

CURRICULUM VITAE

Name: Luke Winslow

Rensselaer Polytechnic Institute
3C13 Jonsson-Rowland Science Center
110 8th St.
Troy, NY 12180
Email: winsl2@rpi.edu
<https://scholar.google.com/citations?user=WENGctYAAAAJ>
<http://github.com/lawinslow>

Degrees:

- 2012-2014 **PhD, Limnology and Freshwater Science (Minor: Computer Science)**
University of Wisconsin – Madison, Center for Limnology, Advisor: Paul Hanson and Emily Stanley
- 2009-2012 **MS, Limnology and Marine Science.**
University of Wisconsin – Madison, Advisor: Paul Hanson and Steve Carpenter
- 2002-2007 **BS, Materials Science and Engineering (Minor: Environmental Studies),**
University of Wisconsin – Madison

Present Employment:

- 2017 **Rensselaer Polytechnic Institute**, Postdoctoral associate with the Department of Biological Sciences

Professional Preparation:

- 2016 **Louisiana State University**, Postdoctoral Researcher and Technical Consultant, McMurdo Dry Valleys Long-Term Ecological Research Site
- 2015-2016 **U.S. Geological Survey**, Postdoctoral Research Hydrologist, Office of Water Information
- 2009 & 2010 **University of Wisconsin – Madison**, Teaching Assistant – Zoology 316, Limnology Lab
- 2007-2009 **University of Wisconsin – Madison**, Research Technician, sensor and data management for North Temperate Lakes Long-Term Ecological Research Site

Awards and External Funding:

- 2017-2018 **National Science Foundation:** Assessing the effects of cross-scale interactions mediating sub-continental lake thermal trends and carbon cycling - \$300,000 (Senior Personnel)
- 2015-2016 **Northeast Climate Science Center:** An integrated assessment of lake and stream thermal habitat under climate change - \$140,000 (Co-PI)
- 2015 **USGS Community for Data Integration:** sbtools: An R package of tools interfacing R with ScienceBase - \$20,000 (Lead PI)
- 2014 **Wisconsin Department of Natural Resources:** Understanding the bass-walleye connection – Part 1: Historic trends in fish oxythermal habitat - \$40,000 (Co-PI)
- 2014 **Wisconsin Department of Natural Resources:** Understanding the bass-walleye connection – Part 2: Future projections of fish oxythermal habitat - \$40,000 (Co-PI)
- 2013 **Anna-Grant Birge Research Award:** Open access fees for publications - \$600 (Award)
- 2012 **Anna-Grant Birge Research Award:** High-throughput and high-performance computing resources - \$1300 (Award)
- 2009-2015 **GLEON (Global Lake Ecological Research Network)** meeting travel grants to: Lammi, Finland; Lake Placid, Florida; Norrtälje, Sweden; Hamilton, New Zealand; Torres, Brazil; Lake Kinneret, Israel; New Hampshire, USA; Westport, Ireland; Montreal, Canada - \$~12,500 (Award)

Publications (Published or In Press):

- 2017 Robertson DM, PF Juckem, ED Dantoin, **LA Winslow** (In Press) Effects of water level and climate on the hydrodynamics and water quality of Anvil Lake, Wisconsin, a shallow seepage lake. *Lake and Reservoir Management*
- 2017 **Winslow LA**, JS Read, GJA Hansen, KC Rose, and DM Robertson (2017) Seasonality of change: Summer warming rates do not fully represent effects of climate change on lake temperatures. *Limnology and Oceanography* 62(5): 2168-2178. doi:10.1002/lno.10557
- 2017 Kimball PW, EB Clark, M Scully, K Richmond, C Flesher, LE Lindzey, J Harmon, K Huffstutler, J Lawrence, S Lelievre, J Moor, B Pease, V Siegel, **LA Winslow**, DD Blankenship, P Doran, S Kim, BE Schmidt, WC Stone (2017) The ARTEMIS under-ice AUV docking system. *Journal of Field Robotics* doi:10.1002/rob.21740
- 2017 **Winslow LA**, GJA Hansen, JS Read, and M Notaro (2017) Data Descriptor: Large-scale modeled contemporary and future water temperature estimates for 10774 Midwestern U.S. Lakes. *Nature Scientific Data* 4:170053. doi:10.1038/sdata.2017.53
- 2017 Jane SF, **LA Winslow**, CK Remucal, KC Rose (2017) Long-term trends and synchrony in dissolved organic matter characteristics in Wisconsin, USA lakes: quality, not quantity, is highly sensitive to climate. *Journal of Geophysical Research Biogeosciences* 112(3): 546-561

- 2016 **Winslow LA**, S Chamberlain, AP Appling, JS Read (2016) sbtools: A package connecting R to cloud-based data for collaborative online research. *The R Journal*, 8(1): 387–398.
- 2016 **Winslow LA**, JA Zwart, RD Batt, HA Dugan, RI Woolway, JR Corman, PC Hanson, and JS Read (2016) LakeMetabolizer: An R package for estimating lake metabolism from free-water oxygen using diverse statistical models. *Inland Waters* 6(4): 622-633
- 2016 Read JS, C Gries, EK Read, J Klug, PC Hanson, M Hipsey, E Jennings, C O'Reilly, **LA Winslow**, D Pierson, C McBride, D Hamilton (2016) Generating community-built tools for data sharing and analysis in environmental networks. *Inland Waters* 6(4): 637-644
- 2016 Kuha JK, L Arvola, PC Hanson, J Huotari, T Huttula, J Juntunen, M Järvinen, K Kallio, M Ketola, K Kuoppamäki, A Lepistö, A Lohila, R Paavola, J Vuorenmaa, **LA Winslow**, J Karjalainen (2016) Response of boreal lakes to episodic weather-induced events. *Inland Waters* 6(4): 523-534
- 2016 Brentrup JA, CE Williamson, W Colom-Montero, W Eckert, E de Eyto, H Grossart, Y Huot, P Isles, LB Knoll, TH Leach, CG McBride, D Pierson, F Pomati, JS Read, KC Rose, NR Samal, PA Stæhr, **LA Winslow** (2016) The potential of high-frequency profiling to assess vertical and seasonal patterns of phytoplankton dynamics in lakes: An extension of the Plankton Ecology Group (PEG) model. *Inland Waters* 6(4): 565-580
- 2016 Hansen GJ, JS Read, JF Hansen, and **LA Winslow** (2016). Projected shifts in fish species dominance in Wisconsin lakes under climate change. *Global Change Biology* 23(4): 1463-1476 doi:10.1111/gcb.13462
- 2016 Thieler ER, S Zeigler, **LA Winslow**, MK Hines, JR Read, and JI Walker (2016). Smartphone-based distributed data collection enables rapid assessment of shorebird habitat suitability. *PLoS ONE* 11(11): e0164979. doi:10.1371/journal.pone.0164979
- 2016 Sharma S, JJ Magnuson, RD Batt, **LA Winslow**, J Korhonen, and Y Aono (2016) Direct observations of ice seasonality reveal changes in climate over the past 320–570 years. *Nature Scientific Reports* 6:25061. doi: doi:10.1038/srep25061
- 2016 Dugan HA, AB Santoso, JR Corman, A Jaimes, ER Nodine, VJ Patil, RI Woolway, J Zwart, J Brentrup, A Hetherington, S Oliver, J Read, K Winters, PC Hanson, E Read, **LA Winslow**, K Weathers (2016) Consequences of gas flux model choice on the interpretation of metabolic balance across 15 lakes, *Inland Waters* 6(4), 581-592
- 2015 Read JS, JI Walker, A Appling, DL Blodgett, EK Read, and **LA Winslow**. (2015). geoknife: Reproducible web-processing of large gridded datasets. *Ecography* 39(4): 354-360 doi:10.1111/ecog.01880
- 2015 Read EK, VP Patil, SK Oliver, AL Hetherington, JA Brentrup, JA Zwart, KM Winters, JR Corman, ER Nodine, RI Woolway, HA Dugan, A Jaimes, AB Santoso, GS Hong, **LA Winslow**, PC Hanson, and KC Weathers. 2015. The importance of lake-specific characteristics for water quality across the continental United States. *Ecological Applications* 25: 943–955. doi:10.1890/14-0935.1

- 2015 Woolway R, I Jones, D Hamilton, S Maberly, K Muraoka, J Read, R Smyth, **LA Winslow** (2015) Automated calculation of surface energy fluxes with high-frequency lake buoy data. *Environmental Modelling & Software* 70: 191-198 doi:10.1016/j.envsoft.2015.04.013
- 2015 Read JS, KC Rose, **LA Winslow**, and EK Read (2015) A method for estimating the diffuse attenuation coefficient (K_d PAR) from paired temperature sensors. *Limnology and Oceanography: Methods* 13(2): 53–61, doi:10.1002/lom3.10006.
- 2015 **Winslow LA**, Read JS, Hansen GJA and Hanson PC (2015). Small lakes show muted climate change signal in deepwater temperatures. *Geophysical Research Letters* 42(2): 355-361. doi:10.1002/2014GL062325
- 2015 Van Den Hoek J, JS Read, **LA Winslow**, P Montesano, and CD Markfort (2014) Examining the utility of satellite-based wind sheltering estimates for lake hydrodynamic modeling. *Remote Sensing of Environment* 156: 551-560. doi:10.1016/j.rse.2014.10.024
- 2014 **Winslow LA**, JS Read, PC Hanson, and EH Stanley (2014). Does lake size matter? Combining morphology and process modelling to examine the contribution of lake size classes to population-scale processes. *Inland Waters* 5(1): 7-14.
- 2014 **Winslow LA**, HA Dugan, HN Buelow, KD Cronin, JC Priscu, C Vesbach, and PT Doran (2014), Autonomous Year-Round Sampling and Sensing to Explore the Physical and Biological Habitability of Permanently Ice-Covered Antarctic Lakes. *Marine Technology Society Journal* 48(5): 8-17
- 2014 Read JS, **LA Winslow**, GJA Hansen, J Van Den Hoek, PC Hanson, LC Bruce, & CD Markfort (2014). Simulating 2,368 temperate lakes reveals weak coherence in stratification phenology. *Ecological Modelling*. 291: 142–150. doi:10.1016/j.ecolmodel.2014.07.029
- 2014 Rose KC, **LA Winslow**, JS Read, EK Read, CT Solomon, R Adrian, & PC Hanson (2014). Improving the precision of lake ecosystem metabolism estimates by identifying predictors of model uncertainty. *Limnology and Oceanography: Methods* 12(5): 303–312. doi:10.4319/lom.2014.12.303
- 2014 **Winslow LA**, Read JS, Hanson PC, Stanley EH (2014) Lake shoreline in the contiguous United States: quantity, distribution and sensitivity to observation resolution. *Freshwater Biology* 59(2): 213-223. doi:10.1111/fwb.12258.
- 2012 Kara EL, PC Hanson, YH Hu, **LA Winslow**, KD McMahon (2012) A decade of seasonal dynamics and co-occurrences within freshwater bacterioplankton communities from eutrophic Lake Mendota, WI, USA. *The ISME journal* 7(3): 680-684. doi: 10.1038/ismej.2012.118
- 2012 Kara EL, PC Hanson, DP Hamilton, M Hipsey, KD McMahon, JS Read, **LA Winslow**, J Dedrick, KC Rose, CC Carey, S Bertilsson, D Motta-Marques, L Beversdorf, T Miller, CH Wu, YF Hsieh, E Gaiser, TK Kratz. (2012) Timescale dependence in numerical simulations: Assessment of physical, chemical, and biological predictions in a stratified lake from scales of hours to months. *Environmental Modelling & Software* 35: 104-121.

- 2011 Read JS, DP Hamilton, ID Jones, K Muraoka, **LA Winslow**, R Kroiss, CH Wu, E Gaiser (2011), Derivation of lake mixing and stratification indices from high-resolution lake buoy data, *Environmental Modeling and Software*. 26(11): 1325-1336.doi:10.1016/j.envsoft.2011.05.006.
- 2008 Benson BJ, **Winslow LA**, PW Arzberger, CC Carey, T Fountain, PC Hanson, TK Kratz, S Tilak (2008). Meeting the challenges of an international grassroots organization of sites deploying sensor networks: the Global Lake Ecological Observatory Network (GLEON). *Proceedings of the Environmental Information Management Conference* (33-38).
- 2008 **Winslow LA**, BJ Benson, KE Chiu, PC Hanson, TK Kratz (2008). Vega: A Flexible Data Model for Environmental Time Series Data. *Ecological Information Management Conference* (166-171).
- 2007 Tilak S, PW Arzberger, BJ Benson, R Bhalerao, K Chiu, T Fountain, DP Hamilton, PC Hanson, TK Kratz, FP Lin, **LA Winslow** (2007). Conceptual Challenges and Practical Issues in Building The Global Lake Ecological Observatory Network. *ISSNIP07 conference proceedings*.
- 2007 Hanson PC, SR Carpenter, JA Cardille, MT Cole, **LA Winslow** (2007). Small lakes dominate a random sample of regional lake characteristics. *Freshwater Biology*, 52(5): 814-822.

Publications (In Review or Revision):

- In review **Winslow LA**, TH Leach, and KC Rose. Global lake response to the recent warming hiatus. *Environmental Research Letters*
- In review **Winslow, LA**, T Hahn, SD Princiotta, TH Leach, KC Rose. hydrolinks: A new tool to link macroscale data to inland water bodies. *Environmental Modelling and Software*
- In prep **Winslow LA**, RD Batt, TH Leach, KC Rose. The future trajectory of lake ice across the conterminous United States. *Target: Nature Climate Change*

Scientific Software Products:

- 2017 **hydrolinks** <<http://cran.r-project.org/web/packages/hydrolinks/>>
 - Continental-scale hydrologic data integration tools
 - Manuscript in review
- 2016 **sbtools** <<http://cran.r-project.org/web/packages/sbtools/>>
 - Package for data dissemination and management for USGS ScienceBase
 - Accompanied by manuscript in *The R Journal* (see publications section)
- 2015 **General Lake Model (GLM)** <<https://github.com/GLEON/GLM-source>>
 - Open-source, hydrodynamic lake model
 - Lead effort to open-source model
 - Lead snow/ice model component

- 2014 **LakeMetabolizer** <<http://cran.r-project.org/web/packages/LakeMetabolizer/>>
 - Package of standardized lake ecosystem metabolism models
 - 12k total downloads (as of Nov 2017)
- 2013 **rLakeAnalyzer** <<http://cran.r-project.org/web/packages/rLakeAnalyzer/>>
 - Package of standardized metrics of lake physics
 - 17k total downloads (as of Nov 2017)
- 2013 **Bathybase** <<http://bathybase.org>>
 - Open collection of inland bathymetry
- 2011 **Lake Analyzer** <<http://lakeanalyzer.gleon.org>>
 - A web front-end to the physical limnology tool
- 2008 **Lake Mendota Buoy** (Construction: 2007-2008; Deployment: 2008-2014)
 - Designed and instrumented a robust sensing platform for Lake Mendota, Wisconsin
 - Info: <<http://metobs.ssec.wisc.edu/buoy/>>

TEACHING EXPERIENCE

- 2017 Guest lecturer: The Global Environment, *BIOL 4880/6480*
 Rensselaer Polytechnic Institute, Troy, NY
The global importance of inland waters: the carbon and water cycle globally
- 2012 Limnology Laboratory Manual Rewrite, Zoology 316
 University of Wisconsin - Madison
 Lead instructor panel to redesign Limnology laboratory course materials
- 2011 Environmental sensing technologies and data processing techniques workshop
 Uppsala Universitet - Erken Laboratory, Sweden
 Instructor in environmental sensor technology
- 2009, 2010 Teaching Assistant – *Zoology 316, Limnology Laboratory*
 University of Wisconsin - Madison
 Full responsibility for syllabus, course, and grading.

Service:

- 2017 **Minnesota Seagrant proposal reviewer**
 On review panel for 2017 round of proposals
- 2011-present **Undergraduate Mentor**
 Evan Hansen (2012, UW-Madison)
 Joseph Glocke (2013, UW-Madison)
 Gabrielle Lehrer-Brey (2014, UW-Madison)
 Justin Lawrence (2015, LSU)
 Jade Lawrence (2016, LSU)
 Tobias Hahn (2017, RPI)

2010-present **Journal Reviewer**
Climactic Change, Inland Waters, Environmental Science and Technology, PLOS One, Cold Regions Science and Technology, Geophysical Research Letters, Nature Communications, Nature Scientific Data, Nature Scientific Reports, Freshwater Biology, Limnology and Oceanography: Letters, F1000 research, Geoscientific Model Development

Invited Presentations:

- 2017 **Winslow LA**, TH Leach "Climate change and acid rain: the physical, chemical and biological response of Northeastern lakes to multiple-stressors" Invited presentation. Ithaca College Biology Department Seminar Series. Ithaca, NY
- 2016 **Winslow LA**, JS Read, GJA Hansen "Some like it hot: Understanding past and future trends and impacts in Midwestern lakes" Invited presentation. USGS National Wildlife Health Center, Madison, WI
- 2016 **Winslow LA**, "A History of Multi-Lake Studies in GLEON", Invited Plenary for Global Lake Ecological Observatory Network, Lunz am See, Austria
- 2015 **Winslow LA**, JS Read, GJA Hansen, Kevin Rose "Modeling past and future thermal conditions for 2,500 Wisconsin managed lakes" Invited presentation. AFS 2015, Portland, Oregon

Other Presentations (Last 5 years only):

- 2016 **Winslow LA**, "The past, present and future of climate change impact on lakes" IBM Research, Yorktown Heights, New York
- 2016 **Winslow LA**, B Schmidt "Robots under ice: Europa, Climate warming and the SIMPLE project" USGS Seminar Series, Madison, Wisconsin
- 2014 **Winslow LA**, JS Read, GJA Hansen. "We are the 99%: 30 year temperature trends and patterns in 2,500 Wisconsin lakes" Center for Limnology Seminar Series, Madison, Wisconsin
- 2014 **Winslow LA**, JS Read, PC Hanson, EH Stanley. "The importance of big and small: Using power-law based models to connect ecosystem process to the size distribution of lakes" Joint Aquatic Sciences Meeting, Portland, Oregon
- 2013 **Winslow LA**, JS Read, J Van Den Hoek, C Markfort. "If sunlight hits a lake and no one is around to measure it, does it have a temperature?" Center for Limnology Seminar Series, Madison, Wisconsin
- 2013 **Winslow, LA**, "Lakes, income, and asteroids. When fat-tailed distributions attack!" Science Happens in Taverns, Madison, Wisconsin
- 2013 **Winslow LA**, JS Read, PC Hanson, EH Stanley. "Estimating U.S. Terrestrial-Aquatic Organic Carbon Flux" ASLO 2013, New Orleans, Louisiana

- 2012 **Winslow LA**, JS Read, PC Hanson, EH Stanley. "Modeling lakes as a population: Parsimonious power-law based models of lake size-distribution morphology and process" Talk at NALMS 2012, Madison, Wisconsin
- 2012 **Winslow LA**, "Everylake USA: If every lake in the United States were combined into a single lake, how would it look?" Poster at GLEON14, Mulranny Ireland
- 2012 **Winslow LA**, "Lakes on this World" Expeditionary Science Presentation Series, Science Expeditions 2012, Madison Wisconsin
- 2012 **Winslow LA**, "Global Limnology: Understanding the role lakes play on our Earth" PLATO - UW Continuing Studies, Madison, WI, April 2012