

# JULIE A. HUBER

Josephine Bay Paul Center  
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## 1. EDUCATION

2005-2006 NRC/NASA Postdoctoral Fellow, Marine Biological Laboratory  
2004 Ph.D., University of Washington, Biological Oceanography  
2002 M.S., University of Washington, Biological Oceanography  
1998 B.S., Eckerd College, Marine Science (Biology)

## 2. ADMINISTRATIVE AND PROFESSIONAL APPOINTMENTS

2014-present Associate Professor (MBL), Ecology & Evolutionary Biology, Brown University  
2013-present Associate Director, Josephine Bay Paul Center, Marine Biological Laboratory  
2013-present Associate Scientist, Marine Biological Laboratory  
2008-2014 Assistant Professor (MBL), Ecology & Evolutionary Biology, Brown University  
2007-2012 Assistant Scientist, Marine Biological Laboratory

## 3. PUBLICATIONS

### A. Refereed Journal Articles

1. Fortunato, C.F. and **J.A. Huber**. In Press. Coupled RNA-SIP and metatranscriptomics of active chemolithoautotrophic communities at a deep-sea hydrothermal vent. *ISME Journal*.
2. Reveillaud, J., Reddington, E., McDermott, J., Meyer, J.L., Algar, C., Sylva, S., Seewald, J., German, C.G., and **J.A. Huber**. In Press. Subseafloor microbial communities in hydrogen-rich vent fluids from hydrothermal systems along the Mid-Cayman Rise. *Environmental Microbiology*.
3. Angermeyer, A.A., Crosby, S.C. and **J.A. Huber**. 2015. Decoupled distance-decay patterns between *dsrA* and 16S rRNA genes among salt marsh sulfate-reducing bacteria. DOI:10.1111/1462-2920.12821 *Environmental Microbiology*.
4. Meyer, J.L. and **J.A. Huber**. 2014. Strain-level genomic variation in natural populations of *Lebetimonas* from an erupting deep-sea volcano. *ISME Journal*. 8:867–880.
5. Reveillaud, J., Maignien, L, Eren, M., Apprill, A., **Huber, J.A.**, Sogin, M.L, and A. Vanreusel. 2014. Host-specificity among abundant and rare taxa in the sponge microbiome. *ISME Journal*. 8:1198-1209.

6. Reed, D.C., Algar, C.K, **Huber, J.A.** and G.J. Dick. 2014. Gene-centric approach to integrating environmental genomics and biogeochemical models. *Proceedings of the National Academy of Sciences*. 111:1879-84.
7. Orcutt, B. N., LaRowe, D. E., Lloyd, K. G., Mills, H., Orsi, W., Reese, B. K., Sauvage, J., **Huber, J. A.**, and Amend, J. 2014. IODP Deep Biosphere Research Workshop report – a synthesis of recent investigations, and discussion of new research questions and drilling targets. *Scientific Drilling*. 17:61–66.
8. Merkel, A., **Huber, J.A.**, Chernyh, N., Bonch-Osmolovskaya, E. and A. Lebedinsky. 2013. Detection of putatively thermophilic anaerobic methanotrophs (ANMEs) in diffuse hydrothermal vent fluids. *Applied and Environmental Microbiology*.79:915-923.
9. Bennett, S.A., Coleman, M., **Huber, J.A.**, Reddington, E., Kinsley, J.C., McIntyre, C., Seewald, J.S., and C.R. German. 2013. Trophic regions of a hydrothermal plume dispersing away from an ultramafic-hosted vent-system: Von Damm vent-site, Mid-Cayman Rise. *Geochemistry Geophysics Geosystems*. 14:317-327.
10. Ver Eecke H.C., Akerman, N.H., **Huber, J.A.**, Butterfield, D.A., and J.F. Holden. 2013. Growth kinetics and energetics of a deep-sea hyperthermophilic methanogen under varying environmental conditions. *Environmental Microbiology Reports*. 5:665-671.
11. Meyer, J.L., Akerman, N.H., Proskurowski, G. and **J.A. Huber**. 2013. Microbiological characterization of post-eruption “snowblower” vents at Axial Seamount, Juan de Fuca Ridge. *Frontiers in Microbiology*. 4:153.
12. Akerman, N.H, Butterfield, D.A, and **J.A. Huber**. 2013. Phylogenetic diversity and functional gene patterns of sulfur-oxidizing subseafloor *Epsilonproteobacteria* in diffuse hydrothermal vent fluids. *Frontiers in Microbiology*. 4:185
13. Ver Eecke, H.C., Butterfield, D.A., **Huber, J.A.**, Lilley, M.D., Olson, E.J., Roe, K.K., Evans, L.J., Merkel, A.Y., Cantin, H.V., and J.F. Holden. 2012. Hydrogen-limited growth of hyperthermophilic methanogens at deep-sea hydrothermal vents. *Proceedings of the National Academy of Sciences*.109:13,674–13,679.
14. Breier, J.A., Gomez-Ibanez, D., Reddington, E., **Huber, J.A.**, and D. Emerson. 2012. A precision multi-sampler for deep-sea hydrothermal microbial mat studies. *Deep-Sea Research Part I: Oceanographic Research Papers*.70:83-90.
15. Resing, J.A, Rubin, K.H., Embley, R.W., Lupton, J.E., Baker, E.T. Dziak, R.P., Baumberger, T., Lilley, M.D., **Huber, J.A.**, Shank, T.M., Butterfield, D.A., Clague, D.A., Keller, N.S., Merle, S.G., Buck, N.J., Michael, P.J., Soule, A. Caress, D.W., Walker, S.L. Davis, R., Cowen, J.P., Reysenbach, A-L., and H. Thomas. 2011. Active submarine eruption of boninite in the northeastern Lau Basin. *Nature Geoscience*. 4:799-806.

16. German, C.R., Bowen, A., Coleman, M.L., Honig, D.L., **Huber, J.A.**, Jakuba, M.V., Kinsey, J.C., Kurz, M.D., Leroy, S., McDermott, J.M, Mercier de Lépinay, B., Nakamura, K., Seewald, J.S., Smith, J.L., Sylva, S.P., Van Dover, C.L., Whitcomb, L.L., and D.R. Yoerger. 2010. Diverse styles of submarine venting on the ultraslow spreading Mid-Cayman Rise. *Proceedings of the National Academy of Sciences*. 107:14,020-14,025.
17. Schrenk M.O., **Huber, J.A.**, and K.J. Edwards. 2010. Microbial Provinces in the Subseafloor. *Annual Review of Marine Science*. 2:279-304.
18. **Huber, J.A.**, Cantin, H.V., Huse, S.M., Mark Welch, D.B., Sogin, M.L., and D.A. Butterfield. 2010. Isolated communities of *Epsilonproteobacteria* in hydrothermal vent fluids of the Mariana Arc seamounts. *FEMS Microbiology Ecology*. 73:538-549.
19. **Huber, J.A.**, Morrison, H.G., Huse, S.M., Neal, P.R, Sogin, M.L., and D.B. Mark Welch. 2009. Effect of PCR amplicon size on assessments of clone library microbial diversity and community structure. *Environmental Microbiology*. 11:1292-1302.
20. Huse, S.M., Dethlefsen, L., **Huber, J.A.**, Mark Welch, D.B., Relman, D.A., and M.L. Sogin. 2008. Exploring microbial diversity and taxonomy using SSU rRNA hypervariable tag sequencing. *PLoS Genetics* 4:e1000255.
21. **Huber, J.A.**, Mark Welch, D.B., Morrison, H.G., Huse, S.M., Neal, P.R., Butterfield, D.A., and M.L. Sogin. 2007. Microbial population structures in the deep marine biosphere. *Science*. 318:97-100.
22. Huse, S.M., **Huber, J.A.**, Morrison, H.G., Sogin, M.L., and D.B. Mark Welch. 2007. Accuracy and quality of massively-parallel DNA pyrosequencing. *Genome Biology*. 8: R143.
23. **Huber, J.A.**, Butterfield, D.A, and J.A. Baross. 2006. Diversity and distribution of subseafloor Thermococcales populations in diffuse hydrothermal vents at an active deep-sea volcano in the northeast Pacific Ocean. *Journal of Geophysical Research, Biogeosciences*. 111:G04016.
24. **Huber, J.A.**, Butterfield, D.A., Johnson, H.P., and J.A. Baross. 2006. Microbial life in ridge flank crustal fluids. *Environmental Microbiology*. 88:88-99.
25. Sogin, M.L., Morrison, H.G., **Huber, J.A.**, Mark Welch, D.B., Huse, S.M., Neal, P.R., Arrieta, J.M., and G.J. Herndl. 2006. Microbial diversity in the deep sea and the under-explored “rare biosphere.” *Proceedings of the National Academy of Sciences*. 103:12,115-12,120.
26. Mehta, M.P., **Huber, J.A.**, and J.A. Baross. 2005. Incidence of novel and potentially archaeal nitrogenase genes in the deep NE Pacific Ocean. *Environmental Microbiology*. 7:1525-1534.

27. **Huber, J.A.**, Butterfield, D.A., and J.A. Baross. 2003. Bacterial diversity in a subseafloor habitat following a deep-sea volcanic eruption. *FEMS Microbiology Ecology*. 43:393-409.
28. **Huber, J.A.**, Butterfield, D.A., and J.A. Baross. 2002. Temporal changes in archaeal diversity and chemistry in a mid-ocean ridge subseafloor habitat. *Applied and Environmental Microbiology*. 68:1585-1594.

### B. Book Chapters

1. Vallino, J.J., Algar, C.K., Fernandez Gonzalez, N., and **J.A. Huber**. 2014. Use of receding horizon optimal control to solve MaxEP-based biogeochemistry problems. In Dewar, R.C., Lineweaver, C., Niven, R. and Regenauer-Lieb, K., (eds), 337-359. *Beyond the Second Law: Entropy Production and Non-Equilibrium Systems*. Springer, Berlin, Germany.
2. **Huber, J.A.** and J.F. Holden. 2008. Modeling the impact of diffuse vent microorganisms along mid-ocean ridges and flanks. In Lowell, R.P., J. S. Seewald, A. Metaxas, and M.R. Perfit (eds.), 215-231. *Magma to Microbe: Modeling Hydrothermal Processes at Oceanic Spreading Ridges*. American Geophysical Union Press, Washington, D.C.
3. Wells, L.E, Armstrong, J.C. and **J.A. Huber**. 2007. Disciplinary aspirations and educational opportunities. In W.T. Sullivan III and J.A. Baross (eds.), 547-557. *Planets and Life: The Emerging Science of Astrobiology*. Cambridge University Press, Cambridge, UK.
4. Baross, J.A., Schrenk, M.O, and **J.A. Huber**. 2007. Limits of Carbon Life on Earth and Elsewhere. In W.T. Sullivan III and J.A. Baross (eds.), 275-291. *Planets and Life: The Emerging Science of Astrobiology*, Cambridge University Press, Cambridge, UK.
5. Butterfield, D.A., Lilley, M.D., **Huber, J.A.**, Roe, K.K., Embley, R.W., Baross, J.A., and G.J. Massoth. 2004. Mixing, reaction, and microbial activity in sub-seafloor hydrothermal upflow zones: Evidence from diffuse flow outcrops across the 1998 Axial Volcano Sea-floor eruption area through time. In W.S.D. Wilcock, E.F. DeLong, D.S. Kelley, J.A. Baross, and S.C. Cary (eds.), 269-289. *The Subseafloor Biosphere at Mid-Ocean Ridges*. American Geophysical Union Press, Washington, D.C.

### C. Non-refereed Journal Articles

1. **Huber, J.A.** 2015. Making methane down deep. *Science*. 349:376-377.
2. C.R. German, Tyler, P.A., McIntyre, C., Amon, D., Cheadle, M., Clarke, J., John, B., McDermott, J., Bennett, S., **Huber, J.A.**, Kinsey, J., Seewald, J. Van Dover, C., and K. Elliott. 2014. Exploration of the Mid-Cayman Rise. *Oceanography*. 25:52-53.
3. **Huber, J.A.** 2012. Microbial Oceanography. *iBio Magazine*.  
<http://www.ibiomagazine.org/issues/september-2012-issue/julie-huber.html>.

4. Chadwick, W.W., Butterfield, D.A., Embley, R.W., Tunnicliffe, V., **Huber, J.A.**, Nooner, S., and D. Clague. 2010. Spotlight: Axial Seamount. *Oceanography*. 23:38-39.
5. Bach, W., Edward, K.J, Hayes, J.M., **Huber, J.A.**, Sievert, S.M., and M.L. Sogin. 2006. Energy in the dark: Fuel for life in the deep ocean and beyond. *Eos, Transactions AGU*. 87:73-78.
6. Johnson, H.P. and LEXEN Scientific Party. 2003. Probing for life in the ocean crust with the LEXEN program. *Eos, Transactions AGU*. 84:109-112.

#### D. Manuscripts in Review

1. Meyer, J.L, Jaekel, U., Tully, B. Glazer, B.T., Wheat, C.G., H-T, Lin., C-C, Hsieh, Cowen, J.P., Hulme, S.M., Girguis, P.R., and **J.A. Huber**. In revision at *Scientific Reports*. A distinct and active bacterial community in cold oxygenated fluids circulating beneath Mid-Atlantic seafloor.

#### 4. AWARDS AND HONORS

2010	Neal Cornell Career Development Award, MBL
2007	L'Oréal USA Fellowship for Women In Science
2007	NSF RIDGE 2000 Distinguished Lecturer
2004	National Research Council Research Associateship Award
2003	Dean A. McManus Excellence in Teaching Award, University of Washington
1998-2001	National Science Foundation Graduate Research Fellowship

#### 5. GRANTS

##### A. Current grants

NSF 10/01/2015 - 09/30/2020  
**Center for Dark Energy Biosphere Investigations (C-DEBI), Phase II**  
 Role: CoI, Associate Director (PI Jan Amend, USC; CoIs, Steve D'Hondt, Univ. Rhode Island; Andrew Fisher, UC Santa Cruz; Geoff Wheat, Univ. Alaska, Fairbanks)  
 Total Award: \$1,131,502 (Subcontract from USC to MBL)

NSF 04/01/2014 – 09/30/2016 (NCE)  
**Center for Dark Energy Biosphere Investigations (C-DEBI), Phase I**  
 Role: Associate Director (PI Jan Amend, USC; CoIs, Steve D'Hondt, Univ. Rhode Island; Andrew Fisher, UC Santa Cruz; Geoff Wheat, Univ. Alaska, Fairbanks; Michael Rappe, Univ. Hawaii)  
 Source of Support: NSF  
 Total Award: \$317,195 (Subcontract from USC to MBL)

NSF 04/15/2015 – 03/31/2016  
**Application of thermodynamic theory for predicting planetary microbial biogeochemistry**  
 Role: CoI (PI Joe Vallino, MBL)  
 Total Award: \$203,658

Gordon and Betty Moore Foundation 06/01/2012-05/31/2016 (NCE)  
**Functional Dynamics, Interactions and Biogeochemical Impact of Chemolithoautotrophic Subseafloor Microbial Ecosystems at Axial Seamount, a Mid-Ocean Ridge Cabled Observatory**  
 Role: PI (CoIs, Joe Vallino, MBL; David Butterfield and Giora Proskurowski, Univ. Washington; James Holden, Univ. Mass, Amherst; Lisa Zeigler, JCVI)  
 Total Award: \$2,258,547

## B. Completed Grants

NSF 06/01/2011-05/31/2015  
**Collaborative Research: Characterization of Microbial Transformations in Basement Fluids, from Genes to Geochemical Cycling**  
 Role: PI (CoIs, Peter Girguis, Harvard and Brian Glazer, Univ. Hawaii)  
 Total Award: \$422,270

The Alfred P. Sloan Foundation 01/01/2012-6/30/2014  
**Deep Life I: Microbial Carbon Transformations in Rock-Hosted Deep Subsurface Habitats**  
 Role: MBL PI (PI, Matthew Schrenk, East Carolina Univ.; CoIs, Doug Bartlett, Scripps Inst. Oceanography; Dawn Cardace, Univ. Rhode Island; Isabelle Daniel, Univ. Lyon; Tori Hoehler, NASA AMES; Merja Itävaara, VTT Finland; Paul McMillan, Univ. College London; Tullis Onstott, Princeton; Ramunas Stepanauskas, Bigelow Lab. Ocean Sciences)  
 Total Award: \$441,410 (Subcontract from ECU to MBL)

Schmidt Ocean Institute 9/20/2013-10/5/2013  
**Functional Dynamics, Interactions and Biogeochemical Impact of Chemolithoautotrophic Subseafloor Microbial Ecosystems at Axial Seamount, a Mid-Ocean Ridge Cabled Observatory**  
 Role: PI (CoIs, David Butterfield and Giora Proskurowski, Univ. Washington; James Holden, Univ. Mass, Amherst; Lisa Zeigler, JCVI)  
 Total Award: \$0, Provides 2 weeks of ship and ROV time with leveraging from Moore Foundation grant for science support

The Alfred P. Sloan Foundation 03/01/2011-02/28/2012  
**Hydrogenase expression patterns and isotopic biosignatures of hydrogen-utilizing bacteria from deep-sea hydrothermal vents**  
 Role: CoI (PI, Marilyn Fogel, Carnegie Inst. Washington)  
 Total Award: \$10,000

NOAA 08/01/2010-07/31/2013

**Exploration of Active Volcanism and Hydrothermal Systems in the NE Lau Basin**

Role: CoI (PI, Robert Embley, NOAA/PMEL; CoIs, Edward Baker and John Lupton , NOAA/PMEL; William Chadwick, Robert Dziak, Haru Matsumoto, Oregon State Univ; David Butterfield, Joseph Resing, Marvin Lilley, Univ. Washington; Timothy Shank, WHOI)

Total Award: \$28,083

NSF 08/15/2010-07/31/2013

**MRI: Acquisition of an Illumina GAIx for Genomics and Microbial Ecology**

Role: CoI (PI, Mitchell Sogin, MBL; CoIs, David Mark Welch, Hilary Morrison, Jennifer Wernergreen, MBL)

Total Award: \$548,090

Brown University 07/15/2010-07/14/2012

**Biogeography, diversity and function of salt marsh bacterial communities: a reciprocal transplant experiment**

Role: PI (CoI, Heather Leslie, Brown Univ.)

Total Award: \$24,939

NSF 09/15/2009-08/31/2013

**Collaborative Research: Function, activity, and adaptation of microbial communities in geochemically diverse seafloor habitats**

Role: PI (CoIs, David Butterfield, Univ. Washington; Allison Beauregard, Northwest Florida State College)

Total Award: \$470,582

NSF 09/01/2009-08/31/2013

**Theory: Biological systems organize to maximize entropy production subject to information and biophysiochemical constraints**

Role: CoI (PI, Joe Vallino, MBL)

Total Award: \$750,000

NSF 04/01/2009- 03/31/2010

**Collaborative Research: Rapid Response to a Submarine Eruption at W. Mata Volcano**

Role: CoI (PI, Joseph Resing, Univ. Washington; CoIs, Ken Rubin and James Cowen, Univ. Hawaii)

Total Award: \$29,789

NASA 01/01/2009-12/31/2013

**Oases for Life and PreBiotic Chemistry: Hydrothermal Exploration using Advanced Underwater Robotics**

Role: MBL PI (PI, Chris German, WHOI; CoIs, Max Coleman, JPL; Jeff Seewald, WHOI; Cindy Van Dover, Duke University)

Total Award: \$506,510 (Subcontract to MBL from WHOI)

NASA 7/21/2008-10/31/2010  
**Modeling methane flux in the seafloor: Quantification and diversity analysis of methanogenic archaea from deep-sea hydrothermal vents**  
 Role: PI  
 Total Award: \$49,567

The Gordon and Betty Moore Foundation 01/01/2008-12/31/2010  
**The Deep Subsurface Biosphere at North Pond: A Mid-Atlantic Ridge Microbial Observatory**  
 Role: MBL PI (PI, Katrina Edwards, USC; CoIs, James Cowen and Brian Glazer, Univ. Hawaii; Peter Girguis, Harvard; Geoff Wheat, Univ. Alaska)  
 Total Award: \$35,000 (Subcontract from USC to MBL)

L'Oreal USA For Women in Science 05/24/2007-05/31/2009  
**Microbial Ecology of Seafloor Communities at Deep-Sea Hydrothermal Seamounts**  
 Role: PI  
 Total Award: \$40,000

## 6. TEACHING EXPERIENCE

2015 Faculty, "Experimental Biology by the Sea," MBL and University of Chicago  
 2015 Instructor, "Alvin Boot Camp," WHOI and DESSC  
 2011 Course Designer, "Reverse Ecology," MBL and Brown University IGERT  
 2010-present Lecturer, "Microbial Diversity Course," MBL  
 2008-present Faculty, Semester in Environmental Sciences, "Microbial Ecology," MBL  
 2003 Teaching Assistant, "Oceanography 101," University of Washington  
 2001 Teaching Assistant, "Biological Oceanography," University of Washington

## 7. SERVICE TO THE PROFESSION AND COMMUNITY

2015-present Senior Editor, *mSystems*  
 2015-present Editorial Board, *Environmental Microbiology*  
 2013-present Associate Director, NSF Science and Technology Center for Dark Energy Biosphere Investigations (C-DEBI)  
 2010-2011 Member, The National Academies National Research Council committee on "Review of the Scientific Accomplishments and Assessment of the Potential for Future Transformative Discoveries with U.S. Supported Scientific Ocean Drilling"  
 2009-2013 Associate Member, SCOR/InterRidge Working Group "Hydrothermal energy transfer and its impact on ocean carbon cycles"  
 2009-2012 Steering Committee, NSF *Deep Biosphere* Research Coordination Network  
 2008,12,15 Invited review panel member, NSF  
 2007 Invited review panel member, NASA



- 2004-present Ad-hoc reviewer for NSF, IODP, NASA, NOAA, NURP, *Applied and Environmental Microbiology*, *Deep Sea Research*, *Environmental Microbiology*, *Estuarine Coastal and Shelf Science*, *FEMS Microbiology Ecology*, *Frontiers in Microbiology*, *Geobiology*, *Geochemistry Geophysics Geosystems*, *Geology*, *Journal of Geophysical Research*, *ISME Journal*, *Microbiology*, *Nature*, *Nature Reviews Microbiology*, *PNAS*, and *Science*
- 1998-present Participant in ~20 deep-sea research cruises, 2 as Chief Scientist

## 8. SERVICE TO MBL AND BROWN

- 2015 Invited Speaker, University of Chicago and Affiliated Laboratories: Powerful Partners in Transformative Science
- 2015-present Member, MBL Directors Council
- 2014 Organizing Committee, MBL-Chicago-Argonne 2<sup>nd</sup> Retreat
- 2014 Member, MBL/Chicago Director Search Scientific Advisory Committee
- 2013-present Associate Director, MBL Josephine Bay Paul Center"
- 2011-2014 Member, MBL Institutional Committee
- 2009-present Member, MBL Corporation, now MBL Society
- 2008-present Co-Leader (with Zoe Cardon), MBL-Brown Micro-Eco Discussion Group
- 2008 Member, MBL Science Council Nominating Committee

## 9. INVITED SEMINARS

- 2016 Life in the subsurface: The Geomicrobiology of the Deep Biosphere  
20th German-American Kavli Frontiers of Science Symposium.  
Potsdam, Germany
- 2015 Microbes, fluids, and rocks: Life beneath the seafloor  
University of Tennessee, Knoxville. Knoxville, TN
- 2015 Looking for life in all the weird places  
The University of Chicago and Affiliated Laboratories: Powerful Partners in Transformative Science
- 2014 Microbial ecology of deep-sea hydrothermal vents  
University of Chicago. Chicago, IL
- 2014 Microbial ecology of subseafloor hydrothermal systems  
University of Minnesota. St. Paul-Minneapolis, MN
- 2014 Microbial life in a cold, hydrologically active oceanic crust  
Woods Hole Oceanographic Institution. Woods Hole, MA
- 2013 Pushing the limits: Microbial life at deep-sea hydrothermal vents  
Bridgewater State University. Bridgewater, MA

- 2013      Microbial ecology of deep-sea hydrothermal vents  
United States Military Academy. West Point, NY
- 2012      Microbial ecology of deep-sea hydrothermal vents  
Yale University. New Haven, CT
- 2010      Exploding submarine volcanoes and microbial life in the deep sea  
Stockholm University. Stockholm, Sweden.  
University of Washington. Seattle, WA
- 2010      Microbial ecology of seafloor communities at deep-sea hydrothermal vents  
University of Massachusetts, Amherst. Amherst, MA
- 2008      Microbial life in the seafloor biosphere  
Massachusetts Institute of Technology. Cambridge, MA
- 2008      Microbial ecology of seafloor communities at deep-sea hydrothermal vents  
Woods Hole Oceanographic Institution. Woods Hole, MA
- 2008      Pushing the limits: Microbial life at deep-sea hydrothermal vents  
University of West Florida. Pensacola, FL  
University of Missouri. Columbia, MO  
Indiana University of Pittsburgh. Indiana, PA
- 2006      Microbial ecology of seafloor communities at deep-sea hydrothermal vents  
University of Connecticut. Storrs, CT
- 2003      Microbial ecology of deep-sea hydrothermal vents  
Eckerd College, St. Petersburg, FL

**10. CONFERENCE ACTIVITY****A. Invited**

- 2015      Microbial life beneath the seafloor  
American Society for Microbiology General Meeting. New Orleans, LA
- 2015      Carbon cycling beneath the seafloor  
Gordon Research Conference on Applied and Environmental Microbiology  
Mount Holyoke, MA
- 2015      How geochemical landscapes shape seafloor microbial communities at deep-sea hydrothermal vents.  
Gordon Research Conference on Chemical Oceanography. Holdren, NH

- 2015      Microbial and viral research at Axial Seamount  
NOVAE - Networked Observations and Visualizations of the Axial Environment  
Seattle, WA
- 2014      Pushing the limits: Microbial life at deep-sea hydrothermal vents  
Advancing STEM Education CASE Conference, K-12 Educators.  
Bridgewater, MA
- 2013      Subseafloor microbial life in venting fluids from the Mid Cayman Rise  
hydrothermal system  
Deep Carbon Observatory General Meeting. Washington, DC  
Deep Carbon Observatory Deep Life Meeting. Portland, OR
- 2012      Meet the marine intraterrestrials  
Gordon Research Conference on Marine Microbes. Berga, Italy
- 2012      Subseafloor microbial life in venting fluids from the Mid Cayman Rise  
hydrothermal system  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2011      Biological communities at and beneath the seafloor at Axial Seamount  
Axial RSN Science Workshop (NSF). Seattle, WA
- 2009      Microbial diversity of subseafloor communities at deep-sea hydrothermal vents  
Bacterial Genetics and Ecology Conference (BAGECO-10). Uppsala, Sweden
- 2009      Rare microbial populations in the deep ocean  
American Society of Microbiology General Meeting. Philadelphia, PA
- 2008      Using crustal fluids to peer into the subseafloor microbial habitat  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2007      Microbial diversity in the deep-sea  
Microbial Genomics. Hinxton Cambridge, UK
- 2006      Microbial diversity in the deep sea and the under-explored “rare biosphere”  
14<sup>th</sup> Annual Meeting on Microbial Genomics. Lake Arrowhead, CA
- 2006      Microbial ecology of subseafloor communities at deep-sea hydrothermal  
seamounts  
International Census of Marine Microbes (ICoMM) First Annual Meeting.  
Noordwijkerhout, Netherlands

**B. Contributed**

- 2014 Investigating microbes, viruses, and carbon across thermal and chemical gradients in the seafloor at Axial Seamount  
Gordon Conference on Marine Microbes. Waltham, MA
- 2014 An active microbial community in fluids circulating through the cold oceanic crust beneath the Mid-Atlantic seafloor  
International Society of Subsurface Microbiology. Pacific Grove, CA
- 2014 Application of RNA Stable Isotope Probing (SIP) to link community activity with microorganisms responsible for autotrophy in the seafloor at Axial Seamount  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2013 Microbial anaerobic methane cycling in the seafloor at the Von Damm hydrothermal vent field, Mid-Cayman Rise  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2009 Molecular diversity and activity of methanogens in the seafloor at deep-sea hydrothermal vents of the Pacific Ocean  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2009 Microbial communities in erupting fluids from West Mata Volcano, Tonga Arc  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2008 Using 454 tag sequencing to determine the diversity and distribution of seafloor indicator organisms at deep-sea hydrothermal seamounts of the Pacific Ocean  
American Society of Microbiology General Meeting. Boston, MA
- 2008 Seafloor archaeal communities at deep-sea hydrothermal seamounts  
Astrobiology Science Conference. Santa Clara, CA
- 2006 Deep sampling of bacterial diversity at diffuse flow hydrothermal vents on Axial Seamount, Juan de Fuca Ridge  
RIDGE Theoretical Institute: From Magma to Microbes. Mammoth Lakes, CA
- 2006 The International Census of Marine Microbes (ICoMM) and a strategy for exploring microbial diversity throughout the world's oceans  
Seamount Biogeosciences Network Workshop. La Jolla, CA
- 2006 Metagenomics of diffuse hydrothermal vents: Determining the distribution of anaerobic thermophilic life in seafloor habitats  
Astrobiology Science Conference. Washington, DC

- 2006      Microbial ecosystems and their connection to hydrothermal flow  
RIDGE Theoretical Institute: From Magma to Microbes. Mammoth Lakes, CA
- 2005      Describing the anaerobic thermophilic seafloor population: A metagenomic  
strategy  
Thermophiles 2005. Gold Coast, Australia
- 2005      Diversity and distribution of key seafloor hyperthermophilic archaea at an active  
deep-sea volcano  
NASA Astrobiology Institute 2005 General Meeting. Boulder, CO
- 2005      Microbial life in ridge flank crustal fluids at Baby Bare Seamount, Juan de Fuca  
Ridge  
American Geophysical Union Fall Meeting. San Francisco, CA
- 2003      Evidence for a seafloor habitat in a 3.5 MA ridge-flank crustal fluids at Baby  
Bare Seamount, Eastern flank, Juan de Fuca Ridge  
Geological Society of America. Seattle, WA
- 2003      Characterization of novel seafloor isolates from a deep-sea volcano in the NE  
Pacific  
NASA Astrobiology Institute General Meeting. Tempe, AZ
- 2002      Microbial diversity and geochemistry at an active deep-sea volcano in the NE  
Pacific: Implications for modeling the subsurface biosphere on Earth and other  
solar bodies  
NATO Advanced Studies Institute Perspectives in Astrobiology. Crete, Greece
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