

## CURRICULUM VITAE - *Stefan M. Sievert*

### **Stefan M. Sievert**

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### **EDUCATION**

1999 Ph.D. (summa cum laude), Microbial Ecology, Max-Planck-Institute for Marine Microbiology (MPI-MM) and University of Bremen, Germany.

1996 M.S. (Diplom, grade 1.0), Biological Oceanography, Alfred-Wegener Institute for Polar- and Marine Research and University of Bremen, Germany.

1992/93 Visiting graduate student (Fulbright Grantee), University of Washington (Seattle, WA).

1990 B.S. (Vordiplom, grade 1.0), Biology, Johannes Gutenberg-University, Mainz, Germany.

### **PROFESSIONAL EXPERIENCE**

2012 – Associate Scientist w/ Tenure, Woods Hole Oceanographic Institution (WHOI)

2007 – 2012 Associate Scientist, WHOI

2002 – 2006 Assistant Scientist, WHOI

2002 Postdoctoral Investigator, WHOI

2000 – 2002 Postdoctoral Scholar, WHOI

1999 – 2000 Postdoctoral Investigator, MPI-MM, Bremen, Germany

### **RESEARCH INTERESTS**

Composition, diversity, and function of microbial communities, with the goal to understand the relationship between microorganisms and their biogeochemical transformations. Special interests include chemosynthetic processes that are important in a variety of environments, such as hydrothermal systems, oxygen minimum zones, and sulfidic marine sediments. An emphasis is on organisms involved in sulfur cycling, and the evolution and ecological importance of CO<sub>2</sub>-fixation pathways other than the Calvin-Benson-Bassham cycle.

### **HONORS AND AWARDS**

2019 Doherty Chair in Education, WHOI

2017 Tenured Associate Scientist Award, WHOI

2015 Invited professorship at the Université Pierre et Marie Curie (Paris VI).

2010 Senior Fellowship of the Alfried Krupp Wissenschaftskolleg Greifswald (Institute for Advanced Studies), Greifswald, Germany.

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- 2004 Fellowship of the Hanse Wissenschaftskolleg (Institute for Advanced Studies), Delmenhorst, Germany
- 2000 Postdoctoral Scholar Award in Ocean Science and Engineering, WHOI
- 1992 Fulbright Scholarship, visiting graduate student at the School of Oceanography, University of Washington, Seattle, WA, sponsor: Prof. John A. Baross

### SCIENTIFIC LEADERSHIP ACTIVITIES

- Chief Scientist on five expeditions to deep-sea hydrothermal vents with R/V *Atlantis* and HOV *Alvin* (4) and ROV *Jason* (1) (2008 - 2017).
- Organizer of International Symposium on Chemosynthetic-Based Ecosystems (CBE6) and associated Morss Colloquium on 40<sup>th</sup> Anniversary of Discovery of Deep-Sea Vents and Implications for Life on Earth and Elsewhere (Woods Hole, MA, USA, August 2017).
- Lead-PI of NSF Dimensions of Biodiversity Grant (2011 – 2016). Involved five Co-PIs from four US institutions and collaborators from three countries (China, France, Germany). Chief scientist of research cruises and organizer of several project meetings.
- Associate member of SCOR working group ‘Hydrothermal energy transfer and its impact on the ocean carbon cycles’ and corresponding mirror group at InterRidge. Participated in meetings, contributed to reports, and contributed to manuscript summarizing outcome of working group<sup>60</sup>.
- Organizer/chair of sessions at international meetings:
  - Co-organizer (with Solveig Bühring and Andrea Koschinsky) of session entitled “Microbial Biogeochemistry of Hydrothermal Vents in Shallow and Deep Waters: Commonalities and Differences” at the ASLO Ocean Sciences Meeting in New Orleans, MS, USA, February 21-26, 2016 (came up with idea, organized session and selected presentations. In the end, could not attend due to conflict with research cruise).
  - Co-organizer (with Karen Lloyd) of session entitled “Role and significance of chemosynthesis in the ocean’ at ASLO Aquatic Sciences Meeting in New Orleans, MS, USA, February 17-22, 2013.
  - Co-organizer (with Nadine Le Bris) of session entitled “Pathways and regulation of energy and carbon transfer in extreme deep-sea environments” at Goldschmidt Conference, June 22-26, 2009, Davos, Switzerland.
  - Co-Organizer (with Nadine Le Bris) of session entitled “From molecules to organisms: Chemoautotrophic pathways and mechanisms of energy transfer in extreme marine environments” at ASLO Aquatic Sciences Meeting, January 25-30, 2009, Nice, France.
  - Member of organizing committee of the InterRidge Theoretical Institute and workshop on “Biogeochemical Interactions at Deep-Sea Vents”, Woods Hole, MA, USA, September 10-14, 2007 and co-chair of working group “Life in extreme environments: strategies and adaptations”.

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- Co-Convener (with KT Scott) of symposium entitled “Insights Into the Sulfur Cycle Through Genomics” American Society of Microbiology General Meeting, Orlando, FL, USA, May 21-26, 2006
- Co-Organizer (with Wolfgang Bach and Katrina Edwards) of workshop on “Dark Energy” at WHOI, MA, USA, Oct 3<sup>rd</sup> - Oct 5<sup>th</sup> 2004.
- Co-organizer of a session on “Geomicrobiology of Hydrothermal Vents” at Aquatic Sciences Meeting of ASLO, Salt Lake City, UT, USA, Feb 8-14 2003.
- Chair of session on “Chemosynthetic Processes at Oxic-Anoxic Interfaces” at the Aquatic Sciences Meeting of the American Society of Limnology and Oceanography (ASLO), Albuquerque, NM, USA, Feb 12-16 2001.

### OUTREACH ACTIVITIES

- The research cruises AT26-10, AT26-23, and AT37-12 on R/V *Atlantis* with either ROV *Jason-II* or *HOV Alvin*, respectively, involved various outreach efforts targeting K-12. This included a highly successful [Dive & Discover Expedition 15](#) website during AT26-10 with science writer David Levin, the [Dark Life cruise blog](#) during AT26-23 and AT37-12, online blogs and print articles in various Scholastic magazines by Scholastic science writer Jennifer Barone during AT26-10 and AT26-23, and a live feed from the ship to the New Bedford Ocean Explorium Family Night during AT26-10.
- Visits to the New Bedford Ocean Explorium Family Night after AT26-10 and to various school classes in Massachusetts (Falmouth, Foxboro, Lexington) before and after the cruises (Grades 2 – 6)
- Invited presentation at the Massachusetts Marine Educators conference in 2014.
- I have worked with teacher Lisa Troy on an Engineering Design Challenge related to an instrument we have developed with NSF funds (Vent-SID) for a 6<sup>th</sup> grade class at The Sage School in Foxboro, MA. As part of the project, the students had to design, build, and test a sampling chamber using the design and engineering process. As part of the project, I visited the school several times. The class visited WHOI in February to see the Vent-SID first hand and also to get an overview of the research carried out at the institution. The students also followed the cruise through a blog site, as well as by having a live feed via Skype, during which they witnessed the launch of Alvin first-hand. This project was described in a manuscript entitled *Engineering Partnerships: How collaborating with a scientist created an authentic engineering problem* that was published at Science Scope, a journal by the National Science Teachers Association for middle and high school science teachers.
- Adapting published PNAS paper for the [Science Journal for Kids](#)

### ADDITIONAL PROFESSIONAL ACTIVITIES

- Funding Agencies: NSF panel member, ad hoc reviewer for NSF and foreign funding agencies (Germany, Austria, Chile), private research foundations.

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- Ad hoc reviewer for various journals, including Applied Environmental Microbiology, Archives of Microbiology, Astrobiology, Environmental Microbiology, FEMS Microbiology Ecology, Frontiers in Microbiology, Geobiology, Geomicrobiology, ISME Journal, Limnology & Oceanography, Microbial Ecology, Nature, Nature Microbiology, Nature Microbiology Reviews, PLoS, PNAS, Royal Society, and Science.
- Editorial board of Applied and Environmental Microbiology (2010-2013), Editor for Frontiers in Microbiology and FEMS Microbiology Letters.

### PUBLICATIONS (Web of Science h-index: 30)

\*indicates student or postdoctoral scientist in my lab, #indicates student or postdoctoral scientist performing parts of their research in my lab, ^indicates corresponding author(s)

78. **Sievert<sup>^</sup>, S. M.**, S. I. Bühring<sup>^</sup>, L. K. Gulmann, K.-U. Hinrichs, P. Pop Ristova, G. V. Gomez-Saez. 2022. Fluid flow stimulates chemoautotrophy in hydrothermally influenced sediments. *Nature Communications Earth and Environment*.
77. Chen, S.-C., J. Ji, D. Popp, U. Jaekel, H.-H. Richnow, **S. M. Sievert**, F. Musat. 2022. Genome and proteome analyses show the gaseous alkane degrader *Desulfosarcina* sp. strain BuS5 as an extreme metabolic specialist. *Environmental Microbiology*.  
<https://doi.org/10.1111/1462-2920.15956>
76. Bentley, J. N., G. T. Ventura, C. J. Dalzell, C. C. Walters, C. A. Peters, A. S. Mennito, R. K. Nelson, C. M. Reddy, J. S. Seewald, **S. M. Sievert**. 2022. Archaeal lipid diversity, alteration, and preservation at the Cathedral Hill deep sea hydrothermal vent, Guaymas Basin, Gulf of California, and its implications regarding the deep time preservation paradox. *Organic Geochemistry*, 163:104302.
75. McNichol<sup>^</sup> J., S. Dyksma, M. Mußmann, J. S. Seewald, S. P. Sylva, and **S. M. Sievert<sup>^</sup>**. 2021. Genus-Specific Carbon Fixation Activity Measurements Reveal Distinct Responses to Oxygen Among Hydrothermal Vent *Campylobacteria*. *Applied and Environmental Microbiology*. doi:10.1128/AEM.02083-21
74. Caramanna, G., **S. M. Sievert**, S. I. Bühring. 2021. Submarine shallow-water fluid emissions and their geomicrobiological imprint: a global overview. *Frontiers in Marine Sciences*, 8:727199.
73. Dalzell, C. J., G. T. Ventura, C. C. Walters, R. K. Nelson, C. M. Reddy, J. S. Seewald, **S. M. Sievert**. 2021. Hydrocarbon transformations in sediments from the Cathedral Hill hydrothermal vent complex at Guaymas Basin, Gulf of California – a chemometric study of shallow seep architecture. *Organic Geochemistry* 152:104173.
72. Hinzke, T., M. Kleiner, M. Meister, R. Schlüter, C. Hentschker, J. Pané-Farré, P. Hildebrandt, H. Felbeck, **S. M. Sievert**, F. Bonn, U. Völker, D. Becher, T. Schweder, S. Markert. 2021. Bacterial symbiont subpopulations have different roles in a deep-sea symbiosis. *eLife* 10:e58371

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70. Shiotani, T., S. Mino, W. Sato, **S. M. Sievert**, T. Sawabe. *Nitrosophilus alvini* gen. nov., sp. nov., a hydrogen-oxidizing chemolithoautotroph isolated from a deep-sea hydrothermal vent in the East Pacific Rise, inferred by a genome-based taxonomy of the phylum "*Campylobacterota*", *PLoS One* 15(12):e0241366.
69. Wang\*, C. H., L. K. Gulmann, T. Zhang, G. A. Farfan, C. M. Hansel, **S. M. Sievert**. 2020. Microbial colonization of metal sulfide minerals at a diffuse-flow deep-sea hydrothermal vent at 9°50'N on the East Pacific Rise. *Geobiology* 18:594-605.
68. Hou, J., **S. M. Sievert**, Y. Wang, J. S. Seewald, V. Perumal Natarajan, F. Wang, X. Xiao. 2020. Microbial succession during the transition from active to inactive stages of deep-sea hydrothermal vent sulfide chimneys. *Microbiome* 8(1):102.
67. Beam J. P., E. D. Becraft, J. M. Brown, F. Schulz, J. K. Jarett, O. Bezuidt, N. Poulton, K. Clark, P. Dunfield, N. V. Ravin, J. R. Spear, B. Hedlund, M. Stott, Kostas Kormas, **S. M. Sievert**, M. S. Elshahed, H. Barton, J. A. Eisen, D. Moser, T. C. Onstott, T. Woyke, R. Stepanauskas. 2020. Ancestral Absence of Electron Transport Chains in Patescibacteria and DPANN *Frontiers in Microbiology* 11:1848.
66. Hinzke T., M. Kleiner, C. Breusing, H. Felbeck, R. Häsler, **S. M. Sievert**, R. Schlüter, P. Rosenstiel, T. B. H. Reusch, T. Schweder, S. Markert. 2019. Host-Microbe Interactions in the Chemosynthetic *Riftia pachyptila* Symbiosis. *mBIO* 10 (6):e02243-19.
65. Ponnudurai, R., S. E. Heiden, L. Sayavedra, T. Hinzke, M. Kleiner, C. Hentschker, H. Felbeck, **S. M. Sievert**, R. Schlüter, D. Becher, T. Schweder, and S. Markert. 2019. Comparative proteomics of related symbiotic mussel species reveals high variability of host-symbiont interactions. *IMSE Journal* 14:649-656.
64. Labonté, J. M., M. Pachiadaki, E. Ferguson, J. McNichol\*, A. Grosche, L. K. Gulmann, C. Vetriani, **S. M. Sievert**, R. Stepanauskas. 2019. Single cell genomics-based analysis of gene content and expression of prophages in a diffuse-flow deep-sea hydrothermal system. *Frontiers in Microbiology* 10, 1262.
63. Thomas\*, F., J. M. Morris, C. Wigand, and **S. M. Sievert**. 2019. Short-term effect of simulated salt marsh restoration by sand-amendment on sediment bacterial communities. *PLoS One* 14(4):e0215767.
62. Youssef N., C. R. Hahn, I. Farag, J. Jarett, E. Becraft, E. Eloë-Fadrosh, J. Lightfoot, A. Bourgeois, T. Cole, S. Ferrante, M. Truelock, W. Marsh, M. Jamaledine, S. Ricketts, R. Simpson, A. McFadden, W. Hoff, N. Ravin, **S. Sievert**, R. Stepanauskas, T. Woyke, and M. Elshahed. 2019. Genomic characterization of candidate division LCP-89 reveals an atypical cell wall structure, microcompartment production, and dual respiratory and fermentative capacities. *Applied and Environmental Microbiology* 14:649-656.

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61. Dang, H., M. G. Klotz, C. R. Lovell, **S. M. Sievert**. 2019. Editorial: The response of marine microorganisms, communities and ecofunctions to environmental gradients. *Frontiers in Microbiology* 10:115.
60. Le Bris, N., M. Yücel, A. Das, **S. M. Sievert**, L. PonnaPakkam, P. R Girgius. Hydrothermal energy transfer and organic carbon production at the deep seafloor. *Frontiers in Marine Science* 5:531.
59. **Sievert, S. M.**, J. McNichol\*, F. Thomas\*. 2018. How do deep-sea hot spring ecosystems work? [Environmental Science Journal for Kids](#)
58. Götz\* F., P. Pjevac, S. Markert, J. McNichol, D. Becher, T. Schweder, M. Mussmann, **S. M. Sievert**^. 2018. Transcriptomic and proteomic insight into the mechanism of cyclooctasulfur- versus thiosulfate-oxidation by the chemolithoautotroph *Sulfurimonas denitrificans*. *Environmental Microbiology* 21:244-258.
- 57 Longnecker K., **S. M. Sievert**, S. P. Sylva, J. S. Seewald, E. B. Kujawinski. 2018. Dissolved organic carbon compounds in deep-sea hydrothermal vent fluids from the East Pacific Rise at 9°50'N. *Organic Geochemistry* 125:41-49.
56. McNichol\*^, J., H. Stryhanyuk, S. P. Sylva, F. Thomas\*, N. Musat, J. S. Seewald, **S. M. Sievert**^. 2018. Primary productivity below the seafloor at deep-sea hot-springs. *Proceedings of the National Academy of Sciences of the USA* 115:6756-6761.
55. Troy L., N. Resnick, **S. M. Sievert**. 2018. Engineering Partnerships: How collaborating with a scientist created an authentic engineering problem. *ScienceScope* 41(8).
54. Götz<sup>#</sup>, F., K. Longnecker, M. C. Kido-Soule, K. W. Becker, J. McNichol, E. B. Kujawinski, **S. M. Sievert**^. 2018. Targeted metabolomics reveals proline as a major osmolyte in the chemolithoautotroph *Sulfurimonas denitrificans*. *MicrobiologyOpen* e586.
53. Signori<sup>#</sup>^, C. N., V. H. Pellizari, A. Enrich-Prast, **S. M. Sievert**^. 2018. Spatiotemporal dynamics of marine bacterial and archaeal communities in surface waters off the northern Antarctic Peninsula. *Deep-Sea Research Part II* 149:150-160.
52. Bühring^, S. I., **S. M. Sievert**^. 2017. The shallow submarine hot vent system off Milos (Greece) – a natural laboratory for the study of hydrothermal geomicrobiology. *In Life at Vents and Seeps*, Jens Kallmeyer (ed.), De Gruyter, Berlin, Germany.
51. Punudurai, R., L. Sayavedra, M. Kleiner, S. E. Heiden, A. Thürmer, H. Felbeck, R. Schlüter, **S. M. Sievert**, R. Daniel, T. Schweder, S. Markert. 2017. Genome sequence of the sulfur-oxidizing *Bathymodiolus thermophilus* gill endosymbiont. *Standards in Genomic Sciences* 12:50.
50. Pérez-Rodríguez<sup>#</sup> I., **S. M. Sievert**, M. L. Fogel, D. I. Foustoukos. 2017. Biogeochemical N signatures from rate-yield trade-offs during in vitro chemosynthetic NO<sub>3</sub><sup>-</sup> reduction by deep-sea vent ε-Proteobacteria and Aquificae growing at different temperatures. *Geochimica et Cosmochimica Acta* 211:214–227.
49. Giovannelli D., **S. M. Sievert**, M. Hügler, S. Markert, D. Becher, T. Schweder, C. Vetriani. 2017. Insight into the evolution of microbial metabolism from the deep-branching bacterium, *Thermovibrio ammonificans*. *eLIFE* 6:e18990.

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48. Waite D. W., I. Vanwonterghem, C. Rinke, D. H. Parks, Y. Zhang, K. Takai, **S. M. Sievert**, J. Simon, B. J. Campbell, T. E. Hanson, T. Woyke, M. G. Klotz, P. Hugenholtz. 2017. Comparative Genomic Analysis of the Class *Epsilonproteobacteria* and Proposed Reclassification to *Epsilonbacteraeota* (phyl. nov.). *Frontiers in Microbiology* 8:682 and erratum 2018, 9:772.
47. Gomez-Saez G. V., P. Pop Ristova, **S. M. Sievert**, M. Elvert, K.-U. Hinrichs, S. I. Bühring. 2017. Relative importance of chemoautotrophy for primary production in a light exposed marine shallow hydrothermal system. *Frontiers in Microbiology* 8:702.
46. Mino, S., S. Nakagawa, H. Makita, T. Toki, J. Miyazaki, **S. M. Sievert**, M. Polz, F. Inagaki, A. Godfroy, S. Kato, H. Watanabe, T. Nunoura, K. Nakamura, H. Imachi, T. Watsuji, S. Kojima, K. Takai, T. Sawabe. 2017. Endemicity of the cosmopolitan mesophilic chemolithoautotroph *Sulfurimonas* at deep-sea hydrothermal vents. *ISME Journal* 11(4):909-919.
45. McNichol\*, J., S. P. Sylva, Fr. Thomas, C. D. Taylor, **S. M. Sievert**^, J. S. Seewald^. 2016. Assessing microbial processes in deep-sea hydrothermal systems by incubation at in situ temperature and pressure. *Deep-Sea Research Part I* 155:221-232.
44. He, Y., M. Li, V. Perumal, X. Feng, J. Fang, J. Xie, **S. M. Sievert**, F. Wang. 2016. Genomic and enzymatic evidence for acetogenesis among multiple lineages of the archaeal phylum Bathyarchaeota widespread in marine sediments. *Nature Microbiology* 1:16035.
43. Gulmann, L. K., S. E. Beaulieu, T. M. Shank, K. Ding, W. E. Seyfried, **S. M. Sievert**^. 2015. Bacterial diversity and successional patterns during biofilm formation on freshly exposed basalt surfaces at diffuse-flow deep-sea vents. *Frontiers in Microbiology* 6:901.
42. Signori<sup>#</sup>, C. N., F. Thomas, A. Enrich-Prast, R. C. G. Pollery, **S. M. Sievert**^. 2014. Microbial diversity and community structure across environmental gradients in Bransfield Strait, Western Antarctic Peninsula. *Frontiers in Microbiology* 5:647.
41. Honjo, S., T. I. Eglinton, C. D. Taylor, K. M. Ulmer, **S. M. Sievert**, A. Bracher, C. R. German, V. Edgcomb, R. Francois, M. D. Iglesias-Rodriguez, B. van Mooy, D. J. Repeta. 2014. Understanding the role of the biological pump in the global carbon cycle: An imperative for ocean science. *Oceanography Magazine* 27(3):10–16.
40. Thomas\*^, F., A. E. Giblin, Z. G. Cardon, **S. M. Sievert**^. 2014. Rhizosphere heterogeneity shapes abundance and activity of sulfur-oxidizing bacteria in vegetated salt marsh sediments. *Frontiers in Microbiology* 5:309.
39. Zhang\* Y., **S. M. Sievert**. 2014. Pan-genome analyses identify lineage- and niche-specific markers of evolution and adaptation in *Epsilonproteobacteria*. *Frontiers in Microbiology* 5:110.
38. Rinke C., P. Schwientek, A. Sczyrba, N. N. Ivanova<sup>1</sup>, I. J. Anderson, J.-F. Cheng, A. Darling, S. Malfatti, B. K. Swan, E. A. Gies, J. A. Dodsworth, B. P. Hedlund, G. Tsiamis, **S. M. Sievert**, W.-T. Liu, J. A. Eisen, S. J. Hallam, N. C. Kyrpides, R. Stepanauskas, E. M. Rubin, P. Hugenholtz, T. Woyke. 2013. Insights into the phylogeny and coding potential

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- of microbial dark matter. *Nature* 499:431-437.
37. Yücel, M., **S. M. Sievert**, C. Vetriani, D. I. Foustoukos, D. Giovannelli, N. Le Bris. 2013. Eco-geochemical dynamics of a shallow-water hydrothermal vent system at Milos Island, Aegean Sea (Eastern Mediterranean). *Chemical Geology* 356:11-20.
  36. **Sievert**<sup>^</sup>, **S. M.**, C. Vetriani. 2012. Chemoautotrophic at deep-sea vents: Past, present, and future. *Oceanography Magazine* 25(1): 218-233.
  35. Gardebrecht A., S. Markert, **S. M. Sievert**, H. Felbeck, A. Thürmer, D. Albrecht, A. Wollherr, J. Kabisch, N. Le Bris, R. Lehmann, R. Daniel, H. Liesegang, M. Hecker, T. Schweder. 2011. Comparative proteogenomics reveals physiological homogeneity among endosymbionts of the deep-sea vent tubeworms *Riftia pachyptila* and *Tevnia jerichonana*. *ISME Journal* 6: 766-776.
  34. Smith A., M. Fisk, M. Nielsen, C. G. Wheat, H. W. Jannasch, A. T. Fisher, K. Becker, **S. M. Sievert**, G. Flores, R. Popa. 2011. *In situ* enrichment of ocean crust microbes on igneous minerals and glasses using an osmotic flow-through device. *Geochemistry, Geophysics, Geosystems* 12 (6).
  33. Markert S., A. Gardebrecht, H. Felbeck, **S. M. Sievert**, A. Thürmer, D. Becher, J. Klose, D. Albrecht, A. Wollherr, R. Daniel, M. Kleiner, M. Hecker, T. Schweder. 2011. Status quo in physiological proteomics of *Endoriftia persephone*, the uncultured endosymbiont of the giant tubeworm *Riftia pachyptila*. *Proteomics* 11:3106-3117.
  32. Hügler<sup>^</sup> M, **S. M. Sievert**<sup>^</sup>. 2011. Beyond the Calvin Cycle: Autotrophic Carbon Fixation in the Ocean. *Annual Review of Marine Science* Vol. 3:261-289.
  31. Foustoukos D. I., J. L. Houghton, W. E. Seyfried Jr., **S. M. Sievert**, G. D. Cody. 2011. Kinetics of H<sub>2</sub>-H<sub>2</sub>O redox equilibria and formation of metastable H<sub>2</sub>O<sub>2</sub> under low temperature hydrothermal conditions. *Geochimica et Cosmochimica Acta* 75:1594-1607.
  30. Hügler<sup>#</sup> M., J. M. Petersen, N. Dubilier, J. F. Imhoff, **S. M. Sievert**<sup>^</sup>. 2011. Pathways of carbon and energy metabolism of the epibiotic community associated with the deep-sea hydrothermal vent shrimp *Rimicaris exoculata*. *PLoS One* 6(1): e16018.
  29. Bühring<sup>^</sup> S. I., **S. M. Sievert**<sup>^</sup>, H. M. Jonkers, T. Ertefai, M. S. Elshahed, L. R. Krumholz, K.-U. Hinrichs. 2011. Insights into chemotaxonomic composition and carbon cycling of phototrophic communities in an artesian sulfur-rich spring (Zodletone, Oklahoma, USA), a possible analogue for ancient microbial mat systems. *Geobiology* 9:166-179.
  28. Xie W., F. Wang, L. Guo, Z. Chen, **S. M. Sievert**, J. Meng, G. Huang, Y. Li, Q. Yan, S. Wu, X. Wang, S. Chen, G. He, X. Xiao, A. Xu. 2011. Comparative metagenomics of microbial communities inhabiting deep-sea hydrothermal vent chimneys with contrasting chemistries. *ISME Journal* 5:414-426.
  27. Walker, C. B., J. R. de la Torre, M. G. Klotz, H. Urakawa, N. Pinel, D. J. Arp, C. Brochier-Armanet, P. S. G. Chain, P. P. Chan, A. Golabgir-Anbarani, J. Hemp, M. Hügler, E. A. Karr, M. Könneke, D. Lang, T. Lowe, W. Martens-Habbena, L. A. Sayavedra-Soto, M. Shin, **S. M. Sievert**, A. C. Rosenzweig, G. Manning, D. A. Stahl. 2010. The *Nitrosopumilus maritimus* genome reveals unique mechanisms for nitrification and autotrophy in globally



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  25. Voordeckers J. W., M. Do, M. Hügler, V. Ko, **S. M. Sievert**, C. Vetriani. 2008. Culture dependent and independent analyses of 16S rRNA and ATP citrate lyase genes: a comparison of microbial communities from different black smoker chimneys on the Mid-Atlantic Ridge. Extremophiles 12:627-640.
  24. **Sievert<sup>^</sup> S. M.**, K. M. Scott<sup>^</sup>, M. Klotz, et al. 2008. The genome of epsilonproteobacterial chemolithoautotroph *Sulfurimonas denitrificans*. Applied and Environmental Microbiology 74:1145-1156.
  23. **Sievert<sup>^</sup>, S.M.**, M. Hügler\*, C. O. Wirsen, C. D. Taylor. 2008. Sulfur oxidation at deep-sea hydrothermal vents. Pp 238-258 In "Microbial Sulfur Metabolism", C. Dahl & C. G. Friedrich (eds), Springer, Berlin, Germany. ISBN-13 978-3-540-72679-1.
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### GRADUATE AND POST DOCTORAL ADVISORS

Advisor during Fulbright: Dr. J. A. Baross (School of Oceanography, UW); Master thesis advisor: Dr. Karin Lochte (AWI Bremerhaven, Germany); Ph.D. adviser: Dr. F. Widdel (MPI Bremen, Germany); Postdoctoral advisors: Dr. C. Taylor, Mr. C. Wirsen (both WHOI), Dr. A. Teske (WHOI, now UNC Chapel Hill)

### STUDENTS AND POSTDOCS ADVISED

Postdocs: Bobby Scharping (2020-, postdoctoral scholar, co-sponsored w/ J. Pohlman and Matt Charette), Kevin Becker (postdoctoral scholar, 2015-2017, co-sponsored w/ J. Pohlman and Ben van Mooy, now research scientist at Geomar Kiel), Camila Signori (guest investigator from University of Sao Paulo, Brazil, 2015, now Professor at Instituto Oceanográfico at University of Sao Paulo, Brazil), François Thomas (postdoctoral investigator, 2012-2014, now a CNRS Researcher at Station Biologique de Roscoff, France), Ying Zhang (postdoctoral scholar, 2011-2013, now Assistant Professor at University of Rhode Island), Karyn Rogers (postdoctoral scholar, 2006-2008, co-sponsored w/ J. Seewald, now Assistant Professor at Rensselaer Polytechnic Institute), Lara Gulmann (postdoctoral investigator, 2007-2010), Cornelia Wuchter (postdoctoral investigator, 2006-2010), Michael Hügler (postdoctoral scholar, 2004-2006, now Staff Scientist at Water Technology Center, Karlsruhe, Germany)

Graduate Students: Florian Götz, (guest student from University of Greifswald, Germany), Diego Franco (guest student from University of Sao Paulo, Brazil), Jesse McNichol (WHOI/MIT JP graduate student, PhD 2016, now postdoc at University of Southern California), Clarissa Karthäuser, (guest student from University of Kiel, 2015), Sayaka Mino (guest student from Hokkaido University, Japan, 2014), Camila Signori (guest student from Federal University of Rio de Janeiro, Brazil, 2013), Kevin Richberg (WHOI/MIT JP graduate student, MSc 2010)

Undergraduate Students: Natalia Rodriguez (PEP student, 2019), Chloe Wang (WHOI summer student fellow (SSF), 2016), Aubrey Kinefick (guest student, 2013), Carolyn Toney (guest student, 2011), Erica Hildebrand (SSF, 2009), Toby Hammer (WHOI SSF, 2008), Dorothea Paulssen

## CURRICULUM VITAE - *Stefan M. Sievert*

(WHOI SSF, 2007), Melissa Duhaime (guest student, 2005), Elia Tait (WHOI SSF, 2004, won poster award at ASLO AqSciMtg, 2005), Whitney Krey (WHOI SSF, 2003, REU, 2004), Caroline Graeber (guest student, 2003), Geoffrey Morris (WHOI SSF, 2002)

### CONTRIBUTIONS TO WHOI'S ACADEMIC PROGRAM

I have a keen interest in taking part in WHOI's academic program, and I find the interaction with students and postdocs to be a very stimulating and rewarding experience. I have participated in a number of teaching activities: I have co-taught *Biological Oceanography* ('07 - '09), have developed and taught *Marine Microbiology and Biogeochemistry* together with Amy Apprill ('13, '15, '17, will be taught again in Fall '19), and have co-taught 3 topics seminar courses ('06, '09, '18, '20). Together with Amy Apprill I received a *Doberty Chair in Education* grant to develop a Field Course component of our Class (*WHOI-MIT Field Course in Microbial Oceanography*) that took place from January 19 to 29, 2020 at the Bermuda Institute of Ocean Science. I have advised JP students Kevin Richberg (MSc in 2010) and Jesse McNichol (PhD in 2016), and have served or am serving on the thesis committee of JP students (7 total, 1 current). Over the years, I have also mentored a total of 7 summer student fellows and 6 undergraduate guest students, including a *Partnership in Education* Student (<https://www.woodsholediversity.org/pep/>) this year and in addition to a number of international guest students. I have been the primary sponsor of 2 postdoctoral scholars, and co-sponsor of 2 others, and have mentored 2 postdoctoral investigators. I have also served on the postdoc mentoring committee of the Biology Department.

### PROFESSIONAL AFFILIATIONS

American Society for Microbiology (ASM), Association for the Sciences of Limnology and Oceanography (ASLO), American Geophysical Union (AGU), International Society for Microbial Ecology (ISME), Vereinigung für Allgemeine und Angewandte Mikrobiologie e.V. (VAAM)

### CRUISE PARTICIPATION

Dark Life II - Expedition to Study Subseafloor Life at Deep-Sea Vents (AT37-12). 9-10°N East Pacific Rise (EPR) R/V Atlantis and HOV Alvin, April 24, 2017 – May 14, 2017, Alvin Dives 4893 – 4905. Chief Scientist: Stefan Sievert, WHOI. <http://web.who.edu/darklife/>

Brazilian Antarctic Program Interbiota Operantar XXXIV, Southern Ocean, Western Antarctic Peninsula, Brazilian research vessel *Npo. Almirante Maximiano* (H41), February - March 2016. Chief Scientist: Eduardo Secchi

Dark Life - Expedition to Study Subseafloor Life at Deep-Sea Vents (AT26-23). 9-10°N East Pacific Rise (EPR) R/V Atlantis and HOV Alvin, Nov 2, 2014 – Nov 26, 2014, Alvin Dives 4761 – 4776. Chief Scientist: Stefan Sievert, WHOI. <http://web.who.edu/darklife/category/dark-life-2014/>

Dark Life at Deep-sea Vents (AT26-10), 9-10°N East Pacific Rise (EPR)R/V Atlantis and ROV Jason, Dec 29, 2013 – Jan 26, 2014, Jason II Dives 758 – 762. Chief Scientist: Stefan Sievert, WHOI. <http://www.divediscover.who.edu/expedition15/index.html>

## CURRICULUM VITAE - *Stefan M. Sievert*

- DOBS cruise, R/V Endeavor, July 23 – Aug 9, 2012. Chief Scientist: Stefan Sievert, WHOI
- MESCAL leg 1, 9-10°N East Pacific Rise (EPR), N/O *L'Atalante* & DSV *Nautile*, April 27-May 2010, DSV *Nautile* dives 1726-1730. Chief Scientist: Nadine Le Bris, Observatoire Océanologique de Banyuls sur mer, France.
- FIX08-II (AT15-38), Guaymas Basin and 9-10°N EPR, R/V *Atlantis* & DSV *Alvin*, Oct 13-Nov 5 2008, DSV *Alvin* dives 4457-4469. Chief scientist: Stefan Sievert, WHOI.
- FIX08-I (AT15-28), 9-10°N and 13°N EPR, R/V *Atlantis* & DSV *Alvin*, Dec 28 2007-Jan 19 2008, DSV *Alvin* dives 4457-4469. Chief scientist: Stefan Sievert, WHOI.  
<http://www.interridge.org/node/5363>
- AT15-25, Guaymas Basin, R/V *Atlantis* & DSV *Alvin*, Oct 18-28 2007. DSV *Alvin* dives 4355-4359. Chief Scientist: Costantino Vetriani, Rutgers University.
- AT15-15, 9-10°N EPR, R/V *Atlantis* & DSV *Alvin*, Jan-Feb 7 2007, DSV *Alvin* dives 4297-4318. Chief Scientist: Timothy Shank, WHOI.
- RESET06 (AT15-06), 9-10°N EPR, R/V *Atlantis* & DSV *Alvin*, June 18-July 7 2006, DSV *Alvin* dives 4201-4207. Chief Scientist: Karen von Damm, University of New Hampshire. Our project contributed two *Alvin* dives to this community driven rapid response cruise to study the aftermath of the '05/'06 eruption.
- EXTREME 2002, 9-10°N EPR, R/V *Atlantis* & DSV *Alvin*, Oct 20-Nov 12 2002. Chief Scientist: Craig Cary, University of Delaware.
- Hydrothermal Fluxes and Biological Production in the Aegean and Fluxes in the Anoxic Basins of the Mediterranean Ridge (M40/2), Dec 2 – Dec 23, 1998, R/V *Meteor*, Chief Scientist: Peter Linke, IfM-Geomar Kiel, Germany.