

Sarah K. Fortner, Ph.D.

EDUCATION

University of Wisconsin, Madison, Wisconsin

Bachelor of Science, Geology and Geophysics 1999

The Ohio State University, Columbus, Ohio

Master of Science, Earth Sciences, 2004

The Ohio State University, Columbus, Ohio

Doctor of Philosophy, Earth Sciences, 2009

EXPERIENCE

- 2019- **Director of the Environmental Science Program, Wittenberg University**
- 2018 (SP) **Director of Wittenberg in Wittenberg Study Abroad**
- 2017- **Associate Professor of Geology and Environmental Science, Wittenberg University,**
- 2017-2018 **Geological Society of America Scholar in Residence (Sabbatical) at the American Geosciences Institute**
- 2016-Present **Faculty and Academic Research and Curriculum Council, Juneau Icefield Research Program**
- 2011-2017 **Assistant Professor of Geology and Environmental Science, Wittenberg University**
- 2009-2011 **Postdoctoral Researcher, Climate Water & Carbon Program, Ohio State University**
- 2009 **Earth Science Instructor, The Ohio State University**
- 2006 **Girls on Ice Instructor (<http://girlsonice.org/instructors/>)**
- 2002-2004 **GIS and Fisheries Research Specialist, Ohio Division of Natural Resources**

PROFESSIONAL ACTIVITIES

AWARDS & HONORS

- Excellence in Community Service, Wittenberg University Honors (2020)
- American Geosciences Union Sharing Science Fellow (2020, declined)
- Invited Pardee Symposium Speaker, Geological Society of America (<5% geoscience faculty) (2020)
- Top Contributor, Teach the Earth (www.serc.edu) (2019)
- Invited Union Speaker, American Geophysical Union (<5% geoscience faculty) (2018)
- Community Science Panelist, American Association for the Advancement of Science (2018)
- Led submission of our national Civic Program Recognition, Association of American Colleges and Universities, Wittenberg Geology and Environmental Science (2017), one of four STEM programs
- Steering Committee National Academies of Sciences and Engineering and Medicine, Service-learning in the Undergraduate Geosciences (2017)
- Council on Undergraduate Research Volunteer of the Year for leading innovation and collaboration (2016)
- Lou Laux Environmental Sustainability Award, Wittenberg University Honors (2015)

- Antarctic Service Medal (2002)
- NSF Graduate K-12 Fellowship pairing STEM graduate students with urban K-12 teachers (2006)
- USGS Ecological Survey Leadership Excellence (2000)
- Young Scholar Recognition for Excellence, Expedition Funding, Juneau Icefield Research Program

MEMBERSHIPS

American Geophysical Union, 2012-present

- Invited Presenter in Science to Action (2020)
- Invited Presenter in 2 AGU Town Halls (2017)
- NAGT Environmental Justice Workshop (2017)

American Association for the Advancement of Science, 2017-present

Council for Undergraduate Research, 2011-present

Chair of the CUR Innovation & Collaboration Committee (2014-2018)

- Surveyed the innovative & collaborative practices of 200+ CUR members & led backward design workshops to expand practitioners
- Collected & disseminated vignettes of innovation & collaboration.

Geoscience Division Councilor (2012-present, in second elected term now)

- Drafted a memorandum of understanding with the American Geophysical Union to build and sustain the global science talent pool.
<https://eos.org/agu-news/agu-signs-agreement-with-council-on-undergraduate-research>
- Served as a Poster on the Hill Reviewer (2014, 2015, 2016)
- Created and vetted CUR Geoscience Mentor Award candidates (2012-present)
- Ran CUR recruitment & resource booth at GSA (2012-)
- Expanded CURs presence at GSA conferences to include poster sessions at all regional GSAs (2013-on)
- Established a collaborative relationship with the American Geoscience Institute that will produce GeoLEAD, a one-stop geology resource center for undergraduates to support their success & career navigation in partnership with the American Geophysical Union/
- Won best CUR Division (2012) for our exceptional service & partnerships (AGU, AGI, GSA)

Nominations Committee (2014)

- Recruited new geoscience faculty to serve as councilors & oversaw nominations
- Stream-lined nomination & application process

Geological Society of America (GSA), 2002- present

- Pardee Panelist (2020)
- Co-chaired 3 sessions of GSA (Education & Geochemistry) (2009, 2015, 2017)
- Geo-CVD participant in advocacy group with GSA president
- Hydrology & Education Section Member

Geochemical Society, 2009-2018

International Association for GeoChemistry, 2009-2016

- Led session on trace elements in the environment (2011) that resulted in a special issue of *Applied Geochemistry* that I co-edited.

National Association for the Advancement of Colored People, Springfield, Ohio 2017-

- Attend health equity & food meetings, shared soil lead & other lead health concerns

National Association of Geoscience Teachers, 2014-

Traveling Workshop Leadership (Faculty Development) <https://nagt.org/nagt/profdev/twp/index.html> (2016-

- Oversaw course and program development workshop planning in the geosciences, primarily creating sustainability and environmental justice content.
- Led 14 course and program development workshops and webinars including 5 campus visits at HBCU, liberal arts, & R1 campuses
- Identified outside expertise in DEI to assist with sessions at workshop for facilitators & early career workshop

Teach The Earth (Chair 2019) <https://serc.carleton.edu/teachearth/index.html>

- Ongoing input into website development and use, especially the engagement of newly funded projects, sustaining built educator communities of practice, and supporting increased participation and access/use of strong materials.
- Multiple webinars, talks, and material review camps.

Union of Concerned Scientists, 2017- present

- Active in the Science-to-Action division including invited speaker in AGU Session, collaborator at AAAS Human Rights Session, and guest blogger. Ongoing planning conversations about scaling undergraduate education forms of advocacy.

NATIONAL ADVISORY ROLES

- **Advisory Committee AAC&U Civic Prompts in the Major: Designs in Social Responsibility and the Public Good** (2019-) (<https://www.aacu.org/events/2020-institute-civic-prompts-major-west/leaders>)
 - **NAGT [Traveling Workshop Program](#)** Sustainability and Civic Engagement Content (2016-)
 - **School of Earth Sciences Alumni Advisory Board** (2019-)
 - **National Academies of Sciences and Engineering Steering Committee and White Paper**
- Author** for the [Workshop on Service-Learning in the Undergraduate Geosciences](#) (2016)
- **Associate Editor of Applied Geochemistry** (2012-2016)
 - **Polar Curriculum Advisor for Polar Ice** ((2015-2016)
 - **Portal to the Public (NSF)**

PROJECT DEVELOPMENT

- **Business And Science: Integrated Curriculum for Sustainability (BASICS)**, <https://serc.carleton.edu/basics/index.html> (2019-2020*), *transferred leadership to John Ritter (2021-2024) Project engages 8 faculty at Bentley, Wittenberg, and Northern Illinois in building a culture of transdisciplinary collaboration through an open source curriculum needed to address sustainable development goals. The effort will improve student learning and inform sustainability educators

nationally. (Collaborators: David W. Szymanski, Eric A. Oches, Otgo Erhemjamts, Rachel Wilson, Christine H. Mooney, Melissa Lenczewski, Ellen Iverson)

- **Metal Redlining Network: EarthConnections** (2019-)
https://serc.carleton.edu/earthconnections/networks/metal_redlining/index.html
Sarah Fortner, Jennifer Latimer, ISU, Melisa Diaz and Berry Lyons, OSU, Carmen Nezat, Central Washington University, Sue Ebanks, Savannah State University, Kim Landsbergen, Antioch College, Cynthia Fadem, Earlham, We collaborate around a shared research question is: Has redlining resulted in an unjust metal burden? Cities include Indianapolis, Terre Haute, Richmond, Dayton, Springfield, Columbus, Spokane, and Savannah and exploring the potential to co-achieve biogeochemistry research and community outcomes through partnering and advocacy. Springfield, Ohio group is collaborating to advance environmental and racial healing for children and racial healing in our community while making our curriculum more inclusive through the **Redlining Education and Change Coalition**. Wittenberg campus partners include: Lori Askeland (English), Rob Baker (Political Science), Marie Bashaw (Nursing), Amber Burgett (Biology), Sheryl Cunningham (Communication), Elena Dahl (Art), Rick Incorvatti (English) Nancy McHugh (Philosophy), Joshua Moore (Assistant Dean of Students for Diversity & Inclusion), and Brooke Wagner (Sociology), Wittenberg University. Local partners I have engaged my students in shared research and advocacy for children, health, and racial healing include: John Wheeler, Springfield Promise Neighborhood; Brandy Phipps, Clark County Local Food Council; Ashley Shearer, Clark County Combined Health District; Leslie McDermott, City of Springfield, Ohio Water Utilities. Collective impact: *These interrelated projects engaged ~1000 undergraduates, 120 faculty and staff (in curricular planning through the network or webinars), 20 community partners, and 500 community members in 2019-2020. We wrote 3 grants together and 3 manuscripts. We are engaged with the CDC, Union of Concerned Scientists, and NSF EarthConnections Communities.*
- **McMurdo Long Term Ecological Research Program**, led by Berry Lyons, OSU (former) & Michael Gooseff, CSU (present), and many collaborators NSF Funded (2001-2002, 2004-2008, 2016-)
<http://mcm.lternet.edu/> Investigating how increasing ecosystem connectivity drives ecosystem responses. I specifically explore glacier originating questions in this water scarce polar desert environment.
- **Terrestrial Records of Holocene Climate Change: Fire, climate and humans on the Juneau Icefield**, led by Natalie Kehrwald, USGS Funded (2016-)
https://www.usgs.gov/centers/geoscience/terrestrial-records-holocene-climate-change-fire-climate-and-humans?qt-science_center_objects=0#qt-science_center_objects
Exploring the fire climate signal in Alaskan glaciers and the change underway.
- **Buck Creek Educational Corridor**, led by John Ritter, Wittenberg University and in collaboration with Amber Burgett, Richard Phillips, & Sarah Fortner (2011-2020). Monitoring and informing water and land use decision making on campus and in the community especially the ecological services of Buck Creek. Mentoring student research and action projects in service to community outcomes. *Annually we engage ~150 undergraduates, 20 community partners, and 200 community members in 2019-2020. Our students complete more than 2000 hours of research in and with community partners. We regularly generate community land instrumentation and internship opportunities. Donated consulting hours exceed \$20,000 annually.*
- **Project Lead for Sustainability from Curriculum to Community** (2014-2016), NSF InTeGrate Project Implementation Program. Since 2014, sustainability course offerings have doubled and

participating programs have increased by more than 75%. All students at Wittenberg participate in sustainability curriculum because my team has developed a personal action project as part of our Freshmen Experience. We were one of [16 NSF InTeGrate Sustainability Implementation Programs](#) (along with top-funded geoscience departments in the country: Pennsylvania State University & Stanford). My curricular resources have been used by more than 3000 students across institutional settings.

- **Civic Learning in the Major by Design** (2017) Wittenberg's Geology and Environmental Science Programs are recognized by the American Association of Colleges & Universities through the Endeavour Foundation as a [top model for civic engagement](#). (Collaborators: John Ritter, Amber Burgett, Richard Phillips)
- **Agroecosystem Research Cluster** (led by Lyons, B., and Lal, R. and many collaborators in Carbon, Water & Climate Program at OSU), 2012-2017, Connecting soil, water, and carbon flux associated with land use in managed landscapes.

NATIONAL FACULTY DEVELOPMENT LEADERSHIP

1. 2020, AAC&U Institute on Civic Prompts in the Major, East Coast, George Washington University (Workshop Facilitator) <https://www.aacu.org/civic-prompts>
2. 2019, [Getting Started in Environmental Justice: Bridging Disciplines & Community](#) Webinar with the National Association of Geoscience Teachers (Co-leader with Nancy McHugh)
3. Multiple campus site visits and curriculum development for course, program, and transdisciplinary strategic planning through the [National Association of Geoscience Teachers Traveling Workshop](#) (2016-)
4. Sustainability And Social Justice Curriculum Planning at Clark Atlanta University, Atlanta, GA (Leaders: Sarah Fortner, Wittenberg University, Richard Gragg, FAMU, Ellen Metzger San Jose State), offered through the *National Association of Geoscience Teachers, Traveling Workshop Program*, 2019.
5. [Engaging Environmental Justice In The Geosciences](#), at the *American Geophysical Union*, Washington, D.C. (Leaders: Sarah Fortner, *Wittenberg University*, Cathy Manduca, *Science Education Research Center*, Richard Gragg, *FAMU*, Rob Rohrbaugh, *El Paso Community College*), 2018.
6. [Geoscience for Community Priorities](#) (Moderator: Ben Mandler, *American Geosciences Institute*, Speaker: Raj Pandya, *Thriving Earth Exchange*, Natasha Udu-gma, *Thriving Earth eXchange*, Sarah Fortner, *Wittenberg University*, Cassandra Rose, *American Geosciences Institute*), 2018.
7. [Addressing Critical Issues in Your Program: Examples for Introductory Courses](#) (Moderator: Mitchell Awalt, Speakers: Sarah Fortner, *Wittenberg University*, Laura Guertin, *Pennsylvania State University-Brandywine*, Kenneth Brown, *West Virginia University*.), *American Geosciences Institute, Council on Undergraduate Research, Geological Society of America, National Association of Geoscience Teachers*, 2018.
8. [Teaching Sustainability And Environmental Justice In The Humanities](#), *InTeGrate* (Moderator Rory McFadden, Speakers: Kate Darby, *Western Washington University*, Ruth Hoff, *Wittenberg University*, Sarah Fortner, *Wittenberg University*, 2016.

9. Innovation & Collaboration Without Reinventing The Wheel (Workshop Co-leaders: Cynthia Merriwether-DeVries, Sarah Fortner. Gretchen Edwalds-Gilbert, Jon, Grahe), *Council on Undergraduate Research Biennial Workshop*, 2016.
10. Service Learning in the Undergraduate Geosciences, American Geophysical Union (Workshop Leader) <https://agu.confex.com/agu/fm16/preliminaryview.cgi/Session13357>, 2016.
11. [Service Learning in Your Course or Program](#), *Earth Educators Rendezvous*, Madison, WI (Workshop Leader), 2015.
12. [Building Societal Relevance into Your Course or Program](#), *Earth Educators Rendezvous*, Boulder, Co. (Workshop Leader), 2015.

EDITORIAL/REVIEWER ROLES

Associate Editor of Applied Geochemistry (<http://www.journals.elsevier.com/applied-geochemistry/>) (2011-2017)

Co-editor of ‘Sources, Transport and Fate of Trace and Toxic Elements in the Environment’ – Special International Applied Geochemistry Society 2009 Issue of Applied Geochemistry (with LeeAnn Munk)

Journal Reviewer for: Applied Geochemistry, Aquatic Geochemistry, Environmental Science & Technology, Hydrological Processes, Polar Research, Antarctic Science, Journal of Glaciology, Journal of Geoscience Education, Journal of Environmental Quality, Journal of Geoscience Education, Chemical Geology, Atmospheric Environments, G³

NSF Reviewer of 16 proposals from multiple directorates in 2014-2020 including: Office of Polar Programs, Hydrological Sciences, Geochemistry, Earth Cube, Department of Undergraduate Education-Geology. Panelist for GEOPATHS in Arlington, VA in 2015.

PEER REVIEWED PUBLICATIONS

In Prep/Review: *mentored undergraduate

1. Diaz, M., Fortner, S., Lyons, W.B. High resolution concentration-discharge relationships in managed watersheds: a 30+ year analysis, (submitted), Applied Geochemistry.
2. Fortner, S.K., Suffoletta, M.*, Vogt, L*., Brown, A., Diaz, M. (2020). An undergraduate soil lead research and partnering model to address systemic racism and the legacy of redlining. Environmental Justice, Special Issue: 6th University of Maryland Environmental Justice and Health Disparities Symposium (submitted).
3. Fortner, S.K., Scherer, H., Latimer, J., Diaz, M., Ebanks, S., Fadem, C., Landsbergen, K., Nezat, C., Brown, K., (invited, in prep). The Metal Redlining Network: A systems approach to research, education, and community engagement to improve faculty, student, & community outcomes, The Handbook of Broader Impacts, eds. Van Egeren, L. and Renoe, S.

Book Chapters, & Edited Volumes:

1. Fortner, S. K., Scherer, H. H., & Ritter, J. B. (2020). Community Engagement in the Earth Sciences: A Situated Learning Model at Wittenberg University. In *Preparing Students for Community-Engaged Scholarship in Higher Education* (pp. 361-378). IGI Global.
2. Fortner, S., and Munk, L..Sources, Transport and Fate of Trace and Toxic Elements in the Environment – International Applied Geochemistry Symposium Special Issue 2009.
<https://doi.org/10.1016/j.apgeochem.2011.06.001>

Journal Articles: *mentored undergraduate

1. Corsello*, R. (2020). Community Engagement Concerning Soil Lead Levels. *The International Undergraduate Journal For Service-Learning, Leadership, and Social Change*, 9(2), 30-38.
<https://opus.govst.edu/cgi/viewcontent.cgi?article=1117&context=iujsl>
2. Kehrwald, N.M., Jasmann, J., Dunham, M., Ferris, D., Osterberg, E., Kennedy, J., Havens, J., Barber, L., Fortner, S., Boreal blazes: Biomass burning and vegetation types archived in the Juneau Icefield, *Environmental Research Letters* (2020).
<https://iopscience.iop.org/article/10.1088/1748-9326/ab8fd2/meta>
3. Fortner, S., Manduca, C., Guertin, L., Szymanski, D., Villalobos, J. Teaching for earth resilience: A strategy for increased diversity and equity, 2019, GSA Today
<https://www.geosociety.org/gsatoday/groundwork/G388GW/article.htm>
4. Fortner, S.K. & Lyons, W.B., 2018. Contributions of glacier surface waters to global ocean chemistry: McMurdo Dry Valleys, Antarctica, Special Issue: Cold region melt water controls, *Frontiers in Geochemistry* (eds. Martyn Tranter, Mark Skidmore, Andy Hodson)
<https://www.frontiersin.org/articles/10.3389/feart.2018.00031/full>
5. Eddy, A.M., Mark, B.G., Baraer, M., McKenzie, J., Fernandez, A., Welch, S., & Fortner, S. K., Exploring patterns and controls on the hydrochemistry of proglacial streams in the upper Santa River, Peru (2018) *Glaciology and Mountain Ecosystems*, INAIGEM
6. Fortner, S.K., Scherer, H., Murphy, M., 2016. Engaging undergraduates in soil sustainability decision making through an InTeGrate Module, *Journal of Geoscience Education*.
7. Baraer, M., McKenzie J., Mark, B.G., Gordon, R., Bury J., Condom T., Gomez J., Knox, S., & Fortner, S.K. 2015. Contribution of groundwater to the outflow from ungauged glacierized catchments: a multi-site study in the tropical Cordillera Blanca, Peru." *Hydrological Processes* 29, no. 11 (2015): 2561-2581.
8. Fortner, S.K., Scherer, H., Murphy, M.A 2014. A growing concern: sustaining soil resources through local decision making,
http://serc.carleton.edu/integrate/teaching_materials/sustain_agriculture/index.html
9. Fortner, S.K., Lyons, W.B., Munk, L.A. 2013. Diel stream geochemistry, Taylor Valley, Antarctica, *Hydrological Processes* 27(3):394-404.. <http://onlinelibrary.wiley.com/doi/10.1002/hyp.9255/abstract>
10. Fortner, S.K., Lyons, W.B., Carey, A.E., Shipitalo, M.J., Welch, S.A., Welch, K.A., 2012. Silicate weathering & CO₂ consumption within agricultural landscapes, the Ohio-Tennessee River Basin, USA. *Biogeosciences*: 9, 941–955. <http://www.biogeosciences.net/9/941/2012/doi:10.5194/bg-9-941-2012>
11. Fortner, S.K., Mark, B.G., McKenzie, J.M., Bury, J., Trierweiler, A., Baraer, M., Burns, P.J., & Munk, L. 2011. Elevated stream trace & minor element concentrations in the foreland of receding tropical glaciers. *Applied Geochemistry* 26(11): 1792-1801. doi:10.1016/j.apgeochem.2011.06.003

12. Fortner, S.K., Lyons, W.B., & Olesik, J., Eolian deposition of trace elements onto Taylor Valley Antarctic glaciers. 2011. *Applied Geochemistry* 26(11): 1897-1904.
doi:10.1016/j.apgeochem.2011.06.013
13. Fortner, S.K., Lyons, W.B., Fountain, A.G., Welch, K.A., Kehrwald, N. M, 2009. Trace element & major ion concentrations & dynamics in glacier snow & melt: Eliot Glacier, Oregon Cascades. *Hydrological Processes* 23: 2987-2996.
14. Fortner, S.K., Fourth & fifth grade students learn about renewable & nonrenewable energy through inquiry, 2009. *Journal of Geoscience Education* 57(2): 121-127.
15. McGill, S.F., Wells, S.G., Anderson, H. Kuzma, Fortner, S.K., & McGill, J.D., 2009. Slip rate of the Western Garlock fault, at Clark Wash, near Lone Tree Canyon, Mojave Desert, California. *Geological Society of America Bulletin* 3-4: 536-554.
16. Fortner, S.K., Tranter, M., Fountain, A., Welch, K.A., & Lyons, W.B., 2005. The geochemistry of supraglacial streams of Canada Glacier, Taylor Valley (Antarctica) & their evolution into proglacial waters. *Aquatic Geochemistry* 11(4): 391-412.

NATIONAL ACADEMIES PRESS

1. Savanick, S. & Fortner, S. 2016. Geoscience Service Learning Literature Themes
http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_171831.pdf
2. NAP, 2016, Proceedings of a Workshop: Service-learning in Undergraduate Geosciences
<https://www.nap.edu/read/24621/chapter/1>

GOVERNMENT & MUNICIPAL RESOURCES

1. Columbus Climate Action Plan, <https://byrd.osu.edu/columbus> (contributor via Byrd Polar and Climate Research)
2. ODNR, River and Stream Fishing Maps,
<http://wildlife.ohiodnr.gov/public-hunting-fishing-wildlife-viewing-areas/lake-and-reservoir-fishing-maps/river-and-stream-fishing-maps> (created 6 maps noting steelhead fisheries)
3. ODNR, Lake and Reservoir Fishing Maps,
<http://wildlife.ohiodnr.gov/public-hunting-fishing-wildlife-viewing-areas/lake-and-reservoir-fishing-maps> (surveyed 10 reservoirs, digitized 15-20 reservoirs for final publication)
4. USGS, OFR 01-459, Physical, Chemical, and Biological Methods and Data from the Urban Land-Use-Gradient Study, Des Plaines and Fox River Basins, Illinois, 1999-2001 (contributed ecological survey data)
5. USGS, SIR 2005, 5218, Physical, Chemical, and Biological Responses to Urbanization in the Fox and Des Plaines River Basins of Northeastern Illinois and Southeastern Wisconsin (contributed ecological survey data)

ONLINE VIDEOS OR OPEN ACCESS CURRICULUM DEVELOPED FOR EDUCATORS

I am a top author for the Teach The Earth (aka SERC) website creating curriculum, faculty development, program development, and curriculum to community implementation materials.

(https://serc.carleton.edu/teachearth/top_contributors.html)

1. Fortner, S., Service Learning Module *with 2 activities*: [Personal temperature Monitoring to Build Context for Climate Justice](#). 2019.

2. Fortner, S. *InTeGrate Module with multiple activities: [Community and Political Engagement in the Geosciences](#)*, InTeGrate, Science Education Resource Center. 2018
3. PBS Think TV, [The Dry Valleys, Scientist Vignette](#), 2009
4. PBS Think TV, *Glacial Melt & Water Quality in the Peruvian Andes*, 2009
5. Fortner, S. [Natural Hazards and Climate Change Risks](#), Science Education Resource Center, 2016.
6. Fortner, S. [Undergraduate Global Climate Change Course Collaboration with a Museum](#), 2016.
7. Fortner, S., Murphy, M. Scherer, H. (McConnell, D. ed) *InTeGrate Module with multiple activities [A Growing Concern: Sustaining Soil Resources through Local Decision Making](#)*

PROFESSIONAL MEETINGS/ABSTRACTS *=*student author*, *italic*= invited

2020

1. Fortner, S., Diaz, M., Ebanks, S., Fadem, C., Latimer, J., Landsbergen, K., Nezat, C., Brown, K., The Metal Redlining Network: Science, Education, Advocacy. Science to Action: Transformative partnerships and knowledge co-production to advance decision-relevant science. American Geophysical Union Meeting Online.
2. *Fortner, S., 2020. Building Communities of Practice for Climate Justice: Literacy and Capacity. Pardee Session P5. Challenges and Solutions for a Changing Climate: New Directions for GSA. GSA 2020.*
3. McHugh, N., Fortner, S., 2020. A Community Empowerment Model for Health Justice Education. Changing Cultures, Changing Sciences, Feminist Epistemologies, Methodologies, Metaphysics, and Science Studies, Waterloo, Canada.
4. Rhodes, D., Fortner, S. The role of the NAGT Traveling Workshop Program in supporting the success of all students. GSA 2020.
5. Szymanski, D., Dove, S., Erhemjamts, O., Fortner, S., Iverson, E., Lenczewski, M., Mooney, Oches, R., and C. Wilson R., 2020. E. Developing transdisciplinary, SDG-focused sustainability curriculum with business and STEM faculty, Connecting the United Nations' Sustainable Development Goals (SDGs) and Global Learning, Association of American Colleges & Universities Conference (submitted)
6. Szymanski, D., Dove, S., Oches, E., Erhemjamts, O., Wilson, R., Fortner, S., Lenczewski, M., Mooney, C., and Iverson, E., 2020, "Build a BASIC Module Around the SDGs: Business- and Science-Integrated Curriculum for Sustainability," Association of American Colleges and Universities (AAC&U) 2020 Global Learning Conference on Connecting the United Nations' Sustainable Development Goals (SDGs) and Global Learning, October 8-10 (virtual).
7. Wenner, J., Fortner, S., Fox, S., Frederick, K., Holzer, M., Resor, P., White, L., Strategies for engaging with Teach the Earth online resources, Earth Educators Rendezvous, 2020. Stanford.

2019

8. *Harris, T., Jablonski, L. M., Fortner, S., & Daniels, M. (2019). Human Rights, Environmental Justice, Social Justice, Faith Values and Ethics: Building Stronger Partnerships for the Common Good by Understanding the Differences.*
9. Fortner, S.K., Place-based approach to climate change: improving student and community outcomes, GSA abstracts with programs, v. 51. no. 5, T199. Enhancing the Geosciences by Empowering Indigenous and Latinx Students II. Phoenix, Arizona
10. Lyons, W.B., Carey, A. E., Welch, S. A., Gardner, C. B., Diaz, M., Fortner, S., Gilbert, D., Monagle, C., Calero, A., The geochemistry of soils from around the world, An earth science perspective, Soil Science Research Day, March 2019, OARDC Symposium, Columbus, Ohio.

2018

11. Chien, A., Zhu, E., Gallop, M., Starr, L. D., & Fortner, S. K. (2018, December). Proglacial and Subglacial Meltwater Ion Concentrations for the Llewellyn Glacier, BC, summer 2018. In AGU Fall Meeting Abstracts. Washington D.C. December.
12. Fortner, S.K., 2018. *Supporting science literacy takes work, but first what are faculty and programs doing? American Geophysical Union, Townhall Panel. Washington, D.C. December.*
13. Fortner, S.K., 2018. *Cultivating science based change agency. American Association for the Advancement of Science (AAAS Annual Meeting) Austin, Texas. February.*
14. Fortner S.K. and Wilson, C.A., 2018. Civic engagement in our classes, programs, and outreach practices: implications for supporting science literacy and our workforce. GSA abstracts with programs. T66. The Twenty-First–Century Geoscience Workforce: What Is It? Who Is In It? Who is Missing? Indianapolis
15. Manduca, C.A., Pandya, R., Feinstein, N., Fortner, S., 2018. Community science: strengthening community capacity to use science. AAAS Annual Meeting, Austin, TX. February.
16. Fortner, S.K., Scherer, H.H., Murphy, M., 2017. *Helping students advocate for the earth using InTeGrate Modules, T115. Hands-on teaching demonstrations that combine geoscience and societal issues: Audience participation requested!*

2017

17. Huston*, K., Gianotti*, Z., Fortner, S. K., Kehrwald, N.M., John*, Ch., 2017. Snow melt chemistry: Major and trace cation contributions to downstream systems from the Llewellyn and Matthes Glaciers, Juneau Icefield. In: Characterizing spatial and temporal variability of hydrological and biogeochemical processes across scales. AGU Fall Meeting, New Orleans.
18. Kehrwald, N. M., D. Battistel, E. Argiriadis, C. Barbante, L. B. Barber, S. K. Fortner, J. Jasmann, T. Kirchgeorg, and P. Zennaro. Fire, Climate, and Human Activity: A Combustive Combination. In American Geophysical Union Fall Meeting Abstracts. New Orleans 2017.
19. Scherer, H., Fortner, S., Murphy, M., 2017. Engaging undergraduates in soil sustainability decision-making, NACTA Conference. 6/28-7/1. Purdue University.

2016

20. Fortner, S.K., and Burgett, A., 2016. *Wicked Problems: Curricular Solutions, GSA Abstracts with Programs, T80. Implementing Discovery-Based Research Experiences in Undergraduate Geoscience Courses and Curricula.*
21. Diaz*, M.A., Fortner, S.K., Lyons, W.B., 2016. Land management impacts on hydrology, yields, and concentration vs. discharge relationships in small, unglaciated, central Ohio watersheds. GSA Abstracts with Programs. T110. Landscape Disturbance in Coupled Hydrologic, Ecologic, and Geomorphologic Systems
22. Guertin, L., Fortner, S., Lord, M. 2016. Engaging students in course-based research: reports from PCAST, NAS, and examples from earth/environmental sciences. CUR Biennial Meeting, Tampa Florida.
23. Merriwether-DeVries, C.A., Fortner S.K., Edwalds-Gilbert, G., Grahe, J. E., 2016. Innovation and collaboration: creating opportunities without reinventing the wheel. CUR Biennial Meeting, Tampa Florida.
24. Miele*, C., Christensen*, K., Clark*, A., Holt*, A., Peek*, Zaccarin*, A., Ziola*, K., Fortner, S., Kehrwald, N., 2016. Chemical weathering on the Llewellyn Glacier, Juneau Icefield, AGU Fall Meeting, San Francisco, CA

25. Shaffer*, L., Alexander*, R., Helterbrandt*, F., Fortner, S., 2016. Winter chloride behavior in Ohio Rivers and the influence of land use and climate, GSA Abstracts with Programs, T30. Sigma Gamma Epsilon—Undergraduate Research
26. Simek*, V., Kaupp Fett, A. Fortner, S.K., 2016: Soil Safe Springfield: Wittenberg Undergraduates collaborate to reduce urban garden lead risk. Ohio Environmental Protection Agency Meeting at Sinclair University, OH.
27. Sullivan, S., Brenner, K., Fortner, S., O’Connell, S., 2016, Service learning in the Undergraduate Geosciences, American Geophysical Union Annual Conference, Session 13357.

2015

28. Bartell*, C., Fortner, S.K., 2015. Soil organic carbon & nitrate profiles associated with land management history: The Antioch Farm, Yellow Springs, Ohio. Geological Society of America Abstracts with Programs.
29. Fortner, S.K., Ritter, J.B., Burgett, A.A., Finster, D.C., Hoff, R.J., Phillips, R.S, 2015 (Invited). *InTeGrate modules and authentic community-based research as sustainability program opportunities. GSA Abstracts with Programs, T81. Intentional integration of research into the curriculum: Undergraduate Research as a teaching practice.*
30. Fortner, S.K., Dowling, C.B., Goldsmith, S.T., Johannesson, K., Leslie, D., Neumann, K., Nezat, C.A., Welch, K.A., Welch, S.A., 2015. Key contributions of W. Berry Lyons to transdisciplinary geochemical explorations. GSA Abstracts with Programs, T35. Honoring the Diverse Career of Dr. W. Berry Lyons: Geochemistry from Polar Deserts to Tropical Watersheds.
31. Freeman*, M. R., Fortner, S.K., 2015. Sulfate concentrations and dynamics in the Maumee & Great Miami Rivers. Geological Society of America Abstracts with Programs, Baltimore.
32. Glaser*, J.K., Fortner, S.K., 2015. Sodium and chloride concentrations and seasonal behavior in the Ohio River and it’s subwatershed, the Great Miami River. GSA Abstracts with Programs
33. Murphy, M., Scherer, H., Fortner, S., 2015, Building a strong collaborative team: factors for success, Earth Educators Rendezvous, Boulder, Colorado.
34. Ngyuen*, C., Fortner, S.K., 2015. Agricultural land use influences the behavior and delivery of calcium and magnesium ions in the Great Miami River, Ohio. PittConn, New Orleans.

2014

35. Fortner, S.K., Lyons, W.B., 2014. Trace and minor elements in cryoconites and supraglacial streams, Canada Glacier, Antarctica, SCAR Biennial Meetings and Open Science Conference 2014, Sept 2014.
36. Provost, J., Childress, H., Grahe, J., Fortner, S., Moore, D., 2014. CUR Task force on Innovation through Collaboration: Update of survey and report on best practices, CUR Conference 2014.
37. Scherer, H., Fortner, S.K., Murphy, M., 2014. Sustainable Agriculture as a context for developing earth systems thinking in undergraduate geoscience courses:GSA Abstracts with Programs, Annual Meeting.
38. Starr*, L.D., Fortner, S.K., Seasonal chloride behavior in the Great Miami River, 2014. OH. Geological Society of America Abstracts with Programs v. 46. No.208, p. 35
39. Wilson*, E.L., Breslin*, K., Marvelle*, K.A., Thacker*, T. N., Fortner, S.K., and Ritter, J. B., 2014 Soil lead distribution at two sites: implications for lead soil outreach in the Promise Neighborhood, Springfield, OH. Geological Society of America Abstracts with Programs v. 46, No 208, p. 40

2013

40. Coutts*, K.E., Crisp*, A.A., Goodwin*, G.M., Hagen*, B. P., Mobley*, T. J., Wilson*, E. L., and Fortner, S.K., 2013. Seasonal and long-term, (1996-2012) trends in the concentrations and ratios of

dissolved silica and dissolved inorganic nitrogen in the Great Miami River at Miamisburg, Ohio, GSA Abstracts with Programs v. 45, No. 4, p.62.

41. Fortner, S.K., Lyons, W.B., Shipitalo, M. J., Carey, A. E., Goldsmith, S., Deuerling*, K., 2013. Agricultural land use controls on critical zone interactions in soil and water in unglaciated east central Ohio. GSA Abstracts with Programs v. 45., No.7, p. 511.
42. Hamilton*, B. B., Fortner, S. K., Lyons, W.B., Deuerling*, K. M., 2013. Leaching and SEM-EDS analyses of glacial and proglacial sediments in Taylor Valley, Antarctica. GSA Abstracts with Programs v. 45, No. 7, p. 211
43. Starr*, L.D., Fortner, S.K., 2013. Spring chloride behavior in Buck Creek and the Great Miami River, OH. GSA Abstracts with Programs v. 45. No.7, p. 596.

2012 & earlier

44. Fortner, S.K., Ritter, J.B., and Austin, B.A., 2012. Integrated service learning across geoscience courses including biogeochemistry: Building depth, scholarship, and community identity: Geological Society of America Abstracts with Programs, Vol. 44, No. 7, p. 496.
45. Fox, L.K., Guertin, L.A., Manley, P.L., Fortner, S.K., 2012. The geosciences division of the council on undergraduate research (GeoCUR): supporting faculty that mentor undergraduate researchers, AGU Fall Meeting, San Francisco, CA
46. Wilson*, E. L., Fortner, S.K., and Ritter, J.B., 2012. Nitrate and alkalinity during the July 2012 drought: Urban and agricultural watershed response observed in Buck Creek, Ohio, U.S.A.: GSA Abstracts with Programs, v. 44, No. 7, p. 565.
47. Mark, B.G., Baraer, M., Fortner, S., and Shoenfelt*, M., 2010. Hydrochemical insights to changing tropical glacier environments in Peru. Association of American Geographers Annual Meeting, Washington D.C., April.
48. Fortner, S.K., Welch, K.A., Lyons, W.B., Olesik, J., and Witherow, R.A., 2009. Spatial assessment of trace elements in Taylor Valley Antarctic Glaciers: Dominance of eolian deposition. 24th International Applied Geochemistry Symposium, Fredericton, New Brunswick, Canada, June.
49. Fortner, S.K., Lyons, W. B., and Munk, L., 2009. Diel concentrations and hysteresis behaviors of major, minor, and trace solutes in Taylor Valley, Antarctic Streams. Geological Society of America 2009 Joint Annual Meeting, Houston, TX, U.S.A., October.
50. Shoenfelt*, M., Fortner, S.K., and Mark, B.G., 2009. Silicate weathering in glacial meltwater in the Cordillera Blanca. Denman Undergraduate Research Forum, The Ohio State University, May.
51. Fortner, S.K., Mark, B.G., McKenzie, J.M., Baraer, M., and Schoenfelt*, M., 2008. Metal concentrations and hydrochemical dynamics in a tropical-glacier watershed. EOS Trans., AGU, 89(53), Abstract C23A-0598, Fall Meeting Suppl.
52. Whisner*, C., Fortner, S.K., and Lyons, W.B., 2008. The impact of agricultural land use on the carbon cycle measured from streams in Coshocton, Ohio watersheds. Mathematical and Physical Sciences Undergraduate Research Forum, The Ohio State University.
53. Fortner, S.K., Trace metal dynamics in polar valley glacier snow and melt, 2007. McMurdo LTER Site Meeting, Boulder, Colorado, U.S.A. August.
54. Fortner, S.K., Lyons, W.B., Munk, L., and McKnight, D., Diel cycling of As, Cu, Fe, Mn, and V in McMurdo Dry Valley, Antarctic Streams: identifying controls on metal geochemistry. Geological Society of America 2008 Joint Annual Meeting, Houston, TX, U.S.A.
55. Fortner, S.K., Lyons, W.B., Welch, K.A., Olesik, J.W., 2007. Trace metal dynamics and transport in a polar glacier dominated watershed: Taylor Valley, Antarctica., 2007. Goldschmidt, Cologne, Germany, August.

56. Fortner, S.K., 2007. Trace metals in Taylor Valley Waters. McMurdo Long-Term Ecological Research Program Annual Meeting, Boulder, Colorado, August.
57. Fortner, S.K., Lyons, W.B., Fountain, A.G., Welch, K.A., 2007. Snow fluxes and melt dynamics of trace elements at Eliot Glacier: South Cascades Oregon. Geological Society of America Abstracts with Programs, 103rd annual meeting, Cordilleran Section, Bellingham, WA May.
58. Fortner, S.K., Lyons, W.B., Fountain, A.G., Welch, K.A., 2006. Fluxes and Dynamics of Trace Metals in Glaciers: McMurdo Dry Valleys, Antarctica and South Cascades, Oregon. All-Site Long Term Ecological Research Meeting, Estes Park Colorado, September, 2006.
59. McGill, S.F., Anderson Kuzma, H., Daneke, T., Grant, J., Slates, M., Stroud, J., Tegt (Fortner), S.K., and McGill, J.D., 2003. Slip rate of the Western Garlock Fault near Lone Tree Canyon, Mojave Desert, California. Geological Society of America Abstracts with Programs, 99th annual meeting, Cordilleran Section, April.
60. Lyons, W.B., Welch, K.A., Graham, E.Y., and Tegt (Fortner), S.K., 2002. The importance of aeolian transport to the geochemistry of McMurdo Dry Valley Lakes, Antarctica. ASLO 2003 Meeting Abstracts, February.

GRANTS

- | | |
|-----------|---|
| 2020 | McCain Acres: Increasing access to local foods and growing community self-reliance and resilience through urban agriculture and education (USDA, \$399,400 & \$815,400 with match), Susan Jennings, Community Solutions (PI) Wittenberg education & evaluation |
| 2019 | <i>Creating Healthy Communities, Ohio Department of Health (Collaborator) (\$100,000)</i> |
| 2019-2023 | NSF-Improving Undergraduate STEM Education Broadening the fusion of STEM and Business. We have renamed ourselves BASICS: Business And Science: Integrated Curriculum for Sustainability (<i>\$2.4 Million across programs, \$369,000 Wittenberg</i>) Collaborative at Wittenberg, Bentley, and Northern Illinois University Pis: David W. Szymanski (project lead), Eric A. Oches, Otgo Erhemjamts, Sarah Fortner (Wittenberg lead PI), Rachel Wilson, Christine H. Mooney, Melissa Lenczewski, Ellen Iverson |
| 2019 | American Geophysical Union 100 Grant, Empowering environmental lead pollution science and advocacy with the Springfield Promise Neighborhood (<i>\$5,000</i>) |
| 2012-2018 | 9 Wittenberg Faculty Development Board Travel Awards (<i>\$6000</i>) |
| 2017-2018 | 1 Faculty Development Board Research Project Award (<i>\$3,000</i>), <i>Engaging Climate Change in the National Parks</i> |
| 2014-2016 | NSF InTeGrate Sustainability Implementation Program (<i>\$50,000, \$75,000 with match</i>) (Wittenberg lead), subaward of the NSF InTeGrate STEP Award. |
| 2014 | <i>Wittenberg Campus Rain Garden, City of Springfield (\$50,000) (Collaborator)</i> |
| 2013 | NSF-COSI Portal to the Public Award: Disseminate Science (<i>\$10,000</i>) (Collaborator) |
| 2013 | NSF- CC-NIE Networking Infrastructure (Co-PI) (<i>\$50,000</i>) |
| 2013 | NSF-InTeGRATE Agricultural Teaching Module (<i>\$15,000</i>) (Co-PI) |
| 2013 | GroundWater Guardian (<i>\$1,500</i>) (Campus Water Quality) |
| 2012 | OSU Agroecosystems Seed Grant (<i>\$50,000</i>) (Co-PI) |
| 2012 | Lily Foundation Natural Springs Assessment Grant (<i>\$1,500</i>) |

TEACHING

COURSES

Global Climate Change (ESCI 100), Introduction to Environmental Science (ESCI 101), Environmental Science Research Methods (Justice-focused) (ESCI 250), Geology of the Critical Zone (GEOL 170), Freshman Seminar

Here is the course project page for ESCI 250:

https://serc.carleton.edu/earthconnections/networks/metal_redlining/wittenberg/springfield_lead.html

COMMUNITY ENGAGEMENT

Students in my classes provided **600 project hours per year** in research, programming, or applied projects in collaboration with the campus and Springfield community each year. Community-based participatory research is featured in my courses. This includes climate outreach and advocacy events, soil lead analyses, water quality testing for urban and agricultural pollutants. We provide partners with information, maps, fact sheets, and reports. Students present at professional or partner meetings. This rich-network results in internships with partners and resources for student learning. It also results in informed municipal decision making such as recognizing the role of climate change in stormwater infrastructure needs- **a \$200 million dollar issue in Springfield, Ohio**, as well as helping community gardening groups tackling food insecurity, improving campus groundskeeping decisions (e.g. soil nutrients and informing fertilizer applications and mapping heat island impacts and suggesting landscaping opportunities). In many projects, GIS, biogeochemistry, and ecological management strategies are emphasized. We partnered with food justice leaders and informed land use & garden decisions at: the Springfield Promise Neighborhood Visioning Garden, the Springfield Ohio Urban Plantfolk (SOUP) McCain Acres Farm, The Conscious Connect Children's Equity Zones, and Clark County Combined Health District (CCHD), Clark County Local Food Council, Clark County Land Revitalization Bank, and community-identified residential sites. Approximately one third of more than 500 soil samples collected across 7 years were above safe gardening limits.

PARTNERS

1. Kate Causbie*, Springfield Promise Neighborhood
2. Anne Kaup Fett, Clark County Combined Health District
3. Andy Aichele, Center Of Science and Industry (COSI)
4. Adam Brown, The Conscious Connect
5. Pam Bennett, OSU Extension
6. Michael Brady, Wittenberg Physical Plant (formerly)
7. Susie Broidy, OSU Extension
8. Sherry Chen, Springfield Ohio Urban Plantfolk
9. Sheryl Cunningham, Sustainability Task Force
10. Dr. Mary Davis, The Ohio State University
11. Lisa D'Allessandris, Clark County Emergency Management Agency
12. Mark DeVilbiss, Wittenberg University (formerly Residential Life)
13. Mike Ekberg, Miami Conservancy District
14. Dave Faulkner, CRSI Strive
15. Sarah Hippensteel Hall, Miami Conservancy District
16. Tyra Jackson, Second Harvest Food Bank
17. Kim Landsbergen, Antioch College, The Farm
18. Kali Lawrence, Springfield Promise Neighborhood
19. Leslie McDermott, City of Springfield Utilities
20. Shannon Meadows*, City of Springfield Community Development
21. Courtney Price, Center Of Science and Industry (COSI)

22. Eric Roberts*, Springfield Promise Grows
23. Kevin Rose*, The Turner Foundation
24. Ashley Shearer, Clark County Combined Health District
25. Sky Schelle*, City of Piqua Water Utilities
26. Steve Schlather, Clark County Waste Management District, & Citizen's Climate Lobby
27. Eric Smith, Springfield Promise Neighborhood (formerly)
28. Leonard Sparks, Center Of Science and Industry (COSI)
29. Carla Tamplin, Springfield Promise Grows (formerly)
30. Bob Welker, Springfield Promise Neighborhood
31. John Wheeler, Springfield Promise Neighborhood Association
32. Marta Wojcik, The Westcott House/Solar House
33. Trish Demeter, Ohio Environmental Council

Undergraduate Research Students (# of professional abstracts with me) Those not presenting abstracts did action or advocacy projects. JIRP= Juneau Icefield Research Program. I have consulted on more than 20 interdisciplinary senior thesis and other projects in addition to the below.

2019

1. Diana Castro, JIRP, glacier ecology and albedo (1)
2. Alexia Fabiani, JIRP, glacier ecology and albedo (1)
3. Lizzie Hebel, JIRP, glacier ecology and albedo (1)
4. Emily Wilcox, JIRP, glacier ecology and albedo (1)
5. Asharee Jones, Biology, after school science engagement with fifth graders
6. Jubileen Kombe, Biology, after school science engagement with fifth graders
7. Rachel Corsello, Biology. Service learning manuscript

2018

8. Annie Chien, JIRP, glacier chemistry and albedo (1)
9. Eric Zhu, JIRP, glacier chemistry and albedo (1)
10. Madeleine Gallop, JIRP, glacier chemistry and albedo (1)

2017

11. Zach Gianotti, JIRP, glacier snow chemistry (1)
12. Kelcy Huston, JIRP, glacier snow chemistry (1)
13. Chelly Johnson, JIRP, glacier snow chemistry (1)

2016

14. Arek Barzaski, Environmental Science, park land management
15. Auri Clark, JIRP, glacier stream biogeochemistry (1)
16. Kit Cunningham, JIRP, glacier stream biogeochemistry (1)
17. Annie Holt, JIRP, glacier stream biogeochemistry (1)
18. Molly Peek, JIRP, glacier stream biogeochemistry (1)
19. Annie Zaccarin, JIRP, glacier stream biogeochemistry (1)
20. Kiana Ziola, JIRP, glacier stream biogeochemistry (1)
21. Chris Miele, JIRP, glacier stream biogeochemistry (1)
22. Haley Jackson, Environmental Science, blood lead meta analyses

2015

23. Chi Nguyen, Chemistry, stream chemistry methods (1)
24. Brandi Hamilton, Geology, Antarctic stream chemistry (1),
25. Eric Roberts, Sociology, urban gardening
26. Faith Helterbrandt, Environmental Science, urban gardening
27. Victoria Simek, Environmental Science, urban lead pollution (1)
28. Sage Pence, Political Science, campus sustainability (1)
29. Leighanne Shaffer, Environmental Science, urban stream chemistry (1)
30. MacKenzie Freeman, Chemistry, Biomolecular, urban sulfate chemistry (1)
31. Jade Glaser, Chemistry, stream chemistry (1)

2014

32. Margaux Empey, campus groundwater protection
33. Kate Bartell Environmental Science, land use stream chemistry and soil carbon associated w/ agricultural land management (3)
34. Whitney Koehling, campus sustainability
35. Alex Scheumann, Geology, land use soil carbon
36. Rebecca Agnor, Math, statistical analyses of long-term watershed data (1)
37. Rachel Ross, Math, statistical analyses of long-term watershed data (1)

2013

38. Lindsay Starr, Geology, road salt and climate change hydrogeochemistry (2)
39. Kim Coutts, Geology, nutrient stoichiometry in streams (2)
40. Alexis Crisp, Geology, land use stream chemistry (1)
41. Grant Goodwin, Geology, urban soil lead (1), Kyle Breslin, urban soil lead (1)
42. Ben Hagen, Geology, land use stream chemistry (1)
43. Biniyam Melese, Chemistry, soil lead method development
44. Grace Gielink, Sociology, urban housing GIS
45. Tyler Thacker, Environmental Science, urban soil lead (1)
46. TJ Mobley, Geology, land use stream chemistry (1)

2012

47. Carla Whisner, Geology, stream alkalinity (1)
48. Michael Shoefeldt, Geography, tropical glacier melt chemistry (1)
49. Beth Wilson, Environmental Science, drought stream chemistry, urban and agricultural chemistry (3)

CAMPUS WORKSHOPS

- 2020, NSF Business And Sustainability: Integrated Curriculum for Sustainability (Workshop Facilitator)
- 2019, Justice Boot Camp, Coretta Scott King Center, Antioch (Session Co-leader)
- 2019, Anti-Racism Discussion Group with Cynthia Richards, Faculty Development Director at Wittenberg
- 2019, Sustainability and Social Justice Curriculum Development at Clark Atlanta University (Workshop Facilitator)
- 2018, 2 Traveling Program Development Traveling Workshops (Michigan & New York Colleges (Workshop Facilitator)

- 2016, Service Learning in the Undergraduate Geosciences, American Geophysical Union (Workshop Leader) <https://agu.confex.com/agu/fm16/preliminaryview.cgi/Session13357>
- 2015, Wittenberg's Sustainability Implementation Program, High Impact Modules Across the Curriculum (Workshop Co-leader)
- 2015, Increase the Impact Workshop (40-hour faculty development working webinar to draft more effective STEM Education Grants) <http://www.increasetheimpact.com/> (Participant)
- 2014, Active Learning Strategies (co-lead at the faculty retreat with Margaret Goodman and Brooke Wagner)
- 2014, Active Learning in the Sciences (workshop at Wittenberg co-led by Amber Burgett)
- 2014, Noyce Active Learning Strategies for Effective Teaching, invited by Gina Post, co-led by Amber Burgett
- 2013, SERC InTeGrate, Sustainability Across the Curriculum (Workshop Leader)
- 2013, Natural Springs Assessment Program (Participant)
- 2013, Transforming Undergraduate STEM Education Grant Workshop (Participant)
- 2008, SERC Becoming Future Geoscience Faculty (Participant)

WITTENBERG SERVICE

- **Public Health Program Planning (2020-)** Helped draft a new program in Public Health drawing from existing courses at Wittenberg and online consortia of courses for liberal arts colleges.
- **Wittenberg Programming Committee (2018-)** Program development for the Wittenberg Series, Chair 2019-2020.
- **Academic Visioning Task Force (2020)** Exploring curricular change models and guiding curricular change discussions. Explored opportunities to reduce administrative burden and improve collaboration.
- **Director, Wittenberg in Wittenberg (2019)** Leading 23 students in course, programming and internship coordination in Wittenberg Germany. Coordinating with Global Studies and Wittenberg programming and housing.
- **Student Development Board (2016-2019)** Awarding student research and travel money. Supporting Fulbright applicants and scholarship days.
- **Strategic Planning Thematic Group: Community Outreach & Partnerships (2016)** Contributed most of the evidence for our curricular strengths and evidence in described in the current state document. Shared other institutional evidence with other strategic planning thematic groups including Program Growth & Excellence & Academics/Student Success.
- **Faculty Endowment Fund Board (2014- 2017)** Evaluated faculty proposals for guest speakers.
- **First Year Experience Advisor (2014-2016)**
- **First Year Experience Task Force (2013):** Investigated first year programs at liberal arts colleges, identified key first year challenges for Wittenberg students, created a FYE program proposal that was approved and implemented.
- **Innovation Task Force (2013-2015):** Met regularly to create a Value Proposition to center Wittenberg activities around (across all spheres of student involvement). Identified potential sources of revenue to Wittenberg. My work centered on defining and creating an *Engaged Learning Audit* through literature review of practices associated with learning & retention. This audit provided current state evidence to strategic planning.
- **Student Development Board (2016-2019):** Evaluated and funded student research and travel based on criteria established in our faculty manual. Participated in multiple scholarship days (x4).
- **Wittenberg University-Engaged Sustainability, Across Curriculum & Community (2014-2016)** (<https://serc.carleton.edu/integrate/programs/implementation/program3/index.html>): This effort directly

increased the number of sustainability-focused and sustainability-related courses at Wittenberg and expanded departments/programs offering sustainability curriculum. Total sustainability courses offered increased by 80% as reported to a national database through Sustainability Tracking And Rating System (STARS). This includes the introduction of [sustainability content](#) for the First Year Seminar that has since been adapted by three other institutions.

- **Archaeology Minor Committee:** Provided feedback on the initial Archaeology Minor Proposal that Dr. Dar Brooks Hedstrom incorporated into the proposal. My revisions included identifying learning goals that matched the developmental level of the course sequence (e.g. ‘Going deeper’ the last part of the minor requires critical-thinking)
- **President’s Climate Commitment Committee:** Drafted the curriculum section and added language on the broader impacts of climate change. My role included drafting aspects of our curricular plans to address this topic.

LOCAL ADVISORY & ADVOCACY ROLES

- 2018-Present, Clark County Local Foods Council, Education Advisor
- 2018, Advisor, Great Miami Environmental Leaders, Workshop Advisor
- 2016-Present, Clark County Soil & Water District, EQUIP (Conservation Advisor)
- 2015-Present, Clark County Ohio Citizens’ Climate Lobby (Member)

PUBLIC ENGAGEMENT

- 2020, FA,
- 2020, SP, Climate & COVID-19 w Wittenberg Alumni
- 2020, SP. Boot Camp for Activists
- 2019, FA. Skype-A-Scientist
- 2019, FA, Climate citizen science with Global Impact STEM Academy
- 2019, FA. Justice Teach-In, A Day of Action at Wittenberg, leading the Environmental Justice Panel
- 2019, FA. Hands on Geology with Snowhill Elementary School second graders
- 2019, FA. Climate literacy and Citizen Science Event with the Global Impact STEM Academy at Snyder Park
- 2019, FA. Lead testing and Art Advocacy Event, Springfield Promise Neighborhood
- 2019, FA. Environmental Lead Pollution in Springfield, Ohio, Mother Stewart’s Brewery
- 2018, SU. Global Climate Change activity station at the Monarch Butterfly Festival, Springfield, Ohio
- 2018, SU. Speaker to Women Supporting Girls Philanthropy group on local climate impacts.
- 2018, SP, Invited Speaker, Ohio Environmental Leadership Institute (OSU & Miami Conservancy District)
- 2018, SP, Climate Panel at Founders hosted by Wittenberg Student Senate
- 2018, SP, Volunteer, Amazing Place Earth Day Education, National Trail Park & Recreation district
- 2018, SP Q&Q at Wittenberg: Realizing Our Civic Potential
- 2018, SP, Growing Food in Antarctica, PechaKucha, Westcott House, Mother Stewart’s Brewery
- 2018, SP, Global Climate Change Solutions, Global Impact STEM Academy
- 2018, 3 time science activity volunteer at Snowhill Elementary
- 2016, SP, Global Education & Peace Network Series: Sustainability at Wittenberg and into the Community, <http://www.wittenberg.edu/news/2016/Global-education>
- 2016, SP, Glaciers and Flubber Presentation and Inquiry Activity at Snowhill Elementary
- 2015, FA, Global Education Series: Wittenberg Environmental Science in the Springfield community, <http://www.wittenberg.edu/news/2015/Global-Education-Wittenberg>
- 2015, 3 Local Food Events hosted by OSU Extension & the Springfield Promise Neighborhood

- 2014, FA, Green Holidays at the Westcott Solar House, presented by Global Climate Change students in collaboration with COSI and informed by 8 local experts
- 2014, FA, Oakwood Village, Climate Change What do we know? An Interdisciplinary panel at Oakwood Village
- 2014, SU, Westcott House Solar House Opening PechaKucha Night, Phosphorus: Too much, but not enough
- 2014, SP, 'Chasing' Ice Global Climate Change Panel at Wittenberg
- 2014, SP, Climate Literacy Modules presented by Wittenberg Global Climate Change students (ESCI 100) at COSI. Reach: 500 plus visitors interacted with our students.
- 2014, SP Wittenberg Open Classroom Melt in the Antarctic dry valleys, lessons learned from the ice
- 2014, SP Community Development Speaker, Hagen Center for Civic & Urban Engagement What role can you play in preserving the local watershed? (explored the homeowner role in water quality, and efforts homeowners can employ to reduce negative water quality impacts; 2 students assisted).
- 2012, FA Wittenberg Saturday Science Series w/ 2 undergraduate co-leaders, Glacier Change
- 2002-2008, Led tours, gave talks on Antarctic travel, research, hosted interactive workshops engaging with more than 1,000 visitors to Byrd Polar Research Center
- Visits to more than 5 Columbus K-12 schools discussing work in Antarctica

NATIONAL PRESS

1. AGU Blogs (Laura Guertin), 2020, Searching for equity in the science fair.
<https://blogs.agu.org/geoedtrek/2020/05/02/science-fair/>
2. Union of Concerned Scientists, (Guest Blog) Science Citizenship: Making Science Actionable.
<https://blog.ucsusa.org/science-blogger/science-citizenship-making-science-actionable>
3. AGI, AGI Welcomes Member Society Scholar-in-Residence, Sarah K. Fortner, Ph.D.
<https://www.americangeosciences.org/news/agi-welcomes-member-society-scholar-residence-sarah-k-fortner-phd>
4. AAC&U, Civic Prompts, Civic learning in the major by design, 2017, <https://www.aacu.org/civic-prompts>
5. AGU Blogs (Laura Guertin), 2016, Helping Students Advocate for the Earth-from InTeGrate;
<http://blogs.agu.org/geoedtrek/2017/04/20/helping-students-advocate-earth-integrate/>
6. AGU Blogs (Laura Guertin), 2016, Day 1 PM – Service Learning in Undergraduate Geosciences: A Workshop,
<http://blogs.agu.org/geoedtrek/2016/04/20/day-1-pm-service-learning-undergraduate-geosciences-workshop/>
7. EOS, 2016, Earth and Space Science News, AGU signs agreement with Council on Undergraduate Research;
<https://eos.org/agu-news/agu-signs-agreement-with-council-on-undergraduate-research>
8. CUR, 2016, AGU and CUR to partner to advance undergraduate science education;
http://www.cur.org/agu_and_cur_partner_to_advance_undergraduate_science_education/
9. NAGT & SERC, Helping the Next Generation Save the Planet (Includes press for Wittenberg's Sustainability Implementation Program), 2016, http://apps.carleton.edu/now/stories/?story_id=1284023

10. NAGT & SERC, 2015, Congratulations to InTeGrate author Sarah Fortner and her team at Wittenberg University (published separately in two major geoscience education resource websites), http://serc.carleton.edu/serc/news/integrate_autho.html

11. NAGT, 2014, InTeGrate Module Author in the News Wittenberg Students Team Up With Springfield To Fight Storm Water Problem, *Geospectrum Quarterly Geoscience Newsletter & E-Zine* <http://www.americangeosciences.org/sites/default/files/GeoSpectrum-2014-Winter.pdf>

LOCAL PRESS

1. WYSO, 2020, Chris Welter, Clark County's Effort To Reach Essential Workers During COVID-19 <https://www.wyso.org/news/2020-08-20/clark-countys-effort-to-reach-essential-workers-during-covid-19>

2. Springfield News Sun, 2020, Springfield residents fighting back after Kroger announces closure (includes ideas from the Local Food Council) <https://www.springfieldnewssun.com/news/local/springfield-residents-fighting-back-after-kroger-announces-closure/HfpvaPV1kaxFictB9Rj96M/>

3. Springfield News Sun, 2019, Lead testing at PromiseFest

4. Springfield News Sun, 2019, Wittenberg to join multi-million dollar research project, <https://www.springfieldnewssun.com/news/local/wittenberg-join-multi-million-dollar-research-project/0gbTINGrPZUTLGzzKhoFLM/>

5. Springfield News Sun, 2017, Springfield woman's climate change studies include trips to Antarctica, <http://www.springfieldnewssun.com/news/local-education/springfield-woman-climate-change-studies-include-trips-antarctica/WPC9EmhNc5RFHYzNbCwznL/>

6. Springfield New Sun, 2015, Global Ed Series kicks off its 14th season, <http://www.springfieldnewssun.com/news/news/local/global-ed-series-kicks-off-14th-season-thursday/nnXtc/>

7. Springfield News Sun, 2015, Springfield, Wittenberg partner on a rain garden <http://www.springfieldnewssun.com/news/news/local/springfield-wittenberg-partner-on-rain-garden/nmyCG/>

8. WYSO, 2014, Wittenberg students team up to fight stormwater problem <http://wyso.org/term/sarah-fortner> (written); <http://wyso.org/post/wittenberg-students-team-springfield-fight-storm-water-problem> (radio release)

9. Springfield News Sun, 2013, Springfield, Witt team up on a survey <http://www.springfieldnewssun.com/news/news/local/springfield-witt-team-up-on-survey/nYbDb/>

CAMPUS PRESS

1. Wittenberg Senior's Paper on Redlining Project Published in Journal. <https://www.wittenberg.edu/news/05-27-20/rachel-corsello-20>

2. Earth Day Celebration: Professor Sarah Fortner will lead first-ever virtual alumni college on the road to celebrate the 50th Anniversary of Earth Day. <https://www.wittenberg.edu/news/04-21-20/earth-day-celebration>

3. Change advocates: Wittenberg Seniors Inspire Local Students to Engage in STEM Programs.

<https://www.wittenberg.edu/news/04-8-20/change-advocates>

4. Wittenberg serves: Wittenberg donates time and supplies while offering virtual engagement options.
<https://www.wittenberg.edu/news/04-2-20/wittenberg-serves>

5. Empowering students: National grant empowers environmental justice.
<https://www.wittenberg.edu/news/03-2-20/empowering-students>

6. STEM-Business Endeavor <https://www.wittenberg.edu/news/08-30-19/stem-business-endeavor>

7. Climate change scientist Sarah Fortner contemplates whether we can slow the devastating effects of a warming planet. https://static1.squarespace.com/static/59ac40138419c2a53ccc7268/t/59b464af37c581fbf87b1899/1504994497173/ChasingIce_Story.pdf

8. Wittenberg University students examine their role in sustainability issues.
<http://www.wittenberg.edu/news/2016/Earth-Week>

9. Wittenberg to host Global Education and Peace Network Series.
<http://www.wittenberg.edu/news/2016/Global-education>

10. Springfield's Global Earth Education Series to open with Wittenberg Scientists.
<http://www.wittenberg.edu/news/2015/Global-Education-Wittenberg>

11. Wittenberg Student Wins James Manner Award At Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy.
<http://www.wittenberg.edu/news/2015/chemistry-student-wins-james-manner-award-at-pittcon>

12. Wittenberg Featured In “The Princeton Review’s Guide To Green Colleges.”
<http://www.wittenberg.edu/news/2015/princeton-review-guide-to-green-colleges> (cites our sustainability curricular effort)

13. Rain Garden to add beauty and purpose to campus, <http://www.wittenberg.edu/news/2015/rain-garden>

14. Wittenberg Students Present Local Research to Geological Society of America
http://www.wittenberg.edu/news/2014/11_10-gsa-conference.html

15. Wittenberg University Students Take Part in Largest Climate March in History
http://www.wittenberg.edu/news/2014/10_17-sustainability-march.html (Climate March)

16. COSI Collaboration Reflects Innovative Learning (Wittenberg Magazine, Spring 2014)

17. Wittenberg University Students Participate in Portal to the Public, Collaborate with COSI
http://www.wittenberg.edu/news/2014/05_27-geology-cosi.html

19. Hands-on learning at its best <http://www.wittenberg.edu/features/hands-on-learning>

OTHER

1. Mapping for Decision Making, Get Spatial Blog, 2019. Sarah Fortner and Tim Shipley

<https://serc.carleton.edu/getspatial/blog/CrissCross.html>

2. On the Juneau Icefield, Women reimagine who does science, 2018. *Sierra*. Drew Higgins.
<https://www.sierraclub.org/sierra/juneau-icefield-women-reimagine-who-does-science>

3. Glacier Hub, Geochemical Evolution of Meltwater from Glacier Snow to Proglacial Lake, Tae Hamm
<https://glacierhub.org/2018/02/20/geochemical-evolution-meltwater-glacier-snow-proglacial-lake/>

4. As wildfires blaze, southeast glaciers will be feeling the melt, 2016. KTOO, Juneau, Alaska. Elizabeth Jenkins
<http://www.ktoo.org/2016/08/17/as-interior-wildfires-blaze-southeast-glaciers-could-be-feeling-the-melt/>

RECENT INVITED TALKS

- 2020, Kent State (postponed): *Teaching local: evidence that a focus on local issues supports diversity and inclusion.*
- 2020, Bootcamp for Activism, Antioch College, Coretta Scott King Center: *Building Networks to tackle Metal Pollution*