

Karen G. Lloyd, Associate Professor

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Professional Appointments

2018-present Associate Professor, University of Tennessee
 2012-2018 Assistant Professor, University of Tennessee
 2001-2002 Guest Investigator, Woods Hole Oceanographic Institution
 2000-2001 Project Coordinator, Northwestern University

Academic Preparation

2009-2011 Postdoc Aarhus University, Denmark - Geomicrobiology (Advisor: B. Jørgensen)
 2005-2009 PhD University of North Carolina - Marine Sciences (Advisor: A Teske)
 2002-2005 MSc University of North Carolina - Marine Sciences (Advisor: A Teske)
 1996-2000 BA Swarthmore College – Biochemistry (Thesis advisor: K. Howard)

Awards and Recognition

2020 Ian Morris Scholar, Horn Point laboratory (delayed until 2021, due to Covid-19)
 2019 UTK Blavatnik Award Nominee
 2017 Chancellor's Professional Promise in Research and Creative Achievement
 2017 UTK College of Arts and Sciences Faculty Academic Outreach Teaching Award
 2017 1st Place in Wild Orbit Film Festival, Paris, France
 2016 NASA Early Career Fellow
 2016 Simons Early Career Investigator in Marine Microbial Ecology and Evolution
 2016 UTK College of Arts and Sciences Early-Career Convocation Research Award
 2015 Alfred P. Sloan Research Fellow
 2015 Kavli Fellow, US National Academy of Sciences
 2015 UTK Quest Scholar of the Week
 2013 UTK Quest Scholar of the Week
 2012 Holger Jannasch Award, Woods Hole Oceanographic Institute
 2006 US EPA STAR Fellow
 2006 NC Space Grant Fellow

Mentoring and Teaching Service

Current PhD Students	Dissertation Topic	Expected Graduation Date
TJ Rogers	Chemolithoautotrophy in a convergent margin subsurface	2023
Katie Sipes	Distinguishing ancient from modern microbes in permafrost, Siberia	2021

Graduated Students	Thesis Title and Current Position	Graduation Date
Katherine Fullerton	MSc: Microbial interactions with convergent margin subsurface fluids Current Position: Pellissippi State Community College	2019
Richard Kevorkian	MSc & PhD: Microbiology of deep subsurface mud volcanoes, Mariana Trench Current Position: Colorado State University	2015 & 2019
Joy Buongiorno	PhD: Carbon and iron cycling in Arctic fjords, Svalbard Current Position: Assistant Professor, Maryville College	2018
Jordan Bird	PhD: Ecophysiology of uncultivated microbes in Baltic subsurface sediments Current Position: University of Arkansas Medical	2017

School

Graduate Student Honors & Awards

2020	2 nd place in Poster Session at Southeastern Biogeochemistry Symposium (Rogers)
2019	David C. White Travel Award (Kevorkian)
2019	Microbiology Department Teaching Award (Fullerton)
2018	Chancellor's Medal of Excellence (Buongiorno)
2018	Polar and Alpine Microbiology Travel Award (Sipes)
2018	Best Talk ASM KY-TN Branch Meeting (Sipes)
2018	AbGradCon Travel Award (Fullerton)
2018	Carolyn Fite Award (Buongiorno)
2018	UTK Student/Faculty Research Award (Kevorkian)
2017	Accepted to the International Geobiology summer course (Fullerton)
2017&2018	Associate Alumnae of Douglas College Fellowship (Fullerton)
2017	Invited to attend DCO Early Career Workshop, Etna, Italy (Fullerton)
2017	UTK Graduate Student Senate Research Award (Buongiorno)
2017	UTK travel award to visit Montana State University (Buongiorno)
2017	Post-Expedition Award from NSF International Ocean Discovery Program (IODP) Exp. 366 (Kevorkian)
2017	David C. White Travel Award (Kevorkian)
2017	Graduate Student Senate Travel Award (Kevorkian)
2016	Accepted as shipboard scientist in NSF International Ocean Discovery Program (IODP) Exp 366 (Kevorkian)
2016	Challenge coin from UTK police department (Buongiorno)
2016	David C. White Travel Award (Buongiorno)
2016	Exploration Fund Grant through the Explorer's Club (Buongiorno)
2016	Mamont Scholar (Buongiorno)
2016	Best oral presentation, 3rd Annual Biogeochemistry Symposium (Buongiorno)
2016	Graduate Student Senate Travel Award (Buongiorno)
2016	David C. White Travel Award (Bird)
2015	Society for Sedimentary Geology Student Assistance Grant (Buongiorno)
2015	Geological Society of America Graduate Student Research Grant (Buongiorno)
2015	Accepted to the International Geobiology summer course (Buongiorno)
2014	Accepted to the International Geobiology summer course (Bird)
2012	NSF Scale-It IGERT fellowship (Bird)
2012	NSF Scale-It IGERT supplemental research grant (Bird)

Undergraduate Research Assistants Mentored

Maddie Spradley (UTK; Fall 2019-Spring 2020), Roberto Diaz (REU, Summer 2019), Peibo Li (UTK; Fall 2018-Spring 2020), Raegan Paul (UTK; Fall 2018-), Abby Coderre (UTK; Spring 2017), Brandy Barber (UTK; Fall 2017-Fall 2018), Rachel Winstead (UTK; Fall 2016-Fall 2017), Alex Swystun (UTK; Spring 2017-Summer 2017), Sean Callahan (New Haven University; Summer 2017), Ameen Abdel-Khalek (Spring 2016-Spring 2017), Jacob Rosalsky (Harvey Mudd; Summer 2016), Taylor Pickett (UTK, Summer 2016), Talor Noordhoek (UTK, Summer 2016), Jason Chu (UTK; Fall 2015), Lindsey Whatley (UTK; Fall 2015), Alexander Eddie (UTK; Summer 2015), Jessica Keys (Elmhurst College; Summer 2015), Ferron Martin (UTK; Summer 2015), Sara Hitson (UTK; Fall 2014-Spring 2015), Spirodon Papoulis (Michigan State University; Summer 2014), Caitlyn Quinton (UTK; Fall 2013), Kyle Saylor (UTK; Spring 2013-Spring 2014), Kelsey Coombs (UTK; Fall 2013-Spring 2014), Caitlyn Mandel (UTK; Fall 2013), Emily Deas (Belmont College; Summer 2013), Emily McCully (Flagler College; Summer 2013), Nikanj Patel (UTK; Fall 2012-Spring 2013), Megan May (Depauw University; Summer 2012), Sarah Underwood (UNC; 2007-2009), Chip Peterson (UNC; 2007-2008), Zoe Manikan (UNC; 2006-

2007), Laura Wehrmann (Oldenburg University, Germany; 2005), Daniela Kolhöfer (Oldenburg University, Germany; 2005), Yushih Lin (Bremen University, Germany; 2006)

Laboratory Technicians Supervised and Placement after their time in my laboratory

Taylor Roy (UTK; 2014-2016; Technician at the University of Utah, Salt Lake, UT), Alexander Shumaker (UTK; 2014; PhD student at Rutgers University)

Teaching Experience – UTK

Fall 2019, 2020	Bioinformatics (MICR 540/480), a course I originated
Fall 2018	Grant-Writing for Graduate Students (MICR 594)
Fall 2017	First year seminar (MICR 515)
Spring 2013, 2015, 2017, 2019	Microbial Physiology (MICR 410)
Fall 2016	Journal Club in Microbial Ecology (MICR 606)
Spring 2016, 2018, 2020	General Microbiology (BIOL 220)
Fall 2015 and 2012	Advanced Topics in Microbial Ecology (MICR 650)
Fall 2015	Topics in Microbial Ecology (MICR 595)
Fall 2014	Advanced Microbiology (MICR 321)
Fall 2013	Introduction to Microbiology (MICR 310)

Research Expeditions

2020	Central Chile hot springs and volcanic arc, Santiago, Chile
2019	Svalbard, Arctic, <i>AWIPEV</i>
2019	Andean Backarc hot springs, Salta, Argentina
8 trips 2005-2019	White Oak River Estuary, NC
2017, 2018	Costa Rica and Panama hot springs and volcanic arc
2016	NSF International Ocean Discovery Program (IODP) Exp. 366: Mariana Trench, onshore participant
2016	Svalbard, Arctic, <i>AWIPEV</i> , <i>R/V Teisten</i>
2014	Malcom X Shabazz High School field work in Poconos
2013	NSF IODP Exp. 347: Baltic Sea onshore participant
2011, 2010	Aarhus Bay, <i>R/V Tyra</i>
2010, 2009	Aarhus Bay, <i>R/V Susannah</i>
2008	Guaymas Basin, <i>R/V Atlantis</i> , <i>DSV Alvin</i>
2008, 2006	Gulf of Mexico, <i>R/V Pelican</i>
2006	Gulf of Mexico, <i>R/V Seward Johnson</i> , <i>DSV SeaLink</i>

Research Grants

Extramural Funding

2019-2022	DOE Office of Biological and Environmental Research <i>Using culture-independent methods to link active compound-specific carbon degradation to greenhouse gas production and recycling in natural populations of permafrost microbes</i> (\$3,320,290; \$1,310,918 to Lloyd) Role: Lead PI
2019-2022	NSF (Biological Oceanography) <i>In situ oxidation rates of methane injected from seafloor gas seeps</i> (\$321,219 to Lloyd) Role: Co-PI
2020	NERC Arctic Research Station visit. (Cost of stay at NERC Arctic station) <i>Organic matter degradation in permafrost</i> Role: Lead PI
2018	AWIPEV French-German Arctic Research Base in Ny Ålesund/Spitsbergen. <i>KOP 56: Biogeochemistry of carbon, iron and sulfur cycling in West-Svalbard fjords</i> . (Cost of stay at the AWIPEV Arctic base) Role: Cooperation Partner

- 2018 DCO funding for small international workshop for grantwriting (\$10,000) **Role: Lead PI**
- 2017-2018 NSF International Ocean Discovery Program (IODP) Exp. 366 Post-Expedition Award *Influence of serpentinization on microbial single cell genomics at the Mariana Forearc Seamounts*. \$13,133.98 Award **Role: Lead PI**
- 2017 AWIPEV French-German Arctic Research Base in Ny Ålesund/Spitsbergen. *KOP 56: Biogeochemistry of carbon, iron and sulfur cycling in West-Svalbard fjords*. (Cost of stay at the AWIPEV Arctic base) **Role: Cooperation Partner**
- 2016-2018 Alfred P. Sloan (Deep Carbon Observatory) *Biology Meets Subduction: A Collaborative and Multi-Disciplinary Deep Carbon Field Initiative*. (\$459,665; \$87,462 to Lloyd) **Role: Co-PI**
- 2017 Alfred P. Sloan (DCO Census of Deep Life) *Costa Rica subsurface fluid communities* (16S rRNA sequencing services) **Role: Lead PI**
- 2015-2018 NASA (Exobiology) *Metabolic flexibility of low energy specialist methanogens* (\$187,000) **Role: Lead PI**
- 2015-2018 Simons Foundation *The role of uncultured microbes in the Arctic marine sediment carbon cycle* (\$432,000) **Role: Lead PI**
- 2016 AWIPEV French-German Arctic Research Base in Ny Ålesund/Spitsbergen. *KOP 56: Biogeochemistry of carbon, iron and sulfur cycling in West-Svalbard fjords*. (Cost of stay at the AWIPEV Arctic base) **Role: Cooperation Partner**
- 2015 Alfred P. Sloan (Research Fellowship) (\$50,000) **Role: Lead PI**
- 2014-2017 NSF (Biological Oceanography) *Quantification of cell-specific organic matter degrading activities of the deep subsurface biosphere* (\$362,095; \$244,101 to Lloyd) **Role: Lead PI**
- 2014-2019 NSF (Dimensions of Biodiversity) *Genetic, phylogenetic, and functional microbial diversity in permanently frozen aquatic sediments over geological time* (\$1,551,143; \$232,144 to Lloyd) **Role: Co-I**
- 2014-2018 NSF (International Research Experience for Students) *Research opportunities in microbiology and biogeosciences of Siberian deep subsurface permafrost* (\$249,997; \$9,000 to Lloyd) **Role: Co-I**
- 2014 Alfred P. Sloan (DCO Census of Deep Life) *Proposal to sequence genomes of uncultivated microorganisms from 30m and 80m deep in Baltic Sea sediments using single cell genomics* (DNA sequencing for 3 genomes) **Role: Lead PI**
- 2014 Alfred P. Sloan (DCO Census of Deep Life) *Community structure of deeply buried sediments within the Baltic Sea*, NSF International Ocean Discovery Program (IODP) Exp. 347 (16S rRNA gene sequencing) **Role: Co-I**
- 2013 NSF (Center for Dark Energy Biosphere Investigations) *Discovering pathways for organic matter breakdown in deep subsurface sediments using “detailed gene homologue analysis” of metagenomes* (\$148,422; \$103,273 to Lloyd) **Role: Lead PI**
- 2012 NSF (Center for Dark Energy Biosphere Investigations) *Single cell research in Baltic Sea Basin* (\$50,000) **Role: Lead PI**

Intramural Funding

- 2015 Oak Ridge National Laboratory (LDRD) *Microscale sorting of microbial communities* (no funds to Lloyd) **Role: Co-I**
- 2013 UTK SARIF *Epifluorescence microscope* \$65,300 **Role: Co-I**

Book Chapters

3. Lloyd, K. G., C. Sheik, B. Garcia-Moreno, and C. Royer. 2019. The genetics, biochemistry, and biophysics of carbon cycling by deep life, in *Deep Carbon: Past to Present*, B. Orcutt, I. Daniel, and R. Dasgupta, Eds. Cambridge University Press.

2. **Lloyd, K. G. 2014.** Importance of microbial quantification in the marine subseafloor. In *Microbial Life of the Deep Biosphere*, Jens Kallmeyer, Ed. (DeGruyter GmbH). **1 citation.**
1. **Lloyd, K. G. 2014.** Quantitative methods applied to methane-cycling archaea in the marine sediments of the White Oak River estuary. In Skovhus, T.L., Caffrey, S., and Hubert, C. *Molecular Methods and Applications in Microbiology* (Norfolk, UK: Caister Academic Press).

Peer-reviewed publications (Students and technicians in my laboratory are marked with *)

49. Buongiorno*, J., K. Sipes*, K. Wasmund, A. Loy, **K. G. Lloyd.** Woeseiales transcriptional response to burial in Arctic fjord surface sediment, *BioRxiv*, <https://www.biorxiv.org/content/10.1101/2020.06.04.134015v1>, *In press at Plos One.*
48. **Lloyd, K. G.,** J. T. Bird*, J. Buongiorno*, E. Deas*, R. Kevorkian*, T. Noordhoek*, J. Rosalsky*, T. Roy*. Evidence for a growth zone for deep subsurface microbial clades in near-surface anoxic sediments. *BioRxiv*, <https://www.biorxiv.org/content/10.1101/2020.03.24.005512v1>, *In press at Appl. Environ. Microbiol.*. Volume 86, issue 19.
47. Murray, A.E., J. Freudenstein, S. Gribaldo, R. Hatzenpichler, P. Hugenholtz, P. Kämpfer, K. Konstantinidis, C. Lane, R. Papke, D. Parks, R. Rosselló-Móra, M. Stott, I. Sutcliffe, J. C. Thrash, S. Venter, W. Whitman, S. Acinas, R. Amann, K. Anantharaman, J. Armengaud, B. Baker, R. Barco, H. Bode, E. Boyd, C. Brady, P. Carini, P. Chain, D. Colman, K. DeAngelis, A. de los Rios, P. Estrada-de los Santos, C. Dunlap, J. Eisen, D. Emerson, T. Ettema, D. Eveillard, P. Girguis, U. Hentschel, J. Hollibaugh, L. Hug, W. Inskeep, E. Ivanova, H.-P. Klenk, W.-J. Li, **K. Lloyd**, F. Löffler, T. Makhalanyane, D. Moser, T. Nunoura, M. Palmer, V. Parro, C. Pedrós-Alió, A. Probst, T. Smits, A. Steen, E. Steenkamp, A. Spang, F. Stewart, J. Tiedje, P. Vandamme, M. Wagner, F. Wang, B. Hedlund, A.-L. Reysenbach. A roadmap for naming uncultivated microorganisms. **2020.** *Nature Microbiology*. 5: 987-994. **1 citation.**
46. Baker, B. J., V. de Anda, K. W. Seitz, N. Dombrowski, A. E. Santoro, and **K. G. Lloyd.** **2020.** A revolution in archaeal biology. *Nature Microbiology* 5: 887-900. **3 citations.**
45. Larowe, D., S. Arndt, J. Bradley, E. Estes, A. Hoarfrost, S. Lang, **K. G. Lloyd**, N. Mahmoudi, W. Orsi, S. S. Walter, A. D. Steen, R. Zhao. **2020.** The fate of organic carbon in marine sediments – New insights from recent data and analysis. *Earth-Science Reviews*. 204: 103146. **1 citation.**
44. Giovannelli, D., P. Barry, J. M. de Moor, **K. G. Lloyd**, M. Schrenk. **2020.** Microbial influences on subduction zone carbon cycling. *EOS*. 101.
43. Bird*, J., E. D. Tague, L. Zinke, J. M. Schmidt, A. D. Steen, B. Reese, I. P. G. Marshall, G. Webster, A. Weightman, H. F. Castro, S. R. Campagna, and **K. G. Lloyd.** **2019.** Uncultured microbial phyla suggest mechanisms for multi-thousand-year subsistence in Baltic Sea sediments. *mBio*. 10(2): e02376-18. **13 citations.**
42. Barry, P. H., J. M. de Moor, D. Giovannelli, M. Schrenk, D. Hummer, T. Lopez, C. A. Pratt, Y. Alpizar Segura, A. Battaglia, P. Beaudry, G. Bini, M. Cascante, G. d'Errico, M. di Carlo, D. Fattorini, K. Fullerton*, E. Gazel, G. González, S. A. Halldórsson, K. Iacovino, J. T. Kulongoski, E. Manini, M. Martínez, H. Miller, M. Nakagawa, S. Ono, S. Patwardhan, C. J. Ramírez, F. Regoli, F. Smedile, S. Turner, C. Vetriani, M. Yücel, C.J. Ballentine, T. P. Fischer, D. R. Hilton, and **K. G. Lloyd.** **2019.** Forearc carbon sink reduces long-term volatile recycling into the mantle. *Nature*. 568: 487-492. **22 citations.**

41. Buongiorno*, J., L. C. Herbert, L. M. Wehrmann, A. Michaud, K. Laufer, A. Szykiewicz, A. Faiia, H. Røy, B. B. Jørgensen, K. M. Yeager, K. Schindler, **K. G. Lloyd**. 2019. Complex microbial communities drive iron and sulfur cycling in Arctic fjord sediments. *Applied and Environmental Microbiology*. 85(14): e00949-19. **9 citations**.
40. Steen, A. D., A. Crits-Christoph, P. Carini, K. M. DeAngelis, N. Fierer, **K. G. Lloyd**, C. Thrash. 2019. High proportions of bacteria and archaea across most biomes remain uncultured. *The ISME Journal*. 13: 3126-3130. **35 citations**.
39. Barry, P. H., M. Nakagawa, D. Giovannelli, J. M. de Moor, M. Schrenk, A. M. Seltzer, E. Manini, D. Fattorini, M. di Carlo, F. Regoli, K. Fullerton*, **Lloyd, K. G.** 2019. Helium, inorganic and organic carbon isotopes of fluids and gases across the Costa Rica convergent margin, *Scientific Data*. 6: 284. **1 citation**.
38. Liang, R., M. Lau, T. Vishnivetskaya, **K. G. Lloyd**, S. Pfiffner, E. M. Rivkina, T. C. Onstott. 2019. Predominance of anaerobic, spore-forming bacteria in metabolically active microbial communities from ancient Siberian permafrost. *Applied and Environmental Microbiology*. 85(15): e00560-19. **2 citations**.
37. Zinke, L., C. Glombitza, J. Bird*, H. Røy, B. B. Jørgensen, **K. G. Lloyd**, J. Amend, and B. Reese. 2019. Microbial organic matter degradation potential in Baltic Sea sediments is influenced by depositional conditions and *in situ* geochemistry. *Applied and Environmental Microbiology*. 85:e02164-18. **6 citations**.
36. Zhou, Z, Liu, Y., **K. G. Lloyd**, J. Pan, Y. Yang, J-D Gu, M. Li. 2019. Genomic and transcriptomic insights into the ecology and metabolism of global benthic archaeal cosmopolitan, Thermopfundales (MBG-D archaea). *The ISME Journal*. 13: 885-901. **26 citations**.
35. **Lloyd, K. G.**, A. D. Steen, J. Ladau, J. Yin, L. Crosby. 2018. Phylogenetically novel uncultured microbial cells dominate Earth microbiomes. *mSystems*. 3(5): e00055-18. **64 citations**.
34. Kevorkian*, R. T., J. T. Bird*, A. Shumaker*, **K. G. Lloyd**. 2018. Estimating population turnover rates by relative quantification methods reveals microbial dynamics in marine sediment. *Applied and Environmental Microbiology*. 84(1): e01443-17. **13 citations**.
33. Vishnivetskaya, T. A., J. Buongiorno*, K. Krivushin, E. Spirina, V. Oshurkova, G. Wilson, **K. G. Lloyd**, E. M. Rivkina. 2018. Methanogens in the Antarctic Dry Valley permafrost. *FEMS Microbiology Ecology* 94(8): fty109. **6 citations**.
32. Buongiorno*, J., S. Turner, G. Webster, M. Asai, A. Shumaker*, T. Roy*, A. Weightman, A. Schippers, **K. G. Lloyd**. 2017. Interlaboratory quantification of Bacteria and Archaea in deeply buried sediments of the Baltic Sea (IODP Expedition 347). *FEMS Microbiology Ecology* 93 (3): fix007. **13 citations**.
31. Zinke, L. A., M. M. Mullis, J. T. Bird*, I. P. G. Marshall, B. B. Jørgensen, **K. G. Lloyd**, J. P. Amend, B. K. Reese. 2017. Thriving or Surviving? Evaluating active microbial guilds in Baltic Sea sediment. *Environmental Microbiology Reports*. 9(5): 528-536. **19 citations**.
30. **Lloyd, K. G.** 2016. (Biogeochemical) cycling in “The Microbe Olympics”. *Nature Microbiology*. 1(8): 16122. **4 citations**.

29. Bird*, J. T., B. J. Baker, A. Probst, M. Podar, **K. G. Lloyd**. 2016. Culture independent genomic comparisons reveal environmental adaptations for Altirchaeales. *Frontiers in Microbiology*. 7: 1221. **11 citations**.
28. Underwood, S., L. Lapham, A. Teske. **K. G. Lloyd**. 2016. Microbial community structure and methane-cycling activity of subsurface sediments at Mississippi Canyon 118 before the Deepwater Horizon disaster. *Deep-Sea Research II*. 129: 148-156. **10 citations**.
27. Solden, L., **K. G. Lloyd**, K. Wrighton. 2016. The bright side of microbial dark matter: Lessons learned from the uncultivated majority. *Current Opinion in Microbiology*. 31:217-226. **93 citations**.
26. Buongiorno*, J., J. T. Bird*, **K. G. Lloyd**, T. Vishnivetskaya. 2016. Draft Genome Sequence of Antarctic Methanogen enriched from Dry Valley Permafrost. *Genome Announcements*. 4(6): e01362-16. **3 citations**.
25. Wasmund, K. C., M. Cooper, L. Schreiber, **K. G. Lloyd**, B. J. Baker, D. G. Petersen, B. B. Jørgensen, R. Stepanauskas, R. Reinhardt, A. Schramm, A. Loy, L. Adrian. 2016. Single-cell genome and group-specific *dsrAB* sequencing implicate marine members of the class Dehalococcoidia (Phylum Chloroflexi) in sulfur cycling. *mBio*. 7:e00266-16. **25 citations**.
24. Teske, A., D. de Beer, L. McKay, J. Biddle, M. Tivey, D. Hoer, **K. G. Lloyd**, M. A. Lever, H. Røy, D. B. Albert, H. Mendlovitz, B. MacGregor. 2016. The Guaymas Basin hiking guide to hydrothermal mounds, chimneys and microbial mats: complex seafloor expressions of subsurface hydrothermal circulation. *Frontiers in Microbiology*. 7: 75. **31 citations**.
23. Dowell, F., Z. Cardman, L. J. McKay, B. MacGregor, S. E. Ruff, J. F. Biddle, S. Dasarathy, **K. G. Lloyd**, H. Mendlovitz, D. Albert, A. Teske. 2016. Methane-processing microbial communities in hot sediments at the base of a hydrothermal mount (Mat Mound) in Guaymas Basin. *Frontiers in Microbiology*. 7: 17. **26 citations**.
22. **Lloyd, K. G.** 2015. Beyond known methanogens. *Science*. 350: 384. **11 citations**.
21. Michalska, K., A. Steen, G. Chhor, M. Endres, J. Bird*, **K. G. Lloyd**, A. Joachimiak. 2015. Discovery of novel aminopeptidase from “Microbial Dark Matter”, *The FASEB Journal*. 29:1-9. **11 citations**.
20. Lever, M. A., K. Rogers, **K. G. Lloyd**, J. Overmann, B. Schink, R. K. Thauer, T. M. Hoehler, B. B. Jørgensen. 2015. Life under extreme energy limitation: a synthesis of laboratory- and field-based investigations. *FEMS Microbiology Reviews*. 39(5):688-728. **160 citations**.
19. Wasmund, K., C. Algora, J. Muller, M. Krüger, **K. G. Lloyd**, R. Reinhardt, L. Adrian. 2015. Development and application of primers for the class *Dehalococcoidetes* (phylum *Chloroflexi*) enables deep insights into diversity and stratification of sub-groups in the marine subsurface. *Environmental Microbiology*. 17: 3540-56. **16 citations**.
18. Orcutt, B. N., D. LaRowe, **K. G. Lloyd**, H. Mills, W. Orsi, B. Kiel-Reese, J. Sauvage. 2014. IODP Deep Biosphere Research workshop report – A synthesis of recent investigations, and discussion of new research questions and drilling targets. *Scientific Drilling*. 17: 61-66. **3 citations**.
17. Wasmund, K., L. Schreiber, **K. G. Lloyd**, D. G. Petersen, A. Schramm, R. Reinhardt, B. B. Jørgensen, L. Adrian. 2014. Genome sequencing of a single cell of the widely distributed marine subsurface *Dehalococcoidetes*, phylum *Chloroflexi*. *The ISME Journal*. 8: 383-397. **90 citations**.

16. **Lloyd, K. G.**, L. Schreiber, D. G. Petersen, K. Kjeldsen, M. A. Lever, A. D. Steen, R. Stepanauskas, M. Richter, S. Kleindienst, S. Lenk, A. Schramm, B. B. Jørgensen. **2013**. Predominant archaea in marine sediments degrade detrital proteins. *Nature*. 496: 215-219. **394 citations**.
15. **Lloyd, K. G.**, M. May*, R. Kevorkian*, A. D. Steen. **2013**. A meta-analysis shows that archaea and bacteria have similar abundances in the seafloor. *Applied and Environmental Microbiology*. 79:7790-7799. **82 citations**.
14. Meyer, S., G. Wegener, **K. G. Lloyd**, A. Teske, A. Boetius, A. Ramette. **2013**. Microbial community connectivity across spatial scales and hydrothermal temperature gradients at Guaymas Basin. *Frontiers in Marine Microbiology*. 4:207. **21 citations**.
13. Kubo, K., **Lloyd, K. G.**, Biddle, J., Teske, A., Amann, R. Knittel, K. **2012**. Archaea of the Miscellaneous Crenarchaeotal Group (MCG) are abundant, diverse, and widespread in marine sediments, *The ISME Journal*. 6, 1949-1965. **194 citations**.
12. Biddle, J. F., Z. Cardman, H. Mendlovitz, D. B. Albert, **K. G. Lloyd**, A. Boetius, A. Teske. **2012**. Anaerobic oxidation of methane at different temperature regimes in Guaymas Basin hydrothermal sediments. *The ISME Journal* 6: 1018-1031. **104 citations**.
11. McKay, L. J., B. J. MacGregor, J. F. Biddle, D. B. Albert, H. P. Mendlovitz, D. R. Hoer, J. S. Lipp, **K. G. Lloyd**, A. P. Teske. **2012**. Spatial heterogeneity and underlying geochemistry of phylogenetically diverse orange and white *Beggiatoa* mats in Guaymas Basin hydrothermal sediments. *Deep-Sea Research Part I*. 67:21-31. **51 citations**.
10. **Lloyd, K. G.**, M. J. Alperin, A. Teske. **2011**. Environmental evidence for net methane production and oxidation in putative ANaerobic MEthanotrophic (ANME) archaea. *Environmental Microbiology* 13(9): 2548-2564. **136 citations**.
9. **Lloyd, K. G.**, D. Albert, J. F. Biddle, J. Chanton, O. Pizarro, and A. Teske. **2010**. Spatial structure and activity of sedimentary microbial communities underlying a *Beggiatoa* spp. mat in a Gulf of Mexico hydrocarbon seep. *PLoS One*, 5(1): e8738. **122 citations**.
8. **Lloyd, K. G.**, B. J. MacGregor, and A. Teske. **2010**. Quantitative PCR methods for RNA and DNA in marine sediments: Maximizing yield while overcoming inhibition. *FEMS Microbiology Ecology*. 72: 143-151. **66 citations**.
7. Joye, S. B., V. A. Samarkin, B. N. Orcutt, I. R. MacDonald, K. U. Hinrichs, M. Elvert, A. P. Teske, **K. G. Lloyd**, C. D. Meile, J. P. Montoya. **2009**. Metabolic variability in seafloor brines revealed by carbon and sulphur dynamics. *Nature Geoscience*. 2(5): 349-354. **97 citations**.
6. Edgcomb, V. P., S. J. Molyneaux, S. Böer, C. O. Wirsen, M. Saito, M. S. Atkins, **K. G. Lloyd**, A. Teske. **2007**. Survival and growth of two heterotrophic hydrothermal vent archaea, *Pyrococcus* strain GB-D and *Thermococcus fumicolans*, under low pH and high sulfide concentrations in combination with high temperature and pressure regimes. *Extremophiles*. 11(2): 329-342. **16 citations**.
5. **Lloyd, K.G.**, L. Lapham, A. Teske. **2006**. An anaerobic methane oxidizing community of ANME-1b archaea in hypersaline Gulf of Mexico sediments. *Applied and Environmental Microbiology*. 72: 7218-7230. **217 citations**.

4. Biddle, J. F., J. S. Lipp, M. Lever, **K. G. Lloyd**, K. B. Sørensen, R. Anderson, H. F. Fredricks, M. Elvert, T. Kelly, D. P. Schrag, M. L. Sogin, J. Brenchley, A. Teske, C. H. House, K. U. Hinrichs. **2006**. Heterotrophic archaea dominate sedimentary subsurface ecosystems off Peru. *Proceedings of the National Academy of Sciences USA*. 103(10): 3846-3851. **691 citations**.
3. **Lloyd, K.G.**, V.P. Edgcomb, S. M. Molyneaux, S. Böer, C.O. Wirsén, M. Atkins, A. Teske. **2005**. Effect of dissolved sulfide, pH, and temperature on the growth and survival of marine hyperthermophilic archaea. *Applied and Environmental Microbiology* 71: 6383-6387. **29 citations**.
2. Dhillon, A., M. Lever, **K. Lloyd**, D. Albert, M. L. Sogin, A. Teske. **2005**. Methanogen diversity based on molecular characterization of Methyl Coenzyme M Reductase A (*mcrA*) genes in hydrothermal sediments of the Guaymas Basin. *Applied and Environmental Microbiology*. 71 (8): 4592-4601. **139 citations**.
1. Edgcomb, V., S.J. Molyneaux, M.A. Saito, **K. Lloyd**, S. Böer, C.O. Wirsén, M.S. Atkins, and A. Teske. **2004**. Sulfide ameliorates metal toxicity for deep-sea hydrothermal vent archaea. *Applied and Environmental Microbiology* 70:2551-2555. **55 citations**.

Submitted manuscripts

- Sipes*, K., A. Almatari, A. Eddie, D. Williams, E. Spirina, E. Rivkina, R. Liang, T. Vishnivetskaya, T. C. Onstott, **K. G. Lloyd**. High-Quality Metagenome Assembled Genomes (MAGs) provide evidence for living microbes in 1,000,000-year-old Siberian permafrost. *In revisions*.
- Kevorkian*, R., S. Callahan*, R. Winstead*, **K. G. Lloyd**. ANME-1 archaea drive methane accumulation and removal in globally common marine sediments. *BioRxiv*, <https://www.biorxiv.org/content/10.1101/2020.02.24.963215v1>. *In revisions*.
- Fullerton*, K. M., M. Schrenk, M. Yücel, E. Manini, M., Basili*, T. J. Rogers*, D. Fattorini, M. de Carlo, G. d'Errico, F. Regoli, M. Nakagawa, C. Vetriani, F. Smedile, C. Ramírez, H. Miller, S. Morrison, J. Buongiorno, G. L. Jessen, M. Martínez, J. M. de Moor, P. H. Barry, D. Giovannelli, **K. G. Lloyd**. Tectonic processes influence deep subsurface microbes across a convergent margin. *EarthArXiv*. <https://eartharxiv.org/gyr7n/>. *In revisions*.

Other publications

2. **Lloyd, K. G.** and Steen, C. G. 2019. *Smore Magazine*. May/June Issue. 14-17.
1. **Lloyd, K. G.** 2018. Book Review. *The Quarterly Review of Biology* 93: 168.

Invited Talks at Seminar Series and Symposia

- 2020 Ohio State University (to be delivered remotely due to Covid-19)
- 2020 Dauphin Island Sea Lab (delivered remotely due to Covid-19)
- 2020 Woods Hole Oceanographic Institute (delivered remotely due to Covid-19)
- 2020 University of Colorado (canceled due to Covid-19)
- 2020 North Carolina Central University (canceled due to Covid-19)
- 2020 Keynote at Southeastern Biogeochemistry Symposium (delivered remotely due to Covid-19)
- 2020 Keynote at Rocky Mountain Geobiology Symposium (canceled due to Covid-19)

- 2019 Extreme Biophysics RCN Workshop, San Diego, CA
- 2019 Simons Foundation, New York, NY
- 2019 Swarthmore College, Pennsylvania
- 2019 Keynote at SciLife Symposium, University of Uppsala, Sweden
- 2019 University of Tennessee, Physics Department
- 2019 University of Tennessee, Honors and Scholars Lecture
- 2019 University of Tennessee, Earth and Planetary Sciences Department
- 2019 University of Salta Biogeochemistry Symposium, Salta, Argentina
- 2019 University of North Carolina, Department of Marine Sciences
- 2019 Michigan State University – student invitation
- 2018 Shanghai Jiao Tong University, International Center for Deep Life Investigations, Shanghai, China
- 2018 34th Annual Perspectives in Biology Symposium, Wake Forest University, Winston-Salem, NC
- 2018 ISME Roundtable panelist
- 2018 DCO Executive Committee meeting: Biology Meets Subduction, Zurich, Switzerland
- 2018 National Research Council of Italy, Ancona, Italy
- 2018 DCO Deep Life Community Leadership Meeting, Frankfurt, Germany
- 2018 DCO Gordon Research Conference Discussion Leader, Rhode Island
- 2018 4D Workshop, Carnegie Institute, Washington, DC
- 2018 Stanford University
- 2018 Montana State University
- 2017 C-DEBI Annual Meeting, Marina, CA
- 2017 International Indian Ocean Expedition II, San Diego, CA
- 2017 University of Tennessee, Knoxville, TN
- 2017 Marine Geomicrobiology symposium. Sønderborg, Denmark
- 2017 University of Calgary, Calgary, Canada
- 2017 Canadian Institute for Advance Research Integrated Microbial Diversity Symposium, Whistler, Canada
- 2017 Rutgers University, New Brunswick, NJ
- 2017 Cardiff University, Cardiff, UK
- 2017 Kennesaw State University, Atlanta, GA
- 2017 Deep Life Community, DCO, meeting Edinburgh, Scotland, UK
- 2016 ISME Round Table panelist
- 2016 Georgia Tech, Atlanta, GA
- 2016 Alfred P. Sloan Foundation. New York, NY
- 2016 Illumina Single-Cell Sequencing Expert Panel. Boston, MA
- 2016 Uppsala University, Uppsala, Sweden
- 2015 C-DEBI Annual Meeting, Marina, CA
- 2015 International Geobiology Summer Course, Catalina Island, CA
- 2015 Kavli Institute's 6th Indo-American Frontiers of Science Symposium. Irvine, CA
- 2015 IODP 2nd post-expedition symposium, Stockholm, Sweden
- 2015 Microenergy Workshop, Sønderborg, Denmark
- 2015 C-DEBI Sediment Workshop. Los Angeles, CA
- 2015 The Last Frontier of Life: Extremophiles - Expedition, Ecology, Adaptation, and Bioenergy Production, Pyongchang, South Korea
- 2015 Miami University, Miami, OH.
- 2015 University of Eastern Finland, Kuopio, Finland, via skype
- 2014 IODP Workshop. Seoul, South Korea
- 2014 CDEBI Annual Meeting, Marina, CA
- 2014 University of Tennessee, Knoxville, TN.
- 2013 NASA Astrobiology Roadmap webinar
- 2013 Argonne National Laboratory, Argonne, IL

- 2013 C-DEBI Networked speaker
- 2012 Oak Ridge National Laboratory, Oak Ridge, TN
- 2012 Woods Hole Oceanographic Institute, Woods Hole, MA, science lecture
- 2012 French Research Institute for Exploitation of the Sea, Brest, France
- 2011 C-DEBI Workshop, University of North Carolina, Chapel Hill, NC
- 2011 North Carolina State University, Raleigh, NC
- 2011 University of Tennessee, Knoxville, TN
- 2011 Skidaway Institute of Oceanography, Savannah, GA
- 2005 University of Bremen, Bremen, Germany

Public Talks

- 2020 International Microorganism Day Marathon Webinar, FEMS
- 2019 2nd TED talk, TED2019, Vancouver, Canada,
https://www.ted.com/talks/karen_lloyd_the_mysterious_microbes_living_deep_inside_the_earth_and_how_they_could_help_humanity?language=en, 2.0 million views
- 2019 Story Collider, Washington, DC https://deepcarbon.net/dco-story-collider?fbclid=IwAR3tZdzvFDIQgl60NIW-suMBUlfm_TqMR_wJz_OtZ7v6BiewKmsv-BSgpA
- 2019 RubyConf Keynote speaker, Nashville, TN
- 2019 Ohio State University Science Sundays, Columbus, OH
<https://www.youtube.com/watch?v=5ejf4WG1mEA>
- 2019 Live performance of 2nd TED talk, Cartier Women's Initiative Awards, San Francisco, CA
- 2019 Carnegie Evening of Science talk, Washington, DC
https://www.facebook.com/watch/live/?v=1501439126654433&ref=watch_permalink
- 2019 University of Tennessee Science Forum <https://www.youtube.com/watch?v=Rb9BjUFQaMw>
- 2019 Friends of Oak Ridge National Laboratory, Oak Ridge, TN
- 2019 Discover Science Lecture Series, University of Nevada
- 2018 Philosophical Society of the Oak Ridge Institute for Continued Learning, Talk #2
- 2019 Pipeline: Vols for Women in STEM Keynote speaker
- 2018 La Ciudad De Las Ideas, Puebla, Mexico, <https://ciudaddelasideas.com/en/>
- 2018 Night of the Microbes, Leipzig, Germany, <http://www.ufz.de/microbenight/>
- 2018 ORION astronomy club, Oak Ridge, TN
- 2018 Oxford University Sparks Facebook Live event, Oxford, UK
<https://www.facebook.com/OxSparks/videos/1887732187975601/?v=1887732187975601>
- 2018 Philosophical Society of the Oak Ridge Institute for Continued Learning, Talk #1
- 2017 1st TED talk, TED@BCG, Milan, Italy
https://www.ted.com/talks/karen_lloyd_this_deep_sea_mystery_is_changing_our_understanding_of_life/transcript?language=en, 2.4 million views
- 2017 Taste of Science public lecture, Knoxville, TN
- 2012 Woods Hole Oceanographic Institute, Woods Hole, MA, public lecture
- 2012 Advanced to FameLab finals, public science talks by NASA and National Geographic, <http://www.youtube.com/watch?v=OUboiJNS4qk>, http://www.youtube.com/watch?v=_jyAnGK1IAg

Presentations at Scientific Meetings (poster presentations, except where noted)

2020

(we were preparing more abstracts to have been submitted by now, but all other conferences have been canceled for 2020 due to Covid-19)

- Liu, D., R. Liang, T. A. Vishnivetskaya, **K. G. Lloyd**, S. M. Pfiffner, E. Rivkina, T. C. Onstott, Reconstruction of metagenome-assembled genomes involved in methane cycling from ancient Siberian permafrost sediments. AGU.
- Sipes, K., R. Paul, P. Li, T. Vishnivetskaya, **K. G. Lloyd**. Combining culturing, metagenomics, and geochemistry to analyze active layer microbial communities in Svalbard, Norway (79°N). 19th International Conference on Cold Regions Engineering.
- Lloyd, K. G.** Linking microbial ecology to deep tectonic processes across a subduction zone. Geobiology Gordon Research Conference. January 2020. *Invited talk*
- Rogers, T. J., J. Buongiorno, M. Schrenk, M. de Moor, P. Barry, M. Basili, D. Giovannelli, **K. G. Lloyd**. Carbon fixation within the Costa Rican subduction zone. Southeastern Biogeochemistry Symposium. Atlanta, GA. March 2020.
- Li, P., K. Sipes, **K. G. Lloyd**. Microbes in Svalbard permafrost: What can they eat in the active layer? Southeastern Biogeochemistry Symposium. Atlanta, GA. March 2020.
- Paul, R., K. Sipes, **K. G. Lloyd**. Isolating cultures from Svalbard permafrost and analyzing the morphology variations on different media. Southeastern Biogeochemistry Symposium. Atlanta, GA. March 2020.
- Sipes, K., R. Paul, P. Li, **K. G. Lloyd**. Metagenomic data from Svalbard permafrost helps to infer microbial presence. Southeastern Biogeochemistry Symposium. Atlanta, GA. March 2020.
- Li, P., K. Sipes, **K. G. Lloyd**. DNA extraction and elemental analysis of Svalbard permafrost active layer. EuReCa Symposium. Knoxville, TN. April 2020.
- Lloyd, K.**, K. Sipes, T. Vishnivetskaya, A. Steen, T. C. Onstott, R. Liang, Z. Garvin, R. Hettich, R. Giannone, J. Cliff, J. Bradley, J. Boike, S. Wetterich, A. Abramov, E. Rivkina. Arctic microbial permafrost degradation. DOE PI Meeting. Washington, DC. February 2020.

2019

- Giovannelli, D., K. Fullerton, **K. Lloyd**, P. Barry, M. Schrenk, M. de Moor, Biology Meets Subduction Science Party. Plate tectonics drive deep biosphere microbial community composition. Annual Meeting. Marina, CA. November 2019.
- Royalty, T., R. Diaz, **K. G. Lloyd**, A. D. Steen. Elucidating microbial functional niches in the subsurface using relative abundance of COG functional categories (and proteomics to come). Center for Dark Energy Biosphere Investigations Annual Meeting. Marina, CA. November 2019.
- Steen, A. D., C. Burdyslaw, T. M. Royalty, **K. G. Lloyd**. The Big BLAST: Interrogating functional genes of uncultured organisms for biochemical novelty. Center for Dark Energy Biosphere Investigations Annual Meeting. Marina, CA. November 2019. *Invited talk*
- Lloyd, K. G.** The future of deep biosphere research. Center for Dark Energy Biosphere Investigations Annual Meeting. Marina, CA. November 2019. *Invited talk*
- Lloyd, K. G.** The most important research questions in deep carbon science for the coming decade. Deep Carbon 2019: Launching the Next Decade of Deep Carbon Science. Washington, D. C. October 2019. *Invited talk*. <https://www.youtube.com/watch?v=cpH-P7-LXr0>
- Ruff, S. E., T. Bornemann, B. Briggs, A. Eleish, H. Fang, E. Gaidos, A. Hoarfrost, J. Ladau, R. Leon-Zayas, K. Lloyd, K. Locey, C. Magnabosco, Panos A, Parsons M, Payet J, Probst A, Reese B, Rogers K, Sheik C, Sherwood Lollar B, Sogin M, Colwell F. Global patterns of subsurface microbial diversity and function. Deep Carbon 2019: Launching the Next Decade of Deep Carbon Science. Washington, D. C. October 2019.
- Sipes, K., T. Vishnivetskaya, **K. G. Lloyd**. Metagenomes from 1,000,000 year old Siberian permafrost shows capacity for subsisting microbes. Bigelow Single Cell Genomics Center Workshop. Boothbay Harbor, ME. September 2019.
- Steen, A. D., C. Burdyslaw, C., S. Sawyer, T. M. Royalty, **K. G. Lloyd**, R. G. Brook. Diversity of functional genes in deeply branching uncultured microbes. AGU Fall Meeting. San Francisco, CA. December 2019.

- Rogers, K. L., J. Ladau, B. K. Reese, C. Sheik, A. Hoarfrost, **K. G. Lloyd**. Global patterns of subsurface microbial diversity through deep time and space. AGU Fall Meeting. San Francisco, CA. December 2019.
- Lloyd, K. G.**, K. M. Fullerton, M. Schrenk, M. Yucel, H. Miller, M. de Moor, P. H. Barry, D. Giovannelli. Microbial community coupling to deep subduction processes. AGU Fall Meeting. San Francisco, CA. December 2019. *Invited talk*.
- Barry, P. H., B.S. Patel, J. M. de Moor, M. Nakagawa, D. Giovannelli, C.J. Ramírez, M. Schrenk, E. Gazel, A.M. Seltzer, S. A. Halldórsson, J.T. Kulongoski, S. Turner, C.J. Ballentine, T.P. Fischer, D.R. Hilton, C. Virrueta, K. Blackmon, **K.G. Lloyd**. Helium and carbon isotopes in southern Costa Rica and western Panama. AGU Fall Meeting. San Francisco, CA. December 2019.
- Liang, R., Z. Li, M. Lau, T. Vishnivetskaya, **K. G. Lloyd**, S. Pfiffner, E. M. Rivkina, W. Wang, J. Wiggins, J. Miller, R. L. Hettich, T. C. Onstott. Reconstruction of metagenome-assembled genomes from past and extant microbial populations in ancient Siberian permafrost. AGU Fall Meeting. San Francisco, CA. December 2019.
- Lloyd, K. G.**, Deep unknowns in the deep subsurface. AGU Fall Meeting. San Francisco, CA. December 2019. *Invited talk*.
- Barry, P., M. de Moor, D. Giovannelli, M. Schrenk, D. Hummer, T. Lopez, K. Pratt, **K. Lloyd**. Calcite precipitation in the Costa Rican forearc reduces long-term carbon recycling into Earth's deep mantle. Goldschmidt Meeting. Barcelona, Spain. August 2019. *Talk*.
- Kevorkian, R., S. Callahan, R. Winstead, B. Barber, **K. Lloyd**. ANME archaea mediate methane production and oxidation in marine sediments. Goldschmidt Meeting. Barcelona, Spain. August 2019.
- Buongiorno, J., K. Fullerton, T. Rogers, D. Giovannelli, M. de Moor, P. Barry, M. Schrenk, **K. Lloyd**, S. Morrison, R. Hazen. Interactions between microbial communities and their geologic environment at the Costa Rica active margin. Goldschmidt Meeting. Barcelona, Spain. August 2019. *Talk*.
- Vishnivetskaya, T., A. Almatari, E. Spirina, M. Moran, J. Rogers, A. Eddie, D. Williams, S. Pfiffner, **K. Lloyd**, E. Rivkina. Changes in microbial communities during permafrost thaw. ASM. June 2019
- Sipes, K., T. Vishnivetskaya, **K. G. Lloyd**. Metagenome assembled genomes (MAGs) from freshwater Siberian permafrost. International Polar and Alpine Microbiology Conference. New Zealand. February 2019.
- Barry, P. H., M. de Moor, D. Giovannelli, M. Schrenk, D. Hummer, T. Lopez, C. A. Pratt, **K. G. Lloyd**. Helium and carbon isotopes in the Costa Rican forearc and implications for carbon recycling into Earth's deep mantle. DINGUE, Zurich, Switzerland. August 2019.
- Kevorkian, R., S. Callahan, R. Winstead, **K. G. Lloyd**. Uncultured ANME-1 archaea gain energy from either methanogenesis or anaerobic oxidation of methane. Geobiology Meeting, Banff, Canada. June 2019.
- Buongiorno, J., K. Wasmund, A. Loy, **K. G. Lloyd**. Genomic and transcriptional evidence for phenotypic responses to burial of the dominant carbon-fixing clade Woeseiaceae in Arctic fjord sediment. Geobiology Meeting, Banff, Canada. June 2019.
- Rogers, T. J., **K. G. Lloyd**. Life under pressure: Exploring the variation in microbial communities across a volcanic arc. Southeastern Biogeochemistry Symposium, Columbia, SC. March 2019.
- Sipes, K., **K. G. Lloyd**. Marine-associated functional genes within metagenomic assembled genomes (MAGs) from freshwater permafrost. Southeastern Biogeochemistry Symposium, Columbia, SC. March 2019.
- Lonergan, A., Fullerton, K., **Lloyd, K.**, & Steen, A. Extracellular enzyme activity in hot springs in Panama. EuReCa symposium. Knoxville, TN. May 2019.

2018

- Buongiorno, J., L. Herbert, L. Wehrmann, A. Fiia, A. Szykiewicz, **K. G. Lloyd**. Evidence for biologically mediated cryptic sulfur cycling in Arctic sediments, Van Keulenfjorden, Svalbard (79°N). GSA Southeastern Section. April 2018. *Talk*.

- Almatari, A., D. Williams, E. Spirina, S. Pfiffner, **K. G. Lloyd**, E. Rivkina, T. Vishnivetskaya, Microbial diversity of Siberian permafrost. GSA Southeastern Section. April 2018.
- Barber, B., J. Buongiorno, A. Coderre, **K. G. Lloyd**. Sulfate reduction activity in sediment samples from Svalbard shown by BONCAT-FISH. Southeastern Biogeochemistry Symposium. Tallahassee, FL. April 2018.
- Kevorkian, R., S. Callahan, **K. G. Lloyd**. High depth resolution of methanogenic estuarine sediments reveals ANME-1 as sole methanogen. Southeastern Biogeochemistry Symposium. Tallahassee, FL. April 2018. *Talk.*
- Fullerton, K., D. Giovannelli, M. Nakagawa, H. Miller, M. Schrenk, DCO Biology Meets Subduction Science Party, **K. G. Lloyd**. Single cell genomic analysis of subduction-associated microbial communities in Costa Rica. Astrobiology Graduate Conference, Atlanta, GA. June 2018.
- Lloyd, K. G.**, Peter Barry, Angelo Battaglia, Patrick Beaudry, Giulio Bini, Katherine Fullerton, Maarten de Moor, Donato Giovannelli, Gino González, David Hilton, Daniel Hummer, Kayla Iacovino, Taryn Lopez, Maria Martinez, Monserrat Matamoros, Heather Miller, Mayuko Nakagawa, Katie Pratt, Carlos Ramírez, Matthew Schrenk, Yemerith Alpizar Segura, Steven Turner. Evidence for deep subsurface chemistry and biology altering carbon budgets across the Costa Rica convergent margin. 4D Workshop, Carnegie Institute. June 2018.
- Sipes, K., T. Vishnivetskaya, A. Eddie, E. Rivkina, E. V. Spirina, T. C. Onstott, **K. G. Lloyd**. Single cell genomes (SAGs) and metagenomes-assembled genomes (MAGs) from 30,000 1.8 million year old Siberian non-marine permafrost similar to those in marine environments. ISME General Meeting, Leipzig, Germany. August 2018.
- Buongiorno J., A. Szykiewicz, A. Faiia, L. Herbert, L. Wehrmann, **K. G. Lloyd**. Biological catalysis of a complete iron and sulfur cycle in Arctic marine fjord sediments, Van Keulenfjorden, Svalbard. ISME Meeting, Leipzig, Germany. August 2018.
- Kevorkian, R., Expedition 366 Science Party, E. Tague, T. Xu, V. Brown, S. Campagna, **K. G. Lloyd**. Microbial ecology of serpentinization-sourced seamounts in the Mariana Forearc. ISME General Meeting, Leipzig, Germany. August 2018.
- Lloyd, K. G.**, J. T. Bird, E. D. Tague, L. Zinke, J. M. Schmidt, A. D. Steen, B. Reese, I. P. G. Marshall, G. Webster, A. Weightman, H. F. Castro, S. R. Campagna. Uncultured phyla suggest mechanisms of long-term persistence in Baltic Sea sediments. ISME General Meeting, Leipzig, Germany. August 2018. *Invited talk.*
- Sipes, K., T. Vishnivetskaya, **K. G. Lloyd**. Marine metagenomic assembled genomes (MAGs) found in 1 Ma old non-marine permafrost of the Eastern Siberia Kolyma Region. Kentucky-Tennessee Branch of the American Society for Microbiology Fall Meeting. Murfreesboro, TN. November 2018. *Talk.*
- Colwell, F., A. Thurber, J. Ladau, **K. G. Lloyd**, R. Harris, E. Shock, A. Trehu. Expanding life's boundaries: A grand challenge of estimating where and how life survives in Earth and other planets. AGU Fall Meeting. Washington, D.C. December 2018. *Invited talk.*
- Fullerton, K. M., D. Giovannelli, M. Nakagawa, M. Schrenk, DCO Biology Meets Subduction Science Party, **K. G. Lloyd**. Interactions across a geochemically active subduction zone in Northern Costa Rica. AGU Fall Meeting. Washington, D.C. December 2018. *Talk.*
- Ajuwon, F., Malcolm X Shabazz BioGeoChemistry Team, **K. G. Lloyd**, A. D. Steen. Breakdown of organic matter in freshwater: The role and nature of extracellular peptidases. AGU Fall Meeting. Washington, D.C. December 2018.
- Liang, R., M. Lau, T. Vishnivetskaya, **K. G. Lloyd**, S. Pfiffner, E. M. Rivkina, T. C. Onstott. Differential diversity and function of microbial communities along a salinity gradient in ancient Siberian permafrost. AGU Fall Meeting. Washington, D.C. December 2018.

2017

- Buongiorno, J, **K. G. Lloyd**. Network analysis of microbial communities show complex ecological linkages in Arctic fjord sediments, Van Keulenfjorden, Svalbard, 79°N, Kentucky-Tennessee

- Branch of the American Society for Microbiology Fall Meeting. Crossville, TN. November 2017.
- Winstead, R, R. Kevorkian, **K. G. Lloyd**. Presence of marine aerobic methanotrophs in Atlantic Ocean. Kentucky-Tennessee Branch of the American Society for Microbiology Fall Meeting. Crossville, TN. November 2017.
- Sipes, K., **K. G. Lloyd**. Metagenomic analysis of Siberian permafrost demonstrates successful binning of several marine-associated uncultured phyla. Kentucky-Tennessee Branch of the American Society for Microbiology Fall Meeting. Crossville, TN. November 2017.
- K. G. Lloyd, T. Noordhoek, R. Kevorkian, J. Bird. Estimating turnover rates of uncultivated clades of archaea and bacteria in marine sediments. C-DEBI Annual Meeting. November 2017.
- Boerriqter, K., Malcolm X Shabazz Aquatic Biogeochemistry Team, P. Murray, **K. G. Lloyd**, A. D. Steen. Study of various peptidases and their effects on freshwater bodies. AGU Fall Meeting. New Orleans, LA. December 2017
- Buongiorno, J, A. Szykiewicz, A. Faiia, K. Yeager, K. Schindler, **K. G. Lloyd**. Environmental drivers of microbial abundance and composition in Arctic sediments, Kongsfjorden and Van Keulenfjorden, Svalbard (79°N): Evidence from stable and radioactive isotopes. AGU. New Orleans, LA. December 2017.
- K. G. Lloyd**, J. T. Bird, L. Zinke, B. Reese. Functional diversity within monophyletic groups in the uncultured archaea: Bathyarchaeota and Altiarchaeales. Goldschmidt Meeting. Paris, France, August 2017. *Invited talk*.
- K. G. Lloyd**. Geochemical evidence for genomic predictions in uncultured archaea and bacteria. Chemical Oceanography Gordon Research Conference, New London, NH, July 2017. *Invited Talk*.
- K. G. Lloyd**. Geochemical evidence for genomic predictions in uncultured archaea and bacteria. Geobiology Society Conference, Banff, Canada, June 2017. *Invited talk*.
- Vishnivetskaya, T., T. Roy, A. Eddie, A. Clack, E. Grater, K. Wilfong, D. Williams, E. Spirina, E. Durdenko, E. Rivkina, S. Pfiffner, **K. G. Lloyd**. Microbial community of Siberian permafrost described through metagenomics and cultivation approaches. ASM, New Orleans, LA, June 2017
- Bird, J. T., E. Tague, L. Zinke, B. Reese, I. Marshall, G. Webster, A. Weightman, H. Castro, S. Campagna, **K. G. Lloyd** Direct metabolic evidence for adaptations to deep subsurface life. Southeastern Biogeochemistry Symposium, Athens, GA, April 2017. *Talk*.
- Buongiorno, J., **K. G. Lloyd**. High resolution microbial community analysis of sediments from the high Arctic, Kongsfjorden and Van Kuelenfjorden, Svalbard. Southeastern Biogeochemistry Symposium, Athens, GA, April 2017.
- Fullerton, K., **K. G. Lloyd**. Biology Meets Subduction: Exploration of microbial diversity of Costa Rican Convergent Margin, Southeastern Biogeochemistry Symposium, Athens, GA, April 2017.
- Kevorkian, R., **K. G. Lloyd**. Genomic insights into a coastal marine sediment mesocosm incubation. Southeastern Biogeochemistry Symposium, Athens, GA, April 2017.
- K. G. Lloyd**, T. Noordhoek, R. Kevorkian, J. Bird. Estimating turnover rates of uncultivated clades of archaea and bacteria in marine sediments. Deep Carbon Observatory 3rd International Science Meeting, St. Andrews, Scotland, UK, March 2017.
- L. A. Zinke, B. K. Reese, J. Bird, I. P.G. Marshall, B. B. Jørgensen, **K. G. Lloyd**, J. P. Amend, Active microbial communities in Baltic Sea Basin sediments, Southern California Geobiology Symposium.
- 2016**
- Murray, P. N. Ferriero, J. Rosalsky, **K. G. Lloyd**, A. D. Steen. How do high school students respond to opportunities to collaborate with authentic scientific research in at-risk environments? Ocean Sciences Meeting. New Orleans, LA. February 2016.
- Buongiorno, J. S. Turner, G. Webster, A. Schumaker, T. Roy, A. Weightman, A. Schippers, **K. G. Lloyd**. Quantification of Deep Subseafloor Bacteria and Archaea – An Inter-Laboratory Comparison. Southeastern Biogeochemistry Symposium. Knoxville, TN 2016. April 2016. *Talk*.

- Bird, J., B. Baker, M. Podar, **K. G. Lloyd**. Comparative genomics reveals clues to the evolutionary history of the candidate order Altiarchaeales. Southeastern Biogeochemistry Symposium. Knoxville, TN 2016. April 2016.
- Lloyd, K. G.**, J. Buongiorno, S. Turner, G. Webster, J. Bird, B. Reese, I. Marshall, M. Asai, A. Shumaker, T. Roy, A. Weightman, A. Schippers. Quantification of deep sedimentary microorganisms and single-cell genomic analysis from IODP Leg 347 Baltic Sea Paleoenvironment. Goldschmidt Conference. Yokohama, Japan. June 2016. *Invited talk*.
- Buongiorno, J., J. Bird, **K. G. Lloyd**, K. Krivushin, V. Shcherbakova, E. Rivkina, T. Vishnivetskaya. Methanosarcina genome from permafrost of McMurdo Dry Valleys (Miers Valley) Antarctica recovered through metagenomic binning. ISME General Meeting. Montreal, Canada. August 2016.
- Bird, J. T., B. J. Baker, M. Podar, **K. G. Lloyd**. Comparative genomics expands the phylogeny and functional diversity of candidate order Altiarchaeales to its cosmopolitan sub-clades. ISME General Meeting. Montreal, Canada. August 2016. *Talk*.
- Lloyd, K. G.** J. Bird, B. Reese, I. Marshall, L. Zinke, E. Tague, H. Castro, S. Campagna, Single cell genomes suggest mechanisms for longterm survival for uncultured microorganisms in the deep marine subsurface. ISME General Meeting. Montreal, Canada. August 2016. *Invited talk*.
- Lloyd, K. G.** Biology meets subduction at the Costa Rica Margin. Subduction Zone Observatory Workshop, Boise, Idaho. September 2016.
- Lloyd, K. G.**, T. Noordhoek, R. Kevorkian, J. Bird. Estimating growth rates of uncultivated clades of archaea and bacteria in marine sediments. AGU, San Francisco, CA, December 2016.
- Zinke, L., B. K. Reese, J. Bird, I. Marshall, J. Amend, **K. Lloyd**. Baltic Sea Basin metatranscriptomics. AGU. San Francisco, CA. December 2016.
- 2015**
- Lloyd, K. G.** Linking deep subsurface microbial dark matter to their carbon cycling functions. Deep Carbon Observatory 2nd International Science Meeting, Munich, Germany. March 2015.
- Bird J. T., **K. G. Lloyd**, J. Buongiorno, H. F. Castro, E. D. Tague, S. R. Campagna, B. Reese, I. Marshall. Toward understanding the functional role of deeply-branching microbial communities in marine sediments from IODP Leg 347: Baltic Sea Paleoenvironment. Southeastern Biogeochemistry Symposium, Atlanta, GA. March 2015.
- Buongiorno, J., A. Shumaker, J. Bird, **K. Lloyd**. Quantification of archaea and bacteria in deeply buried marine sediments from IODP Leg 347: Baltic Sea Paleoenvironment. Southeastern Biogeochemistry Symposium, Atlanta, GA. March 2015.
- Kevorkian, R. T., J. T. Bird, **K. G. Lloyd**. Geochemical Control of Methanogenesis in Cape Lookout Bight, NC. Southeastern Biogeochemistry Symposium, Atlanta, GA. March 2015. *Talk*.
- Lloyd, K. G.**, J. Bird, I. Marshall, B. Reese, B. Baker, M. Podar. Obtaining single cell genomes from 85 meters below the seafloor, and using them to bin metagenomes. Single Cell Genomics Workshop, Boothbay Harbor, ME. June 2015. *Talk and discussion leader*.
- Keys, Jessica, T. Roy, **K. G. Lloyd**. Methanogenesis in marine sediment batch incubations. UTK REU Symposium. August 2015.
- Spirina, Elena, **K. G. Lloyd**, S. Piffner, E. Rivkina, T. Vishnivetskaya. Next generation research opportunities in microbiology and biogeosciences of Siberian permafrost. Permafrost in the XXI Century: Basic and Applied Research. Pushchino, Russia. September 2015.
- Buongiorno, J., F. Martin, **K. G. Lloyd**. In situ DNA hybridized chain reaction (FISH-HCR) as a better method for bacterial and archaeal quantification within marine sediments. AGU. San Francisco, CA. December 2015.
- 2014**
- Kevorkian, R. T., J. Bird, **K. G. Lloyd**. Geochemical control of methanogenesis in Cape Lookout Bight. Southeastern Biogeochemistry Symposium. April 2014.

- Bird, J., B. Baker, C. Lazar, M. Podar, A. Teske, **K. G. Lloyd**. Combining single cell and metagenomic sequencing: The first look at three members of the widely distributed, uncultured archaeal clade, SM1. Southeastern Biogeochemistry Symposium. April 2014. **Talk**.
- Lloyd, K. G.**, Carbon degradation mechanisms in uncultured marine organisms. American Society for Microbiology General Meeting, Boston, MA. May 2014. **Invited talk**.
- Lloyd, K. G.**, Methanogenesis in ANME archaea. C1 Compound Gordon Research Conference. Mt. Holyoke, MA. August 2014. **Invited talk**.
- Lloyd, K.G.**, Exploring the genomes and novel enzyme functions of uncultured, deeply-branching archaea. ISME General Meeting. Seoul, South Korea. August 2014. **Invited talk**.
- Papadoulis, S., J. Bird, **K. G. Lloyd**. Culturing the unculturable: growing archaea without the weeds. UT REU Symposium. August 2014.
- Lloyd, K.G.**, Exploring the possible roles of uncultured marine sediment methanogens in reversible methanogenesis. International Society for Subsurface Microbiology. Pacific Grove, CA. October 2014. **Talk**.
- Lloyd, K.G.**, J. Bird, A. Shumaker, Expedition 347 Scientists. Potential physiologies of deep branches on the tree of life with deep subsurface samples from IODP Leg 347: Baltic Sea Paleoenvironment. AGU Fall Meeting, San Francisco, CA, December 2014. **Invited talk**.
- Kevorkian, R. T., **K. G. Lloyd**, Identification of methanogens and controls on methane production in incubations of natural methane seep sediments. AGU Fall Meeting, San Francisco, CA, December 2014.
- Reese, B. K., L. Zinke, G. Carvalho, J. Amend, **K. G. Lloyd**, A. Shumaker, Ian Marshall, IODP Expedition 347 Shipboard Scientists, Active community structure analysis of deep subsurface sediments within Baltic Sea Basin. American Geophysical Union General Meeting, San Francisco, CA, December 2014.
- Bird, J. T., Expedition 347 Scientists, **K. G. Lloyd**, Genomic analysis of deeply-branching bacteria and archaea from IODP Leg 347: Baltic Sea Paleoenvironment. American Geophysical Union General Meeting, San Francisco, CA, December 2014.
- 2013**
- Lloyd, K.G.**, M. May, A.D. Steen. A meta-analysis of quantitative microbiological methods in marine environments. American Society for Limnology and Oceanography Aquatic Sciences Meeting, New Orleans, LA. February, 2013.
- Wasmund, K., C. Algora, M. Cooper, J. Mueller, M. Krueger, **K. G. Lloyd**, R. Reinhard, L. Adrian. Distributions and diversity of bacteria of the class *Dehalococcoidia* (phylum *Chloroflexi*) in the marine subsurface. Society for General and Applied Microbiology Germany Meeting, Bremen, Germany. March, 2013.
- McCully, E., J. Bird, **K. G. Lloyd**. Targeting cells of interest using fluorescently labeled peptides. UT REU Symposium, Knoxville, TN, August 2013.
- Lloyd, K. G.**, M. May, A. D. Steen. A meta-analysis reveals methodological biases in quantitative methods for marine subsurface microbiology. Goldschmidt Geochemical Society, Florence, Italy. August 2013, **Talk**.
- Meyer, S., G. Wegener, **K. G. Lloyd**, A. Teske, A. Boetius, A. Ramette. Microbial habitat connectivity in hydrothermal sediments of Guaymas Basin. SAME13 Aquatic Microbial Ecology, Stresa, Italy. September 2013.
- Steen, A.D., R. T. Kevorkian, E. A. Deas, **K. G. Lloyd**. Activities of extracellular peptidases in sediments of the White Oak River, USA. CDEBI Annual Meeting, Marina, CA. October 2013.
- Lloyd, K.G.**, J. Bird, L. Schreiber, D. G. Petersen, K. Kjeldsen, A. Schramm, R. Stepanauskas, B. B. Jørgensen. How do natural, uncultivated microbes interact with organic matter? Insights from single cell genomics and metagenomics. American Geophysical Union General Meeting, San Francisco, CA. December 2013.

Steen, A.D, R. T. Kevorkian, M. A. Alperin, **K. G. Lloyd**. Kinetics of extracellular peptidases in sediments of the White Oak River, NC, USA. American Geophysical Union General Meeting, San Francisco, CA. December 2013. *Talk*.

2012

Alperin, M., T. Hoehler, **K.G. Lloyd**, On the reversibility of methane production from CO₂ and H₂: revisited. Microenergy 2012 Workshop, Aarhus, Denmark. May 2012.

Lloyd, K.G., L. Schreiber, D. G. Petersen, M. Richter, K. Kjeldsen, M. A. Lever, S. Lenk, S. Kleindienst, A. Schramm, B. B. Jørgensen. Probing the genomic content of low-energy specialists. Microenergy 2012 Workshop, Aarhus, Denmark. May 2012. *Invited talk*.

Lloyd, K.G., L. Schreiber, D.G. Petersen, M. Richter, K. Kjeldsen, M.A. Lever, S. Lenk, S. Kleindienst, A. Schramm, B. B. Jørgensen. Single cell genomics of uncultured archaea. Goldschmidt Conference, Montreal, Canada. June 2012. *Invited keynote talk*.

Lloyd, K. G., L. Schreiber, D. Petersen, A. Schramm, B. B. Jørgensen. Potential environmental functions of widespread, abundant, uncultured marine archaea. American Geophysical Union General Meeting, San Francisco, CA, December 2012. *Invited talk*.

Lloyd, K. G. Are ANMEs methanogens? Gordon Research Seminar. August 2012. *Invited talk*.

Lloyd, K. G., M. Alperin, A. Teske. Are ANMEs methanogens? Gordon Research Conference. August 2012.

Lloyd, K.G., L. Schreiber, D. G. Petersen, M. Richter, K. Kjeldsen, M. A. Lever, S. Kleindienst, A. Schramm, B. B. Jørgensen, Pinning down a metabolism for widespread, abundant, uncultured archaea through single cell genomic analysis. International Society for Microbial Ecology. Copenhagen, Denmark. August 2012. *Talk*.

Kjeldsen, K., M. Lever, **K. Lloyd**, B. Gribsholt, K. Piil, N. Risgaard-Petersen, H. Roy, W. Al-Soud, S. Sorensen, B. Jørgensen. Changes in bacterial and archaeal community composition across geochemical zones in a coastal marine sediment. International Society for Microbial Ecology. Copenhagen, Denmark. August 2012. *Talk*.

Petersen, D.G., **K.G. Lloyd**, L. Schreiber, K. U. Kjeldsen, B.B. Jørgensen, A. Schramm. A single cell approach for revealing the phylogenetic identity of unknown sulfate-reducing microbes in a marine sediment. International Society for Microbial Ecology. Copenhagen, Denmark. August 2012.

Schreiber, L., **K.G. Lloyd**, D.G. Petersen, S. Lenk, S. Kleindienst, B. B. Jørgensen, A. Schramm. Reconstructing genomes of uncultured microorganisms from marine sediments using single cell genomics – an Aarhus Bay, Denmark, case study. International Society for Microbial Ecology. Copenhagen, Denmark. August 2012. *Talk*.

Wasmund, K., C. Algora, L. Schreiber, **K. Lloyd**, D. Petersen, A. Schramm, M. Cooper, R. Reinhardt, B. B. Jørgensen, L. Adrian. Insights into the ecological distribution and genomes of the enigmatic and widely distributed marine subsurface ‘Dehalococcoidetes (phylum Chloroflexi). International Society for Microbial Ecology. Copenhagen, Denmark. August 2012. *Talk*.

2011

Petersen D.G., Schreiber L., **Lloyd K.**, Schramm A. and Jørgensen B.B. Isolation of single microbial cells using a laser microdissection microscope (LMD). Nordic Environmental Nucleotide Network (NENUN), Island. September 2011.

Lloyd, K. G., J. F. Biddle, K. Knittel, A. Teske. Environmental distribution, abundance, and activity of the Miscellaneous Crenarchaeotal Group. American Geophysical Union Fall Meeting. San Francisco, CA. December 2011.

Lloyd, K. G., M. Alperin, A. Teske. Transcriptional evidence for methane production in putative ANaerobic MEthanotrophic (ANME) archaea. Federation of European Microbiological Societies. 8th International Symposium of Subsurface Microbiology. Garmisch-Partenkirchen, Germany. September 2011. *Talk*.

Lloyd, K. G., M. Alperin, A. Teske. Transcriptional evidence for methane production in putative ANaerobic METHanotrophic (ANME) archaea. Federation of European Microbiological Societies. FEMS Microbiology Congress. Geneva, Switzerland. June 2011.

2010

Lloyd, K. G., M. Alperin, A. Teske. Transcriptional evidence for methane production and methane oxidation in putative ANaerobic METHanotrophic (ANME) archaea. American Geophysical Union Fall Meeting. San Francisco, CA. December 2010. *Talk*.

2009

Lloyd, K. G., D. Albert, J. Chanton, A. Teske. Spatial structure and activity of shallow subsurface microbial communities in a Gulf of Mexico methane seep. 19th Annual VM Goldschmidt Conference. Davos, Switzerland. June 2009. *Talk*.

2008

Lloyd, K. G., B. J. MacGregor, A. Teske. Quantification of archaeal RNA and DNA in marine sediments with qPCR and qRT-PCR. 12th ISME Meeting. Cairns, Australia. August 2008.

Lloyd, K. G., D. Albert, A. Teske. Seafloor bacterial mats as indicators of subsurface microbial activity in a Gulf of Mexico methane seep. ASLO/AGU Ocean Sciences. Orlando, FL. March 2008.

2007

Lloyd, K. G., A. Teske. Strategies for dealing with electron-acceptor limitation in estuarine sediments. International Workshop on Microbial Life under Extreme Energy Limitation. Aarhus, Denmark. October 2007.

2006

Lloyd, K., A. Teske. Using functional gene transcripts to investigate anaerobic methane oxidation in estuarine sediments. 11th ISME Meeting, Vienna, Austria. Aug 2006.

Lloyd, K., A. Teske. Widespread active archaea in the deep and shallow subsurface. Astrobiology Science Conference, Washington, D.C. March 2006. *Talk*.

2005

Lloyd, K., L. Lapham, A. Teske. An Anaerobic Methane Oxidizing Community Dominated by ANME-1 in a Non-Hydrate-Associated Gulf of Mexico Sediment. NASA Astrobiology Institute General Meeting, Boulder, CO. April 2005.

2003

Lloyd, K., V. Edgcomb, S. Böer, S. Molyneaux, M. Atkins, C. Wirsén, A. Teske. Tolerances of hydrothermal vent archaea to deep subsurface conditions. NASA Astrobiology Institute General Meeting, Tempe, AZ. Feb 2003.

2002

Edgcomb V., S. Boer, S. Molyneaux, **K. Lloyd**, C. Wirsén, J. Erickson, M. Saito, M. Atkins, A. Teske. Hyperthermophiles of the hydrothermal vent subsurfaces: limits of life and extraterrestrial analogs. NASA Astrobiology Institute General Meeting, San Jose, CA. March 2002.

Edgcomb V., S. Boer, S. Molyneaux, **K. Lloyd**, C. Wirsén, J. Erickson, M. Saito, M. Atkins, A. Teske. Hyperthermophiles of the hydrothermal vent subsurface: limits of life. AGU/ASLO Ocean Sciences, Honolulu, HI. Jan 2002.

2001

Lloyd K., A. J. Engebretson, P. Adamczyk, C. Tomori, T. Lyons, C. L. Bennett. Out-of-pocket costs and lost wages associated with colorectal, breast, and prostate cancer care. American Society of Clinical Oncology, San Francisco, CA. March 2001.

2000

Lloyd K., K. P. Howard. Studying transmembrane helical peptides in magnetically oriented phospholipid bilayers. Biophysical Society General Meeting, New Orleans, LA. Feb 2000.

Affiliations, Activities, and Service

Leadership Positions

2020-current	Chair of the UTK Graduate Program Steering Committee
2018-2020	Chair of the UTK Dean's Advisory Council
2016-current	Deep Carbon Observatory Executive Committee
2017-current	"Founding Member" of the Geobiology Society, Steering Committee
2013-2020	Chair of Center for Dark Energy Biosphere Investigations Ethics Committee

Departmental Service (UTK)

2020	Microbiology Department promotional film
2018-2019	Faculty advisor of Microbiology Undergraduate Club
2016-present	Graduate Programs Evaluation committee
2016	Department graduate program brochure
2014-2018&2020	Graduate admissions committee
2014-present	Departmental by-laws revision committee
2012-present	Library committee
2012-present	Taskforce for graduate student behavior

College Service (UTK)

2019	Evaluator for Global Catalyst
2019	Evaluator for Herman E. Spivey Humanities Graduate Fellowship
2018	Interview for Higher Ground, Uncovering Microbial Mysteries, by Amanda Womac, who won an award for the piece, https://higherground.utk.edu/uncovering-microbial-mysteries/
2017-2018	Coordinator for Mentoring Matrix
2016	Evaluator for ISSE Grants (UTK)
2015	Panel member for Darwin Day
2014-present	Dean's Advisory Council
2013	Volunteer for Darwin Days

University Service (UTK)

2019	Interview for Science Minute Podcast with Andrea Schneibel, https://news.utk.edu/2019/04/25/science-minute-tiny-microbes-major-impact/
2017	Filmed "Volunteer Stories" about research in Costa Rica, by Russell Hollingsworth. https://youtu.be/G6ANFjD-4B4
2017	Mic/Nite Speaker, https://www.youtube.com/watch?v=vkp_ur95eU8
2016	Panel for WiSTAR ³ , Women in STEM
2016	Filmed video for the Joint Institute for Computer Science, https://www.jics.utk.edu/mysterious-microorganisms
2013	EURCA Judge: evaluated student projects in molecular biology

Graduate Student Committees

Dissertation or Thesis

2012-2017	PhD Jenny Onley (Micro) Advisor: Löffler
2012-2014	MSc Meng Bi (Micro) Advisor: Löffler
2012-2015	MSc Lauren Galesh (Chesapeake Biological Laboratory) Advisor: Lapham
2013-2014	PhD Caroline Dietz (EPS) Advisor: Engel
2013-2017	PhD Jackson Gainer (Micro) Advisor: Wilhelm
2013-2017	MSc Megan Silbaugh (Micro) Advisor: Zinser
2013-2014	MSc Alicia Purcell (Micro) Advisor: Mikucki
2013-2018	PhD Lauren Krausfeldt (Micro) Advisor: Wilhelm
2013-2014	PhD Carolyn Swift (Micro) Advisor: Podar

2015-current	PhD April Mitchell (Micro) Advisor: Buchan
2016-current	PhD Briana McDowell (Micro) Advisor: Löffler
2017-2018	PhD Amanda Devolk (Micro) Advisor: Löffler
2017-2019	PhD Katie Fitzgerald (Micro) Advisor: Hazen
2017-2018	PhD Ellen Taylor (Micro) Advisor: Mikucki
2018-2020	PhD Vickie Frazier (Earth & Planetary Sci.) Advisor: Engel
2019-current	PhD Rhianna Moore (Earth & Planetary Sci.) Advisor: Kah
2019-current	PhD Andrew Putt (GST) Advisor: Hazen
2019-2020	PhD Li Yabing (Engineering) Advisor: He
2020-current	PhD Zabrenna Griffiths (Micro) Advisor: Hazen

PhD Qualifying Exams

2020	Chair: Sean Callahan (Micro)
2020	Elise Phillips (Micro)
2019	Caleb Schuler (Micro)
2018	José Liquet Gonzalez (Micro)
2018	Brittni Kelley (Micro)
2017	Katie Fitzgerald (Micro)
2016	Chair: Briana McDowell (Micro)
2016	April Mitchell (Micro)
2015	Lauren Quigley (Micro)
2015	Chair: Megan Silbaugh (Micro)
2015	Chair: Lauren Krausfeldt (Micro)
2014	Chair: Meng Bi (Micro)
2014	Tian Chen (Micro)
2014	Jackson Gainer (Micro)
2013	Jennifer Merryfield (Onely) (Micro)
2013	Mohammad Moniruzzaman (Micro)

Outreach Service

2020	NowThis Her short video about field work in Chile for Seeker Media https://www.facebook.com/NowThisHer/videos/659977834580970/UzpfSTc3NjIwOTAwMzozMDYwNjExMjk0OTk0MTQ6MTA6MDoxNTg4MzE2Mzk5OjI2OTYzMTk3OTU2MzE0ODE1MzU/ 41,000 views
2019	Filmed short explanatory video for 2018 mSystems paper, American Society for Microbiology https://www.youtube.com/watch?v=b5Ap84pMkSk
2019	Film interview, Carnegie Institute of Science https://videos.carnegiescience.edu/2020/03/20/dr-karen-lloyd/
2018	UTK Microbiology Undergraduate Club seminar
2018	Gresham Middle School outreach about oceanography
2018	Judge for the UTK 4 th Annual Women in STEM Research Symposium
2017	Professional Development Panel, Marina, CA
2017	C-DEBI Professional Development Webinar
2017	Hosted a visit from Camp Creek Elementary School to UT, Knoxville, TN
2017	Award-winning short documentary about field work in Costa Rica, https://www.youtube.com/watch?v=NAf7MvYZfwY
2017	Filmed Volunteer Stories in Costa Rica https://youtu.be/G6ANFjD-4B4
2016-2018	Co-coordinator of NSF-funded International Research Experience for Students to travel to Puschino, Russia to perform permafrost research
2016	15 second science, University of Delaware SeaGrant, https://www.youtube.com/watch?v=KQZPI2Kx7Iw

- 2016 Elementary school outreach about Arctic Science, Mead Montessori School
 2013, 2015 Volunteer and panel member for UT Darwin Day
 2012-current Co-founded the Malcom X. Shabazz High School Aquatic Geochemistry Team, and help them with on-going enzyme activity research in the Poconos and their yearly presentation at AGU
 2003-2009 Frequent Elementary School outreach about submersibles, oceanography, and microbes
 2006-2013 Science judge for National Ocean Sciences Bowl and science fairs
 2004 & 2005 Week-long field trips with Middle School students to NC coast and mountains
 2002 Bi-weekly volunteer tutor for “Communities in Schools”

Participation in Workshops (in addition to those where I gave an invited talk which are listed above)

- 2020 Abyssal Science Workshop, Woods Hole, MA, all virtual attendees
 2019 Deep Decarbonization Workshop at the National Academy of Sciences, Washington, DC
 2019 TED@NAS, Washington, DC
 2019 IODP-NEXT, Denver, CO
 2019 Mobile Summer Science Teaching Institute (MoSI), Knoxville, TN
 2019 Gulf of Mexico Research Initiative (GoMRI) Microbiology and Metagenomics Workshop, Washington, DC
 2018 Grant-writing workshop for NSF Integrated Earth Systems program, Ancona, Italy
 2018 C-DEBI workshop, Knoxville, TN
 2018 DCO Executive Committee meeting in Zurich, Switzerland
 2018 C-DEBI workshop, New York, New York
 2017 Biology Meets Subduction synthesis workshop, New Orleans, LA
 2017 Authors meeting for Whole Earth Carbon book, edited by Beth Orcutt, New Orleans, LA
 2017 Deep Carbon Observatory 3rd International Science Meeting, St. Andrews, Scotland, UK
 2016 Deep Carbon Observatory Executive Committee Meeting and Symposium, Yokohama, Japan
 2016 Census of Deep Life, Los Angeles, CA
 2016 Data Visualization Workshop, DCO, Ascona, Switzerland
 2016 Deep Carbon Observatory Executive Committee Meeting, Washington, DC
 2015 Deep Carbon Observatory Synthesis Planning Workshop, Providence, RI
 2015 NIMBioS workshop: Computational Advances in Microbiome Research, Knoxville, TN
 2015 4-D Visualization workshop, Washington, DC (discussion leader)
 2013 Geomicrobiology and Microbial Geochemistry workshop, Chicago, IL
 2013 EarthCube NSF workshop, Santa Catalina, CA
 2013 Center for Dark Energy Biosphere Investigations theme workshop, Boothbay Harbor, ME
 2013 Integrated Ocean Drilling Program workshop, Florence, Italy
 2013 Deep Carbon Observatory workshop, Portland, OR
 2013 NASA Astrobiology Program Roadmap development workshop, Wallops Island, VA (remote participation)

Advisory and Editorial Boards

- 2020-2023 Senior Editor at The ISME Journal
 2016-2020 Editor at mSystems, ASM
 2018-current Editorial Board of Environmental Microbiology
 2015-current Editorial Board at Applied and Environmental Microbiology, ASM
 2017-current Editorial Board/Editor at Geobiology
 2018 Editor at Microbial Resource Announcements, ASM
 2018-2019 Synthesis Group 2019 Deep Carbon Observatory
 2016-current Steering Committee for International Indian Ocean Expedition 2
 2015 Co-author of NASA Astrobiology Roadmap

2013 Chair of grant review committee (C-DEBI)

Conference and Session Chairing

2023 Chair of the Geobiology Gordon Conference
 2021 Vice Chair of the Geobiology Gordon Conference
 2019 Faculty steering committee for Southeastern Biogeochemistry Symposium, University of South Carolina
 2018 Discussion leader, Geobiology for the inaugural Deep Carbon Observatory Gordon Research Conference
 2017 Session co-chair, *Biogeochemistry in the deep ocean and subsurface: Contributions of the deep biosphere to Earth systems* Goldschmidt Conference, Paris, France
 2016 Session co-chair, *Illuminating the Microbial Dark Matter: the role of uncultivated microorganisms in biogeochemical cycling*, American Geophysical Union Fall Meeting, San Francisco, CA
 2016 Lead workshop organizer for Southeastern Biogeochemistry Symposium, Knoxville, TN
 2015 Co-lead workshop organizer Center for Dark Energy Biosphere Investigations Sediment Working Group Workshop, Los Angeles, CA
 2015 Steering committee for Southeastern Biogeochemistry Symposium, Georgia Tech, Atlanta, GA
 2014 Co-lead for Geobiology Theme, Goldschmidt Conference, Sacramento, CA
 2014 Session co-chair, *Microbial signatures in sedimentary organic matter and the deep biosphere*, Goldschmidt Conference, Sacramento, CA
 2014 Session co-chair, *Advances in the Understanding of Uncultivated Microbes*, American Society for Limnology and Oceanography Ocean Sciences Meeting, Honolulu, HI
 2013 Session co-chair, *Role and Significance of Chemosynthesis in the Ocean*, American Society for Limnology and Oceanography Aquatic Sciences Meeting, New Orleans, LA

Panel and ad hoc grant reviews for NSF Ocean Technology and Interdisciplinary Coordination, NASA EPSCoR Cooperative Agreement NNH12ZHA002C, NASA Post-doctoral program, NASA Exobiology Program, Deep Carbon Observatory Diversity Initiative, Center for Dark Energy Biosphere Investigations Post-doctoral program, Joint Genome Institute, French National Research Agency, Genome Canada, NSF Biological Oceanography, NSF Geophysics and EarthScope (GEO/EAR), NSF-Binational Science Foundation, Moore Foundation, Petroleum Research Fund, NSF Arctic Sciences, Deep Carbon Observatory, NSF Geobiology and Low Temperature Geochemistry, NERC in the United Kingdom

Referee for the following journals: Antarctic Science, Applied and Environmental Microbiology, Applied Microbiology and Biotechnology, Aquatic Microbial Ecology, Archaea, BioMed Research International, BMC Microbiology, Current Biology, Elements: An International Magazine of Mineralogy, Geochemistry, and Petrology, Environmental Microbiology, Environmental Science and Technology, FEMS Microbiology Ecology, FEMS Microbiology Letters, FEMS Microbiology Reviews, Frontiers in Microbiology, Geobiology, Geochemical Perspective Letters, Geochimica et Cosmochimica Acta, ISME Journal, Journal of Geophysical Research – Biogeosciences, Journal of Plankton Research, Limnology and Oceanography Methods, Marine and Petroleum Geology, Microbial Ecology, Microbiome, mSystems, Nature, Nature Communications, Nature Microbiology, Organic Geochemistry, PeerJ, Physical Review X, PloS One, Proceedings of the National Academy of Sciences USA, Science, Science Advances, Scientific Reports

External Examiner/Opponent for International PhD student

2019 Weizhou Zhao, Uppsala University, Uppsala, Sweden
 2012 Adrien Vigneron, French Research Institute for Exploitation of the Sea, Brest, France

Professional Society memberships

2019-present	Geobiology Society
2017-present	American Association for the Advancement of Science
2012-present	Geochemistry Society
2010-present	American Geophysical Union
2006-present	International Society for Microbial Ecology
2004-present	American Society of Microbiology
2002-present	American Society for Limnology and Oceanography

Selected Press

- 2020 2nd TED talk featured in TED Radio Hour <https://podcasts.apple.com/us/podcast/ted-radio-hour/id523121474?i=1000469677885>
- 2020 Interview with Jordana Cepelwicz for The Atlantic and Quanta Magazine <https://www.theatlantic.com/science/archive/2020/05/life-microbes-ocean-floor/611755/>
- 2020 Interview with Whitney Heins at UTK Alumnus Magazine <https://alumnus.tennessee.edu/2020/to-the-extreme/>
- 2020 TV interview at WLVT Knoxville www.wvlt.tv/content/news/UT-science-team-heading-to-Arctic-Circle-to-study-creatures-frozen-in-time-566290321.html
- 2020 Interview with Daniel Dassow at the UTK Daily Beacon
- 2019 2nd radio interview for Jonathan McCrea, Newstalk's Futureproof, Dublin, Ireland <https://t.co/lvbXE9JXH8?amp=1>
- 2019 Interview with Corey Powell at NBC News <https://www.nbcnews.com/mach/science/strange-life-forms-found-deep-mine-point-vast-underground-galapagos-ncna1050906>
- 2019 Interview with Delia O'Hara for AAAS Member Spotlight, <https://www.aaas.org/membership/member-spotlight/microbiologist-seeks-microbes-their-inhospitable-habitats>
- 2019 Interview for The Disruptors podcast with Matt Ward <https://disruptors.fm/122-a-whole-new-unexplored-world-under-the-sea-karen-lloyd/>
- 2019 New Scientist article <https://www.newscientist.com/article/mg24232291-800-zombieland-the-vast-world-of-hidden-microbes-miles-beneath-your-feet/>
- 2019 2nd Radio interview UnDisciplined with Matthew LaPlante for Utah Public Radio <https://www.upr.org/post/undisciplined-microbiologist-and-marine-fisheries-ecologist>
- 2019 Mini Geology radio interview with Daniel Minisini, https://youtu.be/06_4ihYgWo8
- 2019 Scientific American article on 2018 mSystems paper, <https://www.scientificamerican.com/article/most-microbial-species-are-dark-matter/>
- 2019 Interview with Martin Rajec at Slovak Public Radio <http://www.rtvs.sk/radio/archiv/1161/1126621>
- 2019 Podcast interview with Seth Shostak at SETI on Big Picture Science, <http://blog.bigpicture-science.org/2019/01/big-picture-science-rip-van-winkle-worm/>
- 2019 Podcast interview with David Kattenburg, <https://soundcloud.com/greenplanetmonitor/deep-carbon>
- 2019 Radio interview with Ireland's NewsTalk
- 2018 TV interview for Enlace Judio, Mexico <https://www.youtube.com/watch?v=2dZTI9wzkfU>
- 2018 Newsweek article, <https://www.newsweek.com/mysterious-microbial-dark-matter-dominates-our-planets-environments-1139876>
- 2018 Guardian article, <https://www.theguardian.com/science/2018/dec/10/tread-softly-because-you-tread-on-23bn-tonnes-of-micro-organisms>
- 2018 New York Times article, <https://www.nytimes.com/2018/12/19/science/subsurface-microbes.html>
- 2018 Nature Microbiology Research Highlights, "The majority is uncultured." Vol. 16, p. 716

- 2018 Radio interview with TalkRadio with Paul Ross in London
- 2018 Radio interview with Alexander South at Radio Sputnik, Edinburgh, UK,
<https://sputniknews.com/analysis/201812121070597293-earth-life-subsurface-ecosystem/>
- 2018 Radio interview with NPR WUOT, <http://www.wuot.org/post/life-goes-deep-karen-lloyd-life-below-surface>
- 2018 Radio interview with BBC “Science in Action”
<https://www.bbc.co.uk/programmes/w3cswmqg>
- 2018 Live radio interview with BBC World Service Newsday
- 2018 Live TV interview with Australian Broadcasting Corporation
- 2018 Live TV interview with Al Jazeera’s nightly news in London
- 2018 1st Radio interview UnDisciplined with Matthew LaPlante for Utah Public Radio,
<https://www.upr.org/post/undisciplined-microbiologist-and-human-ecologist>
- 2018 1st Radio interview for Jonathan McCrea, Newstalk’s Futureproof, Dublin, Ireland
- 2018 Radio interview with Julie Rose for Top of the Mind, Utah Public Radio,
<http://www.byuradio.org/episode/0cf5f353-aba9-4761-9c59-0e0acd824ba3?playhead=3111&autoplay=true>
- 2017 Interview with New Scientist
- 2016 Interview for Proceedings of the National Academy of Sciences
<http://www.pnas.org/content/114/5/788.long>
- 2016 Interview for Nova Next <http://www.pbs.org/wgbh/nova/next/evolution/microbial-diversity/>
- 2012 Interview for Science News for Kids, AAAS