

Curriculum Vitae

Gregory J. Dick

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Education

2006 Ph.D., Marine Biology, Scripps Institution of Oceanography, UCSD
2002 Microbial Diversity Summer Course, Marine Biological Lab, Woods Hole, MA
2000 B.A., Biology, University of Virginia (Chemistry Minor)

Professional Positions

2021-present Director, Cooperative Institute for Great Lakes Research
2021-present Professor, School of Environment and Sustainability, University of Michigan
(50% appointment)
2021-present Professor, Department of Earth and Environmental Sciences, University of
Michigan (50% appointment)
2020-2021 Professor, Department of Earth and Environmental Sciences, University of
Michigan
2020-present Professor, Department of Ecology and Evolutionary Biology, University of
Michigan (dry appointment)
2016-2021 Associate Chair for Curriculum and Undergraduate Studies, Department of Earth
and Environmental Sciences, University of Michigan
2014-2020 Associate Professor, Department of Earth and Environmental Sciences, University
of Michigan
2014-2020 Associate Professor, Department of Ecology and Evolutionary Biology,
University of Michigan
2011-present Faculty Affiliate, Program in the Biomedical Sciences, University of Michigan
2009-present Faculty Affiliate, Center for Computational Medicine and Bioinformatics
2011-2014 Assistant Professor, Department of Ecology and Evolutionary Biology, University
of Michigan
2008-2014 Faculty Associate, Program in the Environment, University of Michigan
2008-2014 Assistant Professor, Department of Earth and Environmental Sciences, University
of Michigan
2007-2008 Postdoctoral Researcher, Department of Earth and Planetary Science, University
of California, Berkeley
2000-2006 Graduate Research Fellow, Scripps Institution of Oceanography, UCSD
1999 Research Associate, NASA Ames Astrobiology Academy

Honors and Awards

2023 Arthur F. Thurnau Professor (effective July 1, 2023)
2020 2020 John Dewey Award for teaching, College of Literature, Arts, and Sciences,
University of Michigan

2020	GSA Geobiology and Geomicrobiology Post-Tenure Award
2019	Geoclub Best Professor (Department of Earth and Environmental Sciences)
2015	Individual Award for Outstanding Contributions to Undergraduate Education, College of Literature, Science, and Arts, University of Michigan
2013	Alfred P. Sloan Research Fellow in Ocean Science

Publications

Google Scholar: 8345 citations; h-index 44

<https://scholar.google.com/citations?user=76nnaMsAAAAJ&hl=en>

Note that the convention for my field is for the senior author (PI) to be last author.

underline = group member; ¹ = student advisee; ² = postdoc advisee

Peer-reviewed papers and book chapters

Submitted/in revision/pre-print

96. Li W, David Baliu-Rodriguez, Sanduni H. Premathilaka, Sharmila I. Thenuwara, Jeffrey A. Kimbrel, Ty J. Samo, Christina Ramon, E. Anders Kiledal, Sara R. Rivera, Jenan J. Kharbush, Dragan Isailovic, Peter K. Weber, Gregory J. Dick, Xavier Mayali (2023). The dual role of the *Microcystis aeruginosa* microbiome on cyanotoxin production: competition for and remineralization of organic nitrogen *ISME J* (submitted).
95. SL Grim¹, DG Stuart, P Aron, NE Levin, LE Kinsman-Costello², JE Waldbauer, **GJ Dick** (2023) Seasonal Shifts in Community Composition and Proteome Expression in a Sulfur-Cycling Cyanobacterial Mat. Pre-print on BioRxiv: <https://doi.org/10.1101/2023.01.30.526236>.
94. Zhou Z, PQ Tran, AM Adams, K Kieft, JA Breier, CS Fortunato, CS Sheik², JA Huber, M Li², **GJ Dick**, and K Anantharaman¹ (2023). Sulfur cycling connects microbiomes and biogeochemistry in deep-sea hydrothermal plumes. *ISME J* (in press).
93. Yancey CE¹, EA Kiledal², VJ Deneff, RM Errera, JT Evans, LN Hart¹, D Isailovic, W James¹, JJ Kharbush, JA Kimbrel, W Li, X Mayali, HS Nitschky¹, C Polik, MA Powers, SH Premathilaka, N Rappuhn¹, LA Reitz¹, SR Rivera, CC Zwiers¹, and **GJ Dick** (2023). The Western Lake Erie Culture Collection: A promising resource for evaluating the physiological and genetic diversity of *Microcystis* and its associated microbiome. Pre-print on BioRxiv: <https://doi.org/10.1101/2022.10.21.513177>. *Harmful Algae* (in revision).
92. CE Yancey¹, F Yu, A Tripathi, DH Sherman, and **GJ Dick** (2023). Expression of *Microcystis* biosynthetic gene clusters in natural populations suggests temporally dynamic synthesis of novel and known secondary metabolites in western Lake Erie. Pre-print on BioRxiv: <https://doi.org/10.1101/2022.10.12.511943>. *Applied and Environmental Microbiology* (revision submitted).
91. Tang H, ET Hillman, AL Photenhauer, K Kim, AW Schmidt, R Hein, K Gdanetz, **GJ Dick**, JL Golob, NM Koropatkin, C Waldron, and TM Schmidt (2022). Specialized, globally distributed gut microbes capture fiber with pili. *Nature* (in revision).

2023

90. Yancey CE¹, O Mathiesen¹, and **GJ Dick** (2023). Transcriptionally active nitrogen fixation and biosynthesis of diverse secondary metabolites by *Dolichospermum* and *Aphanizommon*-like Cyanobacteria in western Lake Erie *Microcystis* blooms. *Harmful Algae*: 102408.

89. Gonzalez-Nayeck A, S Grim, J Waldbauer, **GJ Dick**, and A Pearson (2022). Isotopic signatures of carbon transfer in a Proterozoic analogue microbial mat. *Applied and Environmental Microbiology* (in press) <https://doi.org/10.1128/aem.01870-22>.
88. Seike K*, EA Kiledal^{2*}, H Fujiwara, I Henig, M Burgos da Silva, MRM van den Brink, R Hein, M Hoostal, , C Liu, K Oravec-Wilson, E Lauder, L Li, Y Sun, TM Schmidt, YM Shah, RR Jenq, **GJ Dick**, and P Reddy (2023). Ambient oxygen levels regulate intestinal dysbiosis and GVHD severity after allogeneic stem cell transplantation. *Immunity* (in press): <https://doi.org/10.1016/j.immuni.2023.01.007>. *contributed equally.

2022

86. Delgado Vela J¹, KJ Gordon, JM Klatt, **GJ Dick**, and NG Love (2022). Integrated Modeling and Lab-Scale Investigations Demonstrate the Impact of Sulfide on a Membrane Aerated Biofilm Reactor. *ACS ES&T Water* 2: 2388-2399. <https://doi.org/10.1021/acsestwater.2c00253>
85. Den Uyl P, S Chaganti, L Thompson, R Errera, C Preston, W Ussler, C Yancey¹, J Birch, S Ruberg, G Doucette, **GJ Dick**, C Scholin, and K Goodwin (2022). Monitoring Freshwater Cyanobacterial Harmful Algal Blooms via an Autonomous Underwater Vehicle. *Frontiers in Marine Science* 9: 1021952. doi: 10.3389/fmars.2022.1021952.
84. Marino J, VJ Denef, **GJ Dick**, MB Duhaime, TH Johengen, G Fahnenstiel^a, and TY James (2022). Fungal community dynamics associated with harmful cyanobacterial blooms in two Great Lakes. *Journal of Great Lakes Research* 4: 1021-2031.
83. Hellweger FL, RM Martin, F Eigemann, DJ Smith², **GJ Dick**, SW Wilhelm (2022). Models predict planned phosphorus load reduction will make Lake Erie more toxic. *Science* 376: 1001-1005.
82. Yancey CE¹, DJ Smith¹, PA Den Uyl, OG Mohamed, F Yu, SA Ruberg, JD Chaffin, K Goodwin, A Tripathi, DH Sherman, and **GJ Dick** (2022). Metagenomic and Metatranscriptomic Insights into Population Diversity of Microcystis Blooms: Spatial and Temporal Dynamics of mcyc Genotypes, Including a Partial Operon That Can Be Abundant and Expressed. *Applied and Environmental Microbiology* 88: e02464-21.
81. Smith¹, DJ, JJ Kharbush², RD Kersten, and **GJ Dick** (2022). Uptake of Phytoplankton-Derived Carbon and Cobalamins by Novel Acidobacteria Genera in Microcystis Blooms Inferred from Metagenomic and Metatranscriptomic Evidence. *Applied and Environmental Microbiology* 88: e01803-21.
80. Smith DJ¹, MA Berry, RM Cory, TH Johengen, GW Kling, TW Davis, and **GJ Dick** (2022). Heterotrophic Bacteria Dominate Catalase Expression during Microcystis Blooms. *Applied and Environmental Microbiology* 88: e02544-21.
79. Gomes ML, JM Klatt, **GJ Dick**, SL Grim¹, KI Rico, MJ Medina¹, W Ziebis, L Kinsman-Costello², ND Sheldon, and DA Fike (2022). Sedimentary pyrite sulfur isotope compositions preserve signatures of the surface microbial mat environment in low-oxygen cyanobacterial mats. *Geobiology*, 20: 60-78.

2021

78. Grim, SL¹, AA Voorhies¹, BA Biddanda, S Jain, SC Nold, R Green, and **GJ Dick** (2021). Omics-inferred partitioning and expression of diverse biogeochemical functions in a low-O₂ cyanobacterial mat community. *mSystems* 6: e01042-21.

77. Pound H, R Martin, CS Sheik, M Steffen, S Newell, **GJ Dick**, RM McKay, G Bullerjahn, and S Wilhelm. Environmental studies of cyanobacterial harmful algal blooms should include interactions with the dynamic microbiome. *Environmental Science & Technology* 55: 12776-12779.
76. **Dick GJ**, MB Duhaime, JT Evans, RM Errera, C Godwin, JJ Kharbush², HS Nitschky¹, MA Powers¹, HA Vanderploeg, KC Schmidt, DJ Smith¹, CE Yancey¹, CC Zwiers¹, and VJ Denef (2021). The genetic and ecophysiological diversity of *Microcystis*. *Environmental Microbiology* 23: 7278-7313.
75. DJ Smith¹, JY Tan, MA Powers, XN Lin, TW Davis, and **GJ Dick** (2021). Individual *Microcystis* colonies harbor distinct bacterial communities that differ by *Microcystis* oligotype and with time. *Environmental Microbiology* 23: 3020-3036. <https://doi.org/10.1111/1462-2920.15514>
74. Chaffin JD, JF Bratton, EM Verhamme, HB Bair, AA Beecher, CE Binding; JA Birbeck, TB Bridgeman, X Chang, J Crossman, WJS Currie, TW Davis; **GJ Dick**; KG Drouillard; T Frenken; HJ MacIsaac; A McClure; RM McKay; LA Reitz; K Stanislawczyk; RP Stumpf; ZD Swan; BK Snyder; JA Westrick; P Xue; CE Yancey¹; A Zastepa; X Zhou (2021). The Lake Erie HABs Grab: A binational collaboration to characterize the western basin cyanobacterial harmful algal blooms at an unprecedented high-resolution spatial scale. *Harmful Algae* 108: 102080.
73. Klatt JM², A Chennu, BK Arbic, BA Biddanda, D de Beer and **GJ Dick** (2021). Possible link between Earth's rotation rate and oxygenation. *Nature Geoscience* 14: 564-570.
72. Lumian J, A Jungblut, M Dillon, I Hawes, P Doran, T Mackey, **GJ Dick**, C Grettenberger, and D Sumner (2021). Metabolic Capacity of the Antarctic Cyanobacterium *Phormidium pseudopriestleyi* that Sustains Oxygenic Photosynthesis in the Presence of Hydrogen Sulfide. *Genes* 12: 426.
71. Delgado Vela J¹, L Bristow, H Marchant, NG Love, and **GJ Dick** (2021). Sulfide alters microbial functional potential in a methane and nitrogen cycling biofilm reactor. *Environmental Microbiology* 23: 1481-1495.
70. Merz E, **GJ Dick**, D de Beer, SL Grim¹, T Hubener, S Littman, K Olsen¹, D Stuart, G Lavik, H Marchant, JM Klatt (2021). Nitrate respiration distributions and diel migration patterns of diatoms in a microbial mat. *Environmental Microbiology* 23: 1422-1435.
69. Stewart BD, JV Sorensen, K Wendt, JB Sylvan, S White, CR. German, **GJ Dick**, JA Breier, and BM Toner (2021). A multi-modal approach to unpacking iron biogeochemical processes in buoyant hydrothermal plumes. *Chemical Geology* 560: 120018.

2020

68. Breier JA, MV Jakuba, MA Saito, **GJ Dick**, SL Grim¹, EW Chan¹, MR McIlvin, DM Moran, BA Alanis, AE. Allen, CL Dupont, and R Johnson (2020). Revealing ocean scale biochemical structure with a deep-diving vertical profiling autonomous vehicle. *Science Robotics* 5: eabc7104
67. Schmidt KC, SL Jackrel, DJ Smith¹, **GJ Dick**, VJ Denef (2020). Genotype and host microbiome alter competitive interactions between *Microcystis aeruginosa* and *Chlorella sorokiniana*. *Harmful Algae* 99: 101939.
66. Z Zhou, Yang Liu, J Pan, B Cron, B Toner, K Anantharaman¹, J Breier, **GJ Dick**, and M Li² (2020). Gammaproteobacteria mediating utilization of methyl-, sulfur- and petroleum organic compounds in deep ocean hydrothermal plumes. *The ISME Journal* 14: 3136-3148.
65. Tan, JY, S Wang, **GJ Dick**, VB Young, DH Sherman, MA Burns, and XN Lin (2020). Co-cultivation of microbial sub-communities in microfluidic droplets facilitates high-resolution genomic dissection of microbial 'dark matter'. *Integrative Biology* 12: 263-274.

2019

64. Cron BR, CS Sheik², FA Kafantaris, GK Druschel, JS Seewald, CR German, **GJ Dick**, JA Breier, and BM Toner. Dynamic Biogeochemistry of the Particulate Sulfur Pool in a Buoyant Deep-Sea Hydrothermal Plume. *ACS Earth and Space Chemistry* 4: 168-182.
63. Davenport, EJ, GS Bullerjahn, TW Davis, SW Wilhelm, MK Denney, LE Krausfeldt, JMA Stough, KA Meyer², **GJ Dick**, TH Johengen, E Lindquist, SG Tringe, and RML McKay (2019). Metatranscriptomic analyses of diel metabolic functions during a toxin-producing *Microcystis* bloom in Lake Erie. *Frontiers in Microbiology* 10: 2081.
62. **Dick GJ** (2019). The microbiomes of deep-sea hydrothermal vents: distributed globally, shaped locally. *Nature Reviews Microbiology* 17: 271-283.
61. Kharbush J, DJ Smith¹, M Powers, HA Vanderploeg, D Fanslow, RL Robinson, **GJ Dick**, and A Pearson (2019). Chlorophyll nitrogen isotope values track shifts between cyanobacteria and eukaryotic algae in a natural phytoplankton community in Lake Erie. *Organic Geochemistry* 128: 71-77.

2018

60. Driscoll CB, KA Meyer², S Šulčius, NM Brown, **GJ Dick**, H Cao, G Gasiūnas, A Timinskas, Y Yin, ZC Landry, TG Otten, TW Davis, SB Watson, and TW Dreher (2018). A closely-related clade of globally distributed bloom-forming cyanobacteria within the Nostocales. *Harmful Algae* 77: 93-107.
59. Kramer BJ, TW Davis, KA Meyer², BH Rosen, JA Goleski, **GJ Dick**, G Oh, and CJ Gobler (2018). Nitrogen limitation, toxin synthesis potential, and toxicity of cyanobacterial populations in Lake Okeechobee and the St. Luci River Estuary, Florida, during the 2016 State of Emergency event. *PLoS One* 13: e0196278.
58. Delgado Vela J¹, **GJ Dick**, and NG Love (2018). Sulfide inhibition of nitrite oxidation in activated sludge depends on microbial community composition. *Water Research* 138: 241-249.
57. Stadler LB, J Delgado Vega¹, S Jain, **GJ Dick**, and NG Love (2018). Elucidating the impact of microbial community diversity on pharmaceutical biotransformation during wastewater treatment. *Microbial Biotechnology*, 11: 995-1007.
56. **Dick GJ**, SG Grim¹, and JK Klatt² (2018). Controls on O₂ production in cyanobacterial mats and implications for Earth's oxygenation. *Annual Reviews of Earth and Planetary Sciences* 46: 123-147.
55. Chaffin JD, TW Davis, DJ Smith², MM Baer, and **GJ Dick** (2018). Interactions between nitrogen form, loading rate, and light intensity on *Microcystis* and *Planktothrix* growth and microcystin production. *Harmful Algae*, 73: 84-97.

2017

54. Meyer KA², TW Davis, SB Watson, VJ Denef, MA Berry, and **GJ Dick** (2017). Genome sequences of lower Great Lakes *Microcystis* sp. reveal strain-specific genes that are present and expressed in western Lake Erie blooms. *PLoS One*, 12: e0183859.
53. Steffen MM, TW Davis, RM McKay, GS Bullerjahn, LE Krausfeldt, JMA Stough, ML Neitzey, NE Gilbert, GL Boyer, TH Johengen, DC Gossiaux, AM Burtner, D Palladino, M Rowe, **GJ Dick**, KA Meyer², Shawn Levy, B Boone, R Stumpf, T Wynne, PV Zimba, DB Gutierrez, and SW Wilhelm (2017). Ecophysiological examination of the Lake Erie *Microcystis* bloom in 2014: linkages between biology and the water supply shutdown of Toledo, Ohio. *Environmental Science and Technology*, 51: 6745-6755.

52. Sharrar AM¹, BE Flood, JV Bailey, DS Jones, B Biddanda, SA Ruberg, DN Marcus, and **GJ Dick** (2017). Novel large sulfur bacteria in the metagenomes of groundwater-fed chemosynthetic microbial mats in the Lake Huron basin. *Frontiers in Microbiology*, 8: 791.
51. Marcus DN, A Pinto, K Anantharaman¹, SA Ruberg, EL Kramer, L Raskin, **GJ Dick** (2017). Diverse manganese (II)-oxidizing bacteria are prevalent in drinking water systems. *Environmental Microbiology Reports*, 9: 120-128.
50. Berry M, RM Cory, TW Davis, MB Duhaime, TJ Johengen, GW Kling, JA Marino, PA Den Uyl, D Gossiaux, **GJ Dick**, and VJ Denef (2017). Cyanobacterial harmful algal blooms are a biological disturbance to Western Lake Erie bacterial communities. *Environmental Microbiology*, 19: 1149-1162.
49. Berry MA, JD White, TW Davis, S Jain, TH Johengen, **GJ Dick**, O Sarnelle, and VJ Denef (2017). Are oligotypes meaningful ecological and phylogenetic units? A case study of *Microcystis* in freshwater lakes. *Frontiers in Microbiology* 8: 365.
48. Snider MJ, BA Biddanda, SL Grim¹, and **GJ Dick** (2017). Versatile photophysiology of compositionally similar cyanobacterial mat communities inhabiting submerged sinkholes of Lake Huron. *Aquatic Microbial Ecology* 79: 63-78.
47. Kinsman-Costello LE², CS Sheik², ND Sheldon, GA Burton, D Costello, DN Marcus, P Den Uyl, and **GJ Dick** (2017). Groundwater shapes sediment biogeochemistry and microbial diversity in a submerged sinkhole. *Geobiology* 15: 225-239.

2016

46. Grim SL¹, and **GJ Dick** (2016). Photosynthetic Versatility in the Genome of *Geitlerinema* sp. PCC 9228 (Formerly *Oscillatoria limnetica* 'Solar Lake'), a Model Anoxygenic Photosynthetic Cyanobacterium. *Frontiers in Microbiology* 7: 1546.
45. Den Uyl P, LL Richardson, S Jain, and **GJ Dick** (2016). Unraveling the physiological roles of *Geitlerinema* sp. BBD and other Black Band Disease community members through genomic analysis of a mixed culture. *PLoS ONE* 11: e0157953.
44. Li M², S Jain, and **GJ Dick** (2016). Genomic and transcriptomic resolution of organic matter utilization among deep-sea bacteria in Guaymas Basin hydrothermal plumes. *Frontiers in Extreme Microbiology* 7: 1125.
43. Flood BP, B Fliss, D Jones, J Bailey, **GJ Dick**, and S Jain, M Mußmann, and M Winkel (2016). Draft genome of *Thiomargarita nelsonii*, a giant sulfide-oxidizing bacterium from a marine methane seep, assembled from tetranucleotide binning of a metagenome. *Frontiers in Extreme Microbiology* 7: 603.
42. Cory RM, TW Davis, **GJ Dick**, TJ Johengen, VJ Denef, MA Berry, SE Page, SB Watson, K Yuhas, & GW Kling (2016). Seasonal dynamics in dissolved organic matter, hydrogen peroxide, and cyanobacterial blooms in Lake Erie. *Frontiers in Marine Science* 3: 54.
41. Lazar CS, BJ Baker¹, K Seitz, AS Hyde, **GJ Dick**, K Hinrichs, and AP Teske (2016). Genomic evidence for distinct carbon substrate preferences and ecological niches of widespread benthic archaea in estuarine sediments. *Environmental Microbiology* 18: 1200-1211.
40. Toner BM, CR German, **GJ Dick**, and JA Breier (2016). Deciphering the Complex Chemistry of Deep-Ocean Particles Using Complementary Synchrotron X-ray Microscope and Microprobe Instruments. *Accounts of Chemical Research*. 49: 128-137.
39. Voorhies AV¹, SD Eisenlord, DN Marcus, MB Duhaime, JD Cavalcoli, BB Biddanda, and **GJ Dick** (2016). Ecological and genetic interactions between cyanobacteria and viruses in a low-O₂ mat

community inferred through metagenomics and metatranscriptomics. *Environmental Microbiology* 18: 358-371.

38. Anantharaman K¹, JA Breier and **GJ Dick** (2016). Metagenomic resolution of microbial functions in deep-sea hydrothermal plumes across the Eastern Lau Spreading Center. *The ISME Journal* 10: 225-239.

2015

37. Pinto A, DN Marcus, U Ijaz, Q Bautista-de los Santos, **GJ Dick** and L Raskin (2015). Metagenomic evidence for the presence of comammox nitrospira-like bacteria in a drinking water system. *mSphere* 1: e00054-15
36. **Dick GJ** and PYT Lam (2015). Omic approaches to microbial geochemistry. *Elements* 11: 403-408. DOI: 10.2113/gselements.11.6.403
35. Li M², BJ Baker¹, K Anantharaman¹, S Jain, J.A. Breier, and **GJ Dick** (2015). Genomic and transcriptomic evidence for scavenging of diverse organic compounds by widespread deep-sea archaea. *Nature Communications* 6: 8933.
34. Schofield MM, S Jain, **GJ Dick**, and DH Sherman (2015). Identification and analysis of the bacterial endosymbiont specialized for production of the chemotherapeutic natural product ET-743. *Environmental Microbiology* 17: 3964-3975.
33. Reed DC², JA Breier, H Jiang, K Anantharaman¹, CA Klausmeier, BM Toner, C Hancock, K Speer, A.M. Thurnherr, and **GJ Dick** (2015). Predicting the response of the deep-ocean microbiome to geochemical perturbations by hydrothermal vents. *The ISME Journal* 9: 1857-1869.
32. Sheik CS², EI Stevenson, P Den Uyl¹, CA Arendt, SM Aciego, and **GJ Dick** (2015). Glacial discharge associated microbial communities exhibit temporal and spatial stability and correlate with geochemistry. *Frontiers in Extreme Microbiology* 6: 495.
31. Sheik CS², K Anantharaman¹, JA Breier, JB Sylvan, KJ Edwards, and **GJ Dick** (2015). Spatially resolved sampling reveals dynamic microbial communities in rising hydrothermal plumes across a back-arc basin. *The ISME Journal* 9: 1434-1445.
30. Baker BJ¹, CS Lazar, A Teske, and **GJ Dick** (2015). Genomic resolution of linkages in carbon, nitrogen, and sulfur cycling among widespread estuary sediment bacteria. *Microbiome* 3:14. DOI: 10.1186/s40168-015-0077-6

2014

29. Castro-Contreras SI, MK Gingras, E Pecoits, NR Aubet, DA Petsah, **GJ Dick**, and KO Konhauser (2014). Textural and geochemical features of freshwater microbialites from Laguna Bacalar, Quintana Roo, Mexico. *Palaios* 29: 192-209.
doi: <http://dx.doi.org/10.2110/palo.2013.063>
28. Breier JA, DA Gomez-Ibanez, RT Sayre-McCord, R Sanger, C Rauch, M Coleman, SA Bennett, B Cron; CS Sheik², M Li², CR German, BM Toner, and **GJ Dick** (2014). A large volume particulate and water multi-sampler with in situ preservation for microbial and biogeochemical studies. *Deep-Sea Research Part I* 94: 195-206.
27. Vorobev A, S Jagadevan, S Jain, K Anantharaman¹, **GJ Dick**, S Vuilleumier, and JD Semrau (2014). Genomic and transcriptomic analyses of the facultative methanotroph *Methylocystis* sp. strain SB2 grown on methane or ethanol. *Applied and Environmental Microbiology* 80: 3044-3052.
26. Anantharaman K¹, MB Duhaime, JA Breier, K Wendt, BM Toner, and **GJ Dick** (2014). Sulfur oxidation genes in diverse deep-sea viruses. *Science* 344: 757-760.

25. Li M², BM Toner, BJ Baker¹, JA Breier, CS Sheik², and **GJ Dick** (2014). Microbial iron uptake as a mechanism for dispersing iron from deep-sea hydrothermal vents. *Nature Communications* 5: 3192. doi: 10.1038/ncomms4192
24. Reed DC², CK Algar, JA Huber, and **GJ Dick** (2014). Gene-centric approach to integrating environmental genomics and biogeochemical models. *Proceedings of the National Academy of Sciences* 111: 1879-1884. Doi: 10.1073/pnas.1313713111.
23. Li M², S Jain, BJ Baker¹, C Taylor¹, and **GJ Dick** (2014). Novel hydrocarbon monooxygenase genes in the metatranscriptome of a natural deep-sea hydrocarbon plume. *Environmental Microbiology* 16: 60-71. doi: 10.1111/1462-2920.12182
22. Sheik CS², S Jain, and **GJ Dick** (2014). Metabolic flexibility of enigmatic SAR324 revealed through metagenomics and metatranscriptomics. *Environmental Microbiology* 16: 304-317. doi: 10.1111/1462-2920.12165

2013

21. Baker BJ¹, CS Sheik², CA Taylor¹, S Jain, A Bhasi, JD Cavalcoli, and **GJ Dick** (2013). Community transcriptomic assembly reveals microbes that contribute to deep-sea carbon and nitrogen cycling. *The ISME Journal* 7: 1962-1973. doi: 10.1038/ismej.2013.85
20. **Dick GJ**, K Anantharaman¹, BJ Baker¹, M Li², DC Reed², and CS Sheik² (2013). The microbiology of deep-sea hydrothermal vent plumes: ecological and biogeographic linkages to seafloor and water column habitats. *Frontiers in Microbiology* 4: 124. doi: 10.3389/fmicb.2013.00124.
19. Anantharaman K¹, JA Breier, CS Sheik², and **GJ Dick** (2013). Evidence for hydrogen oxidation and metabolic plasticity in widespread deep-sea sulfur-oxidizing bacteria. *Proceedings of the National Academy of Sciences* 110: 330-335. doi: 10.1073/pnas.1215340110.

2012

18. Baker BJ¹, RA Lesniewski, and **GJ Dick** (2012). Genome-enabled transcriptomics reveals archaeal populations that drive nitrification in a deep-sea hydrothermal plume. *The ISME Journal* 6: 2269-2279. doi: 10.1038/ismej.2012.64.
17. Lesniewski RA, S Jain¹, PD Schloss, K Anantharaman¹, and **GJ Dick** (2012). The metatranscriptome of a deep-sea hydrothermal plume is dominated by water column methanotrophs and lithotrophs. *The ISME Journal* 6: 2257-2268. doi: 10.1038/ismej.2012.63.
16. Voorhies AA¹, BA Biddanda, ST Kendall, S Jain¹, DN Marcus¹, SC Nold, ND Sheldon, and **GJ Dick** (2012). Cyanobacterial life at low O₂: Community genomics and function reveal metabolic versatility and extremely low diversity in a Great Lakes sinkhole mat. *Geobiology* 10: 250-267. doi: 10.1111/j.1472-4669.2012.00322.x.

2011

15. Biddanda, BA, SC Nold, **GJ Dick**, ST Kendall, JH Vail, SA Ruberg, & CM Green (2011). Rock, water, microbes: underwater sinkholes in Lake Huron are habitats for ancient microbial life. *Nature Education Knowledge* 2(12):9.
14. Lee PKH, D Cheng, P Hu, KA West, **GJ Dick**, EL Brodie, GL Andersen, SH Zinder, J He, and L Alvarez-Cohen (2011). Comparative genomics of two newly isolated *Dehalococcoides* strains and an enrichment using a genus microarray. *The ISME Journal* 5: 1014-1024. doi: 10.1038/ismej.2010.202.

2010

13. Baker BJ, LR Comolli, **GJ Dick**, L Hauser, D Hyatt, B Dill, M Land, NC VerBerkmoes, RL Hettich and JF Banfield (2010). Enigmatic, ultra-small uncultivated Archaea. *Proceedings of the National Academy of Sciences* 107: 8806-8811. doi: 10.1073/pnas.0914470107.
12. **Dick GJ**, and BM Tebo (2010). Microbial diversity and biogeochemistry of the Guaymas Basin hydrothermal plume. *Environmental Microbiology* 12, 1334-1347. doi: 10.1111/j.1462-2920.2010.02177.x.

2009

11. **Dick GJ**, A Andersson, BJ Baker, SS Simmons, BC Thomas, and JF Banfield (2009). Community-wide analysis of microbial genome sequence signatures. *Genome Biology*, R85: 10. doi:10.1186/gb-2009-10-8-r85.
10. **Dick GJ**, BG Clement, SM Webb, FJ Fodrie, JR Bargar, and BM Tebo (2009). Enzymatic microbial Mn oxidation and Mn biooxide production in the Guaymas Basin deep-sea hydrothermal plume. *Geochimica et Cosmochimica Acta*, 73: 6517-6530. doi:10.1016/j.gca.2009.07.039.
9. Goltsman DSA, VJ Denef, SW Singer, NC VerBerkmoes, M Lefsrud, R Mueller, **GJ Dick**, C Sun, K Wheeler, A Zemla, BJ Baker, L Hauser, M Land, M Shah, MP Thelen, RL Hettich, and JF Banfield (2009). Community genomic and proteomic analyses of chemoautotrophic, iron-oxidizing *Leptospirillum rubarum* (group II) and *Leptospirillum ferrodiazotrophum* (group III) bacteria in acid mine drainage biofilms. *Applied and Environmental Microbiology*, 75: 4599-4615. doi: 10.1128/AEM.02943-08.
8. Andersen CR, **GJ Dick**, M Chu, JC Cho, R Davis, S Bräuer, and BM Tebo (2009). *Aurantimonas manganooxydans*, sp. nov. and *Aurantimonas litoralis*, sp. nov. : Manganese oxidizing representatives of a globally distributed clade of α -proteobacteria from the order *Rhizobiales*. *Geomicrobiology Journal*, 26: 189-198. doi: 10.1080/0149045090272484.

2008

7. **Dick GJ**, S Podell, HA Johnson, Y Rivera-Espinoza, R Bencheikh-Latmani, JK McCarthy, JW Torpey, BG Clement, T Gaasterland, and BM Tebo (2008). Genomic insights into Mn(II) oxidation by the marine alphaproteobacterium *Aurantimonas* strain SI85-9A1. *Applied and Environmental Microbiology*, 74: 2646-2658. doi: 10.1128/AEM.01656-07.
6. **Dick GJ**, JW Torpey, TJ Beveridge, and BM Tebo (2008). Direct identification of a bacterial Mn(II) oxidase, the multicopper oxidase MnxG, from spores of several different marine *Bacillus* species. *Applied and Environmental Microbiology*, 74: 1527-1534. doi: 10.1128/AEM.01656-07.

2007

5. Tebo BM, BG Clement, and **GJ Dick** (2007). Biotransformations of manganese, p. 1223-1238. In C. J. Hurst, R. L. Crawford, J. L. Garland, D. A. Lipson, A. L. Mills, and L. D. Stetzenbach (ed.), *Manual of environmental microbiology*, 3rd ed. ASM Press, Washington, DC.

2006

4. **Dick GJ**, YE Lee, and BM Tebo (2006). Manganese(II)-oxidizing *Bacillus* spores in Guaymas Basin hydrothermal sediments and plumes. *Applied and Environmental Microbiology*, 72: 3184-3190. doi: 10.1128/AEM.72.5.3184-3190.2006.
3. Mix L, **GJ Dick**, and FJ Stewart (2006). The Astrobiology Primer, an outline of general knowledge- Version 1, 2006. *Astrobiology*, 6: 735-813. doi: 10.1089/ast.2006.6.735.

2005

2. Webb SM, **GJ Dick**, JR Bargar, and BM Tebo (2005). Evidence for the presence of Mn(III) intermediates in the bacterial oxidation of Mn(II). *Proceedings of the National Academy of Sciences*, 102: 5558-5563. doi: 10.1073/pnas.0409119102.

2004

1. Tebo, BM, JR Bargar, BG Clement, **GJ Dick**, KJ Murray, D Parker, R Verity, and SM Webb (2004). Biogenic manganese oxides: Properties and mechanisms of formation. *Annual Reviews of Earth and Planetary Sciences*, 32: 287-328. doi: 10.1146/annurev.earth.32.101802.120213.

Other Publications: Books, Perspectives, Comments & Responses, Patents & Reports

- Wilhelm SW, FL Hellweger, RM Martin, C Schampera, F Eigemann, DJ Smith, and **GJ Dick** (2022). Response to “Model assumptions limit implications for nitrogen and phosphorus management: The need to move beyond the phosphorus”. *Journal of Great Lakes Research* 48: 1738-1739. DOI: [10.1016/j.jglr.2022.10.001](https://doi.org/10.1016/j.jglr.2022.10.001).
- Hellweger FL, C Schampera, RM Martin, F Eigemann, DJ Smith, **GJ Dick**, and SW Wilhelm (2022). Response to Comment on "Models predict planned phosphorus load reduction will make Lake Erie more toxic". *Science*: 378: eade2277. DOI: [10.1126/science.ade2277](https://doi.org/10.1126/science.ade2277).
- Dick GJ** (2018). Genomic Approaches in Earth and Environmental Sciences. Wiley-Blackwell, 12 chapters, 176 pages. ISBN: 978-1-118-70824-8
- Dick GJ** (2017). Embracing the mantra of modelers and synthesizing omics, experiments, and models. *Environmental Microbiology*, 9: 18-20.
- Sherman DS, M Kaufman-Schofield, **S Jain**, and **GJ Dick** (2015). U.S. Patent 20150361470. *Nonribosomal Peptide Synthetases*.
- Druschel G, **GJ Dick**, and ES Boyd (2014). Geomicrobiology and Microbial Geochemistry 2014 Workshop Report. <https://dx.doi.org/10.6084/m9.figshare.3083524.v1>
- Druschel G and **GJ Dick** (2014). Geochemistry and Microbial Geochemistry Workshop (meeting report). *Eos*, 95: 90.
- Gilbert, JA, **GJ Dick**, B Jenkins, EE Allen, K Mackey, and EF DeLong (2014). Meeting report: Ocean ‘omics science, technology and cyberinfrastructure: current challenges and future requirements (August 20-23, 2013). *Standards in Genomic Sciences* 9(3): 1252-1258. doi:10.4056/sigs.5749944
- Baker BJ**¹ and **GJ Dick** (2013). Omic Approaches in Microbial Ecology: Charting the Unknown. *Microbe* 8: 353-360.

Selected media coverage

- | | |
|------|--|
| 2022 | Yancey et al. (2022) paper highlighted in <i>Applied and Environmental Microbiology</i> “Spotlight” as an article of significant interest. |
| 2021 | Klatt et al. (2021) paper highlighted in the Associated Press, Washington Post, CNN, <i>Science</i> , etc. |
| 2016 | Sinkhole project featured on NPR’s <i>All Things Considered</i> . |
| 2015 | Lake Erie project featured on NPR’s <i>The Environment Report</i> |
| 2014 | Anantharaman et al. (2014) highlighted in <i>Nature Reviews Microbiology</i> , <i>Cell</i> , <i>Microbe</i> , and in numerous popular media outlets. |
| 2014 | Li et al. (2013) recommended by <i>Faculty of 1000</i> |
| 2013 | G. Dick profiled in <i>Microbe</i> magazine |

- 2012 Lesniewski et al. (2012) recommended by *Faculty of 1000*
 2012 Sinkhole research featured in *LSA Magazine*
 2011 Sinkhole research featured by the *Discovery Channel*
 2011 Sinkhole research featured in *Earth* magazine

Invited Lectures

- 2023 Centre national de la recherche scientifique (CNRS) (virtual)
 2023 Innovative Genomics Institute, University of California Berkeley (virtual)
 2022 International Conference on Toxic Cyanobacteria (plenary), Toledo, OH
 2021 University of Michigan School of Environment and Sustainability
 2020 Geological Sciences of America annual meeting, keynote (virtual)
 2020 NSF-DOE Rules of Life Algae Workshop
 2019 Lamont-Doherty Earth Observatory, Columbia University
 2019 Kent State University
 2019 Rice University
 2019 Proctor and Gamble Corporation, Cincinnati, Ohio.
 2018 Bowling Green State University Department of Biological Sciences
 2018 Cooperative Institute for Great Lakes Research, Partners Meeting
 2018 Max Planck Institute for Marine Microbiology, Bremen, Germany
 2017 Hope College Department of Biology
 2017 Cooperative Institute for Great Lakes Research, Partners Meeting
 2017 Ohio State University Department of Earth Sciences
 2017 Borchardt Conference, Ann Arbor, MI
 2016 Stanford University Department of Earth System Science
 2016 International Society of Microbial Ecology Meeting, Montreal, Canada
 2016 Johns Hopkins University Department of Geography and Environmental Engineering
 2016 Geobiology Gordon Conference, Galveston, Texas
 2015 Saturday Morning Physics, University of Michigan (public lecture)
 2015 Goldschmidt Geobiology and Low-Temperature Geochemistry Town Hall
 2015 University of Tennessee Department of Microbiology
 2015 Montana State University Department of Microbiology
 2014 University of British Columbia Department of Microbiology
 2013 AGU Fall Meeting, San Francisco, CA
 2013 Goldschmidt 2013, Florence, Italy (*keynote*)
 2013 Geologists of Jackson Hole (public lecture)
 2013 California Institute of Technology Geological and Planetary Sciences
 2012 AGU Fall Meeting, San Francisco, CA
 2012 Kellogg Biological Station, Michigan State University
 2012 Eastern Michigan University Biology Department
 2012 Argonne Soil Metagenomics Annual Meeting
 2012 University of California-Davis Dept. of Geology
 2012 Michigan State University Dept. of Microbiology & Molecular Genetics
 2012 University of Michigan Tri-Dept. Symposium (EARTH, AOSS, Astro.)
 2012 UM-CILER seminar for the NOAA Assistant Administrator (OAR)
 2012 North Dakota State University Dept. of Geosciences

2012	North Dakota Dept. of Geological Sciences and Geological Engineering
2012	Wayne State University Dept. of Environmental Science/Geology
2011	Program in the Biomedical Sciences Seminar, University of Michigan
2011	MIT Biogeochemistry & Chemical Oceanography Seminar
2011	2011 University of Michigan Bioinformatics Kickoff
2011	University of Kansas Dept. of Geology
2011	Keystone Symposium, Breckenridge, CO
2011	University of Michigan Dept. of Ecology and Evolutionary Biology
2010	Futures in Geobiology and Low-Temperature Geochemistry Workshop, Carnegie Institute of Washington
2010	Grand Valley State University & Annis Water Resources Institute
2010	NOAA Great Lakes Environmental Research Lab
2009	University of Michigan Microbiome Research Initiative, Department of Microbiology and Immunology
2009	University of Michigan School of Medicine Center for Computational Medicine and Bioinformatics
2009	Gordon Research Conference for Applied and Environmental Microbiology, Mt. Holyoke, MA
2009	American Chemical Society, Spring Meeting, Salt Lake City, UT
2008	University of Michigan School of Public Health 2008 Microbial Ecology pre-symposium seminar
2007	University of Michigan Dept. of Geological Sciences
2006	California Institute of Technology Geobiology Seminar
2004	Gordon Graduate Research Seminar in Bioinorganic Chemistry, Ventura, CA

Research Grants

Pending Proposals

2023-2028 \$7,372,485, 56% IDC, NSF/NIH. *Great Lakes Center for Fresh Waters and Human Health.*
 Role: PI (Co-PIs George Bullerjahn, David Sherman, David Kennedy, Chris Winslow, Judy Westrick, Andrew Ault)

Active

2022-2025 \$1,186,125, 26% IDC, NOAA (\$451k to GJD). *HAB-OA 2022: Synergistic impact of climate induced acidification, temperature, total alkalinity and nutrients on cyanobacteria HABs in the Great Lakes*
 Role: U-M PI (PI Reagan Errera, NOAA GLERL; Co-PIs Jenan Kharbush, Cody Sheik, Trisha Spanbauer, Rachel Eveleth, Kevin Yeager)

2022-2027 \$53,000,000, 26% IDC, NOAA. *Cooperative Institute of Great Lakes Research*
 Role: PI

2020-2022 \$258,000 (\$211,880 to GJD), 26% IDC, NOAA. *A Next Generation Research Database to Harness Great Lakes Environmental 'Omics Data.*
 Role: PI (Co-PIs Vincent Deneff and Melissa Duhaime)

- 2020-2022 \$775,568 (\$221,582 to GJD), 26% indirect, NOAA. *Linking genes to microbial traits key to the rise and demise of cyanobacterial harmful algal blooms.*
Role: Co-PI (PI Vincent Deneff, Co-PI Melissa Duhaime)
- 2020-2025 \$11,699,469 (\$1,014,000 to GJD), 56% IDC, NIH. *Host and Microbial Metabolism in Graft versus Host Disease.*
Role: PI of Genomics and Bioinformatics Core (PI Pavan Reddy, U-M Medical School)
- 2020-2023 \$199,999 (all to GJD), 56% IDC, Michigan Sea Grant (NOAA). *Determining how the ecophysiology of different Microcystis strains underpins succession and toxicity of harmful cyanobacterial blooms in Lake Erie.*
Role: PI (Co-PIs: Ed Verhamme and John Bratton, Limnotech; Craig Stow, NOAA-GLERL).
- 2018-2023 \$479,525 (\$361,340 to GJD), 55% indirect, NSF and NIEHS (prime), Bowling Green State University (direct). Lake Erie Center for Fresh Waters and Human Health
Role: U-M PI (Co-PI David Sherman).
- Completed*
2020-2023 \$144,000 (all to GJD), 56% IDC, Lawrence Livermore National Lab (prime sponsor) subcontract from U. Toledo. *Microbiome controls on harmful algal toxin production in Lake Erie.*
Role: U-M PI (Co-PIs Xavier Mayali and Dragan Isailovich)
- 2018-2022 \$874,085 (\$460,532 to GJD), 55% indirect, NSF Biological Oceanography. *The role of heterotrophic bacteria in protecting cyanobacteria from hydrogen peroxide in coastal systems*
Role: PI (Co-PIs: Rose Cory and George Kling, U-M).
- 2018-2022 \$51,293, 55% indirect, subcontract from Ohio State University, via NOAA ECOHAB 2017: *Linking process models and field experiments to forecast algal bloom toxicity in Lake Erie.*
Role: U-M PI (PI Justin Chaffin, Ohio State University).
- 2018-2021 \$69,300, 10% indirect, Cooperative Institute for Great Lakes Research (NOAA). *Development of a gene-based model of toxin production by Microcystis aeruginosa in Lake Erie.*
Role: PI (Co-PIs: Craig Stow, NOAA-GLERL and Ed Verhamme, Limnotech).
- 2016-2022 \$387,151, 55.0% indirect, NSF Geobiology and Low-Temperature Geochemistry. *Revealing the interplay between light, sulfur cycling, and oxygen production in cyanobacterial mats*
Role: PI (Co-PIs: Wiebke Ziebis, USC; Jacob Waldbauer, U. Chicago; Bopi Biddanda, GVSU).
- 2015-2021 \$226,033, 55.0% indirect, NSF. *GP-IMPACT: Broadening pathways to geosciences with an integrated program at The University of Michigan.*

- Role: PI (Project Coordinator Jenna Munson)
- 2018-2020 \$200,066, 29% indirect, Procter & Gamble. *Metagenomic insights into metabolic pathways and microbial interactions of the scalp microbiome.*
Role: Sole PI
- 2014-2015 \$75,894 (\$27,368 to GJD), 55.5% indirect, Cubist Pharmaceuticals. *DNA sequencing of 100 bacterial genomes provided by Cubist Pharmaceuticals.*
Role: Co-PI (PI David Sherman)
- 2014-2015 \$25,000, 0% indirect, Cooperative Institute for Great Lakes Research (NOAA). *Integrated field and laboratory investigation of links between nutrients, dissolved organic carbon, reactive oxygen species, and toxicity of harmful algal blooms.*
Role: PI, 60% contribution (Co-PIs: Tim Davis, NOAA-GLERL).
- 2014 High throughput metagenomic sequencing (3 lanes of Illumina HiSeq; \$0), Census of Deep Life, Sloan Foundation. *Microbial life in an underground ocean: Metagenomics of the Soudan Iron Mine*
Role: Co-PI (Co-PIs Jon Badalamenti, Jeff Gralnick, Brandy Toner, U. Minnesota; Cody Sheik, U. Michigan).
- 2013-2018 \$1,163,656 (\$82,461 to GJD); 55.5% indirect, NSF. *Global Ocean Biogeochemical Mapping Enabled by an Autonomous Vertical Sampling Vehicle.*
Role: Co-PI (PI John Breier, Co-PIs Mak Saito and Michael Jakuba, Woods Hole Oceanographic Institute).
- 2013-2017 \$50,000, 0% indirect. Sloan Research Fellowship in Ocean Sciences. *Linking Microbiology and Geochemistry in the Deep Sea.*
Role: PI
- 2011-2014 \$99,978 (U-M portion: \$78,461), 55.5% indirect, NSF. *EAGER: Collaborative Research: Genomic Insights into Proterozoic Geobiology – Single-Cell and Metagenomic Sequencing of Metabolically Versatile Purple Cyanobacteria.*
Role: PI (Co-PIs: Bopi Biddanda, Grand Valley State University; Nathan Sheldon, U-M).
- 2010-2014 \$1,718,987 (including \$355,250 subcontract to WHOI; \$235,531 subcontract to U. Minn.), 12.5% indirect. The Gordon and Betty Moore Foundation, Marine Microbiology Initiative. *Unveiling the Microbiology that Underpins Deep-Sea Biogeochemistry.*
Role: PI (Co-PIs: John Breier and Houshuo Jiang, Woods Hole Oceanographic Institute; Brandy Toner, University of Minnesota; Patrick Schloss, U-M).
- 2010-2014 \$771,644 (\$245,300 to GJD), 55.5% indirect, NSF. *Collaborative Research: Integrating Geochemistry, Microbiology, and Hydrodynamics: A Model for Trace Element Transport and Fate in Hydrothermal Plumes.*
Role: PI (PI John Breier, Woods Hole Oceanographic Institute; PI Brandy Toner, University of Minnesota).
- 2010-2014 \$367,176, 54.5% indirect, NSF. *Linking Biogeochemistry and Microbial Community Dynamics in Deep-Sea Hydrothermal Plumes.*
Role: PI

- 2013 High throughput DNA pyrosequencing services: 12 lanes of Illumina Hi-Seq sequencing (U-M portion: \$0); DOE Joint Genome Institute Community Sequencing Program. *Insights into Metabolisms of the Cosmopolitan, Enigmatic Miscellaneous Crenarcheota Group (MCG) in Marine Sediments*.
Role: Co-PI (PI U-M PhD student Brett Baker; Co-PIs Andreas Teske, University of North Carolina and Kai-Uwe Hinrichs, University of Bremen).
- 2013 \$764,336 plus 30 days ship time (\$0, one ship berth to GJD); 0% indirect, Schmidt Ocean Institute. *Robotic Exploration of the Mid-Cayman Rise using Sentry and Nereus*.
Role: Collaborator (PI Christopher German, Woods Hole Oceanographic Institute).
- 2011-2012 High throughput DNA pyrosequencing services (\$0 to GJD). Census of Deep Life (CoDL), Deep Carbon Observatory, Alfred P. Sloan Foundation. *Deep Terrestrial Biosphere Observatory: Shield Brines, Microbial Mats, and Banded Iron Formations at the Soudan Iron Mine*.
Role: Co-PI (PI Jeffrey Gralnick and Co-PI Brandy Toner, University of Minnesota).
- 2010-2012 \$244,019 (\$0 to GJD), 12.5% indirect. The Gordon and Betty Moore Foundation. *Developing a Particulate Sampling and In Situ Preservation System for High Spatial and Temporal Resolution Studies of Microbial and Biogeochemical Processes*.
Role: Collaborator (PI John Breier, Woods Hole Oceanographic Institute)
- 2009-2010 5 plates of 454 Titanium DNA pyrosequencing services (\$0 to GJD; ~\$60,000 value). The Gordon and Betty Moore Foundation Marine Microbiology Initiative. *Metagenomics and Metatranscriptomics of Biogeochemistry in the Guaymas Basin Hydrothermal Plume*.
Role: PI

Internal Grants, University of Michigan

- 2016-2017 \$60,000 (\$20,000 to GJD), Mcubed, *Exploring the microbiology of harmful algal blooms*.
Role: PI (Co-PIs Vincent Deneff and Don Scavia).
- 2014-2015 \$249,485 (\$102,947 to GJD), 0% indirect, U-M Water Center. *Building Capacity for Freshwater Science: Integrating Microbial Genomics, Environmental Chemistry, and Ecosystem Processes to Understand Harmful Algal Blooms*.
Role: PI (Co-PIs Vincent Deneff, U-M EEB and Tom Johengen, U-M CILER).
- 2013-2014 \$60,000 (\$20,000 to GJD), Mcubed. *Will Climate, Invasives and Toxicants Imperil Unique Biodiversity in the Great Lakes?*
Role: PI (Co-PIs Nathan Sheldon and Allen Burton).
- 2011-2013 \$48,192, U-M Center for Computational Medicine and Bioinformatics (CCMB) Pilot Research Grant Program. *De Novo Assembly and Clustering of DNA Sequencing Reads from Metagenomic Samples*.
Role: Co-PI (PI Jim Cavalcoli, CCMB).

- 2009-2010 \$7,500, U-M OVPR. *Molecular Biogeochemistry in Buoyant Hydrothermal Plumes at the Eastern Lau Spreading Center.*
Role: PI
- 2009-2010 \$13,322, Rackham Faculty Research Grant, *Genomic Windows into Deep-Sea Microbial Biogeochemistry.*
Role: PI

Courses Taught and Leaves Taken

Course information

Number	Title	Format	Cr	Semesters Taught
EARTH 112	Life in Extreme Environments	Lecture; mini-course	1	F10, W12, F13
EARTH 112	The Great Lakes	Lecture; mini-course	1	Sp20, F20, F21, F22
EARTH 175	The Microbial World	Lecture + discussion	4	W09, W10, W11, W13
EARTH 202	Environmental Science in the Rockies	Lecture + field + lab	5	S11, S12, S13, S14, S15, S16, S17, S18, S19
EARTH 208/497	Hot Topics in the Earth Sciences	Seminar	1	W11
EARTH 219	Introduction to Environmental Science	Lecture + lab	4	W18, W20
EARTH 313	Geobiology	Lecture + lab	4	F10, F12, F13, F15, F16, F17, F18, F19, F20
EARTH 413	Geomicrobiology	Lecture	3	W16
EARTH 450	Ecosystem Science	Lecture + field + lab	5	S21, S22, S23
EARTH 513	Geomicrobiology	Lecture	3	F09, F11, W14
EARTH 523	Microbial Community Omics	Lecture + lab	2	F14, W17, W19, W21

Enrollment & student evaluations

Questions:

Q1: Overall, this was an excellent course.

Q2: Overall, this instructor was an excellent teacher.

Q3: I learned a great deal from this course (now Q1631 - This course advanced my understanding of the subject matter).

Q4: I had a strong desire to take this course.

Student responses: 5-strongly agree; 4-agree; 3-neutral; 2-disagree; 1-strongly disagree.

AY	Term	Course	Cr. ^a	Enroll.	# student response	Q1	Q2	Q3	Q4
2022-2023	F 2022	EARTH 112	1	247	138			4.8	4.3
	Sp2022	EARTH 450 ^e	5						
2021-2022	W2022	<i>1 Course Equivalent release from teaching for LSA sabbatical</i>							
	F2021	EARTH 112	1	217	64			4.8	4.1
	Sp2021	EARTH 450 ^d	5	24	1	4.0	5.0	5.0	4.0
2020-2021	W2021	EARTH 523	3	18	6	4.5	4.9	4.9	4.8
	F2020	EARTH 313	4	70	36	4.2	4.9	4.7	4.1
	F2020	EARTH 112	1	194	79	4.8	4.9	4.9	4.3
	Sp2020	EARTH 112	1	83	24	4.9	4.8	4.8	4.0
2019-2020	W2020	EARTH 219	3	117					
	W2020	EARTH 218	1	27					
	F2019	EARTH 313	4	57	48	4.45	4.81	4.70	4.02
	S2019	^b EARTH202 ^c	5	18	18	5.00	5.00	5.00	4.50
2018-2019	W2019	EARTH 523	3	11	5	5.0	5.0	5.0	5.0
	F2018	EARTH 313 ^b	4	39	35	4.6	4.8	4.8	4.0
	S2018	EARTH 202 ^c	5	13	6	5.0	5.0	5.0	4.5
2017-2018	W2018	EARTH 219	4	46	38	4.71	4.94	4.67	4.4
	F2017	EARTH 313	4	35	28	4.71	4.91	4.75	4.54
	S2017	EARTH 202 ^c	5	19	20	5.00	4.96	4.94	4.77
2016-2017	W2017	EARTH 523	3	12	10	4.79	4.88	4.88	4.79
	F2016	EARTH 313	4	28	20	4.33	4.73	4.50	4.36
	S2016	EARTH 202	5	18	18	4.02	4.96	3.96	4.51
2015-2016	W2016	EARTH 413	3	27	14	4.10	4.50	4.21	4.13
	F2015	EARTH313 ^b	4	52	40	4.18	4.73	4.45	4.06
	S2015	EARTH 202 ^c	5	16	15	4.2	4.82	4.62	4.64
2014-2015	W2015	<i>4 cr. release from teaching for sabbatical</i>							
	F2014	EARTH 523	2	12	8	4.83	4.83	4.50	4.70
	S2014	EARTH 202 ^c	5	8	8	4.92	5.00	4.92	4.17
2013-2014	W2014	EARTH 513	3	16	12	4.25	4.83	4.64	4.64
	F2013	EARTH 112	1	339	274	4.08	4.54	4.07	3.30
	F2013	EARTH 313 ^b	4	55	36	4.39	4.63	4.64	3.97
	S2013	EARTH 202 ^c	4	10	9	4.93	5.00	4.93	4.63
2012-2013	W2013	EARTH 175	4	58	40	4.32	4.81	4.65	3.67
	F2012	EARTH 313 ^b	4	47	40	3.83	4.55	3.98	4.00
	S2012	EARTH 202 ^c	4	15	15	4.71	4.82	4.96	4.78
	W2012	EARTH 112	1	263	210	4.04	4.39	4.07	3.41

2011-2012	-	-	<i>4 cr. release from teaching for 3rd year review nurturance</i>				-	-	-	-
	F2011	EARTH 513	3	13	10	4.67	4.50	4.79	4.50	
	S2011	GEOSCI 202 ^c	4	18	18	4.75	4.85	4.86	4.86	
2010-2011	W2011	GEOSCI 208/497	1	6	4	4.50	4.50	4.50	4.50	
	W2011	GEOSCI 175	4	57	39	4.47	4.73	4.53	3.64	
	F2010	GEOSCI 313 ^b	4	11	7	4.00	4.75	4.17	4.17	
	F2010	GEOSCI 112	1	187	103	4.21	4.59	4.16	3.47	
2009-2010	W2010	GEOSCI 175	4	45	31	4.29	4.76	4.68	3.45	
	F2009	GEOSCI 513	2	8	7	5.00	4.92	4.92	4.80	
			<i>2 cr. release from teaching for 2nd year</i>				-	-	-	
2008-2009	W2009	GEOSCI 175	4	32	13	3.92	4.06	4.00	3.88	
	F2008		<i>4 cr. release from teaching for 1st year</i>				-	-	-	

^a Course Credit

^b Co-taught with Jeff Wilson (50%);

^c Co-taught with Chris Poulsen and Jena Johnson

^d Co-taught with Don Zak and Joel Blum

^e Taught as sole faculty instructor for two weeks (half of the course)

Students, Postdocs, and Staff Advised and Supervised

PhD students, Primary Advisor (Dept. of Earth & Environmental Sciences unless noted)

Name	Years	Current Position & Affiliation
10. Lauren Hart	2022-present (Chemical Biology)	
9. Laura Reitz	2020-present	
8. Yun Suk Lee	2019-2021	
7. Colleen Yancey	2018-2023	Postdoc, New England Biolab
6. Jeseth Delgado*	2016-2018	Asst. Prof., Duke University
5. Derek Smith**	2015-2020	Freelance Science Writer
4. Sharon Grim	2014-2019	Postdoc, NASA Ames Research Center
3. Brett Baker	2010-2014	Assistant Prof., University of Texas Austin
2. Alex Voorhies	2009-2014	Synthetic Biology Consultant, Booz Allen Hamilton
1. Karthik Anantharaman	2009-2014	Assistant Prof., University of Wisconsin, Madison

*Co-Chair with Nancy Love, CEE

**Co-Chair with Tim Davis, BGSU

MS students, Primary Advisor

Name	Years	Department
8. Helena Nitschky	2023-present	Earth and Environmental Sciences
7. Paul Den Uyl	2022-present	Earth and Environmental Sciences
6. Matthew Medina	2015-2017	Earth and Environmental Sciences
5. Jesse Fenno	2015-2016	Earth and Environmental Sciences
4. Sunit Jain	2009 – 2010	Bioinformatics Program (no thesis)

3. Kathryn Iverson,	2009 – Fall 2011	Bioinformatics Program (no thesis)
2. Chris Taylor	2011	Bioinformatics Program (no thesis)
1. Prashanna Balaji Venkatasubramanian	2011 – 2012	Bioinformatics Program (no thesis)

Postdoctoral Fellows Hosted & Mentored in My Laboratory

Name (% sponsor)	Years	Current Position, Affiliation
10. Xianzhe Gong	2022-present	
9. Anders Kiledal (100%)	2021-2023	Assistant Research Scientist, U-M
8. Sara Rivera (100%)	2020-2022	Lab Manager, Dick Lab, U-M
7. Jenan Kharbush (0%)	2019-2021	Assistant Professor, U-M
6. Kevin Meyer (100%)	2015-2019	Biologist, US Army Corps of Engineers
5. Judith Klatt (100%)	2015-2017	Research Scientist, Max Planck Institute for Marine Microbiology
4. Lauren Kinsman (33%)	2013	Research Scientist, Kent State University
3. Cody Sheik (100%)	2011-2015	Assistant Prof., U. Minnesota-Duluth
2. Meng Li (100%)	2011-2014	Assistant Prof., Shenzhen University
1. Daniel Reed (100%)	2011-2014	Director of Ocean Science, Global Spatial Technol.

Postdoctoral Fellows Mentored (CIGLR)

5. Alain Isabwe	2023-present
4. Kristie Mitchell	2021-present
3. Abby Hutson	2021-present
2. David Cannon	2021-present
1. Yi Hong	2021-present

Undergraduate students, Independent Research Advisor

44. Ian Fiero (Summer 2023 – present)
43. Natalie Keating (Summer 2023 – present)
42. Olivia May (Winter 2023 – present)
41. Esmee Kuiper (Fall 2022 – present)
40. Hadley Vandevusse (Winter 2022 – present)
39. Sarah Katz (Fall 2021 – present)
38. John Nicholson (Fall 2021 – present)
37. Helena Nitchsky (Winter 2020 – present)
36. Nicole Rappuhn (Winter 2020 – Winter 2021)
35. Olivia Mathiesen (Winter 2020 – Summer 2021, with Honors Thesis)
34. Janel LaPalm (Fall 2019 – Winter 2020)
33. Lydia Stevens (Fall 2019 – Winter 2020)
32. Benjamin Nieman (Fall 2019 – present)
31. Raina Ruman (Fall 2018 – Winter 2020)
30. Claire Zwiers (Fall 2018 – present)
29. Will James (Fall 2018 – present)
29. Arianna Mann (Spring 2018 – Winter 2019)
28. Henry Schnaidt (Fall 2018 – Summer 2019)
27. Kirsten Nelson (Fall 2017 – Winter 2018)
26. Kendall Schissler (Fall 2017 – Summer 2019)

25. Michael Rader (Fall 2017 – Winter 2018)
24. McKenzie Powers (Summer 2017 – Winter 2018, with Honors Thesis)
23. Keith Hildwein (Winter 2017 – present)
22. Olivia Metcalf (Fall 2016 – Summer 2017)
21. Kirk Olsen (Fall 2016 – Summer 2017)
20. Kiah Lowe (Winter 2016 – Fall 2016)
19. Hui Chien Tan (Winter 2016 – Winter 2017)
18. Megan McConnell (Winter 2016)
17. Changrui Shi (Fall 2015 – Winter 2016)
16. Allison Sharrar (Fall 2014 – Winter 2015, with Honors Thesis).
15. Danielle Boshers (Fall 2013 – Winter 2015, with Honors Thesis).
14. Nicholas Aquilina (Fall 2013 – Fall 2015).
13. Grace Tsaloff (Fall 2013 – 2014).
12. Chelsea Mervenne; co-advised with Nathan Sheldon (Winter 2013 – Winter 2014).
11. Kathryn Gallagher; co-advised with Nathan Sheldon (Winter 2013 – Summer 2013).
10. Matthew Sabuda (Fall 2012 – Winter 2013).
9. Michael Balke (Fall 2012 – Summer 2013).
8. Paul Den Uyl (Fall 2012 – Summer 2013).
7. Issac Anderson (Summer 2012).
6. Clayton Wheeler, UROP student (Fall 2011 – Winter 2012).
5. Eva Kramer (Summer 2011 – Summer 2012).
4. Michael Lerner, UROP student (Fall 2010 – Winter 2012).
3. Daniel Marcus (Winter 2010 – Winter 2011).
2. Bridget Callahan, UROP student (Fall and Winter 2009).
1. Adam Essene, Oberlin College (Summer 2009).

Research Scientists, Staff & Visiting Scholars Mentored/Hosted

Name	Years
Anders Kiledal (100%)	2023-present
Teal Furnholm (100%)	2019-present
Robert Hein (50%)	2017-present
Melissa Duhaime (0%)	2012-2016
Sunit Jain (100%)	2012-2015
Anders Andersson (100%)	2011

Dissertation Member (PhD unless otherwise noted; 40 total, 9 current, not including primary advisees listed above)

Name	Year of Degree
<i>Department of Earth & Environmental Sciences</i>	
Cecelia Howard	in progress
Emma Rieb	in progress
Dhurba Pandey	2021
Rebecca Dzombak	2021
Jenny Bowen	2021
Yi Wang	2020
Timothy Gallagher	2016

Collin Ward	2015
Sae Yun Kwon	2015
Patrick Donovan	2015
Meghan King	2013
Qiaona Hu	2011
Devon Renock	2010

Atmospheric, Oceanic and Space Sciences:

Yuxing Yun	2012
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Biochemistry:

Sam Slocum	2017
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Chemical Biology

Katherine Lev	in progress
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Civil and Environmental Engineering:

Avery Carlson	2023
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Nadine Kotlarz	2017
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Xunchang Fei	2015
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Tara Clancy	2014
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Jeongdae Im	2011
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Sukhwan Yoon	2010
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Ecology and Evolutionary Biology:

Diana Carolina Vergara-Florez	in progress
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Morgan Lindback	in progress
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Kristel Sanchez	in progress
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Anthony Wing	in progress
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Nikesh Dahal	in progress
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Karl Romanowicz	2022
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Byron Smith	2018
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Marian Schmidt	2018
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Jen-Pan Huang	2016
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Tory Hendry	2012
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Microbiology & Immunology:

Matt Jenior	2017
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Alyxandria Schubert	2015
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Michael Schillaci-Schofield	2015
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Joseph Zackuklar	2014
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School of Environment and Sustainability:

Elizabeth Entwistle	2016
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Department of Computational Medicine and Bioinformatics:

Kelly Sovacool in progress

External

Celine Chantal Michiels 2019 *University of British Columbia Microbiology & Immunology*
 Elisa Merz 2020 *Max Planck Institute for Marine Microbiology*

Service

Proposal Review Panels, Editorial Duties, Professional Societies

2018-2019 Member, Advisory Board, Geobiology Society: Special Publication Series
 2011-present Proposal Review Panels: NSF Biological Oceanography, NSF Geobiology and Low-Temperature Geochemistry NASA Astrobiology: Exobiology and Evolutionary
 2014-present Editorial Board, *Environmental Microbiology*
 2014-2022 Subject Editor (Molecular Geomicrobiology), *Geobiology*.
 2012-present Editorial Advisory Board, *Geobiology*
 2014-2015 Co-Guest Editor (with Greg Druschel), *Elements* special issue on Geomicrobiology and Microbial Geochemistry (December, 2015).
 2002-present Professional society memberships: American Geophysical Union; Geochemical Society; International Society for Microbial Ecology; American Society for Microbiology, American Society for Limnology and Oceanography

University Service

2020 Member, Promotion Review Committee for Dr. Ashootosh Tripathi for promotion to Research Associate Professor (Life Sciences Institute).
 2018 – present Faculty Steering Committee, Biosciences Initiative on Global Change (4 hours total)
 2016 – present Science Council, University of Michigan Water Center (5 hours per semester)
 2014 – present Program Advisory Committee, Integrated Training in Epidemiology and Microbiome Science, a \$2.5 million training grant awarded to U-M by the Burroughs Wellcome Fund (5 hours per semester).
 2019 (Winter) Steering Committee, 2019 Water@Michigan event (10 hours total)
 2015 – 2016 Faculty Committee on Environment and Sustainability Programs at the University of Michigan (2-10 hours per week).
 2014 – 2016 Organizing Committee, Michigan Meeting: “Unseen Partners: Microbes in Human and Environmental Health” held May, 2016.
 2013 Selection Committee for the Dow Sustainability Fellows Program.
 2013 Advisory Committee Member for Arvind Venkataraman T32 Training Fellowship from the University of Michigan Multidisciplinary Training Program in Lung Disease.
 2013 Core Team Member and Key Scientific Personnel, Moore and Sloan Foundations Data Science Competition and site visit to the University of Michigan.
 2012 PitE GSI Selection Committee.

College Service

2019-2020 Steering Committee, LSA Theme Semester on the Great Lakes (6 hours total)

2019	Chair, Launch Committee for Assistant Professor Jordan Horowitz (6 hours total)
2019 (Winter)	LSA Nominating Committee (charged with considering nominations and deciding the ballot for College-level elected positions: including the Executive Committee, Curriculum Committee, University Senate Assembly, and Ombudsperson; 5 hours total)
2018 (Fall)	Search for Assessment and Evaluation Specialist for the College Undergraduate Education Division (conducted interviews and evaluated candidates).
2017	Launch Committee for Assistant Professor Melissa Duhaime (EEB)

Department Service (Dept. of Earth & Environmental Sciences unless otherwise noted)

2022-present	Department Executive Committee
2021-present	Camp Davis Advisory Committee
2021-present	Department Curriculum Committee
2016-2021	Associate Chair for Curriculum and Undergraduate Studies (includes assignment of faculty teaching, course scheduling, head of advising, head of curriculum committee)
2019-2021	Faculty mentor for Presidential Postdoc Jenan Kharbush
2015-2021	Department liaison for M-Sci
2019	Member, Search Committee for faculty position in Paleontology
2018	Faculty Promotion Committee for Jason Demers (Assistant to Associate Research Scientist)
2018-present	Faculty Mentor for Assistant Professor Jena Johnson
2018	Member, Launch Committee for Assistant Professor Jena Johnson
2018	Member, Select Committee for promotion of Assistant Research Scientist Mark Rowe (SEAS)
2016	Chair, Search Committee for Faculty Search in Geobiology and Biological Oceanography
2015-2016	Member, Department Executive Committee
2015-2016	Member, Student Awards Committee
2014-present	Faculty Mentor for Assistant Research Scientist, Assistant Professor Melissa Duhaime (EEB)
2014	Member, Tenure Committee for Brian Arbic
2012-present	Graduate student application review, Department of Ecology and Evolutionary Biology (6-9 applications per year)
2012-2013	Member, Search Committee for faculty position in aqueous/low-temperature geochemistry
2012	Member, Turner Awards Committee
2010-2016	Department Outreach Coordinator
2010	Member, Search Committee for faculty position in microbial ecology (Department of Ecology and Evolutionary Biology)
2010	Collaborator, proposal to NSF Opportunities for Enhancing Diversity in the Earth Sciences
2009-present	Faculty Sponsor and Developer of EARTH 494, Experiential Learning
2009-2016	Faculty Advisor, Geoclub

- 2009-present Guest lectures: EARTH 325, Env. Geochemistry (2), EARTH 315, Earth Materials (3); EARTH 346, Plate Tectonics; EEB 401, Microbial Ecology
- 2009-2010 Student Awards Committee
- 2008-2010 Graduate Program & Admissions Committee
- 2009 Alumni Board talk
- 2008 Graduate student recruiting: seminars to undergraduates at Carleton College, Macalester College, and the University of Minnesota, Twin Cities

Diversity, Equity, and Inclusion and Community Service/Outreach

- 2020 Instructor, Wolverine Pathways mini-class on “The Great Lakes”. 8 lectures, mandatory office hours with 17 students; July 2020.
- 2019 Participant, Building STEM at Michigan Workshop (full day)
- 2017-2019 NextProf Mentor and Earth & Environmental Sciences roundtable participant.
- 2018 Panelist, NextProf Meeting
- 2017 Panelist, NextProf Meeting
- 2014 Moderator, University of Michigan Water Center Workshop
- 2012-present Faculty advisor and lecturer, Earth Camp
- 2012 Lead for screening and discussion of Switch energy documentary to Earth Camp M-STEM, and MITE programs (~150 high school students).
- 2012 Lecture to IDEA Institute Banquet
- 2011 Lecture to IDEA Institute Programs Reunion (students & parents).
- 2010-2011 IDEA Institute Advisory Board.
- 2010-2011 Director and lecturer, IDEA Institute Summer Geoscience Camp.
- 2010-2011 Lectures and lab tours to Great Lakes Summer Fellows Program.
- 2010 Lecture to IDEA Institute Summer Chemistry Camp.
- 2008 Roundtable leader, 2008 Microbial Ecology Symposium, a campus-wide initiative hosted at the School of Public Health.
- 2006 Instructor and Curriculum Developer, Birch Aquarium at Scripps Summer Camp
- 2005 Instructor, The Ocean Institute, Dana Point, CA. Ridge2000 SEAS (“Student Experiments at Sea”), Teacher Workshop on Deep-Sea Hydrothermal Vents
- 2003-2005 Laboratory mentor, one high school teacher, four high school students, one undergraduate student.

Other Professional Service

- 2022-2023 Work Group member, International Joint Commission Great Lakes Microbial Water Quality Study Plan (planned and attended four workshops and participated in preparation of the report)
- 2021-2022 Member, Scientific Steering Committee, 12th International Conference on Toxic Cyanobacteria, May 22-27, Toledo, OH
- 2021-present Team Member, NOAA Regional Collaboration Network
- 2021-present Member, Data & Bioinformatics Subcommittee, NOAA Omics Working Group
- 2016-2017 Assisted in Organization of International Geobiology Society Meeting, Banff Canada
- 2016 Theme Team Member, Goldschmidt 2017.
- 2015 Organizer of workshop, “Omic Approaches for Freshwater Science”, Bowling Green State University, April 2015.

- 2014 Steering Committee Member, EarthCube RCN
- 2013 Proposal co-author and workshop co-coordinator, NSF workshop on “Geomicrobiology and Microbial Geochemistry” (October 10-12, 2013, Chicago, IL).
- 2013-2014 Advisory Board Member, NSF Chemical Oceanography Biogeochemistry of the Great Lakes Initiative.
- 2012-2013 Member, Theme Team, Goldschmidt 2013, Theme 17, Biogeochemistry: Activities, mechanisms, and cycles.
- 2007-present Ad hoc reviewer:
- Funding agencies (~6 proposals per year): NSF (Geobiology & Low Temperature Geochemistry, Biological Oceanography, Marine Geology and Geophysics, Antarctic Organisms and Ecosystems, Center for Dark Energy Biosphere Investigations Postdoctoral Fellowship Program); NASA (Exobiology and Evolutionary Biology); Gordon and Betty Moore Foundation (Marine Microbiology Initiative); Schmidt Ocean Institute; American Philosophical Society; CCMB Pilot Program (University of Michigan Medical School); Marine Science & Technology Foundation, Canada Research Chairs Program (2013-2014)
 - Journals (~12-25 papers per year): *Science, Nature Microbiology, Applied and Environmental Microbiology, Environmental Science & Technology, Geobiology, Msystems, Molecular Systems Biology, Limnology and Oceanography, ISME Journal, PNAS, FEMS Microbiology Ecology, Population Ecology, Geochimica et Cosmochimica Acta, Biogeosciences, G-cubed, Journal of the Royal Society Interface, Freshwater Biology, Free Radical Biology and Medicine, Water Research*
- 2010-2013 Workshop participant:
- “Grand Challenges for the Great Lakes” (Michigan State University, 2014);
 - “EarthCube: Ocean Omics” (NSF, 2013);
 - “Biogeochemistry of the Great Lakes” (NSF, 2013);
 - “Merging Complex -omic Data and Computational Ecosystem Models” (Gordon and Betty Moore Foundation, 2013);
 - “Future Directions in Geobiology and Low-Temperature Geochemistry” (NSF, 2010).
- 2014 Co-convener, “Geo-omics” session at Goldschmidt 2015, Prague.
- 2010 Co-convener, “Geomicrobiology of Mid-Ocean Ridge Systems: Connections Among Subseafloor, Plume, and Low-Temperature Alteration Environments” session at Goldschmidt 2010, Knoxville, TN.
- 2009 Convener, “The genomics of geochemistry” session at Goldschmidt 2009, Davos, Switzerland.
- 2005 Co-convener, NASA Astrobiology Graduate Conference, La Jolla, CA.

Oceanographic research cruise experience

OASES2 Cruise. Mid-Cayman Rise. Port Everglades, FL to Port Everglades, FL, January 6 – 28, 2012.
R/V *Atlantis*, ROV *Jason*. Chief Scientist Chris German.

GoCAL3 Cruise. Guaymas Basin, Gulf of California. San Diego, CA to San Diego, CA, July 23 – August 13, 2005. R/V *New Horizon*, Chief Scientists Fred Prah and Brian Popp.

GoCAL2 Cruise. Guaymas Basin, Gulf of California. San Diego, CA to San Diego, CA, January 25 – February 9, 2005. R/V *New Horizon*, Chief Scientists Fred Prah and Brian Popp.

GoCAL1 Cruise. Guaymas Basin, Gulf of California. San Diego, CA to San Diego, CA, July 7 – 22, 2004. R/V *New Horizon*, Chief Scientists Fred Prah and Brian Popp.

Black Sea Cruise. Istanbul, Turkey to Istanbul, Turkey, April 14 - May 10, 2003. R/V *Knorr*, Chief Scientists George Luther, Jim Murray.

HOLA-1 Cruise. Guaymas Basin, Gulf of California. San Diego, CA to Manzanillo, Mexico. April, May 2002. R/V *Atlantis*, DSV *Alvin*, Chief Scientist James P. Cowen.

Extreme 2001 Cruise. 9°N, East Pacific Rise. Puntarenas, Costa Rica to Manzanillo, Mexico. October, November, 2001. R/V *Atlantis*, DSV *Alvin*, Chief Scientist Craig Cary.