



Shannon L. Speir, Ph.D.

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Expertise: Biogeochemistry of streams and rivers, nitrogen cycling and denitrification, impacts of agriculture on water quality, high-frequency sensors, water chemistry and membrane inlet mass spectrometry (MIMS) analyses

Education:

Texas Christian University (Forth Worth, TX) <i>Advisors: Drs. M. Chumchal & R. Drenner</i>	Biology & Spanish Summa Cum Laude, Honors	B.S., 2014
University of Arkansas (Fayetteville, AR) <i>Advisors: Drs. J.T. Scott & J. Taylor</i>	Crop, Soil, & Environmental Science	M.S., 2016
University of Notre Dame (Notre Dame, IN) <i>Advisor: Dr. J. Tank</i>	Biological Sciences	Ph.D., 2021

Appointments:

2021-present	Postdoctoral Research Associate, The University of Alabama
2016-2021	Fellow, University of Notre Dame Notebaert Premier Scholarship
Spring 2021	Notre Dame CEST Pre-Doctoral Fellow
Fall 2020	Teaching Assistant, Stream Ecology
2019-2020	Research Assistant, NSF Smart & Connected Communities Grant
Spring 2019	Teaching Assistant, General Ecology
Fall 2018	Teaching Assistant, Stream Ecology
2017-2018	Research Assistant, USDA Regional Conservation Partnership Program Grant
2014-2016	Research Assistant, University of Arkansas
2012-2014	Undergraduate Research Assistant, Texas Christian University

Publications ([Google Scholar Page](#)):

1. **S.L. Speir**, M.M. Chumchal, R. Drenner, W.G. Cocke, M. Lewis, and H.M. Whitt. 2014. Methylmercury and Stable Isotopes of Nitrogen Reveal that a Terrestrial Spider has a Diet of Emergent Aquatic Insects. *Environmental Toxicology and Chemistry* 33(11), 2506-2509. <https://doi.org/10.1002/etc.2700>
2. **S.L. Speir**, J.M. Taylor, and J.T. Scott. 2017. Seasonal Differences in Relationships between Nitrate and Denitrification Rates in Ditch Sediments Vegetated with Rice Cutgrass (*Leersia oryzoides*). *Journal of Environmental Quality* 46(6), 1500-1509. <https://doi.org/10.2134/jeq2016.11.0450>

3. A.J. Shogren, J.L. Tank, E.J. Rosi, M.M. Dee, **S.L. Speir**, D. Bolster, S.P. Egan. 2019. Transport and instream removal of the Cry1Ab protein from genetically engineered maize is mediated by biofilms in experimental streams. *PloS one* 14(5). <https://doi.org/10.1371/journal.pone.0216481>
4. J.M. Taylor, M. Moore, **S.L. Speir**, S. Testa III. 2020. Vegetated Ditch Habitats Provide Net Nitrogen Sink and Phosphorus Storage Capacity in Agricultural Drainage Networks Despite Senescent Plant Leaching. *Water* 12(3). <https://doi.org/10.3390/w12030875>
5. **S.L. Speir**, J.L. Tank, U.H. Mahl. 2020. Quantifying denitrification following floodplain restoration via the two-stage ditch in an agricultural watershed. *Ecological Engineering*. 155. <https://doi.org/10.1016/j.ecoleng.2020.105945>
6. M.T. Trentman, J.L. Tank, T.V. Royer, **S.L. Speir**, U.H. Mahl, L.R. Sethna. 2020. Cover crops and precipitation influence soluble reactive phosphorus losses via tile drain discharge in an agricultural watershed. *Hydrological Processes*. 34(23), 4446-4458. <https://doi.org/10.1002/hyp.13870>
7. J.L. Tank, **S.L. Speir**, L.R. Sethna, T.V. Royer. 2021. The case for studying highly modified agricultural streams: Farming for biogeochemical insights. *Limnology and Oceanography Bulletin*. <https://doi.org/10.1002/lob.10436>

In Review/Revision:

1. **S.L. Speir**, J.L. Tank, M. Bierzoza, U.H. Mahl, T.V. Royer. Storm size and hydrologic modification influence nitrate mobilization and transport in agricultural watersheds. *In Revision with Biogeochemistry*.
2. **S.L. Speir**, J.L. Tank, J.M. Taylor, A.L. Grose. Warmer temperatures and increasing carbon availability increase nitrous oxide production from incomplete denitrification in streams. *In Review with L&O Letters*.
3. **S.L. Speir**, J.L. Tank, M.T. Trentman, M.M. Dee, A.J. Shogren. Environmental context differentially influences nitrogen and phosphorus uptake in experimental streams. *In review with Freshwater Biology*.
4. **S.L. Speir**, J.L. Tank, M.T. Trentman, U.H. Mahl, L.R. Sethna, T.V. Royer. Cover crops control nitrogen and phosphorus transport from two agricultural watersheds at multiple measurement scales. *In review with Environmental Science and Technology*.

Oral Presentations:

1. **S.L. Speir**, M.M. Chumchal, R. Drenner, W.G. Cocke, M. Lewis, and H.M. Whitt. Use of methyl mercury as a tracer of aquatic carbon flux to terrestrial consumers. Texas Academy of Science 117th Annual Meeting. March 2014.
2. **S.L. Speir**. Methyl mercury in emergent aquatic insects and terrestrial spiders reveals linkages between aquatic and terrestrial ecosystems. TCU Senior Honors Thesis Symposium. April 2014.

3. **S.L. Speir**, M.M. Chumchal, R. Drenner, W.G. Cocke, M. Lewis, and H.M. Whitt. Methyl mercury in emergent aquatic insects and terrestrial spiders reveals linkages between aquatic and terrestrial ecosystems. Joint Aquatic Sciences Meeting. May 2014.
4. **S.L. Speir**, J.M. Taylor, J.T. Scott. Seasonal patterns in nitrogen fluxes as a function of nitrate availability in vegetated agricultural ditch sediments. Society for Freshwater Science Annual Meeting. May 2016.
5. J.M. Taylor, **S.L. Speir**, M.M. Moore, J.T. Scott. Enhancing ditch denitrification with rice cutgrass: experimental evidence for a simple nitrate runoff mitigation tool. Mississippi Water Resources Conference. April 2017.
6. **S.L. Speir**, J.L. Tank, T.V. Royer, U.H. Mahl, M.T. Trentman, B.R. Hanrahan, K. Prior, S.F. Christopher. Continuous nitrate data provides a unique insight into nitrate export dynamics during storms in two agricultural watersheds. Society for Freshwater Science Annual Meeting. June 2017.
7. K. Prior, T.V. Royer, J.L. Tank, **S.L. Speir**, M.T. Trentman, B.R. Hanrahan, S.F. Christopher, U.H. Mahl. In-stream carbon cycle impacts from a watershed-scale implementation of winter cover crops: DOC and greenhouse gas dynamics. June 2017.
8. **S.L. Speir**, J.L. Tank, T.V. Royer, U.H. Mahl, M.T. Trentman, B.R. Hanrahan, K. Prior, S.F. Christopher. Real-time monitoring provides insight into nitrate-N export during storms in two agricultural watersheds. Universities Council on Water Resources Annual Meeting. June 2017.
9. M.T. Trentman, J.L. Tank, S.F. Christopher, B.R. Hanrahan, U.H. Mahl, K. Prior, **S.L. Speir**. Comparing the effectiveness of increased winter land cover on nutrient export across two Indiana agricultural watersheds. Universities Council on Water Resources Annual Meeting. June 2017.
10. B.R. Hanrahan, J.L. Tank, S.F. Christopher, M.T. Trentman, U.H. Mahl, **S.L. Speir**, K. Prior, T.V. Royer. Quantifying changes in nutrient export from an agricultural watershed following the planting of winter cover crops. Universities Council on Water Resources Annual Meeting. June 2017.
11. U.H. Mahl, S.F. Christopher, J.L. Tank, B.R. Hanrahan, M.T. Trentman, K. Prior, **S.L. Speir**, T.V. Royer. Linking soil health to improved water quality via the planting of cover crops in two Indiana watersheds. Universities Council on Water Resources Annual Meeting. June 2017.
12. K. Prior, T.V. Royer, J.L. Tank, S.F. Christopher, B.R. Hanrahan, U.H. Mahl, **S.L. Speir**, M.T. Trentman. Response in dissolved organic carbon dynamics and greenhouse gas emissions to watershed-scale implementation of winter cover crops. Universities Council on Water Resources Annual Meeting. June 2017.
13. **S.L. Speir**, J.L. Tank, A.J. Shogren, M.M. Dee, M.T. Trentman. The impact of substrate size and other drivers on nutrient uptake across a five-month biofilm colonization sequence in experimental streams at ND-LEEF. Society for Freshwater Science Annual Meeting. May 2018.

14. A.J. Shogren, J.L. Tank, M.M. Dee, **S.L. Speir**, E.J. Rosi, S.P. Egan, D. Bolster. Biofilm Accumulation mediates the transport of genetically-engineered protein (*CryIAB*) in experimental streams. Society for Freshwater Science Annual Meeting. May 2018.
15. J.L. Tank, B.R. Hanrahan, U.H. Mahl, **S.L. Speir**, M.T. Trentman, L.R. Sethna, T.V. Royer. The influence of elevated flows on nitrate and phosphorus export from two agricultural watersheds. Society for Freshwater Science Annual Meeting. May 2018.
16. M.M. Dee, J.L. Tank, A.J. Shogren, M.T. Trentman, **S.L. Speir**. Using experimental streams to understand the roles of biofilm colonization and disturbance in estimating reaeration using argon gas as a direct tracer at ND- LEEF. Society for Freshwater Science Annual Meeting. May 2018.
17. N. Ehsani, J.L. Tank, A.F. Hamlet, T.V. Royer, S.F. Christopher, A. Sharma, K. Byun, M.T. Trentman, **S.L. Speir**, L.R. Sethna, C.J. Talbot, U.H. Mahl. Hydrologic and biogeophysical parameter estimation for simulating watershed-scale conservation to reduce nutrient losses to surface waters using SWAT. American Geophysical Union Fall Meeting. December 2018.
18. **S.L. Speir**, U.H. Mahl, J.L. Tank. Quantifying the recovery of denitrification following restoration-related construction in an agricultural watershed. Society for Freshwater Science Annual Meeting. May 2019.
19. N. Ehsani, J.L. Tank, A.F. Hamlet, T.V. Royer, A. Sharma, U.H. Mahl, M.T. Trentman, **S.L. Speir**, K. Byun, and S.F. Christopher. SWAT parameters for modeling watershed-scale conservation to reduce nutrient loss to surface waters. International Association for Great Lakes Research Meeting. June 2019.
20. **S.L. Speir**, U.H. Mahl, J.L. Tank. Quantifying the recovery of denitrification following restoration-related construction in an agricultural watershed. Indiana Water Resources Association Meeting. June 2019.
21. T. Thalhuber, M.M. Chumchal, R.W. Drenner, C. Rodriguez-Ortega, J.H. Kennedy, **S.L. Speir**, W.G. Cocke, M.E. Lewis, H.J. Whitt. Mercury contamination and diet of nestling Red-winged Blackbirds. International Conference on Mercury as a Global Pollutant. September 2019.
22. N. Ehsani, J.L. Tank, A.F. Hamlet, T.V. Royer, U.H. Mahl, M.T. Trentman, **S.L. Speir**, K. Byun. Analyzing the effects of cover crops and climate change on nutrient runoff in Midwestern agricultural watersheds. American Geophysical Union Fall Meeting. December 2019.
23. **S.L. Speir***, J.L. Tank, U.H. Mahl. Quantifying denitrification following floodplain restoration via the two-stage ditch. International Association of Great Lakes Research Annual Meeting. June 2020.
24. L.R. Sethna*, T.V. Royer, J.L. Tank, **S.L. Speir**, M.T. Trentman, U.H. Mahl. Winter cover crops may reduce harmful algal bloom frequency and intensity in agricultural watersheds by altering N:P:Si ratios. International Association of Great Lakes Research Annual Meeting. June 2020.

25. A.L. Grose^{#*+}, **S.L. Speir**, J.L. Tank, A.N. Thellman, M.M. Dee. Differences in groundwater contribution to streamflow versus watershed NO₃⁻-N export reveal importance of scale in evaluating agricultural conservation practices. American Geophysical Union, Annual Fall Meeting, December 2020.
26. **S.L. Speir***, J.L. Tank, M.T. Trentman, U.H. Mahl, L.R. Sethna, T.V. Royer. Winter cover crops reduce nutrient losses from fields to waterways in two agricultural watersheds. International Association of Great Lakes Research Annual Meeting. June 2021.
27. **S.L. Speir***, J.L. Tank, J.M. Taylor, A.L. Grose. Increased temperature and carbon availability enhances nitrous oxide production due to incomplete denitrification in river sediments. Society for Freshwater Science Annual Meeting. May 2021.
28. L.R. Sethna*, T.V. Royer, J.L. Tank, **S.L. Speir**, U.H. Mahl, M.T. Trentman. Does changing land cover alter N:P:Si ratios and risk for cyanobacterial blooms in streams draining intensive agriculture? Society for Freshwater Science Annual Meeting. May 2021.
29. T.V. Royer*, J.L. Tank, L.R. Sethna, **S.L. Speir**, U.H. Mahl, M.T. Trentman. Effect of winter vegetative cover on dissolved organic carbon (DOC) input to streams draining intensively farmed watersheds. Society for Freshwater Science Annual Meeting. May 2021.
30. J.L. Tank*, **S.L. Speir**, M.T. Trentman, U.H. Mahl, L.R. Sethna, T.V. Royer. Winter cover crops reduce nutrient losses from fields to waterways in two agricultural watersheds. Society for Freshwater Science Annual Meeting. May 2021.
31. A.E.S. Vincent*, J.L. Tank, **S.L. Speir**, U.H. Mahl, E.D. Snyder, A.N. Pruitt. Quantifying the role of substrate and biofilm colonization in controlling nitrification rates using experimental streams. Society for Freshwater Science Annual Meeting. May 2021.
32. A.N. Pruitt*, J.L. Tank, **S.L. Speir**, U.H. Mahl, A.E.S. Vincent, T.V. Royer. Land cover change reduces storm-driven sediment export in agricultural streams. Society for Freshwater Science Annual Meeting. May 2021.
33. E.D. Snyder*, J.L. Tank, K. Bibby, A.W. Bivins, P.F.P. Brandão Dias, A.E.S. Vincent, **S.L. Speir**, A.N. Pruitt, G.A. Lamberti. Exploring the role of biofilm colonization on the transport and fate of environmental DNA (eDNA). Society for Freshwater Science Annual Meeting. May 2021.
34. A.E.S. Vincent*, J.L. Tank, **S.L. Speir**, M.T. Trentman, U.H. Mahl, A.N. Pruitt, T.V. Royer, S.S. Roley. Influence of storms on ecosystem metabolism in two agricultural watersheds. Fourth International Workshop on High Temporal Resolution Water Quality Monitoring and Analysis. June 2021.
35. A.N. Pruitt*, J.L. Tank, **S.L. Speir**, U.H. Mahl, A.E.S. Vincent, T.V. Royer. Winter cover crops reduce stream sediment export during storms. Fourth International Workshop on High Temporal Resolution Water Quality Monitoring and Analysis. June 2021.
36. **S.L. Speir***, J.L. Tank, M. Bieroza, U.H. Mahl, T.V. Royer. Storm size and hydrologic modification influence nitrate mobilization and transport in agricultural watersheds. Fourth International Workshop on High Temporal Resolution Water Quality Monitoring and Analysis. June 2021.

37. **S.L. Speir***, J.L. Tank, M. Bieroza, U.H. Mahl, T.V. Royer. Storm size and hydrologic modification influence nitrate mobilization and transport in agricultural watersheds. ASLO 2021 Aquatic Sciences Virtual Meeting. June 2021.

denotes undergraduate mentee

* denotes virtual/recorded video presentation

+ won 2020 AGU Outstanding Student Presentation Award

Lectures & Seminars:

1. **S.L. Speir***. Determination of the source of methyl mercury (MeHg) to shoreline spiders using ^{15}N stable isotopes. TCU “Introduction to Biological Research” Course. November 2013.
2. **S.L. Speir***. Determination of the source of methyl mercury (MeHg) to shoreline spiders using ^{15}N stable isotopes. TCU Alumni Association Presentation. April 2014.
3. **S.L. Speir***. Mercury contamination on a global scale. University of Arkansas Stream Ecology Course. December 2014
4. **S.L. Speir**. Seasonal patterns in dissolved gas and nutrient fluxes as a function of nitrate availability in vegetated agricultural ditch sediments. University of Arkansas Crop, Soil, and Environmental Science Departmental Seminar. March 2016.
5. **S.L. Speir**. From mercury to nitrogen: Swimming across the periodic table. University of Notre Dame Biological Sciences Graduate Student Seminar. October 2016.
6. **S.L. Speir**. Real-time nitrate data provides insight into management of nitrate-N export during storms in agricultural watersheds. University of Notre Dame Biological Sciences Graduate Student Seminar. November 2017.
7. **S.L. Speir***. Decomposition and coarse particulate organic matter. University of Notre Dame Stream Ecology Course. September 2018.
8. **S.L. Speir*** and C.J. Talbot. Hydrology and human impacts on freshwater ecosystems. Indiana Master Naturalist Course. September 2018.
9. **S.L. Speir**. The impact of substrate size and other drivers on nutrient uptake across a five-month biofilm colonization sequence in experimental streams at ND-LEEF. University of Notre Dame Biological Sciences Graduate Student Seminar. November 2018.
9. **S.L. Speir***. Decomposition and nutrient cycling. University of Notre Dame General Ecology Course. April 2019.
10. **S.L. Speir⁺**. Two-stage ditch, cover crops, and water quality. Northwest Indiana Conservation Happenings Meeting. June 2019.
11. **S.L. Speir**. Using stacked conservation practices to improve soil health and water quality in two Indiana watersheds. University of Notre Dame Sustainability Principles Course. November 2019.

12. **S.L. Speir**. Quantifying denitrification following two-stage ditch construction in a Midwestern agricultural watershed. University of Notre Dame Biological Sciences Graduate Student Seminar. November 2019.
13. **S.L. Speir**, J.L. Tank, M. Bieroza, U.H. Mahl, T.V. Royer. Characterizing Storm Nitrate Export in Agricultural Watersheds using High-Frequency Sensor Data. University of Notre Dame Biological Sciences Graduate Student Seminar. October 2020.
14. **S.L. Speir***. Isotope Tracers and Food Webs. University of Notre Dame Stream Ecology Course. November 2020.

* denotes invited lecturer

+ denotes plenary speaker

Poster Presentations:

1. **S.L. Speir**, J.M. Taylor, and J.T. Scott. Quantifying denitrification rates as a function of nitrate availability in vegetated agricultural ditches. Society for Freshwater Science Annual Meeting. May 2015.
2. **S.L. Speir**, J.L. Tank, T.V. Royer, U.H. Mahl, M.T. Trentman, B.R. Hanrahan, K. Prior, S.F. Christopher. Real-time nitrate data provides insight into management of nitrate-N export during storms in agricultural watersheds. WaterSmart Innovations Conference. October 2017.
3. M.T. Trentman, J.L. Tank, T.V. Royer, B.R. Hanrahan, U.H. Mahl, K. Prior, **S.L. Speir**. The impact of cover crops on the export of phosphorus from tile drains. WaterSmart Innovations Conference. October 2017.
4. L.R. Sethna, T.V. Royer, M.T. Trentman, **S.L. Speir**, J.L. Tank. Responses of silica stoichiometry to hydrologic and vegetation changes. Society for Freshwater Science Annual Meeting. May 2018.
5. **S.L. Speir**, J.L. Tank, U.H. Mahl. Quantifying the recovery of nitrogen removal capacity via denitrification following stream dredging and floodplain construction in an agricultural watershed. University of Notre Dame College of Science Joint Annual Meeting. December 2018.
6. N. Ehsani, J.L. Tank, A.F. Hamlet, T.V. Royer, S.F. Christopher, A. Sharma, K. Byun, M.T. Trentman, **S.L. Speir**, L.R. Sethna, C.J. Talbot, U.H. Mahl. Hydrologic and biogeophysical parameter estimation for simulating watershed-scale conservation to reduce nutrient losses to surface water using SWAT. University of Notre Dame College of Science Joint Annual Meeting. December 2018.
7. C.J. Talbot, J.L. Tank, M.T. Trentman, **S.L. Speir**, U.H. Mahl. Using a replicated watershed design to evaluate the role of cover crops in reducing nutrient pollution. University of Notre Dame College of Science Joint Annual Meeting. December 2018.

8. N.T. Gorman[#], **S.L. Speir**, U.H. Mahl, J.L. Tank. Comparing methods for quantifying denitrification rates in stream sediments and floodplain soils. University of Notre Dame College of Science Joint Annual Meeting. May 2019.
9. **S.L. Speir**, J.L. Tank, M. Bieroza, U.H. Mahl, T.V. Royer. Controls on nitrate export during storms in two contrasting agricultural watersheds. University of Notre Dame College of Science Joint Annual Meeting. December 2019.
10. **S.L. Speir***, J.L. Tank, M. Bieroza, U.H. Mahl, T.V. Royer. Hysteresis patterns suggest increased vegetative cover mediates NO₃⁻-N export in two agricultural watersheds. Society for Freshwater Science, Summer of Science Meeting. June 2020.
11. A.L. Grose^{#*}, **S.L. Speir**, J.L. Tank. Differences in groundwater contributions to streamflow versus watershed NO₃⁻-N export reveal the importance of scale in evaluating agricultural conservation practices. Society for Freshwater Science, Summer of Science Meeting. June 2020.
12. A.F. Hamlet*, N. Ehsani, Z. Silver, U.H. Mahl, K. Byun, **S.L. Speir**, M.T. Trentman, J.L. Tank, T.V. Royer. Projected cover crop performance in the Midwestern US improves response to climate change. American Geophysical Union, Annual Fall Meeting, December 2020.
13. **S.L. Speir***, J.L. Tank, M. Bieroza, U.H. Mahl, T.V. Royer. Hysteresis patterns during storms suggest that vegetative cover mediates nitrate export in two agricultural watersheds. American Geophysical Union, Annual Fall Meeting, December 2020.
14. J.A. Fries^{#*}, **S.L. Speir**, J.L. Tank, A.N. Pruitt, U.H. Mahl, T.V. Royer. High-frequency sensor data reveals sediment hysteresis during storms in two agricultural watersheds. Society for Freshwater Science Annual Meeting. May 2021.

#denotes undergraduate mentee

*denotes virtual poster presentation

Research Grants:

May 2020	ND Center for Environmental Science & Technology Fellowship (\$11,646)
July 2019	USDA North Central Region SARE Grant (\$13,351)
July 2019	Notre Dame Graduate School Professional Development Research Grant (\$515)
April 2018	ND Linked Experimental Ecosystem Facility (LEEF) Research Grant (\$1500)
Dec 2016	Cary Institute Fundamentals of Ecosystem Ecology Course Award (\$1000)
May 2012	TCU Science and Engineering Research Center (SERC) Grant (\$1500)

Travel Grants:

Sept 2019	ND Rapid Exposure to Advanced Computational Training (REACT; \$1,148.24)
April 2019	ND Graduate School Professional Development Travel Grant (\$741.93)
April 2019	ND Graduate Student Union Conference Presentation Grant (\$100)
March 2018	Society for Freshwater Science General Endowment Award (\$1000)
Nov 2017	CUAHSI Student Travel Grant (\$500)

Oct 2017 WaterSmart Innovations Student Travel Grant (\$1300)
Jan 2017 ND Department of Biological Sciences Travel Grant (\$500)

Workshops:

June 2021 SLU High Temporal Resolution Water Quality Monitoring and Analysis
Aug 2020 ND Kaneb Center “Setting the Tone” Workshop for teaching during COVID
July 2020 ND Office of Grants & Fellowships “Personal Statement” Workshop
July 2020 ND Office of Grants & Fellowships “Anatomy of a Grant” Workshop
Nov 2019 Conservation Behavior Change Workshop with Grid Impact
Nov 2019 SMART Stakeholder Communication Workshop with Spitfire Strategies
March 2018 ND GLOBES Program Media Science Communication Workshop
Nov 2017 CUAHSI High-Frequency Sensor Workshop

Service Activities:

May 2021 Special Session Co-Organizer, Society for Freshwater Science Annual Meeting
April 2021 Invited Panelist, University of Oklahoma *Dive into SciComm* Event
2020-2021 ND Office of Sustainability Water Working Group Member
2020-2021 Student Representative, Society for Freshwater Science Board of Directors
June 2020 Invited Panelist, Society for Freshwater Science Student SciComm Workshop
2019-2020 Chair, Society for Freshwater Science Student Resources Committee (SRC)
2019-2020 Member, Society for Freshwater Science Diversity & Inclusivity Committee
2019-2020 Co-Organizer, Society for Freshwater Science Meeting Student Workshop
April 2018 Volunteer, Girls Ambitious about Learning Science (GALS)
2017-2019 Member, Society for Freshwater Science Silent Auction Committee
2016-2017 Chair, Society for Freshwater Science SRC Merchandise Committee
2016-2019 Volunteer, ND Environmental Change Initiative’s Annual Science Sunday
2014-2016 Race Director, University of Arkansas CSES Graduate Student Annual 5K

Media:

1. Undergraduate research featured on the cover of and in an article within TCU Magazine: *Nine questions that could change the world*, “Spiders as Mercury Contaminators,” Summer 2015 issue. <https://magazine.tcu.edu/summer-2015/spiders-as-mercury-contaminators/>
2. Invited to showcase dissertation research: South Bend’s WNIT “Outdoor Elements” Segment, June 2019. <https://www.wnit.org/outdoorelements/e/june-23rd-2019.html>
3. NRCS Video on the Indiana Watershed Initiative Project: “Advancing Conservation through Partnerships,” September 2019. <https://www.youtube.com/watch?v=tcNztQqGIKA>
4. NCR-SARE dissertation research featured: Notre Dame College of Science news titled “Graduate student receives sustainable agriculture grant,” December 2019. <https://science.nd.edu/news/graduate-student-receives-sustainable-agriculture-grant/>
5. Indiana Watershed Initiative research featured: Grist article titled “Last-Ditch Effort,” January 2020. <https://grist.org/food/how-do-we-fix-americas-fertilizer-problem-look-in-this-ditch/>

Honors & Awards:

1. University of Notre Dame Notebaert Premier Fellowship
2. Phi Beta Kappa – inducted as a Junior
3. Big XII Dr. Prentice Gautt Postgraduate Scholarship
4. Big XII Dr. Gerald Lage Award – The Big 12 Conference’s Highest Academic Honor
5. TCU Greek Woman of the Year 2013
6. TCU John V. Roach Honors College Boller Award Finalist for Outstanding Senior Honors Thesis Presentation
7. TCU Antonio Rivarés Award for Outstanding Achievement in Spanish – awarded to one graduating major student
8. TCU Faculty Choice Award for Excellence in Spanish
9. TCU Clark Society Scholar – Awarded for character, leadership, and sense of service
10. TCU John V. Roach Honors College
11. Texas Academy of Science Annual Meeting Honorable Mention Presentation Award
12. Order of Omega – Greek Leadership Honor Society
13. Academic All-Big 12 Scholar – First Team (2012-2013 & 2013-2014)
14. Mountain West Scholar-Athlete Honor
15. Mountain West All-Conference Academic Honor
16. TCU Dean’s Scholarship
17. TCU College of Science & Engineering Dean’s List
18. Alpha Lambda Delta Honor Society
19. Gamma Sigma Alpha – National Greek Academic Honor Society
20. National Society of Collegiate Scholars

Analytical Skills: dissolved gas analysis with Membrane Inlet Mass Spectrometry (MIMS), nutrient analysis using fluorometry and Lachat Autoanalyzer, intact sediment core incubations, acetylene block, SUNA nitrate high-frequency sensors, extensive field work experience, Shimadzu TOC analyzer (DOC analysis), isotope ratio mass spectrometry for ^2H and ^{18}O

Professional Skills: programming in R, science communication, scientific writing and presentation, grant writing and reporting, collaborative research experience, data management

Society Membership:

- 2014-present Society for Freshwater Science
2020-present Association for the Sciences of Limnology and Oceanography
2020-present American Geophysical Union