Sarah K. Fortner, Ph.D.

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Education

Ph.D., Earth Sciences, The Ohio State University (2009)
M.S., Earth Sciences, The Ohio State University (2002)
B.S., Geology and Geophysics, University of Wisconsin-Madison (1999)

Leadership Summary

Director of Sustainability at Carleton College (since 2022), shaping vision and implementation of the institution-wide **Sustainable Futures Framework**. Champion cross-functional initiatives in education, operations, and community partnerships to advance sustainability and environmental justice. Manage the Office of Sustainability and its 2 staff (and 16+ student employees) and oversee a 1.5-acre campus farm/living laboratory. Chairing the Environmental Advisory Committee which advises institutional level strategic goals for sustainability in education, operations, and partnerships in climate action. Extensive background in applying **Earth Sciences research** (Ph.D.) to develop and lead innovative educational and applied sustainability programs, securing **$3.65 million** in external funding (NSF, USDA), and leading **30+ national professional development** workshops and **10+** program reviews in sustainability education and building partnerships to address local-to-global issues. Contributing to academic leadership and teaching faculty of the Juneau Icefield Research Program, an 80-year running undergraduate summer research program in glacier field science, mountaineering and science translation.

Experience

- 2022-Present Director of Sustainability, Carleton College
- 2017-Present Academic Council, Juneau Icefield Research Program
- 2020-2022 Science Education Associate, *Science Education Resource Center, Carleton College*
- 2017-2020 Director of the Environmental Science Program, *Wittenberg University*
- 2017-2020 Associate Professor of Geology and Environmental Science, *Wittenberg University,*
- 2017-2018 Geological Society of America Scholar in Residence at the *American Geosciences Institute*
- 2011-2017 Assistant Professor of Geology and Environmental Science, *Wittenberg University*
- 2009-2011 Postdoctoral Researcher, Climate Water & Carbon Program, *Ohio State University*

External Funding $3.80 M (Includes Multi-Institutional Awards)

- **2026:** MN Department of Agriculture, AGRI, Evaluating Mulching Strategies for MN vegetable Growers, $42,000. **Role: PI.**
- **2026**: MN Pollution Control Agency, Multifamily Food Waste Grant, Improving food waste outreach and infrastructure in student housing. $29,881. Role: **Contributor.**
- **2025:** EGU Scholarship Funding for the Juneau Icefield Research Program **$8,000. Role:** Contributor.
- **2024:** MN Pollution Control Agency Local Climate Action Grant with Clean River Partners and the City of Northfield, **$20,000. Role: Co-PI.**
- **2021:** Dayton Power and Light Grant to produce Emmy Award Winning PBS Documentary: *Redlining: Mapping Inequality in Dayton and Springfield*, **$75,000. Role: Concept, Advisor.**
- **2020:** USDA McCain Acres: Increasing access to local foods and growing community self-reliance and resilience through urban agriculture and education, **$399,400. Role: Evaluation.**
- **2019:** NSF-Improving Undergraduate STEM Education BASICS: Integrated Curriculum for Sustainability. (**$2,400,000** total multi-institutional funding). **Role: Co-PI.**

- **2014:** NSF InTeGrate Sustainability Implementation Program (Funding secured by Wittenberg University), **$370,000. Role: Implementation Program Lead.**
- **2014:** Handheld XRF and Soil Sample Kit Awarded from City of Springfield HUD Project, **$85,000. Role: Partner.**
- **2014:** Wittenberg Campus Rain Garden, City of Springfield, **$50,000. Role: Partner.**
- **2013:** NSF-CC-NIE Networking Infrastructure, **$50,000. Role: Co-PI.**
- **2013:** NSF-COSI Portal to the Public Award, **$10,000. Role: Collaborator.**
- **2012:** Springfield Conservancy Award to Purchase Ion Chromatograph & autosampler for ongoing community water testing and literacy building engaging undergraduates, **$85,000. Role: PI.**
- **2012:** OSU Agroecosystems Grant, **$50,000. Role: Co-PI.**

National Leadership and Service

- **2024–Present: Pilot Participant (2025), National Advisory Committee (2026-)** Carnegie Sustainability Elective. Defining national metrics for higher education institutional recognition in sustainability.
- **2024–Present: Board Member,** Upper Midwest Association of Campus Sustainability (UMACS). Guiding strategic direction for 30+ regional colleges.
- **2022–2025: Member,** NAS U.S. National Committee for Geological Sciences. Representing the U.S. geological community in national and international forums.
- **2021–2025: Member, Vice Chair,** NAS Committee to Advise the U.S. Global Change Research Program. Convening expert guidance on the government's 13-agency global change research efforts. Work ceased with the illegal end of the USGCRP.
- **2022–2024: Founding Member,** Midwest Climate Educator Community of Practice. Established a network of 50+ educators.
- **2021–2023: Chair,** AGU GeoHealth Policy Committee. Led policy recommendations on the intersection of Earth science and public health.
- **2021: Contributor,** AGU-NSF Climate Solutions Planning Meetings. Influenced the draft funding vision for future national climate research priorities.
- **2019–2020: Member,** AAC&U Advisory Committee Civic Prompts in the Major. Program Model Recognition.
- **2019–2020: Panelist,** NAS Call to Action on Science Education K-16.
- **2018–2020: Chair,** Teach the Earth Committee, National Association of Geoscience Teachers (NAGT). Directed development of national resources and workshops.
- **2018: National Recognition** (AAC&U & Endeavor Foundation) for Environmental Science Civic Program Model. Cited for innovative curricular design and pedagogy.
- **2014–2018: Chair,** Innovation & Collaboration Committee, Council on Undergraduate Research (CUR). Developed cross-disciplinary strategies to enhance research opportunities.
- **2017: Committee Member,** NAS Workshop in Service Learning in the Undergraduate Geosciences.

Major Reports & National Academies Contributions

1. **2022:** National Academies of Sciences, Engineering, and Medicine. *Review of the U.S. Global Change Research Program's Draft Decadal Strategic Plan, 2022–2031*. Washington, DC: The National Academies Press. (As Committee Member, contributed to the official review report).
2. **2016:** Savanick, S. & **Fortner, S.** Geoscience Service-Learning Literature Themes. (Report prepared for the NAS Workshop in Service Learning in the Undergraduate Geosciences.
3. **2016:** Proceedings of a Workshop: *Service-learning in Undergraduate Geosciences*. Washington, DC: The National Academies Press. (As Committee Member, contributed to the published proceedings).

Recent Peer Reviewed Publications

- **(2026, *in press*)** Fortner, S.K., Scherer, H.H., Diaz, M.A., Brown, K.L., Fadem, C.M., Nezat, C.A., Latimer, J.C., Ebanks, S.C., and Landsbergen, K. Coproducing Research to Advance Environmental Justice Outcomes for Broader Impacts: The Metal Redlining Network. *Handbook of Broader Impacts*, eds.Van Egeren and Renoe.
- **(2024)** Diaz, M. A., **Fortner, S. K.**, & Lyons, W. B. High resolution concentration-discharge relationships in managed watersheds: A 30+ year analysis. *Applied Geochemistry*, 175, 106192.
- **(2022)** Hoffman-Hall, A., Gorris, M.E., Anenberg, S., Bredder, A. E., Dhaliwal, J. K., Diaz, M.A., **Fortner, S.K.,** et al. A GeoHealth Call to Action: Moving Beyond Identifying Environmental Injustices to Co-Creating Solutions. *GeoHealth*.
- **(2022)** O'Reilly, C. M., Josek, T., Darner, R. D., & **Fortner, S. K.** Pedagogy of teaching with large datasets: Designing and implementing effective data-based activities. *Biochemistry and Molecular Biology Education*.
- **(2022) Fortner, S.K.,** Manduca, C.A., Ali, H., Saup, C., et al. Geoscience Education Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science. *Earth, Space Science Open Archive*.
- **(2022)** Barnard, M. A., Emani, S. R., **Fortner, S. K.,** Haygood, L., Sun, Q., White-Newsome, J. L., & Zaitchik, B. GeoHealth Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science. *Earth and Space Science*, e2021EA002157.
- **(2021) Fortner, S.K.,** Suffoleta, M.*, Vogt, L.*, Brown, A., Diaz, M. An undergraduate soil lead research and partnering model to address systemic racism and the legacy of redlining. *Environmental Justice*, Special Issue.
- **(2020) Fortner, S. K.,** Scherer, H. H., & Ritter, J. B. Community Engagement in the Earth Sciences: A Situated Learning Model at Wittenberg University. In *Preparing Students for Community-Engaged Scholarship in Higher Education*. IGI Global.
- **(2020)** Kehrwald, N.M., Jasmann, J., Dunham, M., Ferris, D., Osterberg, E., Kennedy, J., Havens, J., Barber, L., **Fortner, S.**, et al. Boreal blazes: Biomass burning, and vegetation types archived in the Juneau Icefield. *Environmental Research Letters*.

Field Research

- **Antarctica: McMurdo Long Term Ecological Research Program, Dry Valleys**
  Years: 2001, 2005, 2006, 2007, 2016 (5 seasons)
- **Juneau Icefield Research Program, Southeast Alaska**
  Years: 1995, 2001, 2017–2019, 2022-2026 (10 seasons; spanning three decades)
- **Peru: Cordillera Blanca**
  Year: 2007
- **North America Glacial Systems**
  - Oregon Cascades (2005, 2006)
  - Columbia Icefield (1995)
  - *Inspiring Girls Expeditions,* North Cascades (2006)

Honors

- **2023: Lois M. Jones Award for Science Access, Engagement and Communication**, Byrd Polar and Climate Research Center, for efforts to make polar science inclusive.
- **2020: Excellence in Community Service Award**, Wittenberg University, for shaping a community engaged environmental science program.
- **2019: Top Contributor to Open Education**, Teach the Earth (National Association of Geoscience Teachers) an open education platform.
- **2016: Volunteer of the Year**, Council on Undergraduate Research (CUR) for the curation and open collection of partnership models engaging students including open science, community engagement, and “for hire”.
- **2015: Lou Laux Environmental Sustainability Award**, Wittenberg University Honors.
- **2014: Division of the Year Award** (Awarded to the division and members), Council on Undergraduate Research (CUR).

Professional Affiliations

- Association for the Advancement of Sustainability in Higher Education (**AASHE**), 2023–Present
- American Geophysical Union (**AGU**), 2002–Present
- Geological Society of America (**GSA**), 2002–Present
- National Association of Geoscience Teachers (**NAGT**), 2014–Present
- Midwest Climate Collaborative (**MCC**), 2022–Present
- Second Nature, 2023–Present, 2026
- Upper Midwest Association of Campus Sustainability (**UMACS**), 2024–Present
- American Association for the Advancement of Science (**AAAS**), 2017–2021
- Council on Undergraduate Research (**CUR**), 2011–2021

Selected Presentations & Abstracts

I. Leadership & Professional Presentations

Presentations at high-level leadership, institutional, and professional development summits.

- **2026:** Launch of the Carnegie Elective in Sustainability: An Institutional Self Study and Recognition., Morales, M., Berry, P., Fortner, S., Roe, B., Halverson, A., **Second Nature Climate Leadership Summit**, Chicago, IL.
- **2025:** Fortner, S. Opperman Torres, K., Morales, M., Garcia, A., Bridging Community, Academic, and Applied Sustainability Expertise: Strategies for Collaboration Across Roles. **Second Nature Climate Leadership Summit**, Washington D.C.
- **2025:** Fortner, S. & Egge, E. Enhancing Sustainability Education and Action. **American Conference of Academic Deans (ACAD) Annual Meeting**, Phoenix, AZ.
- **2023:** Fortner, S. & Navarro, H. Meet the Midwest Climate Collaborative - Connecting Campuses to Government, Industry, and Community. **Upper Midwest Association of Campus Sustainability (UMACS) Annual Meeting**, Vermillion, SD.
- **2022:** Fortner, S. et al. Establishing Collaborative Partnerships for Equity and Justice (Virtual Workshop). **American Geophysical Union (AGU) Workshop Series.**

II. Select Research & Disciplinary Abstracts

Abstracts and contributed talks presented at disciplinary scientific and research-focused meetings.

- **2023:** Manduca, C.A., **Fortner, S.K.** Undergraduate geoscience education for a successful, sustainable, and just future. T18: Teaching Environmental Justice in and Beyond the Classroom. **Geological Society of America Meeting.**
- **2022:** Massey-Bierman, M., **Fortner, S. K.**, et al. Cyanotypes as Co-creation: Increasing Connection and Understanding of Ice Cores. ED55D-0191. **American Geophysical Union Meeting.**
- **2022:** Fox, S., Carlson, A., **Fortner, S. K.**, et al. Connecting Geoscience Educators to Teaching Resources: The Compass Project. ED25C-0558. **American Geophysical Union Meeting.**
- **2022:** Barnard, M. A., Emani, S. R., **Fortner, S. K.**, et al. Advancing GeoHealth Through Integrated, Coordinated, Open, Networked (ICON) Science. GH12A. **American Geophysical Union Meeting.**
- **2022:** Arthurs, L., St. John, K., Mulvey, B.K., Gold, A.U., Ali, H.N., **Fortner, S.K.,** et al. ICON Science Relevance to Geoscience Education Research. **American Geophysical Union Meeting.**
- **2022: Fortner, S.** The Need to Advance Geoscience Collaboration for Environmental Justice. In: Inclusivity in Geosciences. **American Geophysical Union Meeting.**
- **2022:** Perera, V., Othus-Gault, S., **Fortner, S.**, et al., ICON Framework for Promoting Equity and Justice in Geoscience Education. 232 T167. **Geological Society of America Meeting.**
- **2022:** Fox, S., & **Fortner, S.** Discovery Improvements for SERC Website. **Earth Educators Rendezvous.**
- **2022:** Bruckner, M., Huyck Orr, C., and **Fortner, S.** Incorporating Data, Inquiry, and Exploration into the Classroom with Project EDDIE. **Earth Educators Rendezvous.**

- **2022:** Bruckner, M., Ciancarelli, B., Darner, R., **Fortner, S.**, et al., Environmental Data-Driven Inquiry and Exploration. **AAAS Meeting.**
- **2021:** Dhaliwal, J.K., **Fortner, S.K.**, et al. Advancing GeoHealth Collaboration for Systemic Change. **American Geophysical Union Meeting.**

Courses & Mentoring

- **Courses Taught (Sample):** *Global Climate Change*, *Introduction to Environmental Science*, *Sustainable Earth*, *Geology of the Critical Zone* (Wittenberg); *Introductory Earth Science*, *Water Science & Water Policy* (Ohio State); *Glacier and Climate Systems* (University of Maine/JIRP).
- **Mentorship: Mentored over 100 students** in research and applied projects for academic credit, and **30+ interns** in applied sustainability.

Institutional Service

Carleton College:

- Environmental Advisory Committee, **Chair** (2025–Present)
- Sustainability Working Group, **Co-chair** (2023–2024)

Wittenberg University (Selected Roles):

- Programming Committee, **Chair** (2018–2021)
- **Director,** Wittenberg in Wittenberg Germany (2019)
- Faculty Endowment Fund Board (2014–2017)
- President's Climate Commitment Committee (2014)

Local Service

- **Northfield, MN:** Clean River Partners, **Board Member** (2021–Present), **Board Chair** (2026- Present).
- **Springfield, OH (Selected Roles):**
    - Clark County Local Foods Council (2019–2021)
    - Clark County Community Health District Advisor (2019–2020)
    - Clark County Soil & Water District, EQUIP Advisor (2016–2020)