

# **Kathleen F. Walker, PhD**

University of Tennessee | Energy Science and Engineering  
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## **EDUCATION**

### ***Ph.D. Energy Science and Engineering | Magna Cum Laude***

Bredesen Center for Interdisciplinary Research and Graduate Education | 2016-2023  
*Spatiotemporal Dynamics of Microbial Communities in the Contaminated Subsurface*  
University of Tennessee, Knoxville | Oak Ridge National Laboratory  
Advisor: Dr. Terry C. Hazen | Committee: Dr. Karen Lloyd, Dr. Jill Mikucki, Dr. Andrew Steen

### ***Bachelor of Science, Microbiology***

University of Tennessee, Knoxville | 2011-2015  
Magna Cum Laude | Minor: Business Administration

## **RESEARCH INTERESTS**

My primary research is focused on applied microbial ecology and systems biology with an emphasis on understanding the function and role of microbial communities in the natural attenuation and bioremediation. My dissertation research was a high-resolution time series focused on the spatiotemporal dynamics of microbial communities and geochemical fluctuations in a contaminated subsurface containing nitrate, high acidity, uranium, technetium, and volatile organic carbon species.

## **RESEARCH EXPERIENCE**

### ***Graduate Student Field and Laboratory Researcher | ENIGMA***

Ecosystems & Networks Integrated with Genes & Molecular Assemblies | 2016-2023  
Scientific Focus Area for Department of Energy  
Major Collaborators: Dr. Adam Arkin, Dr. Matthew Fields, Dr. David Stahl, Dr. Jizhoug Zhou, and their laboratory members  
Design and develop sophisticated field experiments and sampling campaigns to understand the geochemical dynamics and biological fluctuations in the contaminated subsurface environment and inform future laboratory experiments focused on the mechanistic understanding of microbial functions.

### ***Post-Baccalaureate Intern***

Higher Education Research Experience | Oak Ridge National Laboratory | 2015-2016  
Mentor: Dr. Terry C. Hazen  
Research known hydrocarbon degraders isolated from the Deepwater Horizon oil spill and gain a greater understanding of their capabilities and mechanisms of bioremediation.

### ***Student Research Assistant***

University of Tennessee, Knoxville | The Hazen Lab | 2014-2015  
Research in basic and applied field microbial ecology. Emphasis on bioremediation, enhanced oil recovery, calculation of microbial growth metrics, and water quality.

## PUBLICATIONS

Published as of January 10, 2024: 5 | h-Index: 2 | Citations: 50

Thorgersen, M. P., J. L. Goff, F. L., II Poole, **K. F. Walker**, A. D. Putt, L. M. Lui, T. C. Hazen, A. P. Arkin and M. W. W. Adams. 2023. *Mixed nitrate and metal contamination influences operational speciation of toxic and essential elements. Environmental Pollution* 338:122674.

Jennifer L. Goff, Lauren M. Lui, Torben N. Nielsen, Farris L. Poole II, Heidi J. Smith, **Kathleen F. Walker**, Terry C. Hazen, Matthew W. Fields, Adam P. Arkin, Michael W. W. Adams. 2023. *Mixed Waste Contamination Selects for a Mobile Genetic Element Population Enriched in Multiple Heavy Metal Resistance Genes.* doi: 10.1101/2023.11.17.566018.

Ji-Won Moon, Charles J. Paradis, Dominique C. Joyner, Frederick von Netzer, Erica L. Majumder, Emma R. Dixon, Mircea Podar, Xiaoxuan Ge, Peter J. Walian, Heidi J. Smith, Xiaoqin Wu, Grant M. Zane, **Kathleen F. Walker**, Michael P. Thorgersen, Farris L. Poole II, Lauren M. Lui, Benjamin G. Adams, Kara B. De León, Sheridan S. Brewer, Daniel E. Williams, Kenneth A. Lowe, Miguel Rodriguez, Tonia L. Mehlhorn, Susan M. Pfiffner, Romy Chakraborty, Adam P. Arkin, Judy D. Wall, Matthew W. Fields, Michael W.W. Adams, David A. Stahl, Dwayne A. Elias, and Terry C. Hazen. 2020. *Characterization of subsurface media from locations up- and down-gradient of a uranium-contaminated aquifer.* doi: 10.1016/j.chemosphere.2020.126951.

Moon, J.-W., C. J. Paradis, D. C. Joyner, F. von Netzer, E. L. Majumder, E. Dixon, M. Podar, G. Xiaoxuan, P. J. Walian, H. J. Smith, X. Wu, G. M. Zane, **K. F. Walker**, M. P. Thorgersen, F. L. Poole II, L. Lui, B. G. Adams, K. B. De León, S. S. Brewer, D. E. Williams, K. A. Lowe, M. Rodriguez, Jr., T. L. Mehlhorn, S. M. Pfiffner, R. Chakraborty, A. P. Arkin, J. D. Wall, M. W. Fields, M. W. W. Adams, D. A. Stahl, D. A. Elias and T. C. Hazen. 2019. *Integrated characterization of subsurface media from locations up- and down-gradient of a uranium-contaminated aquifer.* doi: 10.1101/712562.

Techtmann, S. M., **K. S. Fitzgerald**, S. C. Stelling, D. C. Joyner, S. M. Uttukar, A. P. Harris, N. K. Alshibli, S. D. Brown, and T. C. Hazen. 2016. *Colwellia psychrerythraea strains from distant deep-sea basins show adaptation to local conditions.* doi: 10.3389/fenvs.2016.00033.

### **In Preparation as of January 10, 2024**

**Kathleen F. Walker** and Terry C. Hazen. *DOE Superfund Sites: History, Policy Initiatives, and Current Research to Benefit Environmental Restoration.* Journal of Interest: Renewable and Sustainable Energy Reviews.

**K.F. Walker**, E.R. Dixon, D.C. Joyner, K.A. Lowe, F.L. Poole, X. Ge, J. Goff, M P. Thorgersen, S. Mishra, D. Ning, Y. Fan, J.P. Michael, Y. Fu, R. Tian, Y. Wang, J.D. Van Nostrand, X. Wu, M.W. Adams, R. Chakraborty, J. Zhou, A.P. Arkin, and T.C. Hazen. *Time Series Analysis of Attached and Unattached Microbial Communities in the Contaminated Subsurface.* Journal of Interest: Nature.

**K.F. Walker**, E.R. Dixon, J.P. Michael, A.D. Putt, D.C. Joyner, K.A. Lowe, F.L. Poole, X. Ge, J. Goff, M.P. Thorgersen, D. Ning, Y. Fan, Y. Fu, R. Tian, Y. Wang, J.D. Van Nostrand, L.M. Lui, X. Wu, K.J. Davis, M.W. Adams, R. Chakraborty, J. Zhou, M.W. Fields, A.P. Arkin, and T.C. Hazen. *Time Series Analysis of Contaminated and Pristine Environments: Do They Compare?* Journal of Interest: Frontiers in Microbiology.

Hunt, K.A., A.V. Carr, A.E. Otwell, J.J. Valenzuela, **K.F. Walker**, E.R. Dixon, L.M. Lui, T. Nielsen, S. Bowman, F. von Netzer, J. Moon, C.W. Schadt, M.J. Rodriguez, K. Lowe, D. Joyner, K.J. Davis, X. Wu, R. Chakraborty, M.W. Fields, J. Zhou, T.C. Hazen, A.P. Arkin, S.D. Wankel, N. Baliga, and D.A. Stahl. *A role for the atypical nitrous oxide reductase in attenuation of nitrous oxide surface emissions*. Environmental Science & Technology. In review.

## **POSTERS AND PRESENTATIONS**

1. **K. F. Walker\***, A. Yadav\*. Early Career Scientists Need Localized Information of ENIGMA Historical Studies. Where can they find it? Invited. August 2, 2023. Lawrence Berkley National Laboratory. ENIGMA Planning Retreat.
2. T. C. Hazen\*, **K. F. Walker\***, D. C. Joyner, D. E. Williams. Future of ENIGMA's Subsurface Observatory and Sampling Plan. Invited. August 2, 2023. Lawrence Berkley National Laboratory. ENIGMA Planning Retreat.
3. **K. F. Walker\***, J. Im. Modeling the Subsurface Observatory and Lessons From Field Sampling. Invited. August 1, 2023. Lawrence Berkley National Laboratory. ENIGMA Planning Retreat.
4. **K. F. Walker\***. Cone Penetrometer Testing Leads to Well Connectivity in Subsurface Observatory. Invited. August 1, 2023. Lawrence Berkley National Laboratory. ENIGMA Planning Retreat.
5. Im\*, J., A. Putt, **K. Walker**, J. Marquis, L. Lui, A. Carr, Y. Fan, J. Goff, K. Hunt, J. Michael, F. Poole, Y. Wang, M. Adams, N. S. Baliga, D. Stahl, J. Zhou, M. W. Fields, T. C. Hazen, A. P. Arkin, and M. E. Newcomer. Contributed. Incorporation of Microbial Communities into Reactive Transport Modeling of Nitrogen in Subsurface Systems under Rainfall Perturbations. December 12-16, 2022 Chicago, IL. AGU Fall Meeting.
6. **Walker\***, **K. F.**, E. R. Dixon, D. C. Joyner, K. A. Lowe, F. L. Poole, X. Ge, M. P. Thorgersen, D. Ning, Y. Fan, J. P. Michael, J. D. Van Nostrand, L. M. Lui, X. Wu, J. L. Goff, M. W. W. Adams, R. Chakraborty, D. A. Elias, R. L. Wilpiseski, J. Zhou, M. W. Fields, A. P. Arkin, P. D. Adams, and T. C. Hazen. Diurnal and Seasonal Fluctuations within 27 Contaminated Subsurface Wells. Washington, DC. June 9-13, 2022. ASM Microbe 2022.
7. **Walker\***, **K. F.**, A. D. Putt\*. Spatiotemporal Dynamics of Groundwater and Sediment: Geochemistry, Microbial Communities and Activities in a Contaminated Aquifer. Presentation. Invited. August 3, 2021. DOE Contractors Review Board.
8. **Walker\***, **K. F.**, E. R. Dixon, D. C. Joyner, K. A. Lowe, F. L. Poole, X. Ge, M. P. Thorgersen, D. Ning, Y. Fan, J. P. Michael, Y. Fu, R. Tian, Y. Wang, J. D. V. Nostrand, L. M. Lui, X. Wu, M. W. W. Adams, R. Chakraborty, D. A. Elias, R. L. Wilpiseski, J. Zhou, M. W. Fields, A. P. Arkin, P. D. Adams, and T. C. Hazen.

- Contributed. Invited. Diurnal and Seasonal Fluctuations with the Subsurface: A 17-Week Survey of Groundwater and Sediment in 27 Contaminated Wells. World Microbe Forum, Online, June 20-24, 2021. ASM Microbe 2021.
9. **Walker\***, K. F., E. R. Dixon, D. C. Joyner, K. A. Lowe, F. L. Poole, X. Ge, M. P. Thorgersen, D. Ning, Y. Fan, J. P. Michael, Y. Fu, R. Tian, Y. Wang, J. D. V. Nostrand, L. M. Lui, X. Wu, K. J. Davis, M. W. W. Adams, R. Chakraborty, D. A. Elias, R. L. Wilpiseski, J. Zhou, M. W. Fields, T. C. Hazen, A. P. Arkin and P. D. Adams. Presentation. Invited. Spatiotemporal Dynamics of Groundwater and Sediment: Geochemistry, Microbial Communities and Activities in a Contaminated Aquifer. Invited. February 22-24, 2021. Washington, DC. 2021 Genomic Sciences Program (GSP) Annual.
  10. Hunt\*, K. A., A. E. Otwell, S. Bowman, S. D. Wankel, **K. F. Walker**, E. R. Dixon, M. Rodriguez, K. A. Lowe, D. C. Joyner, A. Carr, L. Lui, T. Nielsen, N. S. Baliga, T. C. Hazen, D. A. Stahl, A. P. Arkin, P. D. Adams. Invited. Resolving Biotic and Abiotic Controls of Nitrous Oxide Flux in a Subsurface Site Contaminated with High Nitrate Concentrations. Contributed. February 22-24, 2021. Washington, DC. 2021 Genomic Sciences Program (GSP) Annual.
  11. Ning\*, D., Y. F., L. M. Lui, J. P. Michael, Y. Fu, J. D. Van Nostrand, R. Tian, Y. Wang, **K. F. Walker**, E. R. Dixon, A. D. Putt, D. E. Williams, D. C. Joyner, K. A. Lowe, F. L. Poole, X. Ge, M. P. Thorgersen, M. W. W. Adams, R. Chakraborty, X. Wu, D. A. Elias R. L. Wilpiseski, J. Zhou, M. W. Fields, T. C. Hazen, A. P. Arkin, and P. D. Adams. Invited. Physical size matters in groundwater bacterial community assembly. February 22-24, 2021. Washington, DC. 2021 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting.
  12. Lui\*, L. M., E. L.-W. Majumder\*, H. J. Smith\*, H. K. Carlson, F. V. Netzer, N. Nielsen, M. Peng, X. Tao, A. Zhou, M. Price, J. V. Kuehl, A. J. Hendrickson, V. Trotter, S. Gushgari-Doyle, J. Valenzuela, A. Otwell, K. Hunt, A. Carr, **K. Walker**, E. Dixon, F. Poole, M. Thorgersen, X. Ge, M. W. W. Adams, E. J. Alm, N. S. Baliga, J.-M. Chandonia, A. M. Deutschbauer, D. A. Elias, M. W. Fields, T. C. Hazen, T. R. Northen, A. Mukhopadhyay, G. E. Siuzdak, D. A. Stahl, P. J. Walian, J. Zhou, R. Chakraborty, A. P. Arkin, and P. D. Adams. Invited. Mechanism across scales: integrating laboratory and field studies for microbial ecology as illustrated by the ENIGMA SF. February 22-24, 2021. Washington, DC. 2021 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting.
  13. Hazen, T. C., E. R. Kelly\*, A. Putt, **K. Walker**, D. C. Joyner, I. Fukai, K. Lowe, M. Rodriguez Jr, M. W. Fields, R. Chakraborty, X. Wu, D. Stahl, T. Lie, M. W. W. Adams, F. Poole, P. J. Walian, J. Zhou, J. V. Nostrand, T. R. Northen, J.-M. Chandonia, A. P. Arkin, and P. D. Adams. Invited. Cone Penetrometer 3-D Characterization of Y12 Site to Determine the Hydrological, Geological and Biogeochemistry Best Sites for ENIGMA Subsurface Observatories. Contributed. February 22-24, 2021. Washington, DC. 2021 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting.
  14. **Walker\***, K. F., E. R. Dixon, D. C. Joyner, K. A. Lowe, F. L. Poole, X. Ge, M. P. Thorgersen, D. Ning, Y. Fan, J. P. Michael, Y. Fu, R. Tian, Y. Wang, J. D. V. Nostrand, L. M. Lui, X. Wu, K. J. Davis, M. W. W. Adams, R. Chakraborty, D. A. Elias, R. L. Wilpiseski, J. Zhou, M. W. Fields, T. C. Hazen, A. P. Arkin and P. D.

- Adams. Presentation. Invited. Spatiotemporal Dynamics of Groundwater and Sediment: Geochemistry, Microbial Communities and Activities in a Contaminated Aquifer. Invited. February 23-26, 2020. Washington, DC. 2020 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting.
15. Lui,\* L. M., H. J. Smith, F. V. Netzer, K. B. D. León, E. L.-W. Majumder, J. V. Kuehl, F. Song, A. Sczesnak, T. Nielsen, M. P. Thorgesen, X. Ge, F. L. Poole, B. P. Bowen, S. M. Kosina, C. J. Paradis, **K. F. Walker**, K. A. Lowe, D. C. Joyner, J. M. Rodriguez, B. A. Adams, D. Williams, J.-W. Moon, J. D. V. Nostrand, D. Ning, Y. Fu, W. Shi, Y. Li, D. J. Curtis, Y. Fan, L. Wu, R. Tian, G. M. Zane, A. B. Aaring, X. Wu, A. E. Kazakov, J.-M. Chandonia, P. S. Novichkov, P. J. Walian, R. Chakraborty, M. W. W. Adams, J. Zhou, T. R. Northen, J. D. Wall, D. A. Stahl, D. A. Elias, T. C. Hazen, M. W. Fields, A. P. Arkin and P. D. Adams. Invited. Core Values: Spatial Variation in Microbial Function, Activity, and Community Assembly in Groundwater and Sediment from a Contaminated Subsurface Aquifer. February 23-26, 2020. Washington, DC. 2020 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting.
  16. Hunt\*, K. A., A. V. Carr, **K. F. Walker**, E. R. Dixon, M. R. Jr, K. A. Lowe, D. C. Joyner, A. E. Otwell, S. D. Wankel, N. S. Baliga, T. C. Hazen, D. A. Stahl, A. P. Arkin and P. D. Adams. Invited. High nitrous oxide emissions from a nitrate contaminated subsurface indicate significant metabolic activity. Contributed. February 23-26, 2020. Washington, DC. 2020 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting.
  17. Lui\*, L. M., T. Nielsen, H. J. Smith, F. V. Netzer, E. L.-W. Majumder, J. V. Kuehl, F. Song, A. Sczesnak, M. P. Thorgesen, X. Ge, F. L. Poole, C. J. Paradis, **K. F. Walker**, K. A. Lowe, D. C. Joyner, D. Ning, J. M. Rodriguez, A. B. Aaring, B. A. Adams, D. Williams, J. D. V. Nostrand, G. M. Zane, M. W. W. Adams, J. Zhou, R. Chakraborty, J. D. Wall, D. A. Stahl, T. C. Hazen, M. W. Fields, A. Arkin and P. D. Adams. Invited. A Method for Circularizing Microbial Genomes from Metagenomics Data. February 23-26, 2020. Washington, DC. 2020
  18. Dixon\*, E. R., **K. F. Walker**, D. Williams, and T. C. Hazen. Contributed. Modeling Dynamic Geochemical Processes: How Diurnal and Seasonal Water Table Fluctuations Influence Contaminated Groundwater Geochemistry. December 10, 2019, San Francisco, CA. AGU Fall Meeting.
  19. **K. F. Walker\***, E.R. Dixon. Presentation. Invited. June 2019. Proposal for High-Resolution Time Series Analysis in Contaminated Groundwater/Sediments at Oak Ridge Reservation. ENIGMA 2019 SAC Planning Meeting and Field Summit.
  20. **K. F. Walker\***, E.R. Dixon. Presentation. Invited. June 2019. Integrated Time Series Groundwater Sampling in Oak Ridge for Modeling Initiative. ENIGMA 2019 SAC Planning Meeting and Field Summit.
  21. **K. F. Walker\***, K. A. Lowe, B. G. Adams, E. R. Dixon, D. C. Joyner, M. Rodriguez Jr., M. W. Fields, D. A. Elias, T. C. Hazen, A. P. Arkin and P. D. Adams. Presentation. Invited. 2019. ENIGMA: Long-Term Continuous Monitoring Gives Insight into Patterns Between Groundwater and Weather Events. DOE 2019 Genomic Sciences Program Annual Principal Investigator (PI) Meeting.
  22. Dixon\*, E. R., **K. F. Walker**, and T. C. Hazen. Contributed. Modeling Dynamic Geochemical Processes: How Water Table Fluctuations Influence RedOx Conditions

in the Presence of Contamination. September 22-25, 2019. Phoenix, AZ. Geological Society of America Annual Meeting and Exposition.

23. L. M. Lui\*, H. J. Smith, F. von Netzer, K. B. De León, E. L.-W. Majumder, J. V. Kuehl, F. Song, A. Sczesnak, T. Nielsen, M. P. Thorgesen, X. Ge, F. L. Poole II, B. P. Bowen, S. M. Kosina, C. J. Paradis, **K. F. Walker**, K. A. Lowe, D. C. Joyner, M. Rodriguez Jr, B. Adams, D. Williams, J.-W. Moon, J. D. Van Nostrand, D. Ning, Y. Fu, W. Shi, Y. Li<sup>1</sup>, D. J. Curtis, Y. Fan, L. Wu, R. Tian, G. M. Zane, A. B. Aaring, X. Wu, A. E. Kazakov, J.-M. Chandonia, P. S. Novichkov, P. J. Walian, R. Chakraborty, M. W. W. Adams, J. Zhou, T. R. Northen, J. D. Wall, D. A. Stahl, D. A. Elias, T. C. Hazen, M. W. Fields, A. P. Arkin and P. D. Adams. 2019 . ENIGMA: Core Values: Large-Scale Analysis of Environmental Constraints on Microbial Community Assembly, Activity, and Dispersal in Groundwater and Sediment from a Contaminated Subsurface Aquifer. DOE 2019 Genomic Sciences Program Annual Principal Investigator (PI) Meeting.
24. von Netzer\*, F., K. A. Hunt, J. Valenzula, A. Otwell, S. Turkarslan, N. S. Baliga, J.-W. Moon, K. Lowe, M. Rodriguez, D. Elias, D. C. Joyner, C. Paradis, S. Pfiffner, D. Williams, **K. Fitzgerald**, S. Brewer, B. Adams, T. C. Hazen, E. L.-W. Majumder, G. M. Zane, J. D. Wall, D. Ning, J. Zhou, M. T. Thorgensen, X. Ge, M. W.W. Adams, L. Lui, R. Chakraborty, H. Carlson, A. Deutschbauer, D. Vuono, K. Meinhardt, D. A. Stahl, A. P. Arkin and P. D. Adams. February 2019. Coupling of Field- and Lab-based Experiments to resolve controls of Nitrate Respiration Pathway Partitioning at the Oak Ridge Shallow Aquifer. Genomic Sciences Program Annual PI Meeting.
25. Blake E. Downing\*, **Kathleen F. Walker**, John I. Miller, Matthew T. Kerr, Stephen M. Techtmann, Terry C. Hazen. August 2018. Are Marine Isolates Munching On Oil or VOCs? UT Microbiology REU Student Research Exhibition.
26. **Walker\***, **K. F.**, B. G. Adams, K. Lowe, M. Rodriguez, D. C. Joyner, and T. C. Hazen. Long-Term Continuous Weather and Groundwater Monitoring at Y-12 for Suggesting ENIGMA Field and Lab Studies. October 9, 2018. Berkeley, CA. Lawrence Berkeley National Laboratory, ENIGMA SAC and Retreat.
27. Putt\*, A.D., B. G. Adams, **K. Fitzgerald**, K. McBride, L. D. McKay, and T. C. Hazen. Poster. Ultramicrobacteria in Uranium Contaminated Y-12 Groundwater. 12, April 2018. Knoxville, TN. Geological Society of America 67th Annual Southeastern Section Meeting.
28. von Netzer\*, F., K. A. Hunt, J. Valenzula, A. Otwell, S. Turkarslan, N. S. Baliga, J.-W. Moon, K. Lowe, M. Rodriguez, D. Elias, D. C. Joyner, C. Paradis, S. Pfiffner, D. Williams, **K. Fitzgerald**, S. Brewer, B. Adams, T. C. Hazen, E. L.-W. Majumder, G. M. Zane, J. D. Wall, D. Ning, J. Zhou, M. T. Thorgensen, X. Ge, M. W.W. Adams, L. Lui, R. Chakraborty, H. Carlson, A. Deutschbauer, D. Vuono, K. Meinhardt, D. A. Stahl, A. P. Arkin, and P. D. Adams. Invited. Coupling of Field- and Lab-based Experiments to resolve controls of Nitrate Respiration Pathway Partitioning at the Oak Ridge Shallow Aquifer. February 26-28, 2018. Washington, DC. Genomic Sciences Program Annual PI Meeting.
29. Ning\*, D., Y. Deng, J. D. Van Nostrand, L. Wu, P. Zhang, Z. He, Y. Fu, D. J. Curtis, Y. Li, Y. Fan, M. B. Smith, A. M. Rocha, C. S. Smillie, S. W. Olesen, C. J. Paradis, J. H. Campbell, J. L. Fortney, T. L. Mehlhorn, K. A. Lowe, J. E. Earles, J. Phillips, S. M. Techtmann, D. C. Joyner, K. L. Bailey, R.A. Hurt Jr., S.P. Preheim, M.C. Sanders, J.

Yang, M. A. Mueller, W. A. Lancaster, B. J. Vaccaro, F. L. Poole II, S. Brooks, D. B. Watson, A. Aaring, B. Adams, S. Brewer, K. De Leon, **K. Fitzgerald**, G. X. Ge, C. Hans, S. Kosina, L. Lui, E. Majumder, J.-W. Moon, A. Ottwell, S. Pfiffner, H. Smith, M. Thorgersen, S. Turkarslan, F. von Netzer, D. Williams, S. X. Wu, G. Zane, A. Zelaya, E. J. Alm, N. S Baliga, A. M. Deutschbauer, M. W. Fields, T. C. Hazen, T. R. Northen, J. D. Wall, M.W.W. Adams, R. Chakraborty, J.-M. Chandonia, D. A. Elias, D. A. Stahl, P. J. Walian, J. Zhou, A. P. Arkin and P. D. Adams. February 2018. Ecological Stochasticity in Subsurface Microbial Community Assembly under Stress Gradient: Application of A General Quantitative Framework. Genomic Sciences Program Annual PI Meeting.

30. Liu J, **Fitzgerald\***, K, Techtmann S, Fortney J, Joyner D & Hazen T. Invited. Microbial Degradation and Community Changes to Crude Petroleum Oil in Different Deep Oceans. June 29, 2016. Yokohama, Japan. Goldschmidt Conference.
31. Brewer\*, S. S., M. F. Campa, A. Garcia de Matos Amaral, S. M. Techtmann, **K. Fitzgerald**, J. L. Fortney, and T. C. Hazen. June 16, 2016. Contributed. Isolation and Characterization of Anaerobic Microbial Communities from Hydraulic Fracturing Fluids. Boston, MA. ASM Microbe Annual Meeting.
32. **Fitzgerald\***, K., S. M. Techtmann, J. L. Fortney, D. C. Joyner, and T. C. Hazen. Invited. Diversity and Distribution of Archaeal amoA Genes in Geochemically Distinct Marine Basins. August 6, 2015. Oak Ridge, TN. Oak Ridge National Lab. Oak Ridge Institute for Science and Education (ORISE) Summer Student Poster Sessions.
33. **Fitzgerald\***, K., S. M. Techtmann, J. L. Fortney, D. C. Joyner, and T. C. Hazen. Contributed. Diversity and Distribution of Archaeal amoA Genes in Distant Marine Basins. April 13-15, 2015. Knoxville, TN. University of Tennessee Exhibition of Undergraduate Research and Creative Achievement (EURECA).
34. Brewer, S. S., M. F. Campa, A. G. Amaral, S. M. Techtmann, J. L. Fortney, **K. Fitzgerald** and T. C. Hazen. Invited. Isolation and Characterization of Anaerobic Microbial Communities from Hydraulic Fracturing Fluids. February 2015. Nashville, TN. Tennessee Experimental Learning Symposium (TELS).

## **AWARDS & RECOGNITIONS**

**Graduate Student Sampling Campaign Co-Lead.** Appointed. Developed and executed a large-scale long-term sampling campaign for ENIGMA's Summer Sampling Plan. July - December 2019.

**Best Poster.** Oak Ridge National Lab. Oak Ridge Institute for Science and Education (ORISE) Summer Student Poster Sessions. August 6, 2015.

**Honorable Mention Poster in the College of Arts and Sciences.** Exhibition of Undergraduate Research and Creative Achievement (EURECA), University of Tennessee, Knoxville. April 14, 2015.

## **MENTORSHIP**

**Summer Hatmaker.** Field Technician. Oak Ridge National Laboratory. 2023-present.  
**Blake Downing.** REU Summer Intern in Hazen Lab. University of Tennessee, Knoxville. Summer Intern 2018. Currently: Graduate Student at UC Berkeley.  
**Tien Tren.** Undergraduate Microbiology Independent Study Student. University of Tennessee, Knoxville. 2019. Currently: Graduate Student at UT.

## **WORKSHOPS AND CONFERENCES**

*ENIGMA SAC Planning Meeting and Field Summit.* Berkeley, CA. June 24 – 25, 2019.  
*DOE 2019 Genomic Sciences Program Annual Principal Investigator (PI) Meeting.* Washington, D.C. February 24 – 27, 2019.  
*ENIGMA Field Summit and Research Meeting.* Oak Ridge National Laboratory. Oak Ridge, TN. January 28 – 30, 2019.  
*Women in STEM Research Symposium.* University of Tennessee, Knoxville. March 1, 2018.  
*ENIGMA Planning Meeting.* Lawrence Berkeley National Laboratory. January 23 – 25, 2018  
*Women Engineers Day.* Conference. Knoxville, TN. April 22, 2017.  
*Goldschmidt.* Conference. Yokohama, Japan. June 26 – July 1, 2016.  
*Do-It-Yourself Microbial Genome Sequence Analysis.* Workshop. American Society for Microbiology Conference. Boston, MA. June 16, 2016.  
*Southeastern Biogeochemistry Symposium.* University of Tennessee, Knoxville. March 11-13, 2016.  
*Undergraduate Research Symposium.* Exhibition of Undergraduate Research and Creative Achievement (EURECA). University of Tennessee, Knoxville. April 14, 2015.  
*Undergraduate Research Symposium.* Exhibition of Undergraduate Research and Creative Achievement (EURECA). University of Tennessee, Knoxville. April 12, 2014.

## **LEADERSHIP**

*President.* Kappa Kappa Gamma Knoxville Alumnae Association.  
2017-present. Intergenerational leadership, event management, meeting planning.  
*Advisor.* Kappa Kappa Gamma, University of Tennessee Chapter.  
2017-present. Interpersonal communication, service, time management.  
*Treasurer.* Kappa Kappa Gamma Knoxville Alumnae Association.  
2015-2017. Fundraising, financial management, philanthropy.  
*Homecoming Chairman.* All Campus Events. University of Tennessee.  
2013-2015. Promotion, coordination, community relations.  
*Logistics Coordinator.* Panhellenic Council.  
2013-2015. Organization, teamwork, counsel.  
*Welcome Leader.* New Student and Family Programs.  
2012-2015. Introductions, peer management, advisement.  
*President.* Junior Panhellenic Council.  
2011-2013. Leadership, promotion, philanthropy.  
*PR and Marketing Director.* Hess Hall Council.



2011-2012. Event coordination, advertising, media relations.

### **SCIENTIFIC OUTREACH**

*Ask a Scientist Volunteer.* Knoxville, TN. 2016-present.

*Chemical Magic Show Coordinator and Leader.* Murfreesboro, TN. 2014-2016.

### **COMMUNITY OUTREACH**

*Light the Night, Leukemia and Lymphoma Society. Volunteer.* 2014-present.

*Habitat for Humanity. Volunteer.* 2008-present.

*Free Little Library Coordinator.* 2017-present.

*Big Brother, Big Sister Volunteer.* 2012-2017.

### **TRAINING AND SKILLS**

Aqua TROLL Groundwater Quality Monitors

HOBO Weather Stations

Cellular Telemetry Devices for Offsite Data Management

HAZWOPER – 40 hours

Radiological Worker 1 & 2 – 24 hours

On-Site Field Training (Y-12, ORNL)

Hazardous Waste

Hazardous Communication

Gas Chromatography (FID, ECD)

Illumina MiSeq

Effective Public Speaking – 40 hours

Fire Extinguisher

Personal Protective Equipment

Compressed Gas Cylinder

First Aid

### **PROFESSIONAL SOCIETY MEMBERSHIPS**

American Society of Microbiology. 2013-present.

Geochemical Society. 2015-present.