

ELIZABETH M. HERNDON

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PROFESSIONAL EMPLOYMENT

2014 – present **Assistant Professor**, Department of Geology, Kent State University
2013 – 2014 **Postdoctoral Researcher**, Environmental Sciences, Oak Ridge National Laboratory
2012 **Instructor**, Dept. of Geosciences, The Pennsylvania State University
2007 – 2012 **Research Fellow**, Dept. of Geosciences, The Pennsylvania State University

EDUCATION

2012 **Ph.D., Geosciences and Biogeochemistry, Pennsylvania State University**
Biogeochemistry of manganese contamination in a temperate forested watershed
PhD Dissertation advisor: Susan Brantley

2007 **B.A., Earth & Planetary Sciences; B.A. Chemistry: Biochemistry concentration,**
Washington University in Saint Louis (*magna cum laude*)
Honors thesis: *Microbial arsenic processes in shallow marine hydrothermal systems*

PUBLICATIONS

1. Shaw M.*, Singer D., Herndon E. (2019, *in review*) Seasonal mixing from intermittent flow drives concentration-discharge behavior in a stream affected by coal mine drainage. *In review with Environmental Science and Technology.*
2. Herndon E., Yarger, B.*, Frederick, H.*, and Singer, D. (2019, *in revision*) Iron and manganese biogeochemistry in forested coal mine spoil. *Invited manuscript accepted to Soil Systems.*
3. Herndon E., Kinsman-Costello L., Duroe K.*, Mills J.*, Kane E., Sebestyen S., Thompson A., and Wullschlegel S. (2019, *in press*) Iron (oxyhydr)oxides serve as phosphate traps in tundra and boreal peat soils. *Accepted to Journal of Geophysical Research Biogeosciences.*
4. Herndon E., Kinsman-Costello L., and S. Godsey (2019, *accepted and in press*) Biogeochemical cycling of redox-sensitive elements in permafrost-affected ecosystems. In "Biogeochemical cycles: Ecological Drivers and Environmental Impacts." K. Dontsova, Z. Balogh-Brunstad, G. Le Roux (eds). John Wiley and Sons, Inc. *Invited.*
5. Herndon, E.M. (2018) News and Views: Permafrost slowly exhales methane. *Nature Climate Change* 8, 273-274. [doi:10.1038/s41558-018-0129-6](https://doi.org/10.1038/s41558-018-0129-6)
6. Brantley S., White T., West N., Williams J., Forsythe B., Shapich D., Kaye J., Lin H., Shi Y., Kaye M., Herndon E., Davis K., He Y., Eissenstat D., Weitzman J., DiBiase R., Li L., Reed W., Brubaker K., and Gu X. (2018, *accepted*) Susquehanna Shale Hills Critical Zone Observatory: Shale Hills in the Context of Shaver's Creek Watershed. *Vadose Zone Journal* 17(1). [doi:10.2136/vzj2018.04.0092](https://doi.org/10.2136/vzj2018.04.0092)
7. Sak P., Murphy M., Ma, L., Gaillardet J., Herndon E., Brantley S., and Daniel C. (2018) From unweathered core to regolith in a single weathering andesitic clast: rates and trends of in situ chemical weathering on a tropical volcanic island (Basse Terre Island, French Guadeloupe). *Chemical Geology.* doi.org/10.1016/j.chemgeo.2018.08.015
8. Herndon E., Steinhofel G., Dere ALD, and P. Sullivan (2018) Perennial flow through convergent hillslopes explains chemodynamic solute behavior in a shale headwater catchment. *Chemical Geology* 493, 413-425. doi.org/10.1016/j.chemgeo.2018.06.019
9. Herndon EM, Havig JR, Singer DM, McCormick M, and LR Kump (2018) Manganese and iron geochemistry in sediments underlying the redox-stratified Fayetteville Green Lake. *Geochimica et Cosmochimica Acta* 231, 50-63. doi.org/10.1016/j.gca.2018.04.013

10. Herndon EM, AlBashaireh AB*, Singer DM, Roy Chowdhury T, Gu B, Graham DE (2017) Influence of iron redox cycling on organo-mineral associations in Arctic tundra soil. *Geochimica et Cosmochimica Acta* 207, 210-231. doi.org/10.1016/j.gca.2017.02.034
11. Herndon, E.M. (2016) Perspectives: Tips to help chemists achieve a work-life balance. *Chemical and Engineering News* 94(27): 30-31.
12. Chambers LG, Chin Y, Filippelli GM, Gardner CB, Herndon EM, Long DT, Lyons WB, Macpherson GL, McElmurry SP, McLean CE, Moore J, Moyer RP, Nezat CA, Soderberg K, Teutsch N, and E Widom (2016) Developing the scientific framework for urban geochemistry. *Applied Geochemistry* 67, 1-20. [doi:10.1016/j.apgeochem.2016.01.005](https://doi.org/10.1016/j.apgeochem.2016.01.005)
13. Herndon EM, Yang Z, Bargar J, Janot N, Regier T, Graham D, Wulfschleger S, Gu B, and L Liang (2015) Geochemical drivers of organic matter decomposition in Arctic tundra soils. *Biogeochemistry* 126(3), 397-414. [doi:10.1007/s10533-015-0165-5](https://doi.org/10.1007/s10533-015-0165-5)
14. Herndon EM, Mann BF, Roy Chowdhury T, Yang Z, Graham DE, Wulfschleger SD, Liang L, and Gu B (2015) Pathways of anaerobic organic matter decomposition in tundra soils from Barrow, Alaska. *Journal of Geophysical Research – Biogeosciences* 120, 2345-2359. [doi:10.1002/2015JG003147](https://doi.org/10.1002/2015JG003147)
15. Herndon EM, Dere AL, Sullivan PL, Norris D, Reynolds B, and Brantley SL (2015) Landscape heterogeneity drives contrasting concentration-discharge relationships in shale headwater catchments. *Hydrology and Earth Systems Science* 19, 3333-3347. [doi:10.5194/hess-19-3333-2015](https://doi.org/10.5194/hess-19-3333-2015)
16. Mann BF, Chen H, Herndon EM, Chu RK, Tolic N, Portier E, Roy Chowdhury T, Robinson EW, Callister SJ, Wulfschleger SD, Graham D, Liang L, and Gu B (2015) High-resolution molecular profiling of permafrost soil organic carbon composition and degradation under warming. *PLoS One* 10(6), e0130557. [DOI: 10.1371/journal.pone.0130557](https://doi.org/10.1371/journal.pone.0130557)
17. Herndon EM, Jin L, Andrews DM, Eissenstat DM, and Brantley SL (2015) Importance of vegetation for manganese cycling in temperate forested watersheds. *Global Biogeochemical Cycles* 29(2), 160-174. [DOI: 10.1002/2014GB004858](https://doi.org/10.1002/2014GB004858)
18. Newman BD, Throckmorton HM, Graham DE, Gu B, Hubbard SS, Liang L, Wu Y, Heikoop JM, Herndon EM, Phelps TJ, Wilson CJ, and Wulfschleger SD (2015) Microtopographic and depth controls on active layer chemistry in Arctic polygonal ground. *Geophys. Res. Lett.* 42, 1808-1817. [DOI: 10.1002/2014GL062804](https://doi.org/10.1002/2014GL062804)
19. Kraepiel A, Dere AL, Herndon EM and Brantley SL (2015) Natural and anthropogenic processes contributing to metal enrichment in surface soils of central Pennsylvania. *Biogeochemistry* 123, 265-283. [DOI: 10.1007/s10533-015-0068-5](https://doi.org/10.1007/s10533-015-0068-5)
20. Roy Chowdhury T, Herndon EM, Phelps TJ, Elias DA, Gu B, Liang L, Wulfschleger S, and Graham DE (2015) Stoichiometry and temperature sensitivity of methanogenesis and CO₂ production from saturated polygonal tundra in Barrow, Alaska. *Global Change Biology* 21(2), 722-737. [DOI: 10.1111/gcb.12762](https://doi.org/10.1111/gcb.12762)
21. Ma L, Konter J, Herndon E, Jin L, Steinhofel G, Sanchez D, and Brantley SL (2014) Quantifying an early signature of the industrial revolution from lead concentrations and isotopes in soils of Pennsylvania, USA. *Anthropocene* 7, 16-29. [doi:10.1016/j.ancene.2014.12.003](https://doi.org/10.1016/j.ancene.2014.12.003)
22. Herndon EM, Martínez CE, and Brantley SL (2014) Spectroscopic (XANES/XRF) characterization of contaminant manganese cycling in a temperate watershed. *Biogeochemistry* 121, 505-517. [DOI: 10.1007/s10533-014-0018-7](https://doi.org/10.1007/s10533-014-0018-7)
23. Herndon EM and Brantley SL (2011) Movement of manganese contamination through the Critical Zone. *Appl. Geochem* 26, S40-S43. [doi:10.1016/j.apgeochem.2011.03.024](https://doi.org/10.1016/j.apgeochem.2011.03.024)
24. Brantley SL, ..., Herndon E, ..., Yoo K (2011) Twelve testable hypotheses on the geobiology of weathering. *Geobiology* 9(2), 140-165. [10.1111/j.1472-4669.2010.00264.x](https://doi.org/10.1111/j.1472-4669.2010.00264.x)
25. Herndon EM, Jin L, and Brantley SL (2011) Soils reveal widespread manganese enrichment from industrial inputs. *Environ. Sci. Technol.* 45(1), 241-247. [DOI: 10.1021/es102001w](https://doi.org/10.1021/es102001w)

*indicates student author

RESEARCH GRANTS

2018 – 2023	CAREER: Manganese biogeochemistry and impacts on carbon storage in plant-soil systems PI: Elizabeth Herndon Funding Agency: National Science Foundation: EAR/Geobiology and Low-Temperature Geochemistry Amount: \$487,222
2018 – 2019	Designing a sensor network to investigate how redox regimes control iron and phosphorus biogeochemistry PI: Elizabeth Herndon Co-PI: Lauren Kinsman-Costello Funding Agency: KSU/Environmental Science and Design Research Initiative Amount: \$12,000 (internal)
2017 – 2018	Acquisition of an X-ray diffractometer for environmental mineralogy and geochemistry PI: David Singer (Kent State) Co-Is: Elizabeth Herndon, Jeremy Williams Funding Agency: National Science Foundation: EAR/Instrumentation & Facilities Amount: \$126,459
2017 – 2018	Impacts of manganese cycling on carbon storage in plant-soil systems PI: Elizabeth Herndon Funding Agency: Kent State University, University Research Council Amount: \$9,538 (internal)
2017 – 2018	Concentration-discharge behavior of dissolved and particulate metals in a mining impacted stream PI: Elizabeth Herndon Funding Agency: Ohio Water Resources Center (OWDA) Amount: \$63,096 (50% cost-shared)
2016 – 2017	Iron geochemistry and controls on phosphorus bioavailability in northern peatlands PI: Elizabeth Herndon Co-I: Lauren Kinsman-Costello (Kent State) Funding Agency: National Science Foundation: EAR/Geobiology and Low-Temperature Geochemistry Amount: \$100,567
2015 – 2018	Impact of vegetation on metal release from soils developed on coal mine waste PI: Elizabeth Herndon Funding Agency: Kent State University, Farris Family Innovation Award Amount: \$24,000 (internal)
2015	Evaluating the impact of vegetation on water and metal transport through coal mine waste PI: Elizabeth Herndon Funding Agency: Kent State University, University Research Council Amount: \$2,469 (internal)

- 2014 Investigating inorganic and organic-mediated cation transport from soils to streams
 PI: Elizabeth Herndon
 Funding Agency: National Science Foundation/Penn State University
 Amount: \$9,902
- 2011 – 2012 Soils and vegetation as a record of anthropogenic pollutants: Mn in the Shale Hills
 CZO
 PI: Susan Brantley (*co-written as part of my dissertation*)
 Funding Agency: National Science Foundation: EAR/Geobiology and Low-Temperature Geochemistry
 Amount: ~\$150,000

INVITED SEMINARS

- 2018 Stockholm University, Department of Geological Sciences
 2017 Cleveland State University, Department of Biological, Geological, and Environmental Sciences
 2016 Ohio State University, Department of Earth Sciences
 Kent State University, Kent State Environmental Society
 Case Western Reserve University, Dept. of Earth, Environmental and Planetary Sciences
 2015 Kent State University, Kent State Biological Sciences
 Smithsonian Institution, National Museum of Natural History; Mineral Sciences Division
 Towson University; Department of Physics, Astronomy and Geosciences
 2013 The Pennsylvania State University; Dept. of Geosciences, *Peter Deines Memorial Lecture*

CONFERENCE PRESENTATIONS

- 2019 Herndon, E.M. (2019) Manganese mobilization from forested soils developed on coalmine waste. *Soil Science Society of America meeting*, San Diego, CA. *Invited*.
- 2018 Herndon, E.M., Barczok, M., Thompson, A., Kinsman-Costello, L., and Smith C. (2018) Iron speciation across redox regimes in arctic tundra soil. *American Geophysical Union Fall Meeting* B31G-2575, Washington D.C.
- Herndon, E.M., Duroe, K., Kinsman-Costello, L., Mills, J., Thompson, A., Kane, E., Sebestyen, S., and Wullschleger, S. (2018) Iron accumulation promotes phosphate retention at redox interfaces in arctic and boreal soils. *28th V.M. Goldschmidt conference*, Boston, MA. *Invited*.
- Herndon E.M. (2018) Iron geochemistry and controls on phosphorus bioavailability in tundra and boreal soils. Iron Geochemistry Workshop, Lech, Austria. *Invited*.
- 2017 Herndon, E.M., Steinhofel, G., Dere, A.L.D., Sullivan, P.L. (2017) Perennial flow through convergent hillslopes explains chemodynamic solute behavior in a shale headwater catchment. *American Geophysical Union Fall Meeting* B54A-02, New Orleans, LA, USA
- Herndon, E.M., Duroe, K., Mills, J., Kinsman-Costello, L., Wullschleger, S., Sebestyen, S., Kane, E. (2017) Iron-phosphorus interactions across redox transitions in tundra and boreal wetlands. *27th V.M. Goldschmidt conference*, Paris, France.
- 2016 Herndon, E.M., AlBashaireh A., Duroe, K., Singer, D. (2016) Influence of iron redox cycling on organo-mineral associations in arctic tundra soils. *American Geophysical Union Fall Meeting* B41D-0458, San Francisco, CA, USA.
- Herndon E.M., Havig, J., Singer, D., McCormick, M., Kump, L. (2016, *invited*) Investigating Fe and Mn geochemistry in sediments of a redox-stratified lake. *Geological Society of America Fall Meeting* 93-7, Denver, CO, USA.

- Herndon E.M., Steinhoefel, G., Dere A.L.D. (2016) Investigating inorganic and organic solute transport in the Shale Hills catchment. *Susquehanna Shale Hills CZO All Hands Meeting*, State College, Pennsylvania, USA.
- Herndon E.M., Singer, D.M., and Zemanek, L. (2016) Metal(loid) leaching from soils developing on coal mine waste. *American Chemical Society Spring Meeting*, San Diego, CA, USA.
- 2015 Herndon E.M. (2015) Importance of vegetation for manganese cycling in forested watersheds. *Geological Society of America Fall Meeting* 172-4, Baltimore, MD, USA.
- Herndon E.M., Roy Chowdhury T., Yang Z., Graham D., Gu B., and Liang L. (2015) Iron biogeochemistry in arctic tundra soils. *25th V.M. Goldschmidt conference*, Prague, Czech Republic.
- 2014 Herndon E.M., Roy Chowdhury T., Mann B., Graham D., Wulschleger S.D., Gu B., Liang L. (2014) Geochemical drivers of anaerobic organic matter decomposition in the active layer of arctic tundra. *AGU Fall Meeting* GC11B-0554, San Francisco, CA, USA.
- Herndon E.M., Roy Chowdhury T., Mann B., Graham D., Wulschleger S.D., Gu B., Liang L. (2014) Geochemical drivers of anaerobic organic matter degradation in Arctic tundra. *24th V.M. Goldschmidt conference*, Sacramento, CA, USA.
- 2013 Herndon E.M., Roy Chowdhury T., Mann B., Graham D., Bargar J., Gu B., Liang L. (2013) Chemical and spectroscopic analyses of organic matter transformation in warming tundra soils. *AGU Fall 2013*.
- 2012 Herndon E.M., Kubicki J. and Brantley S.L. (2012) Micro- to macro-scale investigations of manganese in soil-plant systems. *22nd V.M. Goldschmidt conference*, Montreal, Canada.
- 2011 Herndon E.M., Eissenstat D., Martinez C.E., and Brantley S.L. (2011, oral) Biogeochemical characterization of contaminant Mn sequestration. *21st V.M. Goldschmidt conference*, Prague, Czech Republic.
- Herndon, E.M., and Brantley, S.L. (2011, poster) Movement of manganese contamination through the Critical Zone. *Geochemistry of the Earth's Surface (GES-9)*, Boulder, CO, USA. *IAGC Faure Award for best student presentation
- 2010 Brantley S.L., Herndon E.M., Jin L., Eissenstat D., Raymond P. (2010, *invited*) Vegetation: A natural capacitor for contaminant metals input into the Critical Zone. *EOS Trans. AGU* 91, Fall Meet. Suppl., Abstract B23K-01.
- 2010 Herndon E.M. and Brantley S.L. (2010, *poster*) Role of biotic cycling in determining the soil residence time of industrial pollutants. *20th V.M. Goldschmidt conference*, Knoxville, TN.
- 2009 Herndon E.M., Jin L., and Brantley S.L. (2009, *poster*) Impact of aeolian deposition on Mn cycling in soils. *19th V.M. Goldschmidt conference*, Davos, Switzerland.
- 2008 Herndon E.M., Jin L., and Brantley S.L. (2008, *poster*) Mn enrichment in surface soils: a signal for dust? *EOS Trans. AGU* 89(53), Fall Meet. Suppl., Abstract A43A-0278.

STUDENT-LED CONFERENCE PRESENTATIONS

- 2018 Barczok, M., Smith, C., Kinsman-Costello, L., and Herndon E. (2018) Influence of iron (oxyhydr)oxide crystallinity on phosphorus bioavailability in fluctuating redox conditions. *American Geophysical Union Fall Meeting* B31G-2577, Washington D.C.
- Laubscher, S., and Herndon, E. (2018) Geochemical constraints on manganese uptake by red maple trees. *American Geophysical Union Fall Meeting*, Washington D.C.
- Yazbek, L., Singer, D., Herndon, E. (2018) Particle, nanoparticle, and dissolved metal speciation and transport in an acid mine drainage impacted system in Northeastern Ohio. *American Geophysical Union Fall Meeting*, Washington D.C.
- Shaw, M.E., Klein, M., and Herndon, E. (2018) Concentration-discharge behavior of contaminants in a stream impacted by acid mine drainage. *28th V.M. Goldschmidt conference*, Boston, MA. *Graduate presenter*.

- Klein, M., Herndon, E. (2018) Developing a protocol for extracting mineral-associated organic matter in soils developed from coal mine waste. *Kent State Undergraduate Research Symposium*, Kent State University, Kent, OH. *Undergraduate presenter.*
- 2017 Shaw, M.E., Klein, M., and Herndon, E. (2017) Concentration-discharge behavior of contaminants in a stream impacted by acid mine drainage. *American Geophysical Union Fall Meeting*, New Orleans, LA, USA. *Graduate presenter.*
- Mills, J., Duroe, K., Kinsman-Costello, L., Herndon, E. (2017) Evaluating phosphorus solubility in tundra and boreal peatlands. *GSA Joint Northeastern/North Central Section Meeting*, Pittsburgh, PA, USA. *Undergraduate Poster Award – Honorable Mention*
- Frederick, H., Yarger, B., Herndon, E. (2017) Geochemical evaluation of weathering processes in coal mine spoil. *GSA Joint Northeastern/North Central Section Meeting*, Pittsburgh, PA, USA. *Best Undergraduate Poster Award.*
- Duroe, K., Mills, J., Kinsman-Costello, L., Herndon, E. (2017) Iron redox cycling and impacts on phosphorus solubility in tundra and boreal ecosystems. *GSA Joint Northeastern/North Central Section Meeting*, Pittsburgh, PA, USA. *Graduate presenter.*
- Yarger, B., Frederick, H., Zemanek, L., Singer, D., Herndon, E. (2017) Getting to the root of nonpoint source pollution in abandoned mine lands: biogeochemical cycling of manganese in forested coal mine spoil. *GSA Joint Northeastern/North Central Section Meeting*, Pittsburgh, PA, USA. *Graduate presenter.*
- Shaw, M. and Herndon, E. (2017) Investigation of trace metal transport in an AMD-impacted stream and treatment system in northeastern Ohio. *GSA Joint Northeastern/North Central Section Meeting*, Pittsburgh, PA, USA. *Graduate presenter.*
- 2016 Mills, J., Duroe, K., Kinsman-Costello, L., Herndon, E. (2016) Evaluating phosphorus bioavailability and sorption to iron oxyhydroxides in tundra and boreal peatlands. *Kent State Water and Land Symposium*, Kent State University, Kent OH. *Undergraduate presenter.*
- Frederick, H., Yarger, B., Herndon, E. (2016) Geochemical evaluation of weathering processes in coal mine spoil. *Kent State Water and Land Symposium*, Kent State University, Kent OH. *Undergraduate presenter.*
- Duroe, K., Mills, J., Wullschleger, S., Sebestyen, S., Kinsman-Costello, L., Herndon, E. (2016) Iron redox cycling and impacts on phosphorus solubility in tundra and boreal ecosystems. *Geological Society of America Fall Meeting 93-3*, Denver, CO, USA. *Graduate presenter.*
- Yarger, B., Frederick, H., Zemanek, L., Singer, D., Herndon, E. (2016) The impact of vegetation on manganese biogeochemistry in abandoned mine spoil. *Geological Society of America Fall Meeting 151-5*, Denver, CO, USA. *Graduate presenter.*
- 2015 AlBashaireh, A.B., Singer, D.M., and Herndon E.M. (2015) Geochemical analysis of iron and phosphorus in arctic tundra soils. *Geological Society of America Fall Meeting 210-85*, Baltimore, MD, USA. *Undergraduate presenter.*

BEAMTIME PROPOSALS AWARDED (PI)

Advanced Photon Source, Argonne National Laboratory

Beamline 12-BM-B, General User Proposal #54760 (03/2018), #60689 (10/2018)

Beamline 13-ID-E, General User Proposals #45047 (12/2015), #41616 (02/2015); #26055 (10/2011)

Beamline 13-BM-D, GUP 22644 (10/2010)

Beamline 20-BM-XOR, GUP 11893 (08/2009)

PUBLISHED DATASETS

- Zheng, J., Roy Chowdhury, T., Herndon, E., Yang, Z., Gu, B., Wulschleger, S., and Graham, D. (2018) Synthesis of soil geochemical characteristics and organic carbon degradation in Arctic polygon tundra, Barrow, Alaska. DOI: 10.5440/1440029
- Herndon, E., Yang, Z., and Gu, B. (2017) Soil organic carbon degradation during incubation, Barrow, Alaska. DOI: 10.5440/1168922
- Graham, D., Gu, B., Herndon, E., Wulschleger, S., Yang, Z., and Liang, L. (2016) Surface and active layer pore water chemistry from ice wedge polygons, Barrow, Alaska (2013-2014). DOI: 10.5440/1226245
- Roy Chowdhury T, Herndon E, Graham D, Gu B, Liang L (2013) Soil physicochemical characteristics from low-centered polygon in Barrow, Alaska. DOI: 10.5440/1109232.
- Susquehanna Shale Hills Critical Zone Observatory Stream Water Chemistry (2008-2010). EarthChem. [DOI: 10.1594/IEDA/100241; DOI: 10.1594/IEDA/100242; DOI: 10.1594/IEDA/100243]
- Susquehanna Shale Hills Critical Zone Observatory Porewater Chemistry (2008-2010). EarthChem. [DOI: 10.1594/IEDA/100235; DOI: 10.1594/IEDA/100236; DOI: 10.1594/IEDA/100237]

TEACHING EXPERIENCE

Graduate/Advanced Undergraduate courses (Kent State University)

Environmental Soil Science	Fall 2015, 2017
Hydrogeochemistry	Fall 2014, 2016, 2018

Undergraduate and Core Courses (Kent State University)

Environmental Earth Science	Fall 2016
How the Earth Works	Spring 2016, 2017
How the Earth Works – DL	Fall 2017
Introductory Geology Seminar	Spring and Fall 2015

Graduate/Advanced Undergraduate courses (Penn State University)

Techniques in Environmental Geochemistry	Fall 2012
Earth and Life: Origin and Evolution (TA)	Spring 2011
Techniques in Environmental Geochemistry (TA)	Fall 2008

GRADUATE STUDENTS ADVISED

Meaghan Shaw	M.S., Geology, Kent State University; 2016 – 2018 <i>Thesis: Concentration-discharge behavior of contaminants in a stream impacted by acid mine drainage</i>
Sydney Laubscher	M.S. Geology, Kent State University, 2018 – present
Max Barczok	Ph.D. Geology, Kent State University, 2017 – present
Lindsey Yazbek	M.S. Geology, Kent State University, 2017 – present
Kiersten Duroe	M.S. Geology, Kent State University, 2015 – present
Brianne Yarger	M.S. Geology, Kent State University, 2015 – present

UNDERGRADUATE RESEARCH PROJECTS ADVISED

Mallory Klein	<i>Developing a protocol for extracting mineral-associated organic matter in soils developed from coal mine waste</i> Kent State Conservation Biology major; 2017 – 2018
Hannah Frederick	<i>Geochemical evaluation of weathering processes and metal uptake by vegetation in coal mine spoil</i> Kent State Honors Thesis project; 2015 – 2017

Jonathan Mills	<i>Evaluating phosphorus solubility in tundra and boreal peatlands</i> Kent State Geology major; 2016
Amineh AlBashaireh	<i>Geochemistry of iron and phosphorus in arctic tundra soils</i> College of Wooster undergraduate; Ecology REU Program; Summer 2015
Jennifer Kissel	<i>Examining the role of trees in manganese cycling through soils</i> Penn State University Geology thesis project; 2011 - 2012
Erika Frey	<i>Rate of manganese release from soil components interacting with rain water and litter leachate</i> Penn State University Geology thesis project; 2011 - 2012

UNDERGRADUATE LABORATORY ASSISTANTS

Nicolle Di Domenico (2018 – present); Shannon Joseph (2018); Bryan Agee (2016 – 2017), Roman Waked (2016); Allison Reynolds (2015); Paul Panehal (2014 – 2015); Mitchell Ladig (2014)

GRADUATE/UNDERGRADUATE COMMITTEE MEMBERSHIP

Mary Plauche	M.S. Geology, Kent State University, <i>in progress</i>
Taylor Judice	M.S. Geology, Kent State University, <i>in progress</i>
Sarah Morrison	M.S. Geology, Kent State University, <i>in progress</i>
Hayley Buzulencia	M.S. Geology, Kent State University, <i>in progress</i>
Laura Zemanek	M.S. Geology, Kent State University, <i>in progress</i>
Raihan Chowdhury	Ph.D. Applied Geology, Kent State University, <i>in progress</i>
Joseph Taura	Ph.D. Biological Sciences, Kent State University, <i>in progress</i>
Alescia Roberto	Ph.D. Biological Sciences, Kent State University, <i>in progress</i>
Daniel Wood	M.S. Geology, Kent State University, 2018
Dulci Avouris	Ph.D. Applied Geology, Kent State University, 2018
Michael Burkey	B.S., Geology, Honors thesis, Kent State University, 2018
Taylor Michael	B.S., Biological Sciences, Honors thesis, Kent State University, 2018
Laura Sugano	M.S. Geology, Kent State University, 2018
Eric Traub	M.S. Geology, Kent State University, 2016

UNIVERSITY SERVICE

Kent State University

University Research Council, Reviewer for Summer Research Leave/Farris Award
Hydrogeology faculty search committee, 2016 – 2017
Water and Land Symposium organizing committee, 2016 – present
Faculty Advisory Committee, 2016 – present
Graduate studies committee, Kent State University, 2014 – 2017
Coordinator, Palmer Lecture Series, Kent State University, 2014-2015

PROFESSIONAL SERVICE

Manuscript Reviewer

Nature Climate Change; Geochimica et Cosmochimica Acta; Journal of Geophysical Research – Biogeosciences; Chemical Geology; Environmental Science and Technology; Biogeochemistry; Biogeosciences; Geobiology; Water Resources Research; PloS One; Environmental and Engineering Geoscience; Geomicrobiology; Geochemistry, Geophysics, and Geosystems; CLEAN – Soil, Air, Water

Proposal Reviewer

NSF, ad-hoc reviewer, Geobiology and Low-temperature Geochemistry, Arctic Observing Network Program; 2014 – present
Canadian Light Source Beamline Proposals, 2013 – present
American Geophysical Unions Publications, 2016
University of Nebraska – Omaha Carter Award for Excellence, 2016
Kent State Farris Family Award, 2016
NSF Geobiology and Low-temperature Geochemistry Panel, 2014-2015
Stanford Synchrotron Light Source, 2015 – present
Water Resources Research Institute (WRRI) of North Carolina, 2015

Session Convener

“Redox transitions and impacts on biogeochemical cycling of carbon, nutrients, and contaminants,”
Goldschmidt Conference, 2018
“Environmental Consequences of Resource Development,” American Chemical Society Spring Meeting,
2016
“Tracing biogeochemical and hydrological processes in urban landscapes,” Geological Society of
America Fall Meeting, 2015
“Investigating biogeochemical cycling using micro-scale techniques,” 22nd V.M. Goldschmidt
Conference; 2012

EDUCATIONAL OUTREACH

Interviewed on NPR: <http://www.wksu.org/post/cities-step-challenges-climate-change>
Panelist, “Advancing Understanding of Climate Change: The Role of Science and Global
Communication,” Global Issues Forum hosted by Kent State School of Communication, March 2018,
approximately 120 attendees.
Presentation to K-12 Earth Systems Science teachers (~30) through Kent State School of Teaching,
Learning, and Curriculum Studies, Fall 2016 and 2017
Interviewee for “The Adventures of Meg A. Mole – Future Chemist” article in American Chemical
Society’s “Celebrating Chemistry” brochure for 4-6th graders, 2016
Donated “Soil as a filter” hands-on activity to Educator Resource Center at Cleveland Museum of Natural
History (Fall 2016); activity was subsequently utilized by K-12 educators in the Cleveland metro area
and by museum employees for special events (e.g., 2017 World Water Day)
Demonstrated “Soil as a filter” hands-on activity to K-12 educators at the *Wade into Wetlands* workshop
at the Cleveland Museum of Natural History, Summer 2016
Judge, Kent State Scientista Women in STEM Symposium, Spring 2016

WORKSHOPS AND OTHER ACTIVITIES

Concentration-discharge working group; Pocatello ID; March 2018
Critical Zone Science: Current Advances and Future Opportunities; Arlington, VA; June 2017
Early Career Geoscience Faculty, *On the Cutting Edge*; Williamsburg VA; July 2015
SAVI Early Career Workshop on Critical Zone Resiliency, University of New Hampshire; June 2015
Urban Geochemistry Working Group Meeting, International Association of Geochemistry, Ohio State
University; August 2014
Advanced Tools in Environmental Biogeochemistry – Opportunities and Limitations, European
Association of Geochemistry course; Tübingen, Germany; August 2011
International Critical Zone Student Symposium, GES-9 course; Boulder, CO, USA; June 2011
Thermodynamics and Kinetics of Fluid-Rock Interaction, Mineralogical Society of America course;
Davos, Switzerland; August 2009

Frontiers in Exploration of the Critical Zone II: Geobiology of Weathering and Erosion, NSF workshop;
Smithsonian Institute, Washington D.C.; October 2009
Worldwide University Network/Critical Zone collaboration, University of Sheffield, UK; February 2009
Techniques in Molecular Biology Workshop, Penn State University, June 2008
Field Geology in the Rocky Mountains, Indiana University; 2007
Pathfinder Program in Environment Sustainability, Washington University; 2003-2007

PROFESSIONAL AFFILIATIONS

American Geophysical Union, The Geochemical Society, European Association of Geochemistry,
Geological Society of America, American Chemical Society