydel, S. Stegmann, K. Weber, 2009. REPORT AND PRELIMINARY RESULTS OF POSEIDON CRUISE P386: NAIL (Nice Airport Landslide), Berichte aus dem Fachbereich Geowissenschaften der Univ. Bremen, No. 271: 161pp

**Price, R.E.**, Pichler, T., and Amend, J.P., 2007. Enhanced geochemical gradients in a marine shallow-water hydrothermal system: Unusual arsenic speciation in horizontal and vertical pore water profiles. *Applied Geochemistry*, 22, 2595-2605. Special issue on Gradients: Microbes, Methods, and Measurements.

**Price, R. E.** and Pichler, T., 2006. Abundance and mineralogical association of arsenic in the Suwannee Limestone (Florida): implications for arsenic release during water-rock interaction. *Chemical Geology*, 228 (1-3), pp. 44-56

Pichler, T., Amend, J., Garey, J., Hallock, P., Hsia, N., Karlen, D., McCloskey, B., Meyer-Dombard, D. and **Price, R.**, 2006. A Natural Laboratory to Study Arsenic Geobiocomplexity. *EOS*, v. 87-23, pp. 221-25.

**Price, R. E.** and Pichler, T. 2005. Distribution, speciation and bioavailability of arsenic in a shallow-water submarine hydrothermal system, Tutum Bay, Ambitle Island, PNG. Invited paper for special issue of *Chemical Geology*; 224, pp. 122-135

McCarthy, K.T.; Pichler, T.; and **Price, R.E.**; 2005. Geochemistry of Champagne Hot Springs Shallow Hydrothermal Vent Field and Associated Sediments, Dominica, Lesser Antilles. *Chemical Geology*. 224, pp. 55-68

***Presentations (Since 2016 only; \* = Invited)***

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