
ANGELIA L. SEYFFERTH

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EDUCATION

- 2008 Doctor of Philosophy in Soil and Water Sciences
 University of California – Riverside, Riverside CA
- 2002 Bachelor of Science in Environmental Science-Chemistry, *Summa cum Laude*
 Minor in Chemistry
 Towson University, Towson, MD

PROFESSIONAL EXPERIENCE

- 9/2023-present Professor, Department of Plant and Soil Sciences, University of Delaware, Newark, DE
- 4/2023-present Associate Dean of Research, College of Agriculture and Natural Resources, University of Delaware
- 3/2022-8/2022 Visiting Professor, Institute of Biogeochemistry and Pollutant Dynamics, ETH Zurich, Switzerland
- 3/2018-present Director, Center for Food Systems and Sustainability (CENFOODS), University of Delaware, Newark, DE
- 9/2018-8/2023 Associate Professor, Department of Plant and Soil Sciences, University of Delaware, Newark, DE
- 9/2017-present Professor (joint appointment by courtesy), Department of Earth Sciences, University of Delaware, Newark, DE
- 9/2012-8/2018 Assistant Professor, Department of Plant and Soil Sciences, University of Delaware, Newark, DE
- 6/2008-8/2012 Postdoctoral Scholar, Environmental Earth Systems Science, Stanford University, Stanford, CA
- 9/2003-6/2008 Graduate Research Assistant, University of California-Riverside, CA

PROFESSIONAL AND SCHOLARLY HONORS

- 2022 Charles S. Falkenberg Award, American Geophysical Union
- 2022 Jackson Soil Chemistry and Mineralogy Award, Soil Science Society of America
- 2021 Faculty Award of Excellence, Univ. of Delaware Sustainability Council Green Hen Awards
- 2014 Faculty Early Career Development (CAREER) Award, National Science Foundation
- 2009 Minority Postdoctoral Fellowship Award in Biology, National Science Foundation
- 2009 Honorable Mention, L’Oreal USA Fellowship for Women in Science
- 2008 Graduate Student Association of UCR Dissertation Research Award
- 2005 U.S. Environmental Protection Agency Science to Achieve Results Graduate Fellowship
- 2003 ACS Award in Analytical Chemistry, Dept. of Chemistry, Towson University
- 2003 Commencement speaker, Towson University
- 2001 Margaret Duke Chambers Scholarship
- 1999 E. Gordon Riley Scholarship
- 1999 August & Marjorie Berlitz Memorial Scholarship

PUBLICATIONS

Google Scholar Statistics: Total citations =2700; h-index = 29; i10 index = 48 (revised 5/17/2024)

‡Undergraduate student *Graduate Student; **Postdoc/Research Associate; †Seyfferth is corresponding author.
Names in **bold** represent members of the Seyfferth lab

- †70 **Hu, R.***, **Limmer, M.A.****, **Seyfferth A.L.** How manganese affects rice cadmium uptake and translocation in vegetative and mature plants. *Plant and Soil*, **2024**, *In Press*
- †69 **Fettrow, S.***, Wozniak, A., Michael, H.A., **Seyfferth A.L.** Factors controlling spatiotemporal variability of soil carbon accumulation and stock estimates in a tidal salt marsh. *EGU Biogeosciences*, **2024**, *In Press*
- †68 **Linam, F.***, **Limmer, M.A.****, **Seyfferth A.L.** Contrasting roles of rice root iron plaque in retention and plant uptake of silicon, phosphorus, arsenic, and selenium in diverse paddy soils. *Plant and Soil*, **2024**, *In Press* <https://doi.org/10.1007/s11104-024-06553-6>
- †67 Capooci, M. **Seyfferth A.L.** Tobias, C. Wozniak, A.S., Hedgpeth, A., Bowen, M., Biddle, J.F., McFarlane, K.J., Vargas, R. High methane concentrations in tidal salt marshes: Where does the methane go?. *Global Change Biology*, **2023**, 30:e17050
<https://doi.org/10.1111/gcb.17050>
- †66 Chan, C.S., **Dykes, G.E***, Hoover, R.L., **Limmer, M.A.****, **Seyfferth A.L.** Gallionellaceae in rice root plaque: metabolic roles in iron oxidation, nutrient cycling and plant interactions. *Applied and Environmental Microbiology*, **2023**, 89:e00570-23
<https://doi.org/10.1128/aem.00570-23>
- †65 **Limmer, M.A.****, **Linam, F.***, **Seyfferth A.L.** The effect of rice residue management on rice paddy Si, Fe, As, and methane biogeochemistry. *Science of the Total Environment*, **2023**, 903, 166496 <https://doi.org/10.1016/j.scitotenv.2023.166496>
- †64 **Fettrow, S.***, **Jeppi, V.***, Wozniak, A., Vargas, R., Michael, H.A., **Seyfferth A.L.** Physiochemical controls on the horizontal exchange of blue carbon across the salt marsh-tidal channel interface. *Journal of Geophysical Research-Biogeosciences*, **2023**, 128, e2023JG007404. <https://doi.org/10.1029/2023JG007404>
- †63 **Linam, F.***, **Limmer, M.A.****, Ebling, A.M., **Seyfferth, A.L.** Soil amendment of rice husk and husk biochar stores soil carbon while water management controls dissolved organic matter chemistry in well-weathered soil. *Journal of Environmental Management*, **2023**, 339, 117936. <https://doi.org/10.1016/j.jenvman.2023.117936>
- †62 **Limmer, M.A.****, **Linam, F.***, **Evans, A.***, **Seyfferth, A.L.** Unraveling the mechanisms of Fe oxidation and Mn reduction on Mn IRIS films. *Environmental Science and Technology*, **2023**, 57, 6530-6539. <https://doi.org/10.1021/acs.est.3c00161>
- †61 **Limmer, M.A.****, Webb, S. **Seyfferth, A.L.** Evaluation of quantitative synchrotron radiation μ X-ray fluorescence (SR- μ XRF) in rice grain. *Journal of Synchrotron Radiation*, **2023**, 30, 407-416. <https://doi.org/10.1107/S1600577523000747>
- †60 **Fettrow, S.*** Vargas, R., **Seyfferth AL.** Experimentally simulated sea level rise destabilizes carbon-mineral associations in temperate tidal marsh soil. *Biogeochemistry*, **2023**, 163, 103-120. <https://doi.org/10.1007/s10533-023-01024-z>
- †59 **Hu R***, Cooper J, Daroub S, Kerl CF, Planer-Friedrich B, **Seyfferth AL.** Low levels of arsenic and cadmium in rice grown in southern Florida histosols – Impacts of water

- management and soil thickness. *Science of the Total Environment*, **2023**, 869, 161712. <https://doi.org/10.1016/j.scitotenv.2023.161712>
- 58 Vázquez-Lule, A*, **Seyfferth, A.L., Limmer, M.A.**** Mey, P., Guevara, M., Vargas R. Hyperspectral reflectance for measuring vegetation nutrients and canopy photosynthesis in a salt marsh. *JGR Biogeosciences*, **2022**, 127, e2022JG007088 <https://doi.org/10.1029/2022JG007088>
- †57 **Limmer, M.A.****, **Seyfferth, A.L. (equal contribution)** Altering the localization and toxicity of arsenic in rice grain, *Scientific Reports*, **2022**, 12, 5210. <https://doi.org/10.1038/s41598-022-09236-3>
- †56 **Limmer, M.A.****, **Thomas, J.†**, **Seyfferth, A.L.** The effect of silicon on the kinetics of rice root iron plaque formation, *Plant and Soil*, **2022**, 477, 171-181. <https://doi.org/10.1007/s11104-022-05414-4>
- †55 **Linam, F.***, **Limmer, M.****, Tappero, R., **Seyfferth, A.L.** Rice husk and charred husk amendments increase porewater and plant Si but water management determines grain As and Cd concentration. *Plant and Soil*, **2022**, 477, 135-152. <https://doi.org/10.1007/s11104-022-05350-3>
- †54 **Hu. R.***, **Seyfferth, A.L.** Rice Cd Levels in Cambodia Ranged 3 Orders of Magnitude due to Season and Soil Cd Levels *ACS Omega*, **2021**, 6, 19876-19882. <https://doi.org/10.1021/acsomega.1c02741>
- 53 Runkle, B.R.K., **Seyfferth, A.L.**, Reid, M.C., **Limmer, M.A.****, Moreno-Garcia, B., Reavis, C.W., Peña, J., Reba, M.L., Adviento-Borbe, A.A., Pinson, S.R.M., Isbell, C. Socio-technical changes for sustainable rice production: rice husk amendment, conservation irrigation, and system changes. *Frontiers in Agronomy*, **2021**, 3, 741557. <https://doi.org/10.3389/fagro.2021.741557>
- †52 **Dykes, G.E.***, **Limmer, M.A.****, **Seyfferth, A.L.** Silicon-rich soil amendments impact microbial community composition and the composition of arsM bearing microbes. *Plant and Soil*, **2021**, 468, 147-164. <https://doi.org/10.1007/s11104-021-05103-8>
- †51 **Limmer, M.A.****, **Evans, A.E***, **Seyfferth, A.L.** The IRIS Imager: A freeware program for quantification of paint removal on IRIS films. *Soil Science Society of America Journal*, **2021**, 85, 2210-2219. <https://doi.org/10.1002/saj2.20308>
- †50 **Dykes, G.E.***, Chan, C., **Seyfferth, A.L.** 16S rRNA gene amplicon sequencing data from flooded rice paddy mesocosms treated with different silicon-rich soil amendments. *Microbial Resource Announcements*, **2021**, 10, e0017821. <https://doi.org/10.1128/MRA.00178-21>
- †49 **Evans, A.E***, **Limmer, M.A.**** **Seyfferth, A.L.** Indicator of redox in soil (IRIS) films as a water management tool for rice farmers. *Journal of Environmental Management*, **2021**, 294, 112920. <https://doi.org/10.1016/j.jenvman.2021.112920>
- †48 **Hu, R.***, **Teasley, W.A.***, **Seyfferth, A.L.** Paired soil and rice As and Cd from Northeastern USA rice farms. *Agricultural and Environmental Letters*, **2021**, 6, e20040. <https://doi.org/10.1002/acl2.20040>
- †47 **Seyfferth, A.L.**, **Limmer, M.A.****, Tappero, R. A method to preserve wetland roots and rhizospheres for elemental imaging. *Journal of Visualized Experiments*, **2021**, 168, e62227. <https://doi.org/10.3791/62227>

- †46 **Limmer, M.****, **Evans, A. E.***, **Seyfferth, A.L.** A new method to capture the spatial and temporal heterogeneity of aquatic plant iron root plaque *in situ*. *Environmental Science and Technology*, **2021**, 55, 912-918. <https://doi.org/10.1021/acs.est.0c02949>
- †45 **Linam, F.***, **McCoach, K.‡**, **Limmer, M.****, **Seyfferth, A.L.** Contrasting effects of rice husk pyrolysis temperature on silicon dissolution and retention of cadmium (Cd) and dimethylarsinic acid (DMA). *Science of the Total Environment*, **2021**, 765, 144428. <https://doi.org/10.1016/j.scitotenv.2020.144428>
- 44 Farhat, Y.A., Kim, S-H., **Seyfferth, A.L.**, Zhang, L., Neumann, R.B. Altered arsenic availability, uptake, and allocation in rice under elevated temperature. *Science of the Total Environment*, **2021**, 763, 143049. <https://doi.org/10.1016/j.scitotenv.2020.143049>
- †43 **Griffith, A.‡**, **Wise, P.‡**, **Gill, R.**, **Paukett, M.‡**, Donofrio, N. **Seyfferth, A.L.** Combined effects of arsenic and *Magnaporthe oryzae* on rice and alleviation by silicon. *Science of the Total Environment*, **2021**, 750, 142209 <https://doi.org/10.1016/j.scitotenv.2020.142209>
- †42 **Limmer, M.A.****, **Seyfferth, A.L.** Carryover effects of silicon-rich amendments in rice paddies. *Soil Science Society of America Journal*, **2021**, 85, 314-327. <https://doi.org/10.1002/saj2.20146>
- 41 Brooker, R.M., **Seyfferth, A.L.**, **Hunter, A.‡**, Sneed, J.M., Dixon, D.L., Hay, M.E. Human proximity suppresses fish recruitment by altering mangrove-associated odour cues. *Scientific Reports*, **2020**, 10, 21091. <https://doi.org/10.1038/s41598-020-77722-7>
- 40 Ligaba-Osena, A., Guo, W., Chul Choi, S., **Limmer, M.A.****, **Seyfferth, A.L.** Hankoua B, B. Silicon enhances biomass and grain yield in an ancient crop tef [*Eragrostis tef* (Zucc.) Trotter]. *Frontiers in Plant Science*, **2020**, 11, 608503. <https://doi.org/10.3389/fpls.2020.608503>
- 39 Trifunovic, B., Vazquez-Lule, A., Capooci, M., **Seyfferth, A.L.**, Moffat, C., Vargas, R. Carbon dioxide and methane emissions from a temperate salt marsh tidal creek. *JGR-Biogeosciences*, **2020**, 125, e2019jg005558. <https://doi.org/10.1029/2019JG005558>
- †38 **Dykes, G.E.***, **Chari, N.‡**, **Seyfferth, A.L.** Si-induced DMA desorption is not the driver for enhanced DMA availability after Si addition to flooded soils. *Science of the Total Environment*, **2020**, 739, 139906 <https://doi.org/10.1016/j.scitotenv.2020.139906>
- †37 **Seyfferth, A.L.**, **Bothfeld, F.***, Vargas, R., Stuckey, J. W., Wang, J., **Kearns, K.‡**, Michael., H.A., Guimond, J.*, Yu, X., Sparks, D. L. Spatial and temporal heterogeneity of geochemical controls on carbon cycling in a tidal salt marsh. *Geochimica et Cosmochimica Acta*, **2020**, 282, 1-18. <https://doi.org/10.1016/j.gca.2020.05.013>
- †36 **Wu, W.***, **Limmer, M.A.****, **Seyfferth, A.L.** Quantitative assessment of plant-available silicon extraction methods in rice paddy soil under different management. *Soil Science Society of America Journal*, **2020**, 84, 618-626. <https://doi.org/10.1002/saj2.20013>
- 35 Guimond, J.A.*, Yu, X., **Seyfferth, A.L.**, Michael., H.A. Using hydrological-biogeochemical linkages to elucidate carbon dynamics in coastal marshes subject to relative sea-level rise. *Water Resources Research*, **2020**, 56(2). <https://doi.org/10.1029/2019WR026302>
- †34 **Limmer, M.A.****, **Seyfferth, A.L.** The role of small molecules in restricting rice accumulation of dimethylarsinic acid. *Plant and Soil*, **2020**, 447, 599-609. <https://doi.org/10.1007/s11104-019-04414-1>

- 33 Guimond, J.A.*, **Seyfferth, A.L.**, Moffett, K.B., Michael, H. A physical-biogeochemical mechanism for negative feedback between marsh crabs and carbon storage. *Environmental Research Letters*, **2020**, *15*, 034024. <https://doi.org/10.1088/1748-9326/ab60e2>
- †32 **Seyfferth, A.L.**, Limmer, M.A.***, Wu, W*. Si and water management drives changes in Fe and Mn pools that affect As cycling and uptake in rice. *Soil Systems*, **2019**, *3*(3), 58. <https://doi.org/10.3390/soilsystems3030058>
- 31 Capooci, M.*, Barba, J., **Seyfferth, A.L.**, Vargas, R. Experimental influence of storm-surge salinity on soil greenhouse gas emissions from a tidal salt marsh. *Science of the Total Environment*, **2019**, *686*, 1164-1172. <https://doi.org/10.1016/j.scitotenv.2019.06.032>
- †30 **Seyfferth, A.L.**, Amaral, D.C.*, Limmer, M.A.**, Guilherme, L. R. Combined impacts of Si-rich rice residues and flooding extent on grain As and Cd in rice. *Environment International*, **2019**, *128*, 301-309. <https://doi.org/10.1016/j.envint.2019.04.060>
- †29 **Limmer, M.A.****, Wise, P.‡, Dykes, G.E.*, **Seyfferth, A.L.** Silicon decreases dimethylarsinic acid concentration in rice grain and mitigates straighthead disorder. *Environmental Science and Technology*, **2018**, *52*, 4890-4816. <https://doi.org/10.1021/acs.est.8b00300>
- 28 Warner, D. L., Vargas, R., **Seyfferth, A.L.**, Inamdar, S. Transitional slopes act as hotspots of both soil CO₂ emission and CH₄ uptake in a temperate forest landscape. *Biogeochemistry*, **2018**, *138*, 121-135. <https://doi.org/10.1007/s10533-018-0435-0>
- †27 **Northrup, K.***, Capooci, M., **Seyfferth, A.L.** Effects of extreme events on arsenic cycling in salt marshes. *JGR Biogeosciences*, **2018**, *123*, 1086-1100. <https://doi.org/10.1002/2017JG004259>
- †26 **Seyfferth, A.L.**, Limmer, M.A.**, Dykes, G.* On the use of silicon as an agronomic mitigation strategy to decrease arsenic uptake by rice. *Advances in Agronomy*, **2018**, *149*, 49-91. <https://doi.org/10.1016/bs.agron.2018.01.002>
- †25 **Limmer, M.A.****, Mann, J.N.‡, Amaral, D.*, Vargas, R., **Seyfferth, A.L.** Silicon-rich amendments in rice paddies: Effects on arsenic uptake and biogeochemistry. *Science of the Total Environment*, **2018**, *624*, 1360-1368. <https://doi.org/10.1016/j.scitotenv.2017.12.207>
- †24 **Seyfferth, A.L.**, Ross, J., Webb, S.M. Evidence for the root-uptake of arsenite at lateral root junctions and root apices in rice (*Oryza sativa* L.). *Soil Systems*, **2017**, *1*, 3.
- †23 **Teasley, W.A.***, Limmer, M.A.**, **Seyfferth, A.L.** How rice (*Oryza sativa* L.) responds to elevated As under different Si-rich amendments. *Environmental Science and Technology*, **2017**, *51*, 10335-10343. <https://doi.org/10.3390/soils1010003>
- 22 Neumann, R.B., **Seyfferth, A.L.**, Teshera-Levye, J., Ellingson, J. Soil warming increases arsenic availability in the rice rhizosphere. *Agricultural and Environmental Letters* **2017**, *2*, 170006. <https://doi.org/10.2134/ael2017.02.0006>
- 21 Petrakis, S. *, **Seyfferth, A.L.**, Kan, J., Inamdar, S., Vargas, R. Influence of experimental extreme water pulses on greenhouse gas emissions from soils. *Biogeochemistry*, **2017**, *133*, 147-164. <https://doi.org/10.1007/s10533-017-0320-2>
- †20 **Gutkunst, M.‡**, Vargas, R., **Seyfferth, A.L.** Impacts of soil incorporation of pre-incubated silica-rich rice residue on soil biogeochemistry and greenhouse gas fluxes under flooding

- and drying. *Science of the Total Environment*, **2017**, 593, 134-143.
<https://doi.org/10.1016/j.scitotenv.2017.03.097>
- †19 **Amaral, D.***, Lopes, G., Guilherme, L. R., **Seyfferth, A.L.** A new approach to sampling intact Fe plaque reveals Si-induced changes in Fe mineral composition and shoot As in rice. *Environmental Science and Technology* **2017**, 51, 38-45.
<https://doi.org/10.1021/acs.est.6b03558>
- †18 **Seyfferth, A.L.**, McClatchy, C.‡, **Paukett, M.‡** Arsenic, lead, and cadmium in U.S. mushrooms and substrate in relation to dietary exposure. *Environmental Science and Technology* **2016**, 50, 9661-9670. <https://doi.org/10.1021/acs.est.6b02133>
- †17 **Seyfferth, A.L.**, Morris, A.H., Gill, R., Kearns, K.A.‡, Mann, J.N.‡, **Paukett, M.‡**, Leskani, C.‡ Soil incorporation of silica-rich rice husk decreases inorganic arsenic in rice grain. *Journal of Agricultural and Food Chemistry* **2016**, 64, 3760 - 3766.
<https://doi.org/10.1021/acs.jafc.6b01201>
- †16 **Penido, E.S.‡**, Bennet, A., Hanson, T.E., **Seyfferth, A.L.** Biogeochemical impacts of high-silicon rice residue incorporation into flooded soil: Implications for rice nutrition and cycling of arsenic. *Plant and Soil* **2016**, 399, 75 – 87.
<https://www.jstor.org/stable/43872538>
- †15 **Seyfferth, A.L.** Abiotic effects of dissolved oxyanions on iron plaque quantity and mineral composition in a simulated rhizosphere. *Plant and Soil* **2015**, 397, 43 – 61.
<https://doi.org/10.1007/s11104-015-2597-z>
- 14 Lakshmanan, V., Shantaraj, D., **Li, G.****, **Seyfferth, A.L.**, Sherrier, D.J., and Bais, H.P. A natural rice rhizospheric bacterium abates arsenic accumulation in rice (*Oryza sativa* L.). *Planta* **2015**, 242, 1037 – 1050. <https://doi.org/10.1007/s00425-015-2340-2>
- †13 **Seyfferth, A.L.**, McCurdy, S.‡, Schaefer, M.V., Fendorf, S. Arsenic concentrations in paddy soil and rice and health implications for major rice growing regions of Cambodia. *Environmental Science and Technology* **2014**, 48, 4699 - 4706.
<https://doi.org/10.1021/es405016t>
- †12 **Seyfferth, A.L.**, Kocar, B.D., Lee, J.A., Fendorf, S. Seasonal dynamics of dissolved silicon in a California rice cropping system after straw incorporation. *Geochimica et Cosmochimica Acta* **2013**, 123, 120 - 133. <https://doi.org/10.1016/j.gca.2013.09.015>
- †11 **Seyfferth, A.L.**, Fendorf, S. Silicate mineral impacts on the uptake and storage of arsenic and plant nutrients in rice (*Oryza sativa* L.). *Environmental Science and Technology* **2012**, 46, 13176-13183. <https://doi.org/10.1021/es3025337>
- 10 **Seyfferth, A.L.**, Webb, S.M., Andrews, J.C., Fendorf, S. Defining the distribution of arsenic species and plant nutrients in rice (*Oryza sativa* L.) from the root to the grain. *Geochimica et Cosmochimica Acta* **2011**, 75, 6655 – 6671.
<https://doi.org/10.1016/j.gca.2011.06.029>
- 9 Zhuang, Y., Ahn, S., **Seyfferth, A.L.**, Masue-Slowey, Y., Fendorf, S., Luthy, R.G. Dehalogenation of polybrominated diphenyl ethers and polychlorinated biphenyl by bimetallic, impregnated, and nanoscale zerovalent iron. *Environmental Science and Technology* **2011**, 45, 4896 – 4903. <https://doi.org/10.1021/es104312h>
- 8 Kim, E., **Seyfferth, A.L.**, Fendorf, S. Luthy, R.G. Immobilization of Hg(II) in water by polysulfide-rubber (PSR) polymer-coated activated carbon. *Water Research* **2011**, 45, 453 – 460. <https://doi.org/10.1016/j.watres.2010.08.045>

- 7 **Seyfferth, A.L.**, Webb, S.M., Andrews, J.C., Fendorf, S. Arsenic localization, speciation, and co-occurrence with iron on rice (*Oryza sativa* L.) roots with variable Fe coatings. *Environmental Science and Technology* **2010**, *44*, 8108 – 8113. <https://doi.org/10.1021/es101139z>
- 6 **Seyfferth, A.L.**, Sturchio, N.C., Parker, D.R. Is perchlorate metabolized or re-translocated in lettuce leaves? A stable-isotope approach. *Environmental Science and Technology* **2008**, *42*, 9437 – 9442. <https://doi.org/10.1021/es802006e>
- 5 **Seyfferth, A.L.**, Henderson, M.K.‡, Parker, D.R. Effects of common soil anions and pH on the uptake and accumulation of perchlorate in lettuce. *Plant Soil* **2008**, *302*, 139 – 148. <https://doi.org/10.1007/s11104-007-9461-8>
- 4 Parker, D. R. , **Seyfferth, A.L.**, Reese, B. K. Perchlorate in groundwater: A synoptic survey of "pristine" sites in the coterminous United States. *Environmental Science and Technology* **2008**, *42*:1465-1471. <https://doi.org/10.1021/es7021957>
- 3 **Seyfferth, A.L.** and Parker, D.R. Uptake and fate of perchlorate in higher plants. *Advances in Agronomy* **2008**, *99*, 101 – 123. [https://doi.org/10.1016/S0065-2113\(08\)00402-1](https://doi.org/10.1016/S0065-2113(08)00402-1)
- 2 **Seyfferth, A.L.** and Parker, D.R. Effects of genotype and transpiration rate on the uptake and accumulation of perchlorate (ClO₄⁻) in lettuce. *Environmental Science and Technology* **2007**, *41*, 3361 – 3367. <https://doi.org/10.1021/es062337s>
- 1 **Seyfferth, A.L.** and Parker, D.R. Determination of low levels of perchlorate in lettuce and spinach using ion chromatography-electrospray ionization-mass spectrometry (IC-ESI-MS). *Journal of Agricultural and Food Chemistry* **2006**, *54*, 2012 – 2017. <https://doi.org/10.1021/jf052897v>

OTHER PUBLICATIONS

‡Undergraduate student *Graduate Student; **Postdoc; †Publication where Seyfferth is corresponding author
Names in **bold** represent members of the Seyfferth lab

Published Reports

Runkle, B.; **Seyfferth, A.L.**; Reid, M.; Reba, M; **Limmer, M**.**; Moreno-Garcia, B.
Opportunities for a Circular Bioeconomy in Rice Production. Resource Magazine,
March/April 2023 issue, American Society of Agricultural and Biological Engineers.

Book Chapters

Seyfferth, A.L. and Parker, D.R. "Perchlorate." *World Book Online Reference Center*.
2008. Available: <http://www.worldbookonline.com/wb/Article?id=ar752309>

Theses

Seyfferth, A.L. Uptake and accumulation of perchlorate by lettuce (*Lactuca sativa* L.):
Controlling factors at environmentally relevant concentrations. Ph.D. Dissertation.
University of California, Riverside.

INVITED ORAL PRESENTATIONS

‡Undergraduate student *Graduate Student; **Postdoc; †Presenting author
Names in **bold** represent members of the Seyfferth lab

Invited International Presentations

- 12 **Seyfferth, A.L.**† Invited: *Spatio-temporal dynamics of root iron plaque under different management*. Iron Biogeochemistry Workshop, Lech, Austria, August 2023.
- 11 **Seyfferth, A.L.**† Invited: *Probing Fe plaque in the Rice Rhizosphere: Unraveling a dynamic and heterogeneous interface for contaminant and nutrient cycling*. Goldschmidt Conference, Lyon, France, July 2023.
- 10 **Seyfferth, A.L.**† Invited: *Soil biogeochemical controls on carbon (de)stabilization and uncertainty in tidal salt marshes*. Goldschmidt Conference, Lyon, France, July 2023.
- 9 **Seyfferth, A.L.**† Invited: *Limiting As in rice through water and Si management*. University of Turin, Italy, May 2022.
- 8 **Seyfferth, A.L.**† Invited: *Limiting As in rice through water and Si management*. University of Bern, Switzerland, December 2021.
- 7 **Seyfferth, A.L.**† Invited: *Linking soil science to food security: Combating As uptake by rice through soil Si management*. Eidgenössische Technische Hochschule (ETH) Zürich, Switzerland, October 2019.
- 6 **Seyfferth, A.L.**†, **Limmer, M.A.****†, **Dykes, G.E.***†, Webb, S. *Probing the plant-soil interface to understand As uptake in rice (*Oryza sativa* L.) and accumulation in grain*. International Conference on the Biogeochemistry of Trace Elements, Nanjing, China, May 2019.
- 5 **Seyfferth, A.L.**† Invited: *How management practices influence Fe plaque mineral composition and As cycling in rice paddies*. National Institute for Agro-Environmental Sciences, Tsukuba, Japan, July 2016.
- 4 **Seyfferth, A.L.**† Invited: *How management practices influence Fe plaque mineral composition and As cycling in rice paddies*. Goldschmidt Conference, Yokohama, Japan, June 2016.
- 3 **Seyfferth, A.L.**† *Toxic compounds in our food: Arsenic contamination of rice and potential mitigation strategies*. Universidade Federal de Lavras, Lavras, Brazil, June 2013.
- 2 **Seyfferth, A.L.**† *Toxic compounds in our food: Arsenic contamination of rice and potential mitigation strategies*. Instituto Agronomico, Campinas, Brazil, June 2013.
- 1 **Seyfferth, A.L.**† *Toxic Compounds in Our Food: How soil conditions influence contaminant transport to plants*. Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California, Mexico, April 2011.

Invited National Seminars

- 33 **Seyfferth, A.L.** (Keynote Speaker) *Using advanced tools to understand and mitigate toxic metals in our food*. Harford Community College STEM Day. Harford, MD, February 2024.
- 32 **Seyfferth, A.L.** *Rice and water management: Effects on Metals and Methane*. Arkansas Soil and Water Conservation Conference. Jonesboro, AR, January 2024.

- 31 **Seyfferth, A.L., Limmer, M.**, Linam, F.*** Probing the rice rhizosphere to elucidate dynamic Fe and Mn plaque (trans)formation: Implications for As mobilization and plant uptake. Soil Science Society of America Annual Meeting. Salt Lake City, UT, November 2021.
- 30 **Seyfferth, A.L.** Soil chemical controls on carbon (de)stabilization in tidal salt marshes. Soil Science Society of America Annual Meeting. Salt Lake City, UT, November 2021.
- 29 **Seyfferth, A.L.** Understanding soil chemistry to limit contaminants in food. Soil Science Society of America Annual Meeting. Virtual Conference, November 2020.
- 28 **Seyfferth, A.L.** Combating As uptake by rice through soil Si management. Dartmouth College, NH, June 2020.
- 27 **Seyfferth, A.L.¥, Bothfeld, F.*, Northrup, K.***, Capocci, M.* In the eye of the hurricane: How storm surges influence coastal marsh biogeochemistry. Soil Science Society of America Annual Meeting. San Antonio, TX. November 2019.
- 26 Vargas, R.¥ **Seyfferth, A.L.** *The force awakens: Ecological forecasting needs soil chemistry.* Soil Science Society of America Annual Meeting. San Diego, CA. January 2019.
- 25 **Seyfferth, A.L.¥** *Arsenic cycling in paddy soils and uptake, accumulation and localization in rice.* Dartmouth College, Hanover NH, February 2018.
- 24 **Seyfferth, A.L.¥**, Limmer, M.A., Dykes, G., Teasley, W., Amaral., D. *Biogeochemical Cycling in rice agroecosystems resulting from Si and water management: Implications for As abatement and sustainable rice production.* American Geophysical Union Fall Meeting, New Orleans, LA, December 2017.
- 23 Michael, H.A.¥, Kim, K.H., Guimond, J.A., Heiss, J., Ullman, W., **Seyfferth, A.L.** *Hydrologic influence on redox dynamics in estuarine environments.* American Geophysical Union Fall Meeting, New Orleans, LA, December 2017.
- 22 **Seyfferth, A.L.¥**, Limmer, M.A., Teasley, W., Dykes, G., Amaral., D. *Arsenic cycling and fate under various edaphic conditions.* Synchrotron Environmental Science VII, Brookhaven, NY, November 2017.
- 21 **Seyfferth, A.L.¥.** *Arsenic in rice: Why is it there and what can we do about it?* Interdisciplinary Science Learning Laboratories Fall Speaker Series, Newark, DE, October 2017.
- 20 **Seyfferth, A.L.¥** *An exploration of arsenic and other trace elements at the soil-plant interface across scales and environments.* Cornell High Energy Synchrotron Source, Ithaca, NY, June 2017.
- 19 **Seyfferth, A.L.¥** *Fate of arsenic at the soil-rice nexus and potential mitigation strategies.* Danforth Plant Science Center, St. Louis, MO, May 2017.
- 18 **Seyfferth, A.L.¥** *Geochemical controls on subsurface arsenic cycling at the St. Jones Reserve.* Delaware National Estuarine Research Reserve Research Symposium, Dover, DE, April 2017.
- 17 Michael, H.A.¥, Yu, X. LeMonte, J., Sparks, D.L., Kim, K.H., Heiss, J., Ullman, W.J., Guimond, J. **Seyfferth, A.L.** *Geochemical response to hydrologic change along land-sea interfaces.* American Geophysical Union Fall Meeting, San Francisco, CA, December 2016
- 16 **Seyfferth, A.L.¥** *Toxic compounds in your food?* Science Café, University of Delaware, April 2016.

- 15 **Seyfferth, A.L.**[¥] *Increasing rice yields and decreasing human health risks through soil silicon management.* Columbia University, September 2015.
- 14 **Seyfferth, A.L.**[¥] *Increasing rice yields and decreasing human health risks through soil silicon management.* Master Gardener Volunteer Meeting, UD Cooperative Extension, Newark, DE, September 2015.
- 13 **Seyfferth, A.L.**[¥] *Increasing rice yields and decreasing human health risks through soil silicon management.* University of Arkansas, Fayetteville, AR, August 2015.
- 12 **Seyfferth, A.L.**[¥] *Fate of arsenic at the soil-plant interface: Impacts of soil-incorporation of plant-available silicon on arsenic desorption, iron oxide plaque, and plant uptake.* American Chemical Society Annual Meeting, Denver, CO, March 2015.
- 11 **Seyfferth, A.L.**[¥] *Toxic compounds in our food: Arsenic uptake by rice and mitigation by silicon.* American Geophysical Union Annual Meeting, San Francisco CA, December 2014.
- 10 Vargas, R.[¥], Michael, H., Sanchez, Z., **Seyfferth, A.L.** *Ecohydrology of greenhouse gas fluxes in a temperate estuary.* American Geophysical Union Annual Meeting, San Francisco CA, December 2014.
- 9 **Seyfferth, A.L.**[¥] *Impacts of altered silicon on soil biogeochemistry and plant-uptake of arsenic in flooded rice paddy soil.* Richard Stockton College of New Jersey, Galloway, NJ, November 2014.
- 8 **Seyfferth, A.L.**[¥] *Toxic compounds in our food: Arsenic contamination of rice and potential mitigation strategies.* University of Massachusetts-Amherst, Amherst, MA, October 2014.
- 7 **Seyfferth, A.L.**[¥] *Impacts of altered silicon on soil biogeochemistry and plant-uptake of arsenic in flooded rice paddy soil.* Goldschmidt Conference, Sacramento, CA, June 2014.
- 6 **Seyfferth, A.L.**^{*} *Toxic compounds in our food: Arsenic contamination of rice and potential mitigation strategies.* Department of Civil and Environmental Engineering, University of Delaware, March 2013.
- 5 **Seyfferth, A.L.**[¥] *Arsenic contamination in the rice cropping system: Implications for human health* Towson University, September 2012.
- 4 **Seyfferth, A.L.**[¥] *Toxic Compounds in Our Food: Global Arsenic Contamination of Rice.* University of Delaware, May 2011.
- 3 **Seyfferth, A.L.**[¥] *Toxic Compounds in Our Food: Global Arsenic Contamination of Rice.* Stanford University, April 2011.
- 2 **Seyfferth, A.L.**[¥] *Toxic Compounds in Human Diets: Factors Controlling the Uptake and Translocation of Perchlorate and Arsenic in Edible Plants.* Arizona State University, March 2010.
- 1 **Seyfferth, A.L.**[¥] and Parker, D.R. *Detection of ClO_x compounds at Environmentally-Relevant Concentrations in Complex Matrices.* International Ion Chromatography Symposium. Portland, OR, September 2008.

CONTRIBUTED ORAL PRESENTATIONS

‡Undergraduate student *Graduate Student; **Postdoc; †Presenting author

Names in **bold** represent members of the Seyfferth lab

- 65 **Linam, F.*†**, **Limmer, M.A.****, **Seyfferth, A.L.** *Retention of Oxyanions on Rice Root Fe-Oxide Plaque*. Soil Science Society of America Annual Meeting. St. Louis, MO. November 2023.
- 64 **Limmer M.A.**†**, Runkle B., **Seyfferth A.L.** *Rice accumulation of arsenic and cadmium*. Soil Science Society of America International Meeting. St. Louis, MO. Oct 29 – Nov 1, 2023.
- 63 **Street, B.*†**; **Seyfferth, A. L.** *Impacts of simulated storm surge and sea level rise on soil biogeochemistry along a marsh-forest transition zone*. Soil Science Society of America International Annual Meeting. St. Louis, MO. October 29-November 1, 2023
- 62 **Montgomery, A.*†**, **Seyfferth, A. L.** *Targeting the Destabilization of Organic Matter-Bearing Fe and Mn Oxides Using IRIS Films in Coastal Forests Affected By Sea-Level Rise*. Soil Science Society of America International Annual Meeting. St. Louis, MO. Oct 29 - Nov 1, 2023.
- 61 **Limmer M.A.**†**, **Seyfferth A.L.** *Synchrotron techniques for studying rice accumulation of arsenic*. International Phytotechnologies Conference. Chicago, IL. May 23-26, 2023.
- 60 **Fettrow S.*†**, **Seyfferth A.** *Salt Marsh Migration into Forests and Farms: Effects to Soil Biogeochemistry Along the Salinity Gradient*. Delaware Estuary Science and Environmental Summit. Atlantic City NJ, January 2023.
- 59 **Fettrow S.*†**, Vargas, R., **Seyfferth A.L.** *Biogeochemical Cycling of Blue Carbon in Coastal Wetlands Under Rising Seas*. American Geophysical Union Fall Meeting. Chicago IL, December 2022.
- 58 **Linam, F.*†**, **Limmer, M.A.****, **Seyfferth, A.L.** *Rice Root Fe Plaque Formation and Chemistry in North American Paddy Soils*. Soil Science Society of America Annual Meeting. Baltimore, MD. November 2022.
- 57 **Fettrow S.*†**, **Seyfferth A.L.** *Salt Marsh Migration into Forests and Farms: Effects to Soil Biogeochemistry Along the Salinity Gradient*. Soil Science Society of America Annual Meeting. Baltimore, MD. November 2022.
- 56 **Limmer, M.A.**†**, **Seyfferth, A.L.** *Characterizing changes in the rice root Fe plaque composition due to growth and water management*. Soil Science Society of America International Meeting. Baltimore, MD. November 2022.
- 55 **Fettrow S.*†**, **Jeppi, V*.**, Wozniak, A., Vargas, R., Michael, H., **Seyfferth A.L.** *Fe Oxide Control on Lateral Exchange of C between Salt Marsh Sediment and the Tidal Channel. College of Agriculture and Natural Resources (CANR) Symposium*. Newark DE, November 2022.
- 54 **Fettrow S.*†**, Vargas, R., **Seyfferth, A.L.** *Salt Marsh Migration into Forests and Farms: Effects to Soil Biogeochemistry Along the Salinity Gradient. Project WICCED Seminar Series 2022*. Virtual, September 2022.
- 53 **Linam, F.*†**, **Limmer, M.A.****, **Seyfferth, A.L.** *Rice Husk/Biochar Amendment Increases Soil Carbon and Alters Greenhouse Gas Emissions in an Ultisol Paddy Soil*. 22nd World Congress of Soil Science. Glasgow, UK. August 2022.
- 52 **Limmer, M.A.**†**, **Hanrahan, R*.**, **Evans, A.E.***, **Seyfferth, A.L.** *Quantifying reducing conditions in soils with IRIS*. American Ecological Engineering Society Conference. Baltimore, MD. June 2022.

- 51 **Hanrahan, R.*‡, Limmer, M.A.**, Seyfferth, A.L.** *Visualizing the dynamics of soil biogeochemical cycling of Fe, Mn, and As in variably-flooded rice soils: Indicators of redox in soil (IRIS) as passive sensors.* Soil Science Society of America Annual Meeting. Salt Lake City, November 2021.
- 50 **Moreno-Garcia, B.**‡, Limmer, M.A.** Seyfferth, A.L.,** Reba, M., Runkle, B. R. K. *Impacts of water management and husk amendment on As and Cd uptake in rice.* Soil Science Society of America Annual Meeting. Salt Lake City, November 2021.
- 49 **Fettrow, S.*‡, Jeppi, V.*,** Wozniak, A., Michael, H., Vargas, R., **Seyfferth, A.L.** *Fe oxide control on lateral exchange of C between salt marsh sediment and the tidal channel.* Soil Science Society of America Annual Meeting. Salt Lake City, November 2021.
- 48 **Linam, F.*‡, Limmer, M. A.** Seyfferth, A.L.** *Effects of Si-rich rice husk treatments on SOM and greenhouse gas emissions in an ultisol paddy soil.* Soil Science Society of America Annual Meeting. Salt Lake City, November 2021.
- 47 **Limmer, M.A.**‡, Evans, A.*,** **Seyfferth, A.L.** *Quantifying paint removal on IRIS films with the IRIS imager.* Soil Science Society of America Annual Meeting. Salt Lake City, November 2021.
- 46 **Sircharoenvech, P*.,** Tappero, R., Landrot, G., **Seyfferth, A.L.,** Sparks, D. *The effect of aging on chromium speciation and solubility in Fe- and Mn-rich soils.* Soil Science Society of America Annual Meeting. Salt Lake City, November 2021.
- 45 **Linam, F.*‡, Seyfferth, A.L.** *Impacts of water management and husk amendment on As and Cd uptake in rice.* Soil Science Society of America Annual Meeting. Phoenix, AZ (Virtual). November 2020.
- 44 **Fettrow, S.A.*‡, Seyfferth, A.L.** *Simulated Sea Level Rise Affects Carbon Cycling in a Tidal Salt Marsh.* Soil Science Society of America Annual Meeting. Phoenix, AZ (Virtual). November 2020.
- 43 **Limmer, M.A.*‡‡, Seyfferth, A.L.** *Rice uptake and accumulation of methylated arsenic.* Soil Science Society of America Annual Meeting. Phoenix, AZ (Virtual). November 2020.
- 42 **Linam, F.A.*‡, Seyfferth, A.L.** *Optimizing Rice Husk Biochar for Maximizing Retention and Minimizing As and Cd Uptake by Rice.* Soil Science Society of America International Annual Meeting. San Antonio, TX. November 2019.
- 41 **Limmer, M.A.*‡, Evans A.E., Seyfferth, A.L.** *Visualizing the rice root rhizosphere in situ.* Soil Science Society of America International Annual Meeting. San Antonio, TX. November 2019.
- 40 **Hu, R.*‡,** Cooper, J.A., Daroub, S.H., **Seyfferth, A.L.** *Impacts of Water Management on As and Cd Concentrations in Southern Florida Rice.* Soil Science Society of America International Annual Meeting, San Antonio, TX. November 2019.
- 39 **Linam, F.A.*‡, Seyfferth, A.L.** *Optimizing Rice Husk Biochar for Minimizing As and Cd Uptake by Rice.* International Conference on the Biogeochemistry of Trace Elements. Nanjing, China. May 2019.
- 38 **Dykes, G.E.*‡, Chari, N.‡, Seyfferth, A.L.** *Methylated arsenic dynamics in silicon-amended flooded rice paddies.* Soil Science Society of America Annual Meeting. San Diego, CA. January 2019.

- 37 **Limmer, M.A.**^{***}, Webb, S., **Seyfferth, A.L.** *Quantitative synchrotron X-ray fluorescence for mapping trace element concentrations in rice grains.* Soil Science Society of America Annual Meeting. San Diego, CA. January 2019.
- 36 Vargas, R.[¥], Warner, D., Petrakis, S., Inamdar, S., **Seyfferth, A.L.** *The role of topography for controlling soil CO₂ and CH₄ fluxes.* Soil Science Society of America Annual Meeting. San Diego, CA. January 2019.
- 35 **Limmer, M.A.**^{***}, Anders, M., Rothenberg, S. **Seyfferth, A.L.** *The role of water management on rice grain concentration and localization of trace metalloids.* American Geophysical Union Annual Meeting. Washington, DC. December, 2018.
- 34 Shoher, A. L.[¥], Qin, Z., Mosesso, L., **Seyfferth, A.L.** *Can soil amendments enhance soil P availability and uptake from legacy P soils?* ASA-CSSA-SSSA International Annual Meeting. Baltimore, MD. November, 2018.
- 33 **Seyfferth, A.L., Limmer, M.A.**[¥], *Interactions of Silicon and Arsenic in Rice.* Goldschmidt. Boston, MA. August, 2018.
- 32 **Limmer, M.A.**^{***}, **Seyfferth, A.L.** *Inverse Availability between Cd and As to Rice Across Redox Gradients.* Goldschmidt. Boston, MA. August, 2018.
- 31 **Seyfferth, A.**[¥] *Arsenic and Cadmium in Rice: Interactions Between Soil Management and Human Health.* World Congress for Soil Science. Rio de Janeiro, Brazil, August 2018.
- 30 **Limmer, M.A.**^{***}, **Wise, P.**[‡], **Dykes, G.**^{*}, **Mann, J.**[‡], **Amaral, D.**^{*}, Vargas, R., **Seyfferth, A.** *Silicon amendments for managing arsenic accumulation in rice.* Rice Technical Working Group. Long Beach, CA. February, 2018.
- 29 Vargas, R.[¥], Kowalska, N., Vazquez Lule, A., **Seyfferth, A.** Reimer, J., Cai, W., Moffat, C. *Contrasting extreme flooding events and their influence on carbon dynamics in a salt marsh.* American Geophysical Union International Annual Meeting, New Orleans, LA, December 2017.
- 28 **Seyfferth, A.**[¥] Webb, S. M., Ross, J. *Arsenic cycling in the rice rhizosphere: Evidence for the passive transport of arsenite at lateral root junctions and root apices.* Soil Science Society of America International Annual Meeting. Tampa, FL. October 2017.
- 27 **Northrup, K.A.**^{*¥}, Bothfeld, F., **Seyfferth, A.** *Effects of extreme events on arsenic cycling in salt marshes.* Soil Science Society of America International Annual Meeting. Tampa, FL. October 2017.
- 26 **Limmer, M.A.**^{**¥}, **Mann, J.N.**, **Amaral, D.**^{*}, Vargas, R., **Seyfferth, A.** *Silicon-rich amendments in rice paddies: Effects on arsenic uptake and biogeochemistry.* Soil Science Society of America International Annual Meeting. Tampa, FL. October 2017.
- 25 **Limmer, M.A.**^{**¥}, **Seyfferth, A.** *Decreasing Arsenic Uptake by Rice Through Silicon Additions.* AEESP, Ann Arbor MI, June 2017.
- 24 **Limmer, M.A.**^{**¥}, **Wise, P.**[‡], **Dykes, G.**^{*}, **Mann, J.**[‡], **Amaral, D.**^{*}, **Seyfferth, A.** *Arsenic Uptake by Rice: Interactions with Silicon.* Society of Environmental Toxicology and Chemistry, Brussels, Belgium, May 2017.
- 23 **Limmer, M.A.**^{**¥}, **Seyfferth, A.** *Rice & Organic Arsenic Species: Interactions with Silicon.* Soil Science Society of America International Annual Meeting. Phoenix, AZ. November 2016.
- 22 **Limmer, M.A.**^{**¥}, **Seyfferth, A.** *Arsenic Uptake by Rice: Competition with Silicon.* 13th

- Phytotechnologies Conference. Hangzhou, China. September 2016.
- 21 **Limmer, M.A.**‡**, **Seyfferth, A.** *Rice Uptake of Organic Arsenic Species: Competition with Silicon*. 252nd American Chemical Society National Meeting. Philadelphia, PA. August 2016.
- 20 **Amaral, D.C.*‡**, **Limmer, M.A.****, Guilherme, L.R.G., **Seyfferth, A.L.** *Water and Si management effects on trace element accumulation in rice (Oryza sativa L.)*. 252nd American Chemical Society National Meeting, Philadelphia PA, August 2016.
- 19 **Limmer, M. A.**‡**, **Seyfferth, A.L.**, *Uptake of organic arsenic species by rice*. Soil Science Society of America International Annual Meeting. Minneapolis, MN, November 2015.
- 18 **Seyfferth, A.L.‡**, **Morris, A.H.**, **Kearns, K.A.‡**, **Mann, J.N.‡**, **Teasley, W.***, **Limmer, M.****, **Amaral, D.*** *Impacts of increased soil Si on Fe mineral composition and As cycling in rice paddies*. Soil Science Society of America International Annual Meeting. Minneapolis, MN, November 2015.
- 17 Neumann, R.B.‡, **Seyfferth, A.L.**, Teshera-Levy, J., Ellingson, J. *Elevated soil temperature increases arsenic uptake by rice and arsenic concentration in rice tissues: A pot experiment*. Geological Society of America Annual Meeting, Baltimore, MD, November 2015.
- 16 **Bothfeld, F.*‡**, **Seyfferth, A.L.**, Vargas, R. *Biogeochemical controls on greenhouse gas flux in an estuarine environment*. UD Water Science and Policy Graduate Program Annual Symposium, Newark, DE, September 2014.
- 15 **Li, G.**‡**, **Seyfferth, A.L.** *Molecular mechanisms of silicon-mediated alleviation of arsenic induced oxidative stress in rice plants*. Soil Science Society of America International Annual Meeting. Tampa, FL, USA, November 2013.
- 14 Moffett, K.B.‡, Dittmar, J., **Seyfferth, A.L.**, Fendorf, S., Gorelick, S. *Hydrogeochemical zonation in intertidal salt marsh sediments: Evidence of positive plant-soil feedback*. American Geophysical Union Annual Fall Meeting, San Francisco, CA, USA, December 2012.
- 13 **Seyfferth, A.L.‡**, Fendorf S. *Arsenic and Silicon Dynamics in Flooded Rice Fields*. Soil Science Society of America International Annual Meeting. Cincinnati, OH, USA, October 2012.
- 12 **Seyfferth, A.L.‡**, Fendorf S. *Human Health Impacts of Arsenic in Rice: Implications from Southeast Asia*. Soil Science Society of America International Annual Meeting. San Antonio, TX, USA, November 2011.
- 11 **Seyfferth, A.L.‡**, Fendorf S. *Deciphering controls on arsenic uptake and mechanisms of attenuation on roots of rice (Oryza sativa L.) with variable Fe plaque coatings*. Soil Science Society of America International Annual Meeting. Long Beach, CA, USA, November 2010.
- 10 **Seyfferth, A.L.‡**, Webb, S.M., Andrews, J.C., and Fendorf S. *Speciation of arsenic and co-localization with iron on rice roots*. 239th American Chemical Society National Meeting. San Francisco, CA, USA, March 2010.

- 9 Fendorf, S.[‡], Masue-Slowey, Y., **Seyfferth, A.L.**, Kocar, B.D., Nico, P.S. *Deciphering processes controlling the transport and plant uptake of arsenic in soils and sediments.* 239th American Chemical Society National Meeting. San Francisco, CA, USA, March 2010.
- 8 Kim, E.[‡], Luthy, R.G., Fendorf, S., Masue-Slowey, Y., and **Seyfferth, A.L.** *Enhanced mercury removal efficiency with polysulfide-rubber (PSR) coating on activated carbon.* 239th American Chemical Society National Meeting. San Francisco, CA, USA, March 2010.
- 7 Zhuang, Y.[‡], Ahn, S., **Seyfferth, A.L.**, Slowey, Y., Fendorf, S. and Luthy R. *Debromination of polybrominated diphenyl ethers by nano-iron particles and carbon-supported nano-iron particles.* 239th American Chemical Society National Meeting. San Francisco, CA, USA, March 2010.
- 6 **Seyfferth, A.L.**[‡] and Fendorf S. *Silicate mineral impacts on arsenic accumulation in rice.* Soil Science Society of America International Annual Meeting. Pittsburgh, PA, USA, November 2009.
- 5 **Seyfferth, A.L.**[‡] and Fendorf S. *Arsenic accumulation in rice: Root Uptake, Localization, and Spectroscopic Characterization.* Laboratory of Andreas Kappllar, Eberhard Karls Universitat Tubingen, Germany, September 2009.
- 4 **Seyfferth, A.L.**[‡] and Fendorf S. *Arsenic accumulation in rice: Uptake, Characterization, and influence of Silica mineral amendments.* Bay Area Geochemistry Day, University of California Berkeley, USA, June 2009.
- 3 **Seyfferth, A.L.**[‡] and Parker, D.R. *Perchlorate Accumulation in Lettuce: Do Climatic Factors and Nutrient Availability Influence Uptake?* Society of Environmental Toxicology and Chemistry North America 27th Annual Meeting, Montreal, Canada, November 2006.
- 2 Parker, D.R., **Seyfferth, A.L.**[‡] and Reese, B.K. *Perchlorate in Groundwater: A Synoptic Survey of Background Levels at "Pristine" Locations in the United States.* Society of Environmental Toxicology and Chemistry Europe 16th Annual Meeting, The Hague, The Netherlands, May 2006.
- 1 **Seyfferth, A.L.**[‡] and Parker, D.R. *Determination of perchlorate in lettuce and spinach using IC-ESI-MS.* Society of Environmental Toxicology and Chemistry North America 26th Annual Meeting, Baltimore, MD, November 2005.

POSTER PRESENTATIONS

‡Undergraduate student *Graduate Student; **Postdoc; [‡]Presenting author
 Names in **bold** represent members of the Seyfferth lab

- 95 **Montgomery, A.****; **Seyfferth, A. L.** *Targeting the Destabilization of Organic Matter-Bearing Fe and Mn Oxides Using IRIS Films in Coastal Forests Affected By Sea-Level Rise.* College of Agriculture and Natural Resources Research Symposium. Newark, DE. November 2023

- 94 **Street, B.*‡; Seyfferth, A. L.** *Impacts of simulated storm surge and sea level rise on soil biogeochemistry along a marsh-forest transition zone.* College of Agriculture and Natural Resources Research Symposium. Newark, DE. November 2023
- 93 **Bamidele, S.*‡, Limmer, M.A.****, Noundou, V.L., Hanson, T., **Seyfferth, A.L.** *Soil Health in Rice Paddies.: How Management Affects Key Indicators.* Soil Science Society of America International Annual Meeting. St. Louis, MO. Oct 29 - Nov 1, 2023.
- 92 **Montgomery, A.*‡, Seyfferth, A. L.** *Using IRIS Films to Identify Changes in Soil Redox Conditions in Coastal Marshes.* Critical Zone Network Meeting. Salt Lake City, UT. June 2023.
- 91 **Street, B.*‡; Seyfferth, A. L.** *Storm surge and sea level rise impacts on soil biogeochemistry along a marsh-forest transition zone.* Delaware Environmental Institute Symposium. Newark, DE. April 2023
- 90 **Linam, F.*‡ Limmer, MA.** Tappero, R. **Seyfferth, AL.** *Distribution of As and Fe in Rice Root Plaque.* Delaware Environmental Institute Symposium, Newark, DE, USA. April 2023.
- 89 **Bamidele, S.*‡, Limmer, M.A.****, **Seyfferth, A.L.** *Impacts of Water and Residue Management on Indicators of Soil Health in Rice Paddies.* Delaware Environmental Institute Symposium, Newark, DE, USA. April 2023.
- 88 **Linam, F.* Limmer, MA. Tappero, R. Seyfferth, AL.** *Distribution of As and Fe in Rice Root Plaque.* NSLS-II, CFN & LBMS Users' Meeting, Upton, NY, USA. April 2023.
- 87 **Linam, F.*‡, Limmer, M.A.****, **Seyfferth, A.L.** *Soil Fractionation, Fe Plaque Sequestration, and Plant Uptake of Oxyanions in Variably Drained Paddy Soil.* Soil Science Society of America Annual Meeting. Baltimore, MD. November 2022.
- 86 **Bamidele, S.O.*‡, Limmer, M.A.****, **Seyfferth, A.L.** *Impacts of Water and Residue Management on Indicators of Soil Health in Rice Paddies.* Soil Science Society of America Annual Meeting. Baltimore, November 2022.
- 85 **Bamidele, S.O.*‡, Limmer, M.A.****, **Seyfferth, A.L.** *Impacts of Water and Residue Management on Indicators of Soil Health in Rice Paddies.* College of Agriculture and Natural Resources Research Symposium, University of Delaware. November 2022.
- 84 **Fettrow S.*‡, Jeppi, V.***, **Seyfferth A.L.** *Coastal Wetland Blue Carbon Biogeochemistry Under Rising Seas.* NSF EPSCoR National Conference. Portland ME, November 2022.
- 83 **Linam, F.*‡, Limmer, M.A.****, **Seyfferth, A.L.** *Rice Root Fe Plaque Formation in North American Paddy Soils.* 22nd World Congress of Soil Science. Glasgow, UK. August 2022.
- 82 **Fettrow S.*‡, Seyfferth A.L.** *Salt Marsh Migration into Forests and Farms: Effects to Soil Biogeochemistry Along the Salinity Gradient.* NSF Coastal Critical Zone Annual Meeting. Newark DE, August 2022.
- 81 **Linam, F.*‡, Limmer, M.A.****, **Seyfferth, A.L.** *Rice Husk/Biochar Amendments Sequester Paddy Soil Carbon.* 2022 Delaware Environmental Institute Symposium, Newark, DE. April 2022.
- 80 **Garcia, J.‡‡, Limmer, M.A.****, **Seyfferth, A.L.** *Extracting nucleic acids from Fe deposits in the rhizosphere of rice.* University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2021.

- 79 **Linam, F.*[‡], Limmer, M.A.**[‡], Seyfferth, A.L.** *Optimizing Paddy Water Status and Rice Husk Amendment*. 2021 Delaware Environmental Institute Symposium, Newark, DE, USA. March 25, 2021.
- 78 **Fettrow S. **[‡], Seyfferth A.L.** *Blue C Cycling in a Tidal Salt Marsh: Spatial and Temporal Variation*. Delaware Environmental Institute (DENIN) Symposium, March 2021.
- 77 **Carrera, M.*[‡], Seyfferth, A.L.** *Transporters responsible for the fate of cadmium in rice*. University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2020.
- 76 **Linam, F.A. **[‡], Seyfferth, A.L.** *Limiting As and Cd in rice with rice husk biochar: Lab and Soil Data*. Delaware Environmental Institute Student Symposium. Newark, DE. March 2020.
- 75 **Fettrow, S. **[‡], Seyfferth, A.L.** *Blue carbon cycling in a tidal salt marsh: A field study at St. Jones Estuarine Reserve*. Delaware Environmental Institute Student Symposium. Newark, DE. March 2020.
- 74 **Dykes, G.E. **[‡], Limmer, M.A. **[‡], Chan, C.S., Seyfferth, A.L.** *Rice soil iron cycling and methane cycling bacterial communities respond to pH, redox and silicon*. Microbiology Symposium, Newark, DE. February 2020.
- 73 **Limmer, M.A. **[‡], Seyfferth, A.L.*[‡]**, *Visualizing root plaque formation and arsenic sequestration on rice roots*. American Geophysical Union Annual Meeting. San Francisco, CA. December, 2019.
- 72 **Evans, A.E. **[‡], Limmer, M.A. **[‡], Seyfferth, A.L.** *Using Iron and Manganese-Coated IRIS Films to Quantify Soil Redox Potential in Rice Paddies Under Alternate Wetting and Drying (AWD) Management*. Soil Science Society of America International Annual Meeting. San Antonio, TX. November, 2019.
- 71 **Fields, E.F.*[‡], Limmer, M.A. **[‡], Lule, A.D.V.*[‡], Watson, G.*[‡], Seyfferth, A.L.** *The impacts of silicon on rice tissues*. Annual Biomedical Research Conference for Minority Students. Anaheim, CA. November 2019
- 70 **McCoach, K.*[‡], Limmer, M.A. **[‡], Seyfferth, A.L.** *Impacts of pyrolysis temperature on Si release from rice husk biochar incorporated into paddy soil*. University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2019.
- 69 **Fields, E.F.*[‡], Limmer, M.A. **[‡], Lule, A.D.V.*[‡], Watson, G.*[‡], Seyfferth, A.L.** *The impacts of silicon on rice tissues*. University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2019.
- 68 **Bryan, S.A.*[‡], Dykes, G.E.*[‡], Limmer, M. **[‡], Griffith, A.*[‡], Seyfferth, A.L.** *The Expression of Genes Related to Stress Response, Metal Toxicity, and As Toxicity in Rice*. University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2019.
- 67 **Dykes, G.E. **[‡], Chari, N.*[‡], Seyfferth, A.L.** *Silicon induces arsenite and monomethyl arsenic release from soil solids: the casus belli of microbial chemical warfare?* Goldschmidt. Barcelona, Spain. August, 2019.
- 66 **Dykes, G.E. **[‡], Limmer, M.A. **[‡], Chan, C.S., Seyfferth, A.L.** *Rice soil microbial communities respond to incorporation of silicon-rich soil amendments*. Geobiology. Banff, Canada. June, 2019.

- 65 **Limmer MA^{¥**}, Seyfferth AL.** *The effect of water management on rice grain micronutrients and contaminants.* University of Delaware One Health Symposium. April 2019.
- 64 **Dykes, G.E. ^{¥*}, Limmer, M.A. ^{**}, Chan, C.S., Seyfferth, A.L.** *Rice soil microbial communities respond to soil addition of rice husk residues.* University of Delaware Graduate Student Forum. Newark, DE. April, 2019.
- 63 **Dykes, G.E. ^{¥*}, Limmer, M.A. ^{**}, Chan, C.S., Seyfferth, A.L.** *Silicon as a driver of rice paddy microbial arsenic-methylater communities.* Delaware Environmental Institute Graduate Student Symposium. Newark, DE. March, 2019.
- 62 **Linam, F.A. ^{¥*}, Seyfferth, A.L.** *Optimizing Rice Husk Biochar Amendment for Rice Paddies: Influence on Si and As Cycling.* Delaware Environmental Institute Student Symposium. Newark, DE. March 2019.
- 61 **Dykes, G.E. ^{¥*}, Limmer, M. ^{**}, Chan, C.S., Seyfferth, A.L.** *Silicon as a driver of rice paddy microbial arsenic-methylater communities.* University of Delaware Microbial Systems Symposium. Newark, DE. February, 2019.
- 60 **Hu, R. ^{¥*}, Teasley, W. ^{*}, Seyfferth, A.L.** *Comparison of Soil Chemical Factor Effect on Rice Arsenic and Cadmium Concentrations among Different Geographic Regions.* Soil Science Society of America International Soils Meeting, San Diego, CA, January 2019.
- 59 **Evans, A. ^{¥*}, Limmer, M. ^{**}, Seyfferth, A.L.** *Using Iron and Manganese-Coated IRIS Films to Quantify Soil Redox Potential in Rice Paddies Under Alternate Wetting and Drying (AWD) Management.* Soil Science Society of America International Soils Meeting, San Diego, CA, January 2019.
- 58 Trifunovic, B. ^{*}, Vazquez Lule, A. ^{*}, Capooci, M. ^{*}, **Seyfferth, A.L.**, Moffat, C., Vargas, R. *Patterns and drivers of carbon dioxide and methane emissions from a temperate salt marsh creek.* American Geophysical Union Annual Meeting. Washington, DC. December 2018.
- 57 **Seyfferth, A.L. [¥], Limmer, M. ^{**}, Evans, A. ^{*}, Runkle, B., Reid, M.** *Closing the Si cycle in rice agroecosystems to sustainably control As and Cd uptake by rice grown under alternate wetting and drying (AWD).* USDA NIFA Project Director Meeting. Newark, DE. October, 2018.
- 56 **Dykes, G.E. ^{¥*}, Limmer, M. ^{**}, Chan, C.S., Seyfferth, A.L.** *Silicon as a driver of rice paddy microbial arsenic-methylater communities.* Goldschmidt. Boston, MA. August, 2018.
- 55 **Watson, G. ^{¥‡}, Seyfferth, A.L.** *The effect of silicon amendments on rice straw throughout the growing season.* University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2018.
- 54 **McCoach, K. ^{¥‡}, Limmer, M. ^{**}, Seyfferth, A.L.** *Effect of Pyrolization Conditions on Rice Husk Chemical Properties.* University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2018.

- 53 **Griffith A.** [‡], **Wise P.** [‡], Donofrio N., **Seyfferth A.L.** *Combined Impacts of Arsenic and Magnaporthe oryzae on Rice Stress and Alleviation by Silicon*. University of Delaware Undergraduate Research Symposium, Newark, DE, August 2018.
- 52 **Chari, N.** [‡], **Dykes, G.** ^{*}, **Seyfferth, A.L.** *Impact of Silicon on Arsenic Dynamics in Flooded Rice Paddy Soils*. University of Delaware Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2018.
- 51 **Dykes, G.E.** ^{‡*}, **Limmer, M.** ^{**}, Chan, C.S., **Seyfferth, A.L.** *Silicon addition to rice paddy soils impacts arsenic biogeochemical cycling: Implications for global food security*. University of Delaware College of Agriculture and Natural Resources Research Symposium. Newark, DE. April, 2018.
- 50 **Wise P.** [‡], **Griffith A.** [‡], Donofrio N., **Seyfferth A.L.** *Combating Abiotic and Biotic Stress in Rice Through Silicon Incorporation*. University of Delaware College of Agriculture and Natural Resources Research Symposium. Newark, DE, April 2018.
- 49 **Hu, R.** ^{*‡}, **Teasley, W.A.**, **Seyfferth, A.L.** *Concentration of Arsenic in Rice Grain Sourced from Small Farms in Northeastern USA*. University of Delaware College of Agriculture and Natural Resources Research Symposium. Newark, DE, April 2018.
- 48 **Limmer, M.** ^{**‡}, Webb, S., **Seyfferth, A.L.** *Quantitative synchrotron x-ray fluorescence for trace metal(loid) distribution in rice grains*. University of Delaware College of Agriculture and Natural Resources Research Symposium. Newark, DE, April 2018.
- 47 **Dykes, G.E.** ^{‡*}, **Limmer, M.** ^{**}, Chan, C.S., **Seyfferth, A.L.** *Silicon addition to rice paddy soils impacts arsenic biogeochemical cycling: Implications for global food security*. 8th Annual University of Delaware Graduate Students' Forum. Newark, DE. April, 2018.
- 46 **Dykes, G.E.** ^{‡*}, **Seyfferth, A.L.** *Silicon addition to rice paddy soils impacts arsenic biogeochemical cycling: Implications for global food security*. 13th Annual DOE Joint Genome Institute Genomics of Energy & Environment User Meeting. San Francisco, CA. March, 2018.
- 45 **Hu, R.** ^{*‡}, **Teasley, W.A.**, **Seyfferth, A.L.** *Concentration of Arsenic in Rice Grain Sourced from Small Farms in Northeastern USA*. 3rd Annual DENIN Environmental Symposium, University of Delaware, March, 2018.
- 44 Guimond, J. [‡], **Seyfferth, A.L.**, Michael, H.A. *Hydrologically mediated iron reduction/oxidation fluctuations and dissolved organic carbon exports in tidal wetlands*. American Geophysical Union Fall Meeting, New Orleans, LA, December 2017.
- 43 Capooci, M. [‡], Barba, J., **Seyfferth, A.L.**, Vargas, R. *Effects of a storm-surge related salinity decrease on greenhouse gas emissions in tidal salt marsh mesocosms*. American Geophysical Union Fall Meeting, New Orleans, LA, December 2017.
- 42 **Dykes, G.** ^{*‡}, **Seyfferth, A.** *Microbial activity spurred by silicon amendment addition alters the biogeochemical cycling of arsenic in flooded rice paddies*. Soil Science Society of America International Annual Meeting. Tampa, FL. October 2017.

- 41 **Carty, M.[‡], Limmer, M.A.^{**}, Seyfferth, A.L.** *Changes in Si plant-availability in rice paddy soil due to residue incorporation over 3 years.* UD Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2017.
- 40 **Northrup, K.^{*‡}, Seyfferth, A.L.** *Distribution and Availability of Trace Metal(loid)s Within the Plant-Soil-Water Nexus at the St. Jones Salt Marsh.* Delaware National Estuarine Research Reserve Research Symposium, Dover, DE, April 2017.
- 39 **Northrup, K.^{*‡}, Seyfferth, A.L.** *Distribution and Availability of Trace Metal(loid)s Within the Plant-Soil-Water Nexus at the St. Jones Salt Marsh.* Emerged Symposium on Contaminants of Environmental Concern in Delaware Waterways, Dover, DE, March 2017.
- 38 **Northrup, K.^{*‡}, Seyfferth, A.L.** *Distribution and Availability of Trace Metal(loid)s Within the Plant-Soil-Water Nexus at the St. Jones Salt Marsh.* DENIN Graduate Student Research Symposium, Newark, DE, March 2017.
- 37 **Seyfferth, A.L.[‡], Northrup, K.^{*}, Bothfeld, F.^{*}** *Impacts of a hurricane-induced storm surge on trace-metal cycling in a spatially heterogeneous estuary.* American Geophysical Union Chapman Conference: Extreme Climate Events Impacts on Aquatic Biogeochemical Cycles and Fluxes, San Juan, Puerto Rico, January 2017.
- 36 **Northrup, K.^{*‡}, Seyfferth, A.L.** *Distribution and mobility of trace metal(loid)s within the plant-soil-water nexus at the St. Jones salt marsh.* Northeastern Plant, Pest, and Soils Conference, Philadelphia, PA, January 2017.
- 35 **Loudermilk, E.[‡], Seyfferth, A.L.** *Nutrient Limitations of Algae Growth in a Delaware Estuary.* Northeastern Plant, Pest, and Soils Conference, Philadelphia, PA, January 2017.
- 34 **Dykes, G.E.^{*‡}, Seyfferth, A.L.** *Microbial activity spurred by silicon amendment addition alters the biogeochemical cycling of arsenic and iron in flooded rice paddies.* 3rd Thunen Symposium on Soil Metagenomics, Braunschweig, Germany, December, 2016.
- 33 **Dykes, G.E.^{*‡}, Seyfferth, A.L.** *Microbial activity spurred by silicon amendment addition alters the biogeochemical cycling of arsenic and iron in flooded rice paddies.* Phytobiomes: From Microbes to Plant Ecosystems, Santa Fe, NM, November 2016.
- 32 **Dykes, G.E.^{*}, Seyfferth, A.L.[‡]** *Microbial activity spurred by silicon amendment addition alters the biogeochemical cycling of arsenic and iron in flooded rice paddies.* ASA, CSSA and SSSA International Annual Meetings, Phoenix AZ, November 2016.
- 31 **Amaral, D.C.^{*‡}, Limmer, M.A.^{**}, Guilherme, L.R.G., Seyfferth, A.L.** *Impact of Water and Si Management on As, Cd, and Pb Accumulation in Rice (Oryza sativa L.).* ASA, CSSA and SSSA International Annual Meetings, Phoenix AZ, November 2016.
- 30 **Loudermilk, E.[‡], Seyfferth, A.L.** *Nitrogen and Phosphorus Spatiality in a Delaware Estuary.* UD Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2016.

- 29 **Hunter, A.^{‡¥}**, Brooker, R., Dixon, D., **Seyfferth, A.L.** *Chemical Properties of Mangrove Leaves from Polluted and Healthy Habitats*. UD Undergraduate Research and Service Celebratory Symposium, Newark, DE, August 2016.
- 28 **Limmer, M.A.^{**¥}**, **Seyfferth, A.** *Decreasing Rice Uptake of Organic Arsenic Species*. Gordon Research Conference, Environmental Sciences: Water. Holderness, NH, June 2016.
- 27 **Kearns, K.^{‡¥}**, **Bothfeld, F.^{*}**, **Mann, J.[‡]**, **Morris, A.**, **Limmer, M.^{**}**, **Seyfferth, A.L.**, *Comparison of Greenhouse Gas Fluxes from Two Flooded Vegetated Environments*. 6th Regional Undergraduate Student Research Conference, University of Delaware, Newark, DE, April 2016.
- 26 Petrakis, S.[¥], Vargas, R., **Seyfferth, A.L.**, Jan, J., and Inamdar, S. *The influence of extreme water pulses on greenhouse gas emissions from soils*. American Geophysical Union Fall Meeting, San Francisco, CA, December 2015.
- 25 **Teasley, W. A.^{*¥}**, **Seyfferth, A.L.**, *The effect of Si amendments on As accumulation and greenhouse gas emissions in rice (Oryza sativa L.)*. Soil Science Society of America International Annual Meeting. Minneapolis, MN, November 2015.
- 24 **Amaral, D.^{*¥}**, **Seyfferth, A.L.**, *Impacts of silicon amendments on iron plaque quantity, mineral composition, and associated arsenic in rice (Oryza sativa L.)*. Soil Science Society of America International Annual Meeting. Minneapolis, MN, November 2015.
- 23 **Amaral, D.^{*¥}**, **Seyfferth, A.L.** *Impacts of Rice Husk Residues on Iron Plaque Formation and Associated Arsenic in Rice (Oryza sativa L.)*. DENIN Graduate Student Symposium, Newark DE, October 2015.
- 22 **Mann, J.N.^{‡¥}**, **Seyfferth, A.L.** *Arsenic in rice: Effect of silicon amendments on arsenic uptake*. EPSCoR Summer Scholars Celebratory Symposium, Newark, DE, August 2015.
- 21 **Ahmed, S.^{‡¥}**, **Seyfferth, A.L.** *Arsenic cycling in plants, soils, and water in a tidally influenced brackish estuary*. EPSCoR Summer Scholars Celebratory Symposium, Newark, DE, August 2015.
- 20 **Kearns, K.^{‡¥}**, **Seyfferth, A.L.**, *Microbial Communities at Varying Soil Depths by ARISA Methods*. Delaware Environmental Institute (DENIN) Scholar Symposium, University of Delaware, Newark, DE, May 2015.
- 19 **Loudermilk, E.^{‡¥}**, **Bothfeld, F.^{*}**, **Seyfferth, A.L.**, *The Effect of Spatial Chemical Heterogeneity in an Estuary*. UD Undergraduate Research Program Scholars Poster Session, Newark, DE, April 2015.
- 18 **Kearns, K.^{‡¥}**, **Seyfferth, A.L.** *Comparison of two sampling methods to measure methane concentrations in soil*. University of Maryland – Baltimore's 17th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, Catonsville, MD, October 2014.
- 17 **Paukett, M.^{‡¥}**, **Gill, R.**, and **Seyfferth, A.L.** *Interactions between silicon, arsenic, and Magnaporthe oryzae in rice plants*. Undergraduate Research & Service Scholar Celebratory Symposium, University of Delaware, August 2014.

- 16 **Kearns, K.^{#¥}, Seyfferth, A.L.** *Comparison of two sampling methods to measure methane concentrations in soil.* Undergraduate Research & Service Scholar Celebratory Symposium, University of Delaware, August 2014.
- 15 **McClatchy.^{#¥}, C., Seyfferth, A.L.** Arsenic concentration in mushrooms and associated health risks in the USA. Undergraduate Research & Service Scholar Celebratory Symposium, University of Delaware, August 2013.
- 14 **Seyfferth, A.L.[¥], Fendorf, S.** *Biogeochemical cycling of Si in a California rice cropping system.* American Geophysical Union Annual Fall Meeting, San Francisco, CA, USA, December 2012.
- 13 Barragan, L.[¥] **Seyfferth, A.L.** and Fendorf, S. *Arsenic concentrations in rice and associated health risks along the upper Mekong Delta, Cambodia.* American Geophysical Union Annual Fall Meeting, San Francisco, CA, USA, December 2011.
- 12 **Seyfferth, A.L.[¥], Fendorf, S.** *Soil-root processes responsible for arsenic uptake in rice: A route of human exposure.* American Geophysical Union Annual Fall Meeting, San Francisco, CA, USA, December 2010.
- 11 **Seyfferth, A.L.[¥], Webb, S.M., Andrews, J.C., Fendorf, S.** *Arsenic speciation, localization, and co-occurrence with iron on rice (*Oryza sativa* L.) roots with variable iron coatings.* Goldschmidt Conference, Knoxville, TN, USA, June 2010.
- 10 **Seyfferth, A.L.[¥] and Fendorf, S.** *Speciation of arsenic and co-localization with iron in rice roots.* SSRL User Meeting, Menlo Park, CA, USA, October 2009.
- 9 **Seyfferth, A.L.[¥] and Fendorf, S.** *Silicate mineral impacts on arsenic accumulation in rice (*Oryza sativa* L.).* Goldschmidt Conference, Davos, Switzerland, June 2009.
- 8 **Seyfferth, A.L.[¥] and Parker, D.R.** *Effects of Competing Soil Anions and pH on Perchlorate Uptake and Accumulation by Lettuce.* Soil Science Society of America International Annual Meeting. New Orleans, LA, USA, November 2007.
- 7 **Seyfferth, A.L.[¥] and Parker, D.R.** *Perchlorate Accumulation in Lettuce: Do Climatic Factors and Nutrient Availability Influence Uptake?* Society of Environmental Toxicology and Chemistry North America 27th Annual Meeting, Montreal, Canada, November 2006.
- 6 **Seyfferth, A.L.[¥] and Parker, D.R.** *Factors Controlling Perchlorate Accumulation in Lettuce.* EPA STAR Graduate Fellowship Conference, Washington, D.C., September 2006
- 5 **Seyfferth, A.L.[¥] and Parker, D.R.** *The role of transpiration in predicting perchlorate (ClO_4^-) bioconcentration in lettuce (*Lactuca sativa* L.) and spinach (*Spinacia oleracea* L.).* Society of Environmental Toxicology and Chemistry Europe 16th Annual Meeting, The Hague, The Netherlands, May 2006.
- 4 **Seyfferth, A.L.[¥] and Parker, D.R.** *Perchlorate uptake by lettuce at low ppb concentrations using IC-ES-MS: Method development.* 3rd Annual Environmental Graduate Student Conference, Riverside, CA, September 2004.
- 3 **Seyfferth, A.L.[¥] and Casey, R.E.** *Silicone Rubber Tubing as a Sampling Device to Measure*

- Nitrous Oxide Emissions from Saturated Environments*. Towson University's Research Expo, Towson, MD, 2003.
- 2 **Seyfferth, A.L.**[‡] and Casey, R.E. *Silicone Rubber Tubing as a Sampling Device to Measure Nitrous Oxide Emissions from Saturated Environments*. Colonial League Undergraduate Research Symposium, George Mason University, Fairfax, VA 2003.
- 1 **Seyfferth, A.L.**[‡] and Casey, R.E. *Silicone Rubber Tubing as a Sampling Device to Measure Nitrous Oxide Emissions from Saturated Environments*. University of Maryland – Baltimore's 5th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, Catonsville, MD, 2002.

FUNDED GRANTS

- 2023-2027 PARTNERSHIP: Field management and post-harvest methods to mitigate toxic inorganic and organic arsenic in rice grain. **PI: Seyfferth (UDel)**, Co-PI Runkle (UArk). USDA AFRI Foundational Program . **\$755,168.**
- 2022-2024 Acquisition of an Ultraportable Field CO₂ Isotope Analyzer and a Soil Gas Flux Chamber for Investigating CO₂ Efflux and Stable Carbon Isotopes of CO₂ in Carbon Cycling Research. **PI: Seyfferth (UDel)**, Co-PI Vargas (UDel). National Science Foundation. **\$96,337.**
- 2022-2027 STEEP-CF: Storm Treatment Effects on Ecosystem Processes of Coastal Forests. PI Vargas (UDel), **Co-PI Seyfferth (UDel)**, Co-PI Bond-Lambarty (PNNL), Co-PI Hopple (PNNL). Department of Energy. **\$899,000.**
- 2022-2026 Water and residue management as drivers of rice soil health. **PI-Seyfferth (UDel)**. Co-PI Hanson (UDel) USDA AFRI Foundational Program 1401. **\$748,000.**
- 2022-2024 A framework for heavy metal prioritization and mitigation for reducing metal intake: Rice and spinach case studies. PIs: Runkle (UArk), **Co-PI Seyfferth (UDel)**. Institute for the Advancement of Food and Nutrition Science (IAFNS). **\$62,475.**
- 2022-2023 Assessing the fate of flame retardants in soil. **PIs: Seyfferth (UDel)** and Shober (UDel). Perimeter Solutions, Inc. **\$49,995.**
- 2020-2025 Collaborative Research: Network Cluster: The Coastal Critical Zone: Processes that transform landscapes and fluxes between land and sea. PI Michael (UDel), **Co-PI Seyfferth (UDel)**, Co-PI Chin (UDel), Co-PI Miller (UDel), Co-PI Stotts (DSU). National Science Foundation **\$2,078,334** (To Seyfferth = \$256,080)
- 2019-2022 Fate of cadmium and arsenic under engineered physico-chemical gradients in the soil-water-rice nexus. **PI Seyfferth (UDel)**, Co-PI Limmer (UDel). National Science Foundation. **\$353,911.**
- 2019-2021 The rice of the future: How growing practices can decrease human exposure to toxins. **PI Seyfferth (UDel)**, Co-PI Tappero (BNL). University of Delaware and Brookhaven National Laboratory. **\$200,000.**
- 2019-2021 Impacts of TiO₂ pigments and TiO₂-pigmented agricultural films on TiO₂ distribution in soil and soil physico-chemical properties. **PI Seyfferth**. Chemours Chemical Company. **\$106,039.**

- 2018-2021 Connecting hydrology, biology, and geochemistry, in a coastal wetland: feedbacks between ecosystem processes toward predictive understanding. PI-Michael (UDel), **Co-PI Seyfferth** (UDel). National Science Foundation. **\$374,175.**
- 2018-2021 Optimizing rice residue biochar and water management to improve rice yield and decrease uptake of toxic metal(loid)s. **PI-Seyfferth** (UDel). USDA AFRI Foundational Program 1102. **\$336,633.**
- 2018-2022 Closing the Si cycle in rice agroecosystems to sustainably control As and Cd uptake by rice grown under alternate wetting and drying (AWD). **PI-Seyfferth** (UDel), Co-PIs Runkle (UArk), Reid (Cornell U.). USDA AFRI Foundational Program 1401. **\$499,606.**
- 2018-2022 UD Center for Food Systems and Sustainability: Integrating Research, Education, and Outreach. Unidel Foundation. **PI Seyfferth** (UDel), Co-PI Shober (UDel). **\$601,640.**
- 2017-2017 UD ADVANCE Mini-Grant Award for organizing a breakout session at the Soil Science Society of America's annual meeting in Tampa, Florida. **PI Seyfferth** (UDel). **\$1550.**
- 2016-2020 Harnessing rhizospheric microbes as agents to improve iron nutrition and abate arsenic toxicity PI-Bais (UDel), **Co-PI Seyfferth** (UDel), USDA AFRI Foundational Program-A1151. **\$449,847.**
- 2016-2018 Toward a sustainable solution to improve global food security: Exploring the benefits of silicon incorporation to soil to combat abiotic and biotic stress in rice (*Oryza sativa* L.). **PI-Seyfferth** (UDel), Co-PI Donofrio (UDel), UD CANR Competitive Seed Grant Program. **\$49,434.**
- 2015-2017 Decreasing arsenic and cadmium uptake in rice through rice residue management. **PI-Seyfferth** (UDel), Delaware Federal Research and Development Matching Grant Program. **\$96,160.**
- 2015-2016 UDRF Research Experience for Undergraduates. PI-Seyfferth (UDel), University of Delaware Research Foundation. **\$3,500.**
- 2015-2016 A framework for predicting impacts of climate change on Blue Carbon in estuaries. PI-Vargas (UDel), **Co-PI Seyfferth** (UDel), NOAA-DNREC. \$49,994.
- 2014-2019 CAREER: Toward an improved understanding of the impact of silicon on arsenic, iron, and carbon biogeochemical cycling in rice paddy soils. **PI-Seyfferth** (UDel), National Science Foundation-Geobiology & Low-Temperature Geochemistry. **\$464,742.**
- 2014-2016 Toward global food security: Understanding the impacts of altered dissolved silicon on iron plaque formation, mineralogy, and arsenic uptake by rice **PI-Seyfferth** (UDel). University of Delaware Research Foundation. **\$34,791.**
- 2014-2015 Environmental assessment of a protected estuary: linking sediment biogeochemistry, greenhouse gas fluxes and climate variability. PI-Vargas (UDel), **Co-PI Seyfferth** (UDel), UD CANR Competitive Seed Grant Program. \$39,872.
- 2013-2014 Research Starter Grant: Biogeochemical and grain-arsenic impacts of rice-residue incorporation into rice paddy soil. **PI-Seyfferth** (UDel), National Science Foundation, Division of Biological Infrastructure. **\$47,035.**

- 2009-2012 An assessment of arsenic uptake and transformation in rice varieties: How can we reduce human exposure? **PI-Seyfferth**, National Science Foundation, Division of Biological Infrastructure. **\$189,000**
- 2007-2008 Graduate Dean's Dissertation Research Grant. **PI-Seyfferth. \$972**
- 2007 Stolzy-Letey Environmental Travel Scholarship, University of California, Riverside. **PI-Seyfferth \$1000**
- 2006 Frank T. Bingham Memorial Scholarship Award for Soil and Water Sciences, University of California, Riverside. **PI-Seyfferth \$1200**
- 2005-2008 Genotypic variability and the factors controlling the uptake and metabolism of perchlorate at low part-per-billion levels using IC-ESI-MS. **PI-Seyfferth** Environmental Protection Agency, STAR program. **\$92,000**
- 2005 Frank T. Bingham Memorial Scholarship Award for Soil and Water Sciences, University of California, Riverside. **PI-Seyfferth \$1400**

COURSES TAUGHT

Tenure-track

<i>Course</i>	<i>Units</i>	<i>Term</i>	<i>Enrollment</i>
PLSC 171 New Student Colloquium	1	Fall 2014	7
		Fall 2015	7
		Fall 2016	9
		Fall 2017	6
		Fall 2018	11
PLSC 267 Humans and Environmental Sustainability	3	Fall 2014	9
PLSC 366 Independent Research (Plant-Soil Interactions)	1	Spring 2015	1
UNIV 402 Senior Thesis	1	Spring 2016	1
		Spring 2017	1
		Spring 2022	1
		Fall 2018	1
ENSC 464 Environmental Internship	3	Fall 2013	1
PLSC 466 Independent Research (Plant-Soil Interactions)	3	Spring 2015	1
		Spring 2021	1
		Spring 2022	3
BISC 468 Independent Research (Plant molecular techniques)	1	Winter 2015	1
		Spring 2015	2
		Fall 2016	1
		Fall 2021	1
		Fall 2022	2
PLSC 640 Field Methods Water-Air-Soil (previously PLSC 667 Field Methods and Analysis, co-taught with R. Vargas)	3	Fall 2013	17
		Fall 2015	18
		Fall 2017	20

		Fall 2019	19
		Fall 2020	11
		Fall 2022	20
		Fall 2023	9
PLSC 666-Special Problem (Ginni Jeppi MS)		Fall 2021	1
PLSC 667 Plant-Contaminant Interactions	3	Fall 2016	8
		Fall 2018	7
PLSC 869 Master's Thesis	1	Fall 2015	1
	1	Spring 2016	1
	1	Winter 2018	1
	1	Winter 2019	1
	1	Spring 2022	1
	1	Fall 2023/Winter 2024	1
PLSC969 Doctoral Dissertation	1	Fall 2019	1
	1	Winter 2021	1
	1	Spring 2022	1
	1	Spring 2023	1
	1	Fall 2023	1

Pre tenure-track

2012	<i>EES 212: Measurements in Earth Systems</i> (Graduate level at Stanford University: 3 credits). Co-taught with 6 faculty members at Stanford University with 15% engagement
2007	<i>ENSC 003: Contemporary Issues in Environmental Sciences</i> . (Undergraduate level at University of California, Riverside: 3 credits). <i>Teaching Assistant</i> .
2005	<i>ENSC 176: Acquisition and Analysis of Environmental Data</i> (Undergraduate level summer field course in Sierra Nevada Mountains via University of California, Riverside: 5 credits). <i>Teaching Assistant</i> .
2004	<i>ENSC 100: Introduction to Soil Science</i> (Undergraduate level at University of California, Riverside: 4 credits). <i>Teaching and Lab Assistant</i> .

GUEST LECTURING

2015-Sp	CIEG465 <i>Engineers Without Borders</i> , Instructor Clarke-Sather, University of Delaware
2013-Fa	R02 Environmental Issues, Instructor Meitner, Osher Institute of Lifelong Learning, University of Delaware
2010-Fa	EES 156 Soil and Water Chemistry, Prof. Fendorf, Stanford University

SUPERVISING AND MENTORING*Scientists and Senior Personnel*

Matthew Limmer, July 2023 – present
 Tecele Weldekidan, December 2023 – present
 Maria Pautler, February 2015 – 2022

Postdoctoral Scholars

Matthew Limmer, March 2015 – June 2023

Gang Li, March 2013 – June 2014

Research Assistants

Ethan Wetter, June 2022 – January 2023

Ayofela Dare, March 2017 – July 2018

William Teasley, September 2016 – January 2017

Andrew Morris, February 2015 – August 2015

Rattandeep Gill, September 2013 – September 2014

Graduate student committees

<u>Student</u>	<u>Degree/Program</u>	<u>Role</u>	<u>Years</u>
Abby Reeves	Ph.D./Plant Soil Sci.	Advisor	2024 – present
Baileigh Rosado	M.S./Plant Soil Sci.	Advisor	2024 – present
Marissa Jerden	M.S./Plant Soil Sci.	Advisor	2023 – present
Ashleigh Montgomery	Ph.D./Plant Soil Sci.	Advisor	2022 – present
Bailee Street	M.S./Plant Soil Sci.	Advisor	2022 – present
Samuel Bamidele	M.S./Plant Soil Sci.	Advisor	2022 – 2024 (graduated)
Bekah Hanrahan	M.S./Plant Soil Sci.	Advisor	2020 – 2022 (graduated)
Virginia Jeppi	M.S./Plant Soil Sci.	Advisor	2020 – 2021 (graduated)
Frank Linam	Ph.D./Plant Soil Sci.	Advisor	2018 – present
Sean Fettrow	Ph.D./Plant Soil Sci.	Advisor	2019 – 2023 (graduated)
Abby Evans	M.S./Water Sci. Pol.	Advisor	2018 – 2020 (graduated)
Ruifang Hu	Ph.D./Plant Soil Sci.	Advisor	2018 – 2022 (graduated)
Sha Zhang	M.S./Plant Soil Sci.	Advisor	2018 – 2019 (graduated)
Weida Wu	M.S./Plant Soil Sci.	Advisor	2017 – 2019 (graduated)
Kristy Northrup	M.S./Plant Soil Sci.	Advisor	2016 – 2018 (graduated)
Gretchen Dykes	Ph.D./Microbiology	Advisor	2015 – 2021 (graduated)
Douglas Amaral	Ph.D./UFLA Sandwich	Advisor	2015 – 2017 (graduated)
William Teasley	M.S./Plant Soil Sci.	Advisor	2014 – 2016 (graduated)
Frances Bothfeld	M.S./Water Sci. Pol.	Advisor	2014 – 2016 (graduated)
Willow Blew	M.S./Plant Soil Sci.	Committee Member	2023 – 2024 (graduated)
Sara Martinengo	Ph.D./Univ. of Turin	Committee Member	2022 – 2024 (graduated)
Xu Fang	Ph.D./ETH Zurich	Committee Member	2021 – 2022 (graduated)
Piyapas Sircharoenvec	Ph.D./Plant Soil Sci.	Committee Member	2021 – 2023 (graduated)
Alexa Bennett	Ph.D./Bioinformatics	Committee Member	2021 – present
Dongyang Wei	Ph.D./Geography	Committee Member	2020 – present
Andrew Hill	Ph.D./Plant Soil Sci.	Committee Member	2020 – 2022 (graduated)
Andrea Aguilera	Ph.D./UC Davis	Committee Member	2020 – 2022 (graduated)
Jessica Pancake	Ph.D./Plant Soil Sci.	Committee Member	2018 – 2022 (graduated)
Alma Vazquez Lule	Ph.D./Plant Soil Sci.	Committee Member	2018 – 2021 (graduated)
Maggie Capocci	Ph.D./Plant Soil Sci.	Committee Member	2018 – 2022 (graduated)
Branimir Trifunovic	M.S./Water Sci. Pol.	Committee Member	2018 – 2019 (graduated)
Josh Sanchez	Ph.D./Plant Soil Sci.	Committee Member	2017 – 2021 (graduated)
Covel McDermot	Ph.D./Plant Soil Sci.	Committee Member	2016 – 2019 (graduated)
Catherine Winters	M.S./Water Sci. Pol.	Committee Member	2015 – 2016 (graduated)

Hui Li	Ph.D./Plant Soil Sci.	Committee Member	2015 – 2018 (graduated)
Daniel Warner	Ph.D./Water Sci. Pol.	Committee Member	2015 – 2018 (graduated)
Zhixuan Qin	Ph.D./Water Sci. Pol.	Committee Member	2014 – 2018 (graduated)
Sandra Petrakis	M.S./Water Sci. Pol.	Committee Member	2014 – 2016 (graduated)
Autumn Starcher	Ph.D./Plant Soil Sci.	Committee Member	2013 – 2016 (graduated)
Michael Doody	M.S./Plant Soil Sci.	Committee Member	2013 – 2014 (graduated)

Senior Thesis committees

<u>Student</u>	<u>Degree/Program</u>	<u>Role</u>	<u>Years</u>
Timothy Mulderrig	B.S., Senior Thesis	Advisor	2019 – 2022 (graduated)
Erica Loudermilk	B.S., Senior Thesis	Advisor	2016 – 2017 (graduated)
Adrienne Gendron	B.A., Senior Thesis	Second Reader	2015 – 2016 (graduated)
Jessica Mann	B.S., Senior Thesis	Advisor	2015 – 2016 (graduated)
Evanise Penido	B.S., Senior Thesis	Advisor	2012 – 2013 (graduated)

Mentoring of Undergraduate Student Researchers

<u>Student</u>	<u>Year(s)</u>	<u>Institution</u>	<u>Experience</u>
Abby Foytlin	2023-present	UD	UDRAW/Research for Pay
Izabella Debraski	2023-present	UD	UDRAW
Jelayiah Thompkins	2023-present	UD	UDRAW
Tara Metters	2023-present	UD	CZN intern; research for pay
Carina Eisenberg	2023	NYU	CANR Summer Institute
Corinne Van Hoven	2023-present	UD	Research for Pay
Jack Arnuk	2023	UD	Research for Pay
Gui Trindade	2022	UD	DLE credits
Stephanie Dryden	2022-2023	UD	Research for Pay
Paige Aldred	2021	UD	CENFOODS Intern
Katherine Evans	2021-2022	UD	Research for pay
Wes Carson	2021-2022	UD	Research for pay, DLE credits
Thomas Bouck	2021-2023	UD	UDRAW
Ian Kelly	2021-2022	UD	Research for pay
Josh Garcia	2021	Del State	UD SOURCE Program
Sara D'Appolonia	2021	UD	DLE credits
Timothy Mulderrig	2019-2022	UD	Research for pay; Senior Thesis
John Thomas	2019-2021	UD	DLE credits; Research for pay
Ava McCreary	2020-2021	UD	Research for pay
Mariela Carrera	2020	Rutgers	UD SOURCE Program
Jonathan Craig	2019	UD	Research for pay
Ophelia Cristoph	2019-2020	UD	Research for pay
Chloe Kroll	2019	UD	Research for pay
Juliana Serrano	2019	UD	Research for pay
Sheridan Bryan	2018-2021	UD	Research for pay, Summer Scholars
Florence Fields	2019	UD	CANR Summer Institute
Sarah Lotito	2018	UD	Volunteer

Katie Paller	2018-2019	UD	Research for pay
George Watson	2018-2019	UD	Volunteer; EPSCoR Summer Scholars
Nikhil Chari	2018	UD/UCBerkl.	CANR Summer Institute
Kendall McCoach	2017-2020	UD	Volunteer; Research for Pay; Summer Scholars; CANR Unique Strengths
Aaron Nolan	2017	UD	Volunteer
Mikaela Carty	2017	UD	CANR Summer Institute
Amelia Griffith	2017-2019	UD	Research for pay; Summer Scholars Plastino Fellow
Alesia Hunter	2016	UD	McNair Scholar
Heather Eby	2016	UD	Research for pay
Serena Wingel	2016	UD	Volunteer
Patrick Wise	2016-2018	UD	Volunteer; research for credit; DWRC Fellow
Adrienne Gendron	2015-2016	UD	Senior Thesis
Alaina Johansson	2015-2016	UD	Volunteer; research for pay
Jessica Mann	2015-2016	UD	Research for credit; Senior Thesis; EPSCoR Summer Scholar; DENIN Environmental Scholar
Troy McCartney	2015 – 2016	UD	Volunteer; Research for Credit
Corey Leskanic	2014 – 2016	UD	Volunteer; Research for Credit
Kelli Kearns	2014 – 2016	UD	EPSCoR Summer Scholar; DENIN Environmental Scholar; DWRC Fellow
Erica Loudermilk	2014 – 2017	UD	DWRC Fellow; EPSCoR Summer Scholar
Madison Gutekunst	2014 – 2017	UD	Volunteer; Research for Credit
Michelle Paukett	2013 – 2015	UD	Research for pay; CANR Summer Institute
Colleen McClatchy	2013 – 2014	UD	CANR Summer Institute; DENIN Environmental Scholar
Taylor Dieffenbach	2013	UD	Research for pay
Michael Hilyard	2013 – 2014	UD	Volunteer; Research for pay
Evanise Penido	2012 – 2013	UD	UFLA Exchange student; Senior Thesis
Sarah McCurdy	2011	Stanford U.	Volunteer
Elise Post	2009 – 2011	Stanford U.	Volunteer
Maya Henderson	2006	UCR	California Alliance for Minority Participation summer research program

Mentoring of High School Student Researchers

<u>Student</u>	<u>Year(s)</u>	<u>Institution</u>	<u>Experience</u>
Cate Brown	2023	UD	Research for pay
Rishav Sharma	2024	UD	Volunteer
Guthrie Specht	2022	UD	RICE Facility participant for pay
Preeti Krishnamani	2017	UD	NSF CAREER award participant; 1st place, Charter School of Wilmington Science Fair; 1 st place in Plant Science, New Castle County Science Fair; 1 st place in Delaware state BioGENEius competition; Finalist in Regeneron Science Talent Search competition; Egleston Scholar (Columbia Univ.)
Julia O'Brien	2015 & 2016	UD	NSF CAREER award participant
Shreya Venkat.	2015	UD	Volunteer
Alice Liu	2015	UD	Volunteer
Izzy Sibbers	2014	UD	Volunteer; Research for pay
Rohith Venkataraman	2013	UD	Volunteer; 1st place, Charter School of Wilmington Science Fair; Bronze Medalist, Delaware Valley Science Fair 2014
Emily Rosenthal	2012	Stanford U.	Volunteer
Lilia Barragan	2011 & 2012	Stanford U.	School of Earth Sciences Summer Internship Program Stanford University; Diversity Fellowship
Manelle Ona	2006	UCR	Science Fair Project Collaboration; High School Science Fair Achievement Award
Catherine Lo	2006	UCR	Science Fair Project Collaboration; High School Science Fair Achievement Award

AWARDS AND RECOGNITIONS OF ADVISEES

UG = Undergraduate, MS = Master's student, PhD = PhD student, PoD = Postdoctoral Researcher

<u>Year</u>	<u>Student</u>	<u>Degree</u>	<u>Award/Recognition</u>
2023	Carina Eisenberg	UG	CANR Summer Institute (\$5000)
2023	Frank Linam	PhD	Mott Award, CSSA, 2023

2023	Ashleigh Montgomery	PhD	3 rd place, Poster, CANR Research Symposium, 2023 (\$25)
2023	Ashleigh Montgomery	PhD	1 st place, Rapid Oral, Soil Mineralogy Division, SSSA 2023 (\$800)
2023	Bailee Street	MS	2 nd place, Oral Presentation, Soil Chemistry Division, SSSA 2023 (\$150)
2022	Frank Linam	PhD	2 nd place, Oral Presentation, Soil Chemistry Division, SSSA 2022 (\$150)
2021	Frank Linam	PhD	USDA NIFA Predoc. Fellowship (\$172,272)
2021	Sean Fettrow	PhD	DENIN Fellowship (\$70,000)
2020	Sean Fettrow	PhD	1 st Place, CANR Unique Strength Symposium (\$110)
2020	Gretchen Dykes	PhD	Unidel Doctoral Fellowship (\$30,000)
2019	Gretchen Dykes	PhD	1 st Place, Microbiology Symposium (\$100)
2019	Frank Linam	PhD	Professional Development Award (\$500)
2019	Abby Evans	MS	2 nd Place, Poster presentation, Wetlands Division, SSSA 2019
2019	Sean Fettrow	PhD	CANR Unique Strength Fellowship (\$30,000)
2019	Gretchen Dykes	PhD	Townsend Fellowship (\$30,000)
2019	Kendall McCoach	UG	CANR Unique Strength Fellowship (\$4000)
2018	Ruifang Hu	PhD	Donald and Joy Sparks Fellowship (\$3000)
2018	Patrick Wise	UG	NSF Graduate Fellowship (\$60,000)
2018	Gretchen Dykes	PhD	UD Doctoral Fellowship (\$30,000)
2018	Sha Zhang	PhD	CANR Unique Strengths Fellowship (\$30,000)
2018	Abby Evans	MS	Water Science & Policy Fellowship (\$18,000)
2018	Kendall McCoach	UG	Summer Scholars CENFOODS Fellow (\$4000)
2018	Amelia Griffith	UG	Summer Scholars Plastino Fellow (\$4000)
2018	George Watson	UG	EPSCoR Summer Scholars Fellowship (\$4000)
2018	Matt Limmer	PoD	CANR Symposium Postdoctoral award (\$500)
2017	Preeti Krishnamani	UG	1 st place, Charter School of Wilmington Science Fair; 1 st place in Plant Science, New Castle County Science Fair
2017	Kristy Northrup	MS	1 st place Oral presentation, Soil Chemistry Division, SSSA Annual meeting
2017	Gretchen Dykes	PhD	Honorable mention poster presentation, Soil Biology Division, SSSA Annual meeting
2017	Patrick Wise	UG	DENIN Environmental Scholar (\$4000)
2017	Mikaela Carty	UG	CANR Summer Institute (\$3,500)
2017	Kristy Northrup	MS	2 nd place Northeastern Plant, Pest, and Soils Conference
2016	Gretchen Dykes	PhD	DENIN Fellowship (\$73,360)
2016	Erica Loudermilk	UG	EPSCoR Summer Fellowship (\$3500)
2016	Patrick Wise	UG	DWRC Summer Fellowship (\$3500)
2015	Matthew Limmer	PoD	USDA Postdoc. Fellowship (\$150,000)

2015	William Teasley	MS	Student Travel Grant (\$500)
2015	William Teasley	MS	2 nd place in Soil Chemistry, ASA-CSA-SSSA Meeting (\$150)
2015	Frances Bothfeld	MS	2016 John A Knauss Marine Policy Fellowship (\$56,500)
2015	Kelli Kearns	UG	DWRC Summer Fellowship (\$3500)
2015	Jessica Mann	UG	EPSCoR Summer Scholars (\$3500)
2014	Frances Bothfeld	MS	2 nd place, Best Presentation WSP Graduate Symposium (\$50)
2014	Kelli Kearns	UG	DENIN Environ. Scholar (\$3500)
2014	Kelli Kearns	UG	EPSCoR Summer Scholars (\$3500)
2014	Erica Loudermilk	UG	DWRC Summer Fellowship (\$3500)
2014	Michelle Paukett	UG	CANR Summer Institute (\$3500)
2013	Colleen McClatchy	UG	DENIN Environ. Scholar (\$3500)
2013	Colleen McClatchy	UG	CANR Summer Institute (\$3500)

OUTREACH/NON-CREDIT TEACHING

2018	Instructed UD's Laboratory preschool students on <i>Soil is Life</i> day camp
2016	Instructed William Penn High School students on <i>Soil is Life</i> day camp
2015	Developed and Instructed Serviam Academy students on <i>Soil is Life</i> day camp

PROFESSIONAL DEVELOPMENT

Women's Leadership at UD, March-April 2018

Winter Faculty Institute, University of Delaware, January 9-10, 2017

Building Academic Leadership Strengths, University of Delaware, September 9, 2016

Early Career Geoscience Faculty: Teaching, Research, and Managing Your Career, On the Cutting Edge, National Association for Geoscience Teachers, College of William and Mary, Williamsburg, VA, June 10 – 15 2012

Reactive Transport Modeling – The Geochemists Workbench, Stanford University, Stanford, CA, September 25 – 26, 2010

Structural Molecular Biology Low-Z X-ray Absorption Spectroscopy Summer School, Stanford Synchrotron Radiation Lightsource, Menlo Park, CA, July 20 – 23, 2010

SSRL School on Synchrotron X-ray Spectroscopy Techniques in Environmental and Materials Sciences: Theory and Application. Stanford Synchrotron Radiation Lightsource, Menlo Park, CA, June 2 – 5, 2009

Stable Isotope Ecology course, University of Utah, 2006

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union (current)
American Chemical Society (current)
Association for Women in Science (current)
Geochemical Society of America (current)
Soil Science Society of America (current)
Women in Soil Science (current)

ACADEMIC SERVICE

Professional Service

Leadership Roles

2023 Past Chair, Soil Chemistry Division, Soil Science Society of America
2022 Chair, Soil Chemistry Division, Soil Science Society of America
2021 Chair-Elect, Soil Chemistry Division, Soil Science Society of America

Editorial Duties

2018 – 2021 Associate Editor, Journal of Environmental Quality
2016 – 2017 Guest editor, Special Issue “Rhizosphere Processes” in Soils journal

Peer Reviewer of Manuscripts

Journals: Science, PNAS, Environmental Science and Technology, Applied Geochemistry, Geochimica et Cosmochimica Acta, Global Change Biology, Soil Science Society of America Journal, Plant and Soil, Biology and Fertility of Soils, Environment International, Journal of Hazardous Materials, Environmental Science and Pollution Research, Environmental and Experimental Botany, Ecotoxicology and Environmental Safety, Journal of Environmental Science, Current Pollution Reports

Grant Panelist and Reviewer

2018 Selected to Review Cal EPA guidance on As in rice
2018 Ad hoc reviewer for Department of Energy
2016 NSF Biology Research Experience for Undergraduates
2015 NSF Biology Research Experience for Undergraduates
2015 Ad hoc reviewer for Research Councils UK
2015 Ad hoc reviewer for Swiss National Science Foundation
2015 Ad hoc reviewer for USDA AFRI
2013 NSF Postdoctoral Research Fellowships in Biology – International Track
2013 USDA NIFA AFRI Fellowship Program

Session organizer and presider in national meetings

2023 Soil Science Society of America International Annual Meeting, Soil Chemistry Division

- Bioavailability, Bioaccumulation, and Speciation Orals I and II: Approaches for Controlling Transfer of Potentially Toxic Elements in Soils and Connecting Soil Research to Communities, Society, and Justics. Co-organizers: Angelia Seyfferth, Aaron Thompson, Ganga Hettiarachchi.
- 2022 Soil Science Society of America International Annual Meeting, Soil Chemistry Division Contaminants, Communities, and Environmental Justice. Co-organizers: Angelia Seyfferth, Sam Ying, Claudia Avila.
- 2022 Soil Science Society of America International Annual Meeting, Soil Chemistry Division Soil Carbon and Global Change – Linking across Scales, Measurements, and Disciplines. Co-organizers: Angelia Seyfferth, Aaron Thompson, Tracey Olexa, Eric Sucre
- 2020 Soil Science Society of America International Annual Meeting, Soil Chemistry Division Plant/Fungi-Soil Interactions across Scales II: Contaminant Transport, Uptake, and Transformation By Plants and Fungi. Co-organizers: Angelia Seyfferth, Matt Limer, Ruifang Hu, Frank Linam.
- 2020 Soil Science Society of America International Annual Meeting, Soil Chemistry Division 5 Minute Rapid Oral--"What Does My Data Mean?" or "What Should I Do Next??" or "This Is Cool, It'll Only Take 2-Minutes for Me to Explain It" Co-organizers: Samantha Ying, Scott Fendorf, Matthew Polizzotto, Angelia Seyfferth
- 2019 International Conference on the Biogeochemistry of Trace Elements. Co-organizer.
- 2017 Soil Science Society of America International Annual Meeting, Soil Chemistry Division Women's Networking Event. Food (and Drink!) For Thought: A Facilitated Networking Event for Female Soil Scientists. Co-organizers: Samantha Ying and Angelia Seyfferth
- 2016 American Chemical Society Fall National Meeting, Oral session: Interfacial Biogeochemical Controls on Inorganic Contaminants, Co-organizers: Angelia Seyfferth and Matthew Ginder-Vogel; Co-presiders: Angelia Seyfferth and Matthew Ginder-Vogel
- 2015 American Chemical Society Spring National Meeting, Oral session: Kinetics and Mechanisms of Aqueous Geochemical Processes, Co-organizers Scott Fendorf and Douglas Kent; Co-presiders: Angelia Seyfferth and Michael Hochella
- 2013 Soil Science Society of America Meeting, Oral session: *Soil-Plant Interactions: Small-Scale Processes and Large-Scale Implications*, Co-organizers and presiders: Angelia Seyfferth and David McNear

Judge for Student Poster Sessions

- 2023 Soil Science Society of America Annual Meeting
- 2022 Soil Science Society of America Annual Meeting
- 2021 Soil Science Society of America Annual Meeting
- 2020 Soil Science Society of America Annual Meeting
- 2019 Soil Science Society of America Annual Meeting
- 2017 Soil Science Society of America Annual Meeting
- 2014 American Geophysical Union Annual Meeting
- 2014 17th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland, Baltimore County

Other

- 2019-2022 SSRL Users' Executive Committee member
- 2019 Mentor Panelist, Soil Science Society of America Annual Meeting
- 2018- Mentor, Soil Science Society of America
- 2013 Career panelist, Fifth Annual Envirofest, Towson University

University of Delaware Service

University level

- 2024-present Internal Advisory Board Member, Delaware Environmental Institute
- 2023-2024 Search Committee Member, CANR Dean Search
- 2023-2024 Co-Chair, NSF CAREER Academy, University of Delaware
- 2021-2022 Search Committee Member, Postdoctoral Researcher in Mantle Processes Group, Department of Earth Sciences
- 2019-2020 Search Committee Member, Water and Soil Remediation Cluster hire
- 2019-2023 Committee Chair, Sparks Distinguished Lectureship Committee
- 2018-present Director, Center for Food Systems and Sustainability
- 2018 Led UD-wide Cluster Hire Proposal; selected as top 10
- 2018 Organized symposium/workshop on Food Systems and Sustainability
- 2017 Search Committee member, ISE Laboratory Core Facilities Faculty Director
- 2016 ISE Laboratory Core Facilities Working Group
- 2016-2017 Ad Hoc Working Group to develop university-wide Biogeosciences Graduate Program
- 2015-present DENIN Executive Committee member
- 2015 Career panelist, DENIN Winter Undergraduate Program Retreat
- 2013 Career panelist, EPSCoR Undergraduate Summer Intern Program Retreat

College level

- 2023-present Associate Dean for Research
- 2018-2023 Co-Chair, Sustainable Food Systems, Landscapes, and Ecosystems Unique Strength Group
- 2017 Worrlow Hall Renovation Steering Committee
- 2016-2018 CANR Space Utilization Committee
- 2016 CANR Seed Grant Panel Reviewer
- 2015 Discovery Days Participant (student recruitment)

Department level

- 2023-2024 Faculty search committee chair, Environmental Soil Chemistry position
- 2021 Promotion and tenure committee member
- 2019 Staff search committee member for Administrative Assistant II (hired Diana Mesa and Lexie Samick)
- 2018 Staff search committee member for Business Administrator (hired Tracy McMullen)
- 2017-2018 PLSC Administrative Team committee member

- 2016-2017 Faculty search committee member for Asst. Professor of Agronomy (hired Jarrod Miller)
- 2016 Promotion and tenure committee member
- 2015-2021 Hospitality Committee member
- 2014-2016 Curriculum committee member
- 2013-2014 Faculty search committee member for Asst. Professor of Landscape Horticulture and Design (hired Anna Wik)
- 2013 Promotion and tenure committee member