CURRICULUM VITAE Jennifer Leah Tank August 2021

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Research Interests:

Biogeochemistry of stream and river ecosystems, nitrogen cycling and transport, impact of land use on stream ecosystem function, role of denitrification in agricultural streams, impact of agricultural conservation practices on coupled biogeochemical cycles and water quality.

Professional Preparation:

B.S.	Michigan State University, East Lansing, MI	Zoology	1988
M.S.	Virginia Tech, Blacksburg, VA	Ecology	1992
Ph.D.	Virginia Tech, Blacksburg, VA	Ecology	1996

Appointments:

2016-present	Director, Notre Dame Environmental Change Initiative (ND-ECI)
2010- present	Galla Professor, Department of Biological Sciences, Univ. of Notre Dame
2012-2016	Director, Notre Dame Linked Experimental Ecosystem Facility (ND-LEEF)
2014-2015	Interim Director, Notre Dame Environmental Change Initiative (ND-ECI)
2005-2010	Galla Associate Professor, Department of Biological Sciences, Univ. of Notre Dame
2000-2005	Galla Assistant Professor, Department of Biological Sciences, Univ. of Notre Dame
1998- 2000	Assistant Professor, Natural Resources & Environmental Sciences, Univ. of Illinois.
1996-98	Postdoctoral Research Associate, Oak Ridge National Lab Advisors: P.J. Mulholland

Selected Honors and Awards:

2020 Fellow, American Academy for the Advancement of Science (AAAS); Section O: Agriculture, Food, and Renewable Resources.

- 2020 SFS Fellow, Society for Freshwater Science.
- 2019 Ruth Patrick Award, Association for Sciences of Limnology and Oceanography (ASLO). 2019. <u>Award</u> <u>Presentation</u>. <u>Interview</u>.
- 2019 Hoosier Resilience Hero from the Environmental Resilience Institute (recognizing 10 Indiana residents who are working to make the state more resilient in the face of environmental changes).
- 2016 Ganey Faculty Community-Based Research Award, Center for Social Concerns, University of Notre Dame. <u>http://socialconcerns.nd.edu/content/ganey-research-award</u>
- 2013 Leopold Leadership Fellow from the Stanford Woods Institute for the Environment.
- 2013 James A. Burns CSC Award for Graduate Education at the University of Notre Dame.

Synergistic Activities:

Nominated and Confirmed Member: National Academies of Science, Engineering and Medicine (NASEM) Committee on Water Science & Technology Board, 3 yr term (2020-present).

Invited Member, Advisory Board, The Jones Center at Ichauway (2020- present)

President (elected) for the Society for Freshwater Science. SFS is an international scientific organization of professional aquatic scientists, and its role is to increase understanding of freshwater ecosystems around the world (2017-2019).

Advisory Committee on for Aquatic Ecology; National Ecological Observatory Network and the John Wesley Powell Center for Analysis and Synthesis, USGS (2019-present).

AAAS Elected Council Delegate: Section on Agriculture, Food & Renewable Resources, American Association for the Advancement of Science (2017-2021).

Nominated Member, U.S. Environmental Protection Agency Science Advisory Board (2015-2018). Associate Editor, Biogeochemistry (2006 - present)

Associate Editor, Limnology and Oceanography Letters (2015 - present)

Scholarship statistics:

Total number of publications:	n=174	
Total number of citations:	Web of Science $= 10,974$	Google Scholar = $17,878$
H-index:	Web of Science $= 54$	Google Scholar = 69

Recent Publications (2019 - present):

- 150. Höök, TO., Foley, CJ, Collingsworth, P., Dorworth, L., Fisher, B., Hoverman, JT, LaRue, E., Pryon, M., Tank, J.L. 2019. An assessment of the potential impacts of climate change on freshwater habitats and biota of Indiana, USA. Climatic Change. <u>https://doi.org/10.1007/s10584-019-02502-w</u>
- 151. Shogren, A.J., Tank, J.L., Riis, T., Egan, S., Bolster, D. 2019. Riverine distribution of mussel eDNA reflects a balance among density, transport, and removal processes. 2019. Freshwater Biology. 64 (8): 1467-1479. doi: 10.1111/fwb.13319
- 152. Shogren, A.J., **Tank, J.L.**, Rosi, E.J., Dee, M.D., Speir, S., Bolster, D., Egan, S.P. 2019. Transport and instream removal of the Cry1Ab protein from genetically engineered maize is mediated by biofilms in experimental streams. PLOS One. 14(5): e0216481
- 153. Hoellein, T.J., Shogren, A.J., Tank, J.L., * Risteca, P., Kelly, J.J. Microplastic deposition velocity in streams follows patterns for naturally occurring allochthonous particles. 2019. Scientific Reports. 9, 3740. 10.1038/s41598-019-40126-3.
- 154. Roche, K., Shogren, A.J., Aubeneau, A., Tank, J.L., Bolster, D. 2019. Modeling benthic vs. hyporheic nutrient uptake in unshaded streams with varying substrates. JGR-Biogeosciences. 124. 367-383. 10.1029/2018JG004684
- 155. Deatsch, A., Egan, S.P., Sun, N., Shogren, A.J., Tank, J.L., Tanner, C., Ruggiero, S. 2019. Rapid quantitative protein detection by Light Transmission Spectroscopy. Applied Optics. 58(4): 1121. 10.1364/AO.58.001121
- 156. Rahman, M.M., Penny, G, Mondal, MS, Zaman, MH, Kryston, A, Salehin, M, Nahar, Q, Islam, MS, Bolster, D, Tank, JL, Müller, MF. 2019. Salinization in large river deltas: Drivers, impacts and socio-hydrological feedbacks. Water Security <u>https://doi.org/10.1016/j.wasec.2019.100024</u>
- 157. Riis, T, **Tank, J.L**., Reisinger, A.J., Aubenau, A., Roche, K.R., Levi, P.S., Baattrup-Pedersen, A., Alnoee, A.B., and Bolster, D. 2020. Riverine macrophytes control seasonal nutrient uptake via both physical and biological pathways. Freshwater Biology. 65 (2) 178-192.
- 158. Stepanian, P.M., Entrekin, S.A., Wainwright, C.E., Mirkovic, D., Tank, J.L., Kelly, J.F. 2020. Declines in an abundant aquatic insect, the burrowing mayfly, across major North American waterways. Proceedings of the National Academy of Sciences. 117 (6) 2987-2992.
- 159. Shogren, A.J., **Tank, J.L.**, Hanrahan, B.R., and Bolster, D. 2020. Controls on fine particle retention in experimental streams. Freshwater Science. 39 (1) 28-38.
- 160. Rüegg, J. Chaloner, D.T., Ballantyne, F., Levi, P. S., Song, C., Tank, J.L., Tiegs, S.D., Lamberti, G.A. 2020. Understanding the Relative Roles of Salmon Spawner Enrichment and Disturbance: A High-Frequency, Multi-Habitat Field and Modeling Approach. Frontiers in Ecology and Evolution. 8: 19
- 161. Penny, G, Mondal, MS, Biswas, S, Bolster, D, Tank, JL, and Mueller, M. 2020. Using Natural Experiments and Counterfactuals for Causal Assessment: River Salinity and the Ganges Water Agreement. Water Resources Research. 56(4). DOI: 10.1029/2019WR026166
- 162. Entrekin, SA, Rosi, EJ, **Tank, JL**, Hoellein, TJ, Lamberti, GA. 2020. Quantitative Food Webs Indicate Modest Increases in the Transfer of Allochthonous and Autochthonous C to Macroinvertebrates

Following a Large Wood Addition to a Temperate Headwater Stream. Frontiers in Ecology and Evolution. 8: 114

- 163. Trentman, MT, Tank, JL, Jones, SE, McMillian, SK, Royer, TV. 2020. Seasonal evaluation of biotic and abiotic factors suggests phosphorus retention in constructed floodplains in three agricultural streams. Science of The Total Environment. 729, 138744
- 164. Speir, SS, **Tank, JL**., Mahl, UH. 2020. Quantifying denitrification following floodplain restoration via the two-stage ditch in an agricultural watershed. Ecological Engineering 155, 105945
- 165. Trentman, MT, Tank, JL, Royer, TV, Speir, SL, Mahl, UH, and Sethna, RL. 2020. The role of cover crops and antecedent precipitation on soluble reactive phosphorus losses via tile drain flow in an agricultural watershed. Hydrological Processes. 34: 4446-4458.
- 166. Dee, MM and **Tank, JL**. 2020. Inundation time mediates denitrification end products and carbon limitation in constructed floodplains of an agricultural stream. Biogeochemistry 149: 141-158.
- 167. Trentman, MT, Tank, JL, Braund, D, Entrekin, SA. 2021 Agricultural layering explains variation in sediment P dynamics in streams draining two distinct agricultural biomes. Aquatic Sciences 83: 1-11.
- 168. Christopher, SF, Tank, JL, Mahl, UH, Hanrahan, BR, and Royer, TV. 2021. Effect of winter cover crops on soil nutrients in two row-cropped watersheds in Indiana. J Environ Qual. 1–13. <u>https://doi.org/10.1002/jeq2.20217</u>
- 169. Reisinger, AJ, **Tank, JL**, Hall, RO, Rosi, EJ, Baker, MA, Genzoli, L. 2021. Water column contributions to the metabolism and nutrient dynamics of mid-sized rivers. Biogeochemistry 153: 67-84.
- 170. Brandão-Dias, PFP, Rosi, EJ, Shogren, AJ, **Tank, JL**, Fischer, DT, and Egan, SP. Fate of Environmental Proteins (eProteins) from Genetically Engineered Crops in Streams is Controlled by Water pH and Ecosystem Metabolism. 2021. Environmental Science & Technology 55: 4688-4697.
- 171. B.R. Hanrahan, **J.L. Tank**, S.L. Speir, M.T. Trentman, S.F. Christopher, U.H. Mahl, T.V. Royer. 2021. Extending the growing season with winter cover crops reduces phosphorus loss from an agricultural watershed. In press. Science of the Total Environment.
- 172. Trentman, MT, J.L. Tank, R.T. Davis, B.R. Hanrahan, U.H. Mahl, S.S. Roley. 2021. Watershed-scale land use change increases ecosystem metabolism in an agricultural stream. Ecosystems. <u>https://doi.org/10.1007/s10021-021-00664-2</u>
- 173. Trentman, MT, J.L. Tank, H.A.M. Shepherd, A.J. Marrs, J.R. Welsh, & H.V. Goodson. 2021. Understanding disturbance driven variation in bioavailable phosphorus using a novel yeast growth assay in an agricultural stream. Biogeochemistry 154:509–524 https://doi.org/10.1007/s10533-021-00803-w
- 174. Tank, JL, Speir, SL, Sethna, LR, and Royer, TV. 2021. The Case for Studying Highly Modified Agricultural Streams: Farming for Biogeochemical Insights. Limnology & Oceanography Bulletin. <u>https://doi.org/10.1002/lob.10436</u>

Current Extramural Funding:

- Tank, JL, Egan, S, Bolster, S, Lamberti, G, Bibby, K. Predicting eDNA transport and degradation in flowing waters: application of a conservation tool using integrated experimental, field, and modeling approaches. Department of Defense Strategic Environmental Research & Development Program (SERDP) Core Solicitation. \$1,500,000. (8/01/2019 – 7/31/2023)
- Tank, JL and T.V. Royer (IU). Understanding persistence of conservation practices after targeted incentives end. Walton Family Foundation. \$289,200. (10/15/2019 to 10/14/2021).
- Wang, D., Wei, N., Tank, JL, Wood, D., Bolster, D. SCC: Smart Water Crowdsensing: Examining how innovative data analytics and citizen science can ensure safe drinking water in rural versus suburban communities. NSF-CNS. \$1,466,428. (10/1/2018 – 9/30/2021). J.L. Tank is co-PI.
- A. Hamlet, J.L. Tank, T.V. Royer (IU), S. Christopher, A. Sharma. Cover crops prevent nutrient runoff and promote climate resiliency in Great Lakes watersheds. Environmental Protection Agency Great Lakes Restoration Initiative (EPA GLRI). \$564,314. (08/01/2017 to 07/31/2021) J.L. Tank is co-PI.

- **Tank, JL** and T.V. Royer (IU). Indiana Watershed Initiative: Documenting the persistence of water quality and soil health benefits after conservation incentives end. Indiana Soybean Alliance (ISA). \$85, 000. (10/2020 to 09/2021).
- Goodson, H. and **JL Tank.** Development of a yeast-based continuous culture system for detecting bioavailable phosphate. NSF-IDBR Type A. \$436,808. (03/2016 03/2021). JL Tank is a coPI.
- JL Tank. Nutrient Reduction through Real-Time Optimization and Control. Great Lakes Protection Fund. \$217,193 (07/2020 05/2022).
- K Bibby, **JL Tank**, and D Bolster. Antimicrobial Resistance Fate and Transport in Flowing Waters. USDA NIFA. \$ 995,051 (01/2021 12/ 2023). JL Tank is a coPI.
- T Riis and **JL Tank**. RockNrole; Deciphering the role of rocks as nitrogen source for biological cycling in Arctic freshwaters. NOVA Aarhus University Research Foundation. \$340, 000. (2021-2024).
- T Riis and **JL Tank**. Permafrost thawing in high-Arctic causing increased organic carbon and dissolved nitrogen export to sea. Carlsberg Foundation. \$70,000. (2020-2023).