Jemma Stachelek

CONTACT INFORMATION

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EDUCATION

PhD, **Michigan State University**	**2016 to 2020**
MS, **University of Texas at Austin**	**2009 to 2012**
BS, **University of Maine**	**2004 to 2008**

PROFESSIONAL EXPERIENCE

Scientist, **Los Alamos National Laboratory, High Performance Computing Division**	**2023 to Present**
Postdoctoral Research Fellow, **Los Alamos National Laboratory**	**2021 to 2023**
Postdoctoral Research Associate, **University of Wisconsin, Center for Limnology**	**2020 to 2021**
Research Scientist, **South Florida Water Management District**	**2012 to 2016**
Research Technician, **University of Texas Marine Botany Lab**	**2008 to 2009**

REFEREED PUBLICATIONS

[32] Kraklow, V.A., E.C. Thompson, **J. Stachelek**, E. Casleton, S. Sevanto, L.T. Dickman, A. Junghans. 2025. Using eddy covariance data to detect nuclear reactor operational status. *Journal of Environmental Management*, 10.1016/j.jenvman.2024.123569

[31] Wander, H.L., Farruggia, M.J., La Fuente, S., Korver, M.C., Chapina, R.J., Robinson, J., Bah, A., Munthali, E., Ghosh, R., **Stachelek, J.**, Khandelwal, A., Hanson, P.C., Weathers, K.C. 2024. Using knowledge-guided machine learning to assess patterns of areal change in waterbodies across the contiguous U.S. *Environmental Science and Technology*, 10.1021/acs.est.3c05784

[30] Weng, W., Coburn, K.M., Kemanian, A.R., Boyle, K.J., Yuning, S., **Stachelek, J.**, White, C. 2023. Quantifying Co-Benefits of Water Quality Policies: An Integrated Assessment Model of Land and Nitrogen Management. *American Journal of Agricultural Economics*, 10.1111/ajae.12423

[29] Bennett, K., Schwenk, J., Bachand, C., Gasarch, E., **Stachelek, J.**, Bolton W.R., Rowland, J.C. 2023. Recent streamflow trends across permafrost basins of North America. *Frontiers in Water*, 5:1099660. 10.3389/frwa.2023.1099660

[28] **Stachelek, J.**, 2023. Quantifying uncertainty in Pareto estimates of global lake area. *Limnology and Oceanography: Methods*, 21(3), 164-168. 10.1002/LOM3.10536

[27] **Stachelek, J.**, Avendaño, S., Schwenk, J. 2022. Geographically aware estimates of remotely sensed water properties for Chesapeake Bay. *Journal of Applied Remote Sensing*, 16(4), 044528. 10.1117/1.JRS.16.044528

[26] Swedberg, K., Boyle, K.J., **Stachelek, J.**, Ward, N.K., Weng W., Cobourn, K.M. 2022. Examining Implicit Price Variation for Lake Water Quality. *Water Economics and Policy*, 10.1142/S2382624X22400057

[25] Schwenk, J., Zussman, T., **Stachelek, J.**, Rowland, J.C., 2022. rabpro: global watershed boundaries, river elevation profiles, and catchment statistics. *Journal of Open Source Software*, 80(0), 4237. 10.21105/joss.04237

[24] Ladwig, R., Appling, A., Delany, A., Dugan, H., Gao, Q., Lottig, N., **Stachelek, J.**, Hanson, P., 2022. Long-term Change in Metabolism Phenology in North Temperate Lakes. *Limnology and Oceanography*, 67(7), 1502-1521. 10.1002/lno.12098

[23] **Stachelek, J.**, Hanly, P.J., Soranno, P.A., 2022. Imperfect slope measurements drive overestimation in geometric cone model of lake and reservoir depth. *Inland Waters*, 12(2), 283-293. 10.1080/20442041.2021.2006553

[22] Hanson, P., Stillman, A.B., Jia, X., Karpatne, A., Dugan, H.A., Carey, C.C., **Stachelek, J.**, Ward, N.K, Zhang, Y., Read, J.S., Kumar, V., 2020. Predicting lake surface water phosphorus dynamics using process-guided machine learning. *Ecological Modelling*, 430, 1-11. 10.1016/j.ecolmodel.2020.109136.

[21] **Stachelek, J.**, Weng, W., Carey, C.C., Kemanian, A.R., Cobourn, K.M., Wagner, T., Weathers, K.C., Soranno, P.A., 2020. Granular measures of agricultural land-use influence lake nitrogen and phosphorus differently at macroscales. *Ecological Applications*, 30(8) 1-13. 10.1002/eap.2187.

[20] Servais, S., Kominoski, J.S., Coronado-Molina, C., Bauman, L., Davis, S.E., Gaiser, E.E., Kelly, S., Madden, C., Mazzei, V., Rudnik, D., Santamaria, F., Sklar, F.H., **Stachelek, J.**, Troxler, T.G., Wilson, B.J., 2020. Effects of saltwater pulses on soil microbial enzymes and organic matter breakdown in freshwater and brackish coastal wetlands. *Estuaries and Coasts*, 43, 814-830. 10.1007/s12237-020-00708-1.

[19] Soranno, P.A., Cheruvelil, K.S., Liu, B., Wang, Q., Tan, P.N., Zhou, J., King, K.B.S., McCullough, I.M., **Stachelek, J.**, Bartley, M., Filstrup, C.T., Hanks, E.M., Lapierre, J.F., Lottig, N.R., Schliep, E.M., Wagner, T., Webster, K.E., 2020. Ecological prediction at macroscales using big data: Does sampling design matter? *Ecological Applications*, 30(6), 1-13. 10.1002/eap.2123.

[18] Wagner, T., Lottig, N., Bartley, M.L., Hanks, E.M., Schliep, E.M., Wikle, N.B., King, K.B.S., McCullough, I., **Stachelek, J.**, Cheruvelil, K.S., Filstrup, C.T., Lapierre, J.F., Liu, B., Soranno, P.A., Tan, P.N., Wang, Q., Webster, K., Zhou, J. 2019. Increasing accuracy of lake nutrient predictions in thousands of lakes by leveraging water clarity data. *Limnology and Oceanography: Letters*, 5, 228-235. 10.1002/lol2.10134.

[17] McCullough, I., King K., **Stachelek, J.**, Diaz, J., Soranno, P.A., Cheruvelil K.S. 2019. Applying the patch-matrix model to lakes: a connectivity-based conservation framework. *Landscape Ecology*, 34, 2703-2718. 10.1007/s10980-019-00915-7.

[16] Qian, S.S., Stow, C.A., Nojavan, F., **Stachelek, J.**, Cha, Y., Alameddine, I., Soranno, P.A. 2019. The Implications of Simpson's Paradox for Cross-Scale Inference Among Lakes. *Water Research*, 163, 1-7. 10.1016/j.watres.2019.114855.

[15] McCullough, I., Cheruvelil, K.S, Lapierre, J.F., Lottig, N., Moritz, M., **Stachelek, J.**, Soranno, P.A. 2019. Do lakes feel the burn? Ecological consequences of increasing exposure of lakes to fire in the continental United States. *Global Change Biology*, 25(9), 2841-2854. 10.1111/gcb.14732.

[14] Collins, S.M., Yuan, S., Tan, P.N., Oliver, S.K., Lapierre, J.F., Cheruvelil, K.S., Fergus, C.E., Skaff, N.K., **Stachelek, J.**, Wagner, T., Soranno, P.A. 2019. Winter Precipitation and Summer Temperature Predict Lake Water Quality at Macroscales. *Water Resources Research*, 55(4), 2708-2721. 10.1029/2018WR023088.

[13] **Stachelek, J.**, Soranno, P.A. 2019. Does freshwater connectivity influence phosphorus retention in lakes? *Limnology and Oceanography*, 64(4), 1586-1599. 10.1002/lno.11137.

[12] Ward, N.K., Fitchett, L., Hart, J.A., Shu, L., **Stachelek, J.**, Weng, W., Zhang, Y., Dugan, H., Hetherington, A., Boyle, K., Carey, C.C., Cobourn, K.M., Hanson, P.C., Kemanian, A.R., Sorice, M.G., Weathers, K.C. 2018. Integrating fast and slow processes is essential for simulating human-freshwater interactions. *Ambio*, 48(10), 1169-1182 10.1007/s13280-018-1136-6.

[11] Wilson, B.J., Servais, S., Mazzei, V., Kominoski, J.S., Hu, M., Davis, S.E., Gaiser, E., Sklar, F., Bauman, L., Kelly, S., Madden, C., Richards, J., Rudnick, D., **Stachelek J.**, Troxler, T. 2018. Salinity pulses interact with seasonal dry-down to increase ecosystem carbon loss in marshes of the Florida Everglades. *Ecological Applications*, 28(8), 2092-2108. 10.1002/eap.1798.

[10] Mazzei, V., Gaiser, E., Kominoski, J., Wilson, B.J., Servais, S., Bauman, L., Davis, S.E., Kelly, S., Sklar, F.H., Rudnick, D.T., **Stachelek J.**, Troxler, T. 2018. Functional and compositional responses of periphyton mats to simulated saltwater intrusion in the southern Everglades. *Estuaries and Coasts*, 41(7), 2105-2119. 10.1007/s12237-018-0415-6.

[9] **Stachelek J.**, Kelly, S.P, Sklar, F., Coronado, C.M., Troxler, T., Bauman, L. 2018. In-situ simulation of sea-level rise impacts on coastal wetlands using a flow-through mesocosm approach. *Methods in Ecology and Evolution*, 9(8), 1908-1915. 10.1111/2041-210X.13028.

[8] Cobourn, K.M., Carey, C.C., Boyle, K.J., Duffy, C., Dugan, H.A., Farrell, K.J., Fitchett, L., Hanson, P.C., Hart, J.A., Henson, V.R., Hetherington, A.L., Kemanian, A.R., Rudstam, L.G., Shu, L., Soranno, P.A., Sorice, M.G., **Stachelek J.**, Ward, N.K., Weathers, K.C., Weng, W., Zhang, Y. 2018. From concept to practice to policy: modeling coupled natural and human systems in lake catchments. *Ecosphere*, 9(5):e02209 10.1002/ecs2.2209.

[7] **Stachelek J.**, Ford, C., Kincaid, D., King, K., Miller, H, and Nagelkirk, R. 2018. The National Eutrophication Survey: lake characteristics and historical nutrient concentrations. *Earth Syst. Sci. Data*, 10, 81-86. 10.5194/essd-10-81-2018.

[6] Rougier NP, Hinsen K, <34 alphabetical authors>, **Stachelek J**, <8 alphabetical authors>. 2017. Sustainable computational science: the ReScience initiative. *PeerJ Computer Science*. 3:e142 10.7717/peerj-cs.142.

[5] Soranno P.A., <62 alphabetical authors>, **Stachelek J**, <15 alphabetical authors>. 2017. LAGOS-NE: A multi-scaled geospatial and temporal database of lake ecological context and water quality for thousands of U.S. lakes. *Gigascience*. 6(12). 10.1093/gigascience/gix101

[4] Hollister J and **Stachelek J** 2017. lakemorpho: Calculating lake morphometry metrics in R [version 1; referees: 2 approved]. *F1000Research*. 6:1718. 10.12688/f1000research.12512.1.

[3] **Stachelek J** 2016. [Re] Least-cost modelling on irregular landscape graphs. *ReScience*. 2(1): 1-4. 10.5281/zenodo.47146.

[2] **Stachelek J** and Madden C.J. 2015. Application of Inverse Path Distance Weighting for high density spatial mapping of coastal water quality patterns. *International Journal of Geographical Information Science*. 29(7), 1240-1250. 10.1080/13658816.2015.1018833.

[1] **Stachelek J** and Dunton, K.H. 2013. Freshwater inflow requirements for the Nueces Delta, Texas: Spartina alterniflora as an indicator of ecosystem condition. *Texas Water Journal*. 4(2), pp.62-73. 10.21423/twj.v4i2.6354.

Pre-prints and Whitepapers

[4] **Stachelek J.**, Abolt, C.J., Schwenk, J. 2024. Enabling high resolution hydrologic routing with machine learning assisted waterbody classification. *ESS Open Archive*. link

[3] **Stachelek J.**, Regier, P., Schwenk, J., Ward, N. 2023. Uncertainty in global time-resolved methane emissions from aquatic waterbodies. *AI4CH4*. link

[2] Bennett, K. Karra, S., Vesselinov, V.V., Schwenk, J. **Stachelek, J.**, Nearing, G. 2022. Advancing the use of ML for improved understanding of hydrologic extremes under climate change. *AI@DOE*.

[1] **Stachelek J.**, Madden, C.J., Kelly, S.P, Blaha, M. 2022. Improved estimation of phytoplankton abundance and fine-scale water quality features via simultaneous discrete and semi-continuous surveys. *EarthArxiv*. 10.31223/X54S8M

Public Datasets

[6] Schwenk, J. **Stachelek, J.**, Avendaño, S. Salinity, temperature, and turbidity from 2000-2021 in the Chesapeake Bay. https://doi.org/10.6084/m9.figshare.21578898.v1

[5] **Stachelek, J.**, L.K. Rodriguez, et al. 2021. LAGOS-US DEPTH v1.0: Data module of observed maximum and mean lake depths for a subset of lakes in the conterminous U.S. ver 1. *Environmental Data Initiative* https://doi.org/10.6073/pasta/64ddc4d04661d9aef4bd702dc5d8984f

[4] **Stachelek, J.** 2021. Bathymetry Data for 5,000 Lakes. 10.6084/M9.FIGSHARE.12722246

[3] **Stachelek J.** 2019. Freshwater connectivity and stream morphology metrics for Northeast and Midwestern US lakes. https://doi.org/10.5281/zenodo.2554212

[2] **Stachelek J.**, Ford C., Kincaid D., King K., Miller H., Nagelkirk R. 2017. The National Eutrophication Survey: lake characteristics and historical nutrient concentrations. *KNB Data Repository* http://dx.doi.org/10.5063/F10G3H3Z

[1] Madden C, **Stachelek J**, Kelly S, Blaha M. 2017. Florida Bay water quality estimated by underway flow-through measurement. *KNB Data Repository* http://dx.doi.org/10.5063/F11R6NGR

Software Development

(See Open Science Portfolio)

[9] Schwenk, J., Zussman, T., **Stachelek, J.**, Rowland, J.C., 2022. rabpro: python toolbox to delineate watershed basins and compute attribute statistics. Python toolbox.

[8] Schwenk, J., Hariharan, J., **Stachelek, J.**, Vulis, L., Barnhart, K. 2022. RivGraph: Tools for topological analysis of fluvial networks from binary masks. Python toolbox.

[7] **Stachelek, J.** 2019. gssurgo: Python toolbox enabling an open source gSSURGO workflow. Python toolbox.

[6] **Stachelek, J.** 2019. nhdR: Tools for working with the National Hydrography Dataset. R package.

[5] **Stachelek J.**, Oliver S. 2019. LAGOSNE: Interface to the Lake Multi-scaled Geospatial and Temporal Database. R package.

[4] **Stachelek J.** 2019. dbhydroR: Everglades Hydrologic and Water Quality Data from R. R package.

[3] Chamberlain, S., Anderson, B., Salmon, M., Erickson, A., Potter, N., **Stachelek, J.**, Simmons, A., Ram, K., Hart, E. 2019. rnoaa: 'NOAA' Weather Data from R. R package.

[2] **Stachelek J.** 2018. ipdw: Interpolation by Inverse Path Distance Weighting. R package.

[1] Hollister, J.W., **Stachelek J.** 2018. lakemorpho: Lake Morphometry Metrics in R. R package.

Selected Academic Presentations

[41] Carolina C. Barbosa, **Jemma Stachelek**, Alice Carter, Isabella A. Oleksy, Linnea A. Rock, Joshua Culpepper, Xiangzhen Kong, Sarah Collins. Navigating Change: Exploring the controls on Nitrogen and Phosphorus Retention in Western US Lakes and Reservoirs. ASLO Summer Meeting, Madison, WI, USA. June 2024.

[40] Kraklow, Vachel, Dickman, L. Turin, Sevanto, Sanna, **Stachelek, Jemma**, Casleton, Emily Michele, Thompson, Christi, Junghans, Ann. Detecting nuclear effluent signatures at FluxNet ecological monitoring stations. Poster Presentation at the AGU Fall Meeting, San Francisco, CA, USA, December 2023.

[39] **Stachelek, J.**, Abolt, C.J., Schwenk J. Scalable machine learning pipelines for waterbody delineation, classification, and change detection. Poster Presentation at the HydroML Symposium, Berkeley, CA, USA. May 23, 2023.

[38] Bennett, K., Schwenk, J., Gasarch, E., **Stachelek, J.**, Bolton, R., Rowland, J. Recent Changes in Streamflow Seasonality across Permafrost Basins of North America. Oral Presentation at the AGU 2022 Fall Meeting, Chicago, IL, USA. December 12, 2022.

[37] **Stachelek, J.**, Avendaño, S., Schwenk J. Geographically-Aware Estimates of Remotely Sensed Water Properties for Chesapeake Bay. Poster Presentation at the AGU 2022 Fall Meeting, Chicago, IL, USA. December 16, 2022.

[36] **Stachelek, J.**, Schwenk, J. Identifying false positive lakes in surface water detection datasets. Poster presentation at the HydroML Symposium, Penn State University, PA, USA. May 18, 2022.

[35] Rowland, J.C., Schwenk, J., Muss, J., Shelef, E., **Stachelek, J.**, Stauffer, S., Ahrens, D., Douglas, M., Chadwick, A., Lamb, M., Piliouras, A. Multiscale analysis of remotely sensed imagery to quantify spatial and temporal patterns of river bank erosion in floodplains with permafrost. Presentation at the International Circumpolar Remote Sensing Symposium. University of Alaska - Fairbanks, Fairbanks, AK, May 16, 2022.

[34] Schwenk J., **Stachelek, J.**, Bennett, K., Prior, E., Zussman, T., Rowland, J. Veins of the Earth: a Flexible Framework for Mapping, Modeling, and Monitoring the Earth's River Networks. Poster Presentation at the AGU 2021 Fall Meeting, Virtual, December 13, 2021.

[33] **Stachelek, J.**, Schwenk, J., Bennett, K.E. 2021. Flexible Integration of Lakes in Global River Systems. Poster Presentation at the AGU 2021 Fall Meeting, Virtual, December 13, 2021.

[32] Wander, H., R.J. Chapina, A. Bah, M.J. Farruggia, R. Ghosh, M.C. Korver, S. La Fuente, E. Massa, E. Munthali, J. Robinson, **J. Stachelek**, A. Khandelwa, P.C. Hanson, K.C. Weathers. 2021. Using machine learning to assess patterns of areal change in lakes and reservoirs of the contiguous US. Poster Presentation at the 2nd Workshop on Knowledge Guided Machine Learning, Virtual, August 10, 2021.

[31] **Stachelek, J.** 2021. Challenges and future directions for hacking lake bathymetry data. Oral Presentation at the Data Science and Open Science in Aquatic Research Summit, Virtual, July 23, 2021.

[30] Ladwig, R., L. Gao, J. Willard, A. Appling, A. Delany, **J. Stachelek**, H.A. Dugan, S. Oliver, J.S. Read, P.C. Hanson. 2020. Two-layer bayesian dissolved oxygen model for ecological process discovery. Poster Presentation at the Global Lake Ecological Observatory Network Meeting, Virtual, Oct 19 2020.

[29] Weng, W., K. M. Cobourn, A. R. Kemanian, K. J. Boyle, Y. Shi, **J. Stachelek**, C. White. 2020. Quantifying Co-benefits of Water Quality Policies: An Integrated Assessment Model of Nitrogen Management. Selected paper, Agricultural and Applied Economics Association Meeting, Aug 11 2020.

[28] McCullough, I.M., <7 alphabetical authors>, **Stachelek, J.** 2020. Data synthesis: No picnic, but no need to panic. Oral Presentation at the Ecological Society of America Meeting, Virtual, Aug 3 2020.

[27] **Stachelek, J.**, Rodriguez L., Soranno P.A. 2019. Spatial patterning and prediction of lake depth at continental scales. Poster Presentation at the Global Lake Ecological Observatory Network Meeting, Huntsville, ON, CA. Nov 6 2019.

[26] **Stachelek, J.**, <8 authors>. 2019. Analysis of 500 lake catchments reveals the relationship between crop type, fertilizer and manure inputs and lake nutrient concentrations. Oral Presentation at the Ecological Society of America Meeting, Louisville, Kentuckey, USA. Aug 13 2019.

[25] McCullough, I.M., King, K., **Stachelek, J.**, <3 authors>. 2019. No lake left behind: Do protected areas facilitate biological connectivity among lakes? Oral Presentation at the Ecological Society of America Meeting, Louisville, Kentuckey, USA. Aug 13 2019.

[24] Kelly, S.P., **Stachelek, J.**, Strazisar, T. 2019. Examining the effects of sea-level rise on Everglades coastal marshes using coupled mesocosm and in-situ field manipulations: design and implementation. Oral Presentation to the Greater Everglades Ecosystem Restoration Conference, Coral Springs, Florida, USA. Apr 2019.

[23] **Stachelek, J.**, Soranno, P.A. 2018. Does Lake and Stream Connectivity Control Phosphorus Retention in Lakes? Oral Presentation to the Association for the Sciences of Limnology and Oceanography, Victoria, British Columbia, CA. Jun 15 2018.

[22] Smith, N., Soranno, P.A., Cheruveill, K., Gries, C., **Stachelek, J.** 2018. Mapping a Journey Towards Open Science: Lessons Learned Building a Lake Water Quality Geodatabase. Oral Presentation at the American Water Resources Association GIS & Water Resources X Conference, Orlando, Florida, USA. Apr 23 2018.

[21] **Stachelek, J.**, Soranno, P.A. 2017. Does Connectivity Control Lake Phosphorus Retention? Poster Presentation at the Global Lake Ecological Observatory Network Meeting, New Paltz, New York, USA. Nov 29 2017.

[20] Collins, S.M, Cheruvelil, K.S., Fergus, C.E., Lapierre, J.F., Oliver, S.K., Scott, C.E., Skaff, N.K., Soranno, P.A., **Stachelek, J.**, Tan, P., Yuan, S. and Wagner, T. 2017. Which measures of climate are the best predictors of lake water quality at sub-continental scales? Oral Presentation at the Ecological Society of America Meeting, Portland, Oregon, USA. Aug 06 2017.

[19] Nowosad, J., Teucher A., **Stachelek, J.**, Cotton, R., Vitolo, C. 2017. The State of Data on CRAN: Discovering Good Data Packages. Oral Presentation at the rOpenSci Unconference, Los Angeles, CA, USA. May 26 2017.

[18] Madden, C.J., M. Koch, T. Strazisar, T. Troxler, Y. Shangguan, S.P. Kelly, **J. Stachelek**, R.M. Price, and F.H. Sklar, 2017. Interconnections in the Everglades and Florida Bay Watershed: Implications for Ecosystem Integrity. 2017 American Water Resources Association Spring Conference, Snowbird, Utah, May 3, 2017.

[17] Sklar, F.H., C. Coronado-Molina, **J. Stachelek**, S.P. Kelly, and T. Troxler, 2017. Coastal Subsidence as a Function of Salinity Intrusion and Peat Decomposition in a Karst Environment. Greater Everglades Ecosystem Restoration Meeting, Coral Springs, Florida, April 20, 2017.

[16] **Stachelek, J.** 2017. Lake Connectivity Effects on Phosphorus in 1,000s of Lakes. Oral Presentation at the Michigan State University Fisheries and Wildlife Graduate Research Symposium. Feb 24 2017.

[15] Kominoski, J, Evelyn Gaiser, Tiffany Troxler, <12 others>, **Stachelek, J.**, <20 others>. 2016. Saltwater intrustion and carbon loss: identifying the biogeochemical attributes that drive differential responses among coastal wetlands. Poster Presentation at the International Long Term Ecological Research Meeting, Kruger National Park, South Africa. Oct 09 2016.

[14] **Stachelek, J.**, Madden, C.J., Kelly, S., Blaha, M. 2016. Fine-scale spatial patterning of phytoplankton abundance in a coastal estuary. Oral Presetentation at the Ecological Society of America Meeting, Fort Lauderdale, Florida, USA. Aug 07 2016.

[13] Troxler, T.G., <12 others>, **Stachelek, J.**, Wilson, B.J. 2016. Carbon cycle science in the Florida Coastal Everglades: Research to inform carbon and water management. Oral Presentation at the Ecological Society of America Meeting, Fort Lauderdale, Florida, USA. Aug 07 2016.

[12] Sklar, F.H., Coronado, C., Troxler, T.G., **Stachelek, J.**, Kelly, S., Kominoski, J.S. 2016. Coastal subsidence as a function of salinity intrusion and peat decomposition in a karst environment. Oral Presentation at the Ecological Society of America Meeting, Fort Lauderdale, Florida, USA. Aug 07 2016.

[11] **Stachelek, J.**. 2015. Resolving Fine-Scale Patterning and Restoration Outcomes in the Coastal Everglades. Oral Presentation at the Greater Everglades Ecosystem Restoration Meeting, Coral Springs, Florida, USA. Apr 21 2015.

[10] Kominoski, J., Servais, S., B.J. Wilson, V. Mazzei, E.E. Gaiser, T. Troxler, C. Coronado-Molina, S.E. Davis, S.P. Kelly, **J. Stachelek**, F.H. Sklar, C.J. Madden, and L. Bauman. 2015. Effects of increased water salinity and inundation on microbial processing of carbon and nutrients in oligohaline wetland soils. Oral Presentation at the Ecological Society of America 100th Annual Meeting, Baltimore, Maryland, USA. Aug 09 2015.

[9] Troxler, T., F.H. Sklar, S.E. Davis, E.E. Gaiser, S.P. Kelly, J. Kominoski, C.J. Madden, V. Mazzei, C. Coronado-Molina, D.T. Rudnick, S. Servais, **J. Stachelek**, and B.J. Wilson. 2015. The effects of projected sea-level rise on Everglades coastal ecosystems: Evaluating the potential for and mechanisms of peat collapse. Oral Presentation at the Ecological Society of America 100th Annual Meeting, Baltimore, Maryland, USA. Aug 09 2015.

[8] Wilson, B., Troxler, T., Gaiser, E., Kominoski, J., Richards, J., Servais, S., **Stachelek, J.**, Kelly, S. Kelly, Sklar, F., Coronado-Molina, C., Madden, C., Davis, S.E., Mazzei, V., Schulte, N., Bauman, L. 2014. Ecosystem Productivity Responses to Saltwater Intrusion and P Loading

As a Result of Future Sea Level Rise in the Coastal Everglades. Poster Presentation at the American Geophysical Union Meeting, San Fransisco, California, USA. Dec 15 2014.

[7] **Stachelek, J.**, Madden, C.J. 2013. High Density Spatial Mapping of Water Quality Patterns Reveals Impacts of Freshwater Inputs in Florida Bay, USA. Poster Presentation at the Coastal and Esutarine Reserach Federation, San Diego, California, USA. Nov 03 2013.

[6] Madden, C.J., McDonald, A.A., Koch-Rose, M., Glibert, P., Kelly, S.P., **Stachelek, J.** 2013. Exploring Linkages Among Watershed-Estuary Processes in the Southern Everglades, Florida Bay Using Model Synthesis. Oral Presentation at the Coastal and Esutarine Reserach Federation, San Diego, California, USA. Nov 03 2013.

[5] **Stachelek J.**, Dunton K.H. 2012. Porewater salinity dynamics in an irregularly flooded marsh. Poster Presentation at the Texas Bays and Estuaries Meeting, Port Aransas, Texas, USA. April 2012.

[4] **Stachelek J.**, Dunton, K.H. 2011. Estimation of freshwater inflow requirements for a semi-arid salt marsh using emergent plants as indicators of ecosystem condition. Oral Presentation at the Coastal and Esutarine Reserach Federation, Daytona Beach, Florida, USA. Nov 06 2011.

[3] Park, S.R., **Stachelek J.**, Dunton, K.H. 2011. Seasonal variations in photosynthetic characteristics of three major emergent salt marsh plants in the Southwestern Gulf of Mexico. Oral Presentation at the Coastal and Esutarine Reserach Federation, Daytona Beach, Florida, USA. Nov 06 2011.

[2] **Stachelek J.**, Dunton, K.H. 2011. Porewater salinity dynamics within emergent salt marsh vegetation. Oral Presentation at the Benthic Ecology Meeting, Mobile, Alabama, USA. Mar 16 2011.

[1] **Stachelek, J.**, Brawley, S.H. 2008. Constructing a guide to intertidal algae of Acadia and testing DNA barcoding. Poster Presentation at the Northeast Algal Society Meeting, Durham, New Hampshire, USA. Apr 18 2008.

Invited Presentations

[1] **Stachelek, J.**, Scaling and extrapolation of lake water quality using abstraction, Center for Limnology, University of Wisconsin (Virtual-online), Oct 7, 2020.

Workshops Given

Miscellaneous

- Basics of geospatial analysis for research computing. Sep 24 2021, Global Lake Ecological Observatory Network (GLEON) Meeting. Virtual-online instruction.
- Version control software (Git) for application in academic research. Oct 13 2020. Global Lake Ecological Observatory Network (GLEON) Meeting. Virtual-online instruction.
- Basics of geospatial analysis for research computing. Feb 27 2020, Great Lakes Acoustic Telemetry Observation System (GLATOS) Coordination Meeting.
- Basics of editing Wikipedia, recommended practices, and reasonable workflows. Jun 12 2018, Association for the Sciences of Limnology and Oceanography (ASLO) Meeting.
- Version control software (Git) for application in academic research. Apr 28 2017. MSU EEBB Programming Group.
- Basics of Python and the Linux command line for research computing. Jan 12 2017. MSU Institute for Cyber-enabled Research.

Software Carpentry (certified instructor)

Lesson Maintainer for Geospatial Data Analysis with R materials **2015 to 2023**

- Basics of geospatial analysis for research computing. Sep 26 2017, Lawrence Berkeley National Laboratory.
- Basics of geospatial analysis for research computing. Jul 21 2016, South Florida Water Management District.
- Basics of geospatial analysis for research computing. May 26 2016, South Florida Water Management District.

Professional Service

Reviewer

- *NSF (external)*, *Limnology and Oceanography*, *Limnology and Oceangraphy: Methods*, *Journal of Advances in Modeling Earth Systems*, *Limnology and Oceanography: Letters*, *PNAS*, *Water*, *Air Soil and Water Research*, *Earth Syst. Sci. Data*, *BioScience*, *rOpenSci*, *Texas Water Journal*, *Journal of Open Source Software* [6], *Journal of Atmospheric and Oceanic Technology*, *Ecologial Modelling* [2], *Frontiers in Ecology and Evolution* [2], *ReScience*, *Methods in Ecology and Evolution*, *Journal of Open Source Education*, *Aquatic Conservation: Marine and Freshwater Ecosystems*, *Journal of Geophysical Research: Earth Surface*

Other Activities

- Mentor, (July 9-18, 2024) LANL Open Hackathon - Venado.
- Editor, (2023-2024) Journal of Open Source Software
- President, (2024) Association for Women Geoscientists - Laramide Chapter
- President-elect, (2023) Association for Women Geoscientists - Laramide Chapter
- Erdmann, Christopher, Meyer, Michael F., Little, John R., Hondula, Kelly, **Stachelek, Jemma**, Oleksy, Isabella, Brousil, Matthew R., Claborn, Kelly, Mesman, Jorrit, Dennis, Tim. (2021). Guidance for AGU Authors: R Script(s)/Markdown. Zenodo. https://doi.org/10.5281/zenodo.5647998
- Soranno, P., King, K., Poisson, A., **Stachelek, J.**, Boudreau, C., Skaff, N., Smith, N. (2017) Cyberinfrastructure support for collaboration and open science in ecology. NSF Request for Information on Future Needs for Advanced Cyberinfrastructure to Support Science and Engineering Research.
- NEON spatio-temporal hackathon (2015) - developed tutorials and assessment instruments to teach fundamental big data skills needed to work efficiently with large spatio-temporal data using open tools, such as R and Python. link

Outreach

- Group leader for the *STEM Santa Fe* team in the Northern New Mexico Community Data Sprint, July 25-29 2022, Virtual. https://community.lanl.gov/economic-development/data-sprint/
- Special Awards judge for the: Northeastern New Mexico Science and Engineering Fair, March 12 2022, New Mexico Highlands University, Las Vegas, NM, USA.
- **Stachelek, J.**, Hondula, K., Kincaid, D., Shogren, A., Zwart, J. 2020. Ripples on the web: spreading lake information via Wikipedia. Limnology and Oceanography Bulletin. 10.1002/lob.10382.
- Everglades Day, Feb 20 2016, Guided tours of science activities at the Loxahatchee Impoundment Landscape Assessment, 17th Annual Everglades Day, Loxahatchee National Wildlife Refuge.
- Interviewed for: National Public Radio, May 25 2016, Rising Seas Push Too Much Salt Into the Florida Everglades.

- Interviewed for: PBS Newshour, June 10 2015, Florida's Everglades face new invasive threat: rising sea levels.

GRANTS

- Center for Space and Earth Science, Los Alamos National Laboratory, *Hydrologic Restoration for Climate Adaptation: Unintended Consequences for Mosquito-borne Disease*. Principal Investigator. ($70,000)
- National Oceanic & Atmospheric Administration, Florida Sea Grant, *The effects of projected sea-level rise on Everglades coastal ecosystems: Evaluating the potential for and mechanisms of peat collapse using integrated mesocosm and field manipulations.* Assisting Author, PI Tiffany Troxler (FIU) ($279,216)

MENTORSHIP

Undergraduate students

- Jake Namovich (MSU)
- Sebastian Zhu (UW)

Los Alamos National Laboratory

- Shubhendu Kumar Singh (LANL)

HONORS AND AWARDS

- LANL, Large Team Distinguished Performance Award (DPA). Oct 2024.
- LANL Director's Postdoctoral Fellowship. January 2022.
- MSU Dissertation Completion Fellowship. Summer 2020.
- GLEON G21 Student Travel Award. Nov 4 2019.
- GLEON G19 Student Travel Award. Nov 27 2017.
- Invited participant at the 2017 rOpenSci Conference. May 25 2017.
- Finalist for the 2012 NOAA Coastal Management Fellowship for Texas.
- Best poster award at the 2012 Texas Bays and Estuaries Meeting. Apr 11 2012. *Porewater Water Salinity Dynamics within the Creekbank Areas of an Irregularly Flooded Salt Marsh*.

PROFESSIONAL MEMBERSHIPS

Association for the Sciences of Limnology and Oceanography
American Geophysical Union
Global Lake Ecological Observatory Network