

Dustin W. Kincaid

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EDUCATION

Ph.D.	Michigan State University Integrative Biology & Ecology, Evolutionary Biology, & Behavior	2018
B.S.	University of Wisconsin-Madison Zoology & Biological Aspects of Conservation	2007

APPOINTMENTS

2021-	Post-Doctoral Associate, Using Big Data Approaches to Assess Ecohydrological Resilience Across Scales, Critical Zone Collaborative Network, University of Vermont
2018-2021	Post-Doctoral Associate, VT EPSCoR Basin Resilience to Extreme Events (BREE) project. University of Vermont

PEER-REVIEWED PUBLICATIONS

- (9) Shanley JB, Wemple BC, Hastings B, & **Kincaid DW**. In press. Hydrology on high: Assessing the effect of a ski resort expansion at the Mount Mansfield paired catchment study in Vermont USA. *Hydrological Processes*.
 - (8) **Kincaid DW**, Beck WS, Brandt JE, Brisbin MM, Farrell KJ, Hondula KL, Larson EI, & Shogren AJ. 2021. Wikipedia helps resolve information inequality in the aquatic sciences. *Limnology & Oceanography Letters* 6: 18–23.
 - (7) **Kincaid DW**, Seybold EC, Adair EC, Bowden WB, Perdrial JN, Vaughn MCH, & Schroth AW. 2020. Land use and season influence event-scale nitrate and soluble reactive phosphorus exports and export stoichiometry from headwater catchments. *Water Resources Research* 56: e2020WR027361.
 - (6) Stachelek J, Hondula K, **Kincaid D**, & Shogren A. 2020. Ripples on the web: Spreading lake information via Wikipedia. *Limnology & Oceanography Bulletin* 29: 70–72.
 - (5) **Kincaid DW**, Lara NAH, Tiegs SD, & Hamilton SK. 2019. Decomposition in flocculent sediments of shallow freshwaters and its sensitivity to warming. *Freshwater Science* 38: 899–916.
 - (4) Stachelek J, Ford C, **Kincaid D**, King K, Miller H, & Nagelkirk R. 2018. The National Eutrophication Survey: lake characteristics and historical nutrient concentrations. *Earth System Science Data* 10: 81–86.
 - (3) Rosi-Marshall EJ, **Kincaid DW**, Bechtold HA, Royer TV, Rojas M, & Kelly JJ. 2013. Pharmaceuticals suppress algal growth and microbial respiration and alter bacterial communities in stream biofilms. *Ecological Applications* 23: 583–593.
 - (2) Rosi-Marshall EJ, Kennedy TA, **Kincaid DW**, Cross WF, Kelly HAW, Behn KA, White T, Hall Jr RO, & Baxter CV. 2010. Short-term effects of the 2008 high-flow experiment on macroinvertebrates in the Colorado River below Glen Canyon Dam, Arizona. *U.S. Geological Survey Open-File Report 2010-1031*: 1–28.
 - (1) **Kincaid DW** & Findlay SEG. 2009. Sources of elevated chloride in local streams: groundwater and soils as potential reservoirs. *Water, Air, and Soil Pollution* 203: 335–342.
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PUBLICATIONS IN REVISION, REVIEW, OR PREPARATION

Kincaid DW, Adair EC, Joung DJ, Stockwell JD & Schroth AW. Ice cover and thaw events influence nitrogen partitioning and concentration in two shallow eutrophic lakes. *In revision* at *Biogeochemistry*

Letters.

- Kincaid DW** & Phanikumar MS (co-first authors), Briggs MA, Zarnetske JP, & Hamilton SK. Buoyancy-induced flow drives exchange between flocculent sediment and overlying water in a small pond. *In review* at Water Resources Research.
- Aoki R, Brisbin MM, Hounshell AG, **Kincaid DW**, Larson E, Sansom BJ, Shogren AJ, Smith RS, Sullivan-Stack J. Preparing aquatic research for an extreme future: Call for unified definitions, tools, and approaches. *In review* at Bioscience.
- Seybold EC, Dwivedi R, Musselman KN, **Kincaid DW**, Schroth AW, Perdrial JN, Classen AT, & Adair EC. Changing winter dynamics pose threat to water quality. *In review* at Nature Communications Earth & Environment.
- Wu R, Hamshaw SD, Yang L, **Kincaid DW**, Etheridge R, & Ghasemkhani A. Data imputation for multivariate time series sensor data with large gaps of missing data. *In review* at IEEE Sensors Journal.
- Halpern B . . . **Kincaid DW** . . . Priorities for synthesis in ecology and environmental science. *Intended submission* to Frontiers in Ecology and the Environment.
- Hamshaw SD, Javed A, **Kincaid DW**, Nguyen LK, Schroth AW, & Rizzo DM. Watershed data science at the event scale: Challenges and new approaches for defining and characterizing event concentration-discharge dynamics. *Invited to submit* to Hydrological Processes Special Issue on Data Science Applications in Hydrology.

OTHER RESEARCH EMPLOYMENT

- 2011 Research Support Specialist, *Nutrient spiraling in large rivers*. Cary Institute of Ecosystem Studies. PIs: Drs. Emma Rosi-Marshall, Jennifer Tank, Robert Hall, & Michelle Baker
- 2011 Research Support Specialist, *Evaluating the influence of riparian forest structure on stream ecosystems across the northern forest*. Cary Institute of Ecosystem Studies. Supervisors: Drs. Emma Rosi-Marshall & Heather Bechtold
- 2010-2011 Research Support Specialist, *Effects of chronic exposure to pharmaceutical compounds on stream ecosystem functions*. Cary Institute of Ecosystem Studies. PI's: Drs. Emma Rosi-Marshall, Heather Bechtold, & Todd Royer
- 2008-2011 Research Support Specialist, *Linking whole-system carbon cycling to quantitative food webs in the Colorado River*. Loyola University Chicago & Cary Institute of Ecosystem Studies. PI's: Drs. Emma Rosi-Marshall, Robert Hall, Ted Kennedy, & Colden Baxter
- 2007 Research Assistant, Stream Ecology Center. Idaho State University. Supervisor's: Drs. Colden Baxter & Amy Marcarelli
- 2006 REU, *Sources of elevated chloride in local streams: groundwater and soils as potential reservoirs*. Cary Institute of Ecosystem Studies. Mentor: Dr. Stuart Findlay
- 2004-2007 Undergraduate Research Assistant, Center for Limnology, River Ecology Lab. University of Wisconsin-Madison. Supervisor: Dr. Emily Stanley

TEACHING

- 2018 Graduate Teaching Assistant, Population & Organismal Biology Lab, Michigan State University
- 2016, 2017 Science Education Fellow, Kellogg Biological Station, Michigan State University
- 2014, 2015 Graduate Teaching Assistant, Wetlands Ecology & Management, Kellogg Biological Station, Michigan State University
- 2014 Graduate Teaching Assistant, Integrated Studies Biology Lab, Michigan State University
- 2012-2014 NSF Graduate STEM Fellow in K-12 Education: Kellogg Biological Station Bioenergy Sustainability Project, Michigan State University
- 2011, 2012 Graduate Teaching Assistant, Population & Organismal Biology Lab, Michigan State University
- 2007, 2008 Educator and Naturalist, Trees for Tomorrow Natural Resources Specialty School

Guest lectures:

- 2020 Drivers of nitrogen and phosphorus export from headwater catchments, Pollutant Movement, University of Vermont
- 2020 Best practices in collaborative team science and engineering, Stormwater Engineering, University of Vermont
- 2020 Best practices in collaborative team science and authorship, Snow Hydrology, University of Vermont
- 2019 Drivers of nitrogen and phosphorus export from headwater catchments, Environmental Geochemistry, University of Vermont
- 2017 Biogeochemical importance of small waterbodies, Global Change Biology, Michigan State University
- 2016 Biogeochemical importance of small waterbodies, Freshwater Ecology, Western Michigan University
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GRANTS – EXTERNALLY FUNDED

- 2020 Co-PI. “Recruiting a diverse editor base to improve aquatic-related information on Wikipedia.” Wikimedia Foundation – Project Grant. *PI: J. Zwart (USGS). Co-PIs: J. Brandt (University of Connecticut), M. Brisbin (Woods Hole Oceanographic Institution), K. Farrell (University of Georgia), K. Hondula (SESYNC), D. Kincaid (University of Vermont), E. Larson (Alaska Pacific University), A. Shogren (Michigan State University).* \$9,200 to PI Zwart.
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OTHER AWARDS AND FELLOWSHIPS

- 2016-2017 Science Education Fellowship, Kellogg Biological Station, Michigan State University (\$45,000)
- 2016 Kellogg Biological Station LTER Small Grants Program, Michigan State University (\$2000)
- 2015-2016 Kellogg Biological Station LTER Full Year Research Fellowship, Michigan State University (\$45,000)
- 2015 Society for Freshwater Science Endowment Award (\$1000)
- 2015 Kellogg Biological Station Summer Research Fellowship, Michigan State University (\$2000)
- 2014 Kellogg Biological Station Summer Research Fellowship, Michigan State University (\$1000)
- 2014 Kellogg Biological Station LTER Summer Research Fellowship, Michigan State University (\$6750)
- 2013-2014 Graduate STEM Fellowship in K-12 Education, National Science Foundation (\$45,000)
- 2012-2013 Graduate STEM Fellowship in K-12 Education, National Science Foundation (\$45,000)
- 2012 Kellogg Biological Station Summer Research Fellowship, Michigan State University (\$1000)
- 2012 Graduate Research Fellowship, National Science Foundation (Honorable Mention)
- 2006 NSF Research Experience for Undergraduates (REU) Fellowship, Cary Institute of Ecosystem Studies (\$4500)
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INVITED SEMINARS

- 2021 California State University-Chico, Chico, CA
- 2021 Colby College, Waterville, ME
- 2020 East Carolina University, Greenville, NC
- 2019 Cary Institute of Ecosystem Studies, Millbrook, NY
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CONFERENCE PRESENTATIONS

**Student mentee*

Lee R, Underwood K, Seybold E, Hamshaw S, **Kincaid D**, Rizzo D, Li L, Perdrial J, & Abbott B. Big data is finally enough to evaluate ecosystem vulnerability in the Anthropocene. Geological Society of America, Annual Meeting, Portland, OR. Oral.

Perdrial J, Bristol C, Ruckhaus M, Seybold E, Stewart B, Abbott BW, **Kincaid DW**, Underwood K, Hamshaw SD, Shanley JB, Li L, Rizzo D, Lee R, Lewis G, & Lee BS. 2021. Assessing ecohydrological resilience across scales: opportunities and challenges for Critical Zone research. Goldschmidt Conference, Lyon, France. Oral.

Kincaid D & Hamshaw S. 2021. Watershed data science at the event scale: Challenges and new approaches for defining and characterizing event concentration-discharge dynamics. Incorporating Data Science and Open Science in Aquatic Research, Virtual Summit. https://aquaticdatasciopenci.github.io/program_2/

Kincaid D, Hamshaw S, Underwood K, Seybold E, Adair C, Perdrial J, Rizzo D, Wemple B, & Schroth A. 2021. Self-organizing maps reveal the influence of event regimes on dissolved N and P export dynamics from an agricultural and forested watershed. Society for Freshwater Science, Annual Meeting, Virtual. Oral.

Kincaid DW, Seybold EC, Adair EC, Bowden WB, Perdrial JN, Vaughan MCH, & Schroth AW. 2019. Event-scale riverine loading of nitrogen and phosphorus: Impacts of land use, seasonality, and antecedent conditions on N:P export. American Geophysical Union, Fall Meeting, San Francisco, CA. Poster.

Seybold EC, **Kincaid DW**, Lancellotti B, Adair EC, Perdrial JN, & Schroth AW. 2019. Effects of rain on snow events on runoff generation and nutrient export from forested and agricultural catchments in northern Vermont. American Geophysical Union, Fall Meeting, San Francisco, CA. Poster.

Lancellotti B, Adair EC, Perdrial JN, Seybold EC, **Kincaid DW**, Schroth AW. 2019. Spring snowmelt: a 'hot moment' for soil denitrification in riparian areas? American Geophysical Union, Fall Meeting, San Francisco, CA. Poster.

Hondula KL, Brandt JE, Farrell K, **Kincaid DW**, Shogren A, & Zwart JA. 2019. From classroom to community: Student contributions to WikiProject Limnology & Oceanography expand public education in the aquatic sciences. American Geophysical Union, Fall Meeting, San Francisco, CA. eLightning Poster.

Irizarry PG*, Lancellotti B, **Kincaid D**, & Adair EC. 2019. Impacts of land use and landscape position in denitrification rates during spring snowmelt period. The SACNAS National Diversity in STEM Conference, Honolulu, Hawaii. Poster.

Sosa MD*, Burns W, Ruiz LE, Schroth A, **Kincaid D**, & Blocher S. 2019. Understanding the community dynamics, timing, and intensity of the 2017 and 2018 cyanobacteria blooms in two shallow eutrophic bays in Lake Champlain. Annual Biomedical Research Conference for Minority Students, Anaheim, CA. Poster.

Zwart JA, Beck W, Brandt J, Brisbin M, Farrell K, Hondula K, **Kincaid D**, Larson E, Shogren A, & Eco-DAS XIII Participants. 2019. Curating open scientific information on Wikipedia: a case study of WikiProject Limnology and Oceanography. Ecological Society of America Annual Meeting, Louisville, KY. Oral.

Schroth A, Vaughan M, Seybold E, Bowden B, **Kincaid D**, Wilkes A, Shanley J, Vermilyea A, Gold A, Inamdar S, Birgand F, Addy K. 2019. "Land use controls on solute export dynamics: Insight gleaned from in-situ spectrophotometers. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico. Oral.

Kincaid DW & Hamilton SK. 2017. "Total nitrate removal by flocculent organic sediments in shallow freshwater ecosystems." Society for Freshwater Science, Annual Meeting, Raleigh, NC. Poster.

Lara N*, **Kincaid DW**, Hamilton SK, & Tiegs SD. 2017. "Patterns and controls on cellulose decomposition rates within thick accumulations of flocculent sediment in shallow freshwaters." Society for Freshwater Science, Annual Meeting, Raleigh, NC. Poster.

Roley SS, Hamilton SK, & **Kincaid DW**. 2017. "Phosphorus retention and release by reservoirs of a eutrophic river." Society for Freshwater Science, Annual Meeting, Raleigh, NC. Oral.

Hamilton SK, Roley SS, **Kincaid DW**, Kieser MS, Hoch-Melluish P, Boyer B, & Heaton S. Phosphorus internal loading from reservoir sediments: a historical legacy, or sustained by ongoing inputs? ASLO Aquatic Sciences Meeting, Honolulu, HI. Oral.

- Kincaid DW**, Phanikumar MS, Hamilton SK, Briggs MA, & Zarnetske JP. 2016. “Does density-driven nocturnal water column mixing drive redox oscillations in flocculent organic sediments?” American Geophysical Union, Fall Meeting, San Francisco, CA. Poster.
- Kincaid DW**, Hamilton SK, Briggs MA, Zarnetske JP, & Phanikumar MS. 2016. “Does density-driven nocturnal water column mixing drive redox oscillations in flocculent organic sediments?” Society for Freshwater Science, Annual Meeting, Sacramento, CA. Oral.
- Muñiz-Tirado A*, **Kincaid DW**, Hamilton SK. 2016. “Changes in sediment porewater chemistry and wild rice growth as a result of reduced hyporheic flow.” Society for Freshwater Science, Annual Meeting, Sacramento, CA. Poster.
- Kincaid DW**, Briggs MA, Hamilton SK, & Zarnetske JP. 2015. “Hydrologic controls on biogeochemical gradients in thick layers of flocculent organic sediments in a through-flow wetland.” NSF Long Term Ecological Research Network All Scientists Meeting, Estes Park, CO. Poster.
- Kincaid DW**, Briggs MA, Hamilton SK, & Zarnetske JP. 2015. “Hydrologic controls on biogeochemical gradients in thick layers of flocculent organic sediments in a through-flow wetland.” Society for Freshwater Science, Annual Meeting, Milwaukee, WI. Oral.
- Hamilton SK & **Kincaid DW**. 2014. “Freshwater sediment-water nitrogen transformations in tropical and temperate regions.” Joint Aquatic Sciences Meeting, Portland, OR. Oral.
- Kincaid DW** & Hamilton SK. 2013. “Do hydrologic fluctuations regulate biogeochemical fluxes to surface waters in a riparian wetland? Drying and wetting: a whole ecosystem manipulation.” NSF Long Term Ecological Research Program, Kellogg Biological Station All Scientists Annual Meeting, Lansing, MI. Poster.
- Kincaid DW** & Hamilton SK. 2013. “Do hydrologic fluctuations regulate biogeochemical fluxes to surface waters in a riparian wetland? Drying and wetting: a whole ecosystem manipulation.” Society for Freshwater Science, 61st Annual Meeting, Jacksonville, FL. Poster.
- Kincaid DW**, Rosi-Marshall EJ, Royer TV, & Bechtold HA. 2011. “Chronic exposure to pharmaceutical compounds suppresses in-situ algal growth and microbial respiration.” North American Benthological Society, 59th Annual Meeting, Providence, RI. Oral.
- Kincaid DW**, Rosi-Marshall EJ, Cross WF, Kennedy TA, & Hall RO. 2009. “Effects of an experimental flood on invertebrates in the Colorado River.” North American Benthological Society, 57th Annual Meeting, Grand Rapids, MI. Oral.
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MENTORING

- 2021 Mentor, Undergraduate Internship Program, Vermont EPSCoR, University of Vermont. Students mentored:
Igreña Aponte-Morrero, Universidad Ana G. Méndez, Recinto de Cupey. Research topic: *The influence of a deltaic wetland complex on riverine nitrogen and phosphorus cycling*
Roujia Zhong, Colby College. Research topic: *Synchronization of solute transport from headwater catchments*
- 2019 Mentor, Undergraduate Internship Program, Vermont EPSCoR, University of Vermont. Students mentored:
Mariah Cronin, University of Vermont. Research topic: *Groundwater phosphorus dynamics in an agricultural riparian buffer*
Julia Petty, University of Vermont. Research topic: *Spatio-temporal patterns in groundwater nitrogen cycling in an agricultural riparian wetland*
Ellie Sovcik, University of Vermont. Research topic: *Determining the influence of a deltaic wetland complex on riverine nitrogen and phosphorus cycling using high-resolution water quality sensors*
- 2016 Mentor, REU & Undergraduate Research Apprenticeship (URA) Programs, Kellogg Biological Station, Michigan State University. Students mentored:

Nicolas Lara, NSF REU Fellow, Oberlin College. Research topic: *Decomposition of organic carbon in loosely consolidated organic (flocculent) sediments in shallow freshwaters.*

Jezreel Wallace, URA, Michigan State University. Research topic: *Patterns of chlorophyll in loosely consolidated organic (flocculent) sediments in shallow freshwaters.*

2015 Mentor, REU & Undergraduate Research Apprenticeship (URA) Programs, Kellogg Biological Station, Michigan State University. Students mentored:

Adamaris Muñiz Tirado, NSF REU Fellow, University of Puerto Rico. Research topic: *Changes in sediment porewater chemistry and wild rice growth as a result of reduced hyporheic flow.*

Andrew Copsey, URA, Michigan State University. *Aquatic macroinvertebrate communities of loosely consolidated organic (flocculent) sediments in shallow freshwaters.*

2014 Mentor, Undergraduate Research Apprenticeship Program (URA), Kellogg Biological Station, Michigan State University. Student mentored:

Natalie Harnsakunatai, URA, Michigan State University. Research topic: *Biogeochemical importance of flocculent sediments in shallow freshwaters.*

SERVICE

Professional Societies

- 2016-2017 Member, *Ad hoc* Diversity and Inclusivity Committee, Society for Freshwater Science
- 2015-2016 Chair, Annual Meeting Live Auction Subcommittee, Student Resource Committee, Society for Freshwater Science
- 2014-2015 Student Representative, Board of Directors, Society for Freshwater Science
- 2013-2014 Chair, Student Resource Committee, Society for Freshwater Science

Peer Review, Journal Articles

Biogeochemistry, Ecosphere, Hydrological Processes, Journal of Hydrology, Water Resources Research

University of Vermont

- 2021 Pod facilitator, Unlearning Racism in Geoscience (URGE), University of Vermont

Michigan State University

- 2015-2017 Co-chair, KBS-LTER Graduate Student Group, Kellogg Biological Station, Michigan State University
- 2013-2016 Member, Science Communications Advisory Committee, Kellogg Biological Station, Michigan State University
- 2013-2017 Member, Council on Diversity & Community, College of Natural Science, Michigan State University

Community Outreach & Education

- 2020 Curating free aquatic information on Wikipedia and in your classrooms, WikiProject Limnology & Oceanography, Virtual Workshop
- 2017 Workshop Organizer, *From ecosystems to classrooms: teaching global change*, KBS K-12 Partnership, 2017 Summer Institute for Teachers, Kellogg Biological Station, Michigan State University
- 2017 Session Presenter, *Barcodes in water: using eDNA to monitor rare and invasive species in aquatic ecosystems*, KBS K-12 Partnership, 2017 Spring Teacher Workshop, Kellogg Biological Station, Michigan State University

- 2016 Workshop Organizer, *Go with the flow! Exploring the importance of connectivity in nature*, KBS K-12 Partnership, 2016 Fall Teacher Workshop, Kellogg Biological Station, Michigan State University
- 2015, 2016 Presenter, *Introduction to Microsoft Excel and data analysis*, REU & Undergraduate Research Apprenticeship Programs, Kellogg Biological Station, Michigan State University
- 2015 Presenter, *Aquatic macroinvertebrates of southwestern Michigan*. Kalamazoo Water Festival, Kalamazoo, MI
- 2013 Presenter, *Watershed connectivity*. Kellogg Biological Station LTER's Annual Share the Harvest Event. Hickory Corners, MI
- 2012 Presenter, *Aquatic macroinvertebrates of southwestern Michigan*. Kellogg Biological Station LTER's Annual Share the Harvest Event. Hickory Corners, MI
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RESEARCH SYMPOSIA, WORKING GROUPS, & WORKSHOPS

- 2021 Contributor, "Hacking Limnology" Workshop + Virtual Summit in Data Science & Open Science in Aquatic Research
- 2021 Invited Participant, The Future of Synthesis in Ecology and Environmental Science, National Center for Ecological Analysis & Synthesis (NCEAS), Virtual
- 2018 Invited Participant, Ecological Dissertations in Aquatic Sciences (Eco-DAS) Symposium, Association for the Sciences of Limnology and Oceanography (ASLO), Honolulu, HI
- 2015 Organizer, Inland Freshwater Wetlands Working Group, 2015 NSF Long Term Ecological Research Network All Scientists Meeting, Estes Park, CO
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TEACHING PROFESSIONAL DEVELOPMENT

- 2020 Student, University Teaching, University of Vermont
- 2018 Participant, Designing Open-Inquiry Laboratories: It Needn't Be Chaotic, Center for Teaching & Learning, University of Vermont
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SHORT COURSES & CERTIFICATIONS

- 2016 Watershed Science Master Class, Consortium of Universities for the Advancement of Hydrologic Science, Inc., Biosphere 2, Oracle, AZ
- 2013 Linking aquatic and soil organic matter across ecosystems through characterization of optical properties. NSF Long Term Ecological Research Program. University of Colorado-Boulder
- 2012 Techniques to quantify stream-groundwater exchange and shallow transport workshop. Consortium of Universities for the Advancement of Hydrologic Science, Inc., Pennsylvania State University
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SOCIETAL MEMBERSHIPS

American Geophysical Union (AGU): 2016-Present
Association for the Sciences of Limnology and Oceanography (ASLO): 2019-Present
Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS): 2020-Present
Society for Freshwater Science (SFS): 2008-Present