

Dr. Roy E. Price
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Current Positions

-**Assistant Professor**, School of Marine and Atmospheric Sciences (SoMAS), Stony Brook University, Stony Brook, New York, USA. Since September 2023.
-Affiliated Faculty, Department of Geosciences, 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 Assistant Professor (with PI status), School of Marine and Atmospheric Sciences (SoMAS), Stony Brook University, Stony Brook, New York, USA. *Oct 2014 – Sept 2023*.
- Institute for Advanced Study “Hanse-Wissenschaftskolleg” for the project “Fluid-mineral-microbe interactions in saponite-rich hydrothermal systems”, in collaboration with Wolfgang Bach at Uni Bremen. *July 2022 – May 2023*
- 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*.

Notable funded Partnerships, Grants, Awards and Scholarships

Current:

- 2023-2026. NASA Habitable Worlds proposal as PI: Habitability estimates for heterotrophic metabolisms in wet-to-dry transient environments on Noachian Mars (HabMars). Starting November 2023, ending October 2026. Total: \$1,326,736.
- 2023-2024. SoMAS Seed Grant Program proposal as PI: "Development of a UHPLC-QTOF-MS technique for characterization of DOC in hydrothermal fluids". Total \$29,871.
- Stony Brook University Office of the Vice President for Research (OVPR) Seed Grant as PI: “SubTeg: Construction of a Prototype **S**ubmersible **T**hermo **E**lectric **G**enerator”. July 1, 2023, ending June 30, 2024. Total amount received: \$5,920.
- NASA Habitable Worlds proposal as PI: Habitability of saponite-rich hydrothermal systems of early Mars. Starting February 2020, ending January 2024. Total: \$908,904.

- Stony Brook SoMAS “Dean’s Incentive Research Grant”, which provides additional student support for the NASA Habitable Worlds research grant. Available through Jan 2026. 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 CH₄ clumped isotopes.
- 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 - 8/27/22; PSTAR grants are typically for 5 years, and I anticipate an additional 2 years of funding from this grant.
- 20121-2022: 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. 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).

Past:

- 2018-2020: “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.
- 2015-2020. Grant for “Clean Water Technology Initiative” as Co-I. Bloomberg Philanthropies. Total award \$648,600. Grant is renewable, so no end date anticipated over the next several years.
- 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
- 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.

Service

- Member: SoMAS graduate admissions committee meeting. November 2023 to present.
- Member: SoMAS Faculty Council. September 2023 to present.
- One of the founding members of the Diversity, Equity, and Inclusion Committee of the SBU School of Marine and Atmospheric Sciences. Served Oct 2020 through May 2022.

Professional Memberships

- Geochemical Society Member # 209133

Distinguished Achievements

- Invited presentation for 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”.
- 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”
- 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://astrobiology.com/2014/06/hydrothermal-vents-could-explain-chemical-precursors-to-life.html>
- 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 14th – 16th, 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

- Fall 2023. MAR 527. Current Issues in Global Climate Change.
- 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 (*anticipated graduation date):*

- Jonathan Lubiantoro. Ph.D. Primary advisor: *May 2026. Potentially toxic element cycling in hydrothermal vents.

*Past: (*graduation date)*

- Arlaine Sanchez, M.S. Primary advisor: *May 2022. 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)”.
- 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

Submitted or in revision:

Bastianoni, A., Cascone, M., de Moor, J.M., Barry, P.H., **Price, R.E.**, Cordone, A., Aiuppa, A., Fischer, T.P., Marty, B., Giovannelli, D., submitted to *Geochemical Perspectives Letters* August 2023. The missing carbon budget puzzle piece: shallow-water hydrothermal vents contribution to global CO₂ fluxes. Available as a preprint: <https://eartharxiv.org/repository/view/4680/>.

Gutiérrez-Ariza, C., Barge, L., Ding, Y., Cardoso, S., McGlynn, S., Nakamura, R., Giovannelli, D., **Price, R.E.**, Lee, H.E., Huertas, F., Sainz-Díaz, C., Cartwright, J., Submitted to *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, August 2023. Mg silicate chimneys at Strytan hydrothermal field, Iceland as analogues for prebiotic chemistry at early Earth alkaline submarine hydrothermal vents.

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 (*student from Price lab):

47. Postec, A.; Galès, G.; Prime, A-H; Bartoli, M.; **Price, R.E.**; Vandecasteele, C.; Erauso, G. 2023 accepted. *Marinitoga aeolica* sp. nov., a novel thermophilic anaerobic heterotroph isolated from a shallow hydrothermal field of Panarea Island in the Aeolian archipelago, Italy. *International Journal of Systematic and Evolutionary Microbiology*.
46. Barosa, B., Ferrillo, A., Selci, M., Giardina, M., Bastianoni, A., Correggia, M., di Iorio, L., Bernardi, G., Cascone, M., Capuozzo, R., Intoccia, M., **Price, R.E.**, Vetriani, C., Cordone, A., and Giovannelli, D., 2023, Mapping the microbial diversity associated with different geochemical regimes in the shallow-water hydrothermal vents of the Aeolian archipelago, Italy: *Frontiers in Microbiology*, v. 14.
45. Rucker*, H., Ely, T.D., LaRowe, D.E., Giovannelli, D., **Price, R.E.**, 2023. Quantifying the bioavailable energy in an ancient hydrothermal vent on Mars and a modern Earth-based analogue. *Accepted*, 23(5).
44. Barge, L. and **Price, R.E.**, 2022. Diverse geochemical conditions for prebiotic chemistry in shallow-sea hydrothermal vents. *Nature Geosciences Perspectives*.

- 43 Twing, K.I., Ward, L.M., Kane, Z.K., Harding, A.O.S., **Price, R.E.**, Pendleton, H.L., Giovannelli, D., Brazelton, W.J., McGlynn, S.E., accepted August 2022. Microbial Ecology of a Shallow Alkaline Hydrothermal Vent: Strýtan Hydrothermal Field, Eyjafördur, Northern Iceland. *Frontiers in Microbiology - Rising Stars in Hydrothermal Vents and Cold Seeps* special issue.
42. 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., 2022. Metastable iron (mono)sulfides in the shallow-sea hydrothermal sediments of Milos, Greece. *ACS Earth and Space Chemistry*.
41. Nyer*, S.C., **Price, R.E.**, Volkenborn, N., Graffam, M., Zhu, Q., Aller, R.C. 2021. Drivers of nitrogen dynamics in laboratory-based constructed wetlands: a closer look at plant-soil interactions. *Science of the Total Environment*. 2021 Nov 13:151560. doi: 10.1016/j.scitotenv.2021.151560.
40. Menzies, C., **Price, R.E.**, Ryan, J., Sissman, O., Takai, K., Wheat, J. in final revision step. 2021. Spatial variation of subduction zone fluids during progressive subduction: Insights from Serpentine Mud Volcanoes: results from IODP Expedition 366. *Geochemica et Cosmochemica acta*. <https://doi.org/10.1016/j.gca.2021.10.030>
39. Clyde*, P., Brownawell, B., **Price, R.**, Venkatesan, A. 2021. Occurrence and Removal of 27 PPCPs in Onsite Wastewater Treatment Systems Employing Two-Step Nitrogen Removal. *Water Research*. 206, 1 November 2021, 117743.
38. Monnin, C., Quéméneur, M., **Price, R.E.**, Jeanpert, J., Maurizot, P., Pelletier, B., 2021. 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)*
37. 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.
36. 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
35. 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
34. 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>.
33. 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>
32. 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
31. 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>
30. 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 H₂, 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
29. 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>
28. 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
27. 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*.
26. 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>
- 25. 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⁺ gradients from ridge-flank basalts—Implications for the origin and evolution of life. *Geology*, v.45 (12).
24. 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>
23. 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.
22. 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.
- 21. 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.
20. 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.

19. **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.
18. 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.
17. 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.
16. **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.
15. Bayraktarov, E.; **Price, R.E.**; Ferdelman, T.G.; and Finster, K.; 2013. The pH and pCO₂ dependence of sulfate reduction in shallow submarine hydrothermal CO₂ – venting sediments (Milos Island, Greece). *Frontiers in Microbiology*, 4, 111.
14. **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
13. **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.
12. 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.
11. 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.
10. 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.
9. 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.
8. 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
7. **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
6. 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

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- Menzies, C.D., Ryan, J., Sissmann, O., **Price, R.E.**, Foster, G.L., Boyce, A., Wheat, G. 2023. Tracing volatile cycling during progressive subduction in the Mariana Forearc. Goldschmidt 2023 Conference
- Clyde, P., Smolinski, R., **Price, R.E.**, Venkatesan, A., Brownawell, B., 2023. Evaluating the Effects of Antibiotics on the Biological Transformation of Nitrogen and Pharmaceutical and Personal Care Products Removal From Onsite Wastewater in Nitrifying Sand Columns. SETAC North America 43rd Annual Meeting.
- Price, R.E.**, 2022*. Extending the submarine alkaline vent model for life's emergence to the shallow sea. Invited presentation for Origins of Life Gordon Research Conference (Jan 2022), in the session "Hydrothermal Vents: Differences Between Modern and Hadean Earth". Session was cancelled due to Covid.
- Rucker, H.R., Ely, T., LaRowe, D.E., Giovannelli, D., **Price, R.E.**, 2022. Quantifying the bioavailable energy in an ancient hydrothermal vent on Mars and a modern Earth-based analogue. Submitted to AbSciCon. Atlanta, GA.
- Chavez, J., Barge, L., **Price, R.E.**, Khodayari, A., 2023. Laboratory-Grown Hydrothermal Chimneys Simulating Saponite-Rich Hydrothermal Systems. 2022 Astrobiology **Science Conference**
- Price, R.E.**, Sanchez, A., Barge, L., 2022. In Situ Growth Chambers (IGCs): A new method to grow hydrothermal chimneys for astrobiology research. Submitted to AbSciCon. Atlanta, GA.
- Sanchez, A.M., **Price, R.E.**, Fraeman, A.A., Thorpe, M.T., Barge, L.M., 2022. Mission-Relevant Analyses of Icelandic Vent Precipitates: An Analogue Study of Hydrothermal Smectites in Eridania Basin, Mars. Submitted to AbSciCon. Atlanta, GA.
- Price, R.E.**, Rucker, H.R., Sanchez, A.M., Barge, L.M., Ely, T., Fraeman, A.A., Giovannelli, D., LaRowe, D., 2022. Habitability of saponite-rich hydrothermal systems of early Mars and a modern Earth-based analogue in Iceland. Submitted to Lunar and Planetary Science Conference. The Woodlands, TX.
- Sanchez, A.M., **Price, R.E.**, Fraeman, A.A., Thorpe, M.T., Barge, L.M., 2022. Investigating hydrothermal saponite precipitates on Mars using an Icelandic vent analogue. Submitted to Lunar and Planetary Science Conference. The Woodlands, TX.

- Rodriguez, L.E., Yanchilina, A.G., Lamm, S., Simon, K.H., Eshelman, E.J., Sudlik, C., Pochettino, O., Kelley, D.S., **Price, R.E.**, Sobron, P.S., Barge, L.M., 2021. Raman-LIBS Data Fusion for Ocean World Exploration. *5th Planetary Data Workshop (Planetary Science Informatics & Data Analytics)*
- Sissmann, O., Monnin, C., **Price, R.E.**, Rouchon, V., Eric, K., & IODP expedition 366 scientists. 2021. Native H₂ generation & consumption through abiotic reactions: mineral catalysis and formation of short-chain organic compounds in the Marianna Trench. *Goldschmidt Geochemistry Conference*, July 4-9. Lyon, France.
- Rucker, H.R., **Price, R.E.**, Ely, T.D., LaRowe, D.E., 2021. Habitability of Eridania Lake: An Ancient Mars Lacustrine Hydrothermal Vent, Compared to an Icelandic Analogue Fjord Site. *Lunar and Planetary Science Conference*, 2370
- Monnin, C., Sissmann, O., Berger, G., Quéméneur, M., **Price, R.E.**, Pelletier, B., Marques, J., Wheat, G., 2021. The concentration of organic compounds in high-pH waters of serpentinizing environments determined by 1H NMR: continental sites (Oman, Liguria, New Caledonia, Portugal) and a marine environment (Marianna mud volcanoes: IODP Exp 366, ODP Legs 125 and 195). *Goldschmidt Geochemistry Conference*, July 4-9. Lyon, France.
- Gao, Y., **Price, R.E.**, Lott, C., Henkes, G.A., 2020. Clumped isotope geochemistry of carbonates formed in association with shallow water continental methane seeps at Prony Bay, New Caledonia and Elba, Italy. *AGU Fall Meeting 2020*.
- Hermis, N., Barge, L.M., **Price, R.E.**, LeBlanc, G. 2019. Simulation of Iron Hydroxide and Magnesium Silicate Hydrothermal Chimney Systems In a Thermal Gradient Environment. *Astrobiology Science Conference*.
- Sobron, P., Barge, L.M., Acosta-Maeda, T., Amend, J., Burnett, J., Detry, R., Doloboff, I., Hermis, N., Kelley, D.S., Manalang, D., Marburg, A., Misra, A.K., Nawaz, A., **Price, R.E.**, Rehnmark, F., Smith, M., Thornton, B., Yu, D., Zacny, K., 2019. InVADER: Furthering the Understanding and Exploration Readiness of Terrestrial and Planetary Underwater Vent Systems (Screen 7). 2019 *Astrobiology Science Conference*.
- Sissman, O., Monnin, C., **Price, R.E.**, Rouchon, V., Beaumont, V., and Takai, K. 2019. Formation abiogénique de composés organiques à chaîne courte dans les volcans de boue de la fosse des Mariannes – de nouvelles informations sur les éléments constitutifs de la vie (English: Abiogenic formation of short-chain organic compounds in mud volcanoes of the Mariana Trench - new information on the building blocks of life. 7th *French Society of Isotopes meeting SFIS2019. November 12-15, 2019. Orsay, France*.
- Hermis, N., Barge, L., **Price, R.E.**, Melwani Daswani, M., 2019. Simulation of a magnesium silicate hydrothermal chimney system. *AGU Fall meeting, December 2019, San Francisco, USA*.
- Ryan, J., Johnston, R., Jensen, O., Menzies, C., **Price, R.E.**, Sissman, O., Wheat, G., 2019. The development of a subduction channel serpentinite reservoir: Insights from IODP Expedition 366 recovered solids and fluids. *Goldschmidt, August 2019, Barcelona, Spain*.
- Sobron, P., Barge, L., Acosta-Maeda, T., Amend, J., Burnett, J., Detry, R., Hermis, N., Kelley, D., Manalang, D., Marburg, A., Misra, A., Nawaz, A., **Price, R.E.**, Rehnmark, F., Smith, M., Thornton, B., Yu, D., Zacny, K., 2019. New insights in geobiological characterization of terrestrial and planetary underwater vent systems. *Goldschmidt, August 2019, Barcelona, Spain*.
- Hermis, N.; Barge, L.M.; **Price, R.E.**; LeBlanc, G.; 2019. Simulation of iron hydroxide and magnesium silicate hydrothermal chimney systems in a thermal gradient environment. *AbSciCon conference, June 2019, Washington*.
- Sobron, P., LM Barge, J Amend, J Burnett, R Detry, I Doloboff, DS Kelley, A Marburg, AK Misra, A Nawaz, **RE Price**, M Smith, K Zacny, B Thornton. 2019. Exploring Underwater Vent Systems: New Technologies and

Strategies to Advance Life Detection and Scientific Understanding of Ocean Worlds. *AGU Fall Meeting Abstracts*.

Debret, B., Mattielli, N., Albers, E., Walter, B., **Price, R.E.**, Barnes, J.D., Beunon, H., Williams, H., Role of the forearc in the geochemistry of subduction zones: new insights from the IODP expedition 366. Goldschmidt 2018, Boston, MA, USA.

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Lever, M.A., Eickenbusch, P., Torti, A., Hoshino, T., Inagaki, F., Jørgensen, B.B., Liu, C., Marshall, IPG & IODP Expeditions 337, 347, and **366 Scientists**. Recent developments in the use of perfluorocarbon tracers for contamination monitoring in ocean drilling. Deep Carbon Observatory. Edinburgh, 2017.

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***Price, R.E., 2016.** Understanding the diversity and geochemical evolution of hydrothermal vents on Earth to improve exploration on other worlds. ELSI/TDE Meeting: “Requirements for Origin of Life Field Investigations” October 5-7, 2016. Tokyo, Japan.

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