

JULIA A. HART

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EDUCATION

- 2017 M.S. University of Wisconsin-Madison
Major: Freshwater & Marine Science
Advisors: Dr. Paul Hanson & Dr. Emily Stanley
- 2015 B.S. University of Notre Dame
Major: Environmental Science
Secondary Major: Peace Studies
Advisor: Dr. Gary Lamberti

RESEARCH EXPERIENCE

- 2015-2017 Graduate Research Assistant, Center for Limnology
University of Wisconsin-Madison, Madison, WI
- *Thesis Title:* Greenhouse Gas Formation and Organic Carbon Dynamics in a Eutrophic Lake
 - Proficiency with hydrodynamic water quality modeling for the simulation of lake physics, biology, and biogeochemistry and statistical analysis in the R environment.
 - Management of large-scale field campaign, data organization and analysis, and successful written and verbal communication of results to both scientific and general audiences.
 - Collaborated on multidisciplinary research projects outside the scope of thesis work to expand the breadth of research and communication skills.
 - Provided quality assurance for large datasets and assembled metadata for publishable data products.
 - Synthesize large datasets and complex ideas to produce thoughtful scientific manuscripts.
- 2012-2015 Undergraduate Research Assistant, Lamberti Stream Ecology Laboratory
University of Notre Dame, Notre Dame, IN
- Assisted with various laboratory, data processing, and data organization tasks.
 - Experience with laboratory sediment slurries for the measurement of CH₄ and CO₂ production potential in Alaskan wetlands.
 - Experience with measuring chlorophyll *a* on nutrient-diffusing substrates, determining organic matter content of sediment samples using Loss On Ignition, and measurement of water column POC, DOC, DIC, TN, and TP.
 - Experience preparing sediment, macroinvertebrate, and macrophyte samples for stable isotope analysis.

FIELDWORK EXPERIENCE

- 2016 Lake Mendota, Madison, WI
- Managed a 40-week weekly field campaign for the measurement of CH₄, CO₂, and carbon analytes on Lake Mendota and associated tributaries.
 - Designed and implemented protocols for the measurement of dissolved gas samples, using headspace method and a Varian 3800 gas

chromatograph.

- Designed and implemented protocols for the deployment and sampling of CH₄ ebullition traps on Lake Mendota.
- Supervised and mentored three undergraduate research assistants with the aim to promote a positive, collaborative work environment.

2014

Copper River Delta, Cordova, AK

- Designed and executed field project to look at the influence of CH₄ cycling on the carbon stable isotopes of detritus in a coastal wetland ecosystem.
- Assisted in the collection of sediment, water, macroinvertebrate, and macrophyte samples in pond and stream ecosystems.
- Assisted in research concerning juvenile salmon habitat preferences.
- All fieldwork was conducted in collaboration with the USDA Forest Service, Cordova Ranger District, AK.

2013

University of Notre Dame Environmental Research Center, Land O'Lakes, WI

- Participated in 10-week practicum in field biology in Northern Highlands Lake District of northern Wisconsin and Upper Peninsula of Michigan.
- Experience with field methods in mammology, herpetology, forest ecology, insect ecology, and aquatic ecology.
- Designed and executed field project to look at the effect of increased dissolved organic carbon on diel migration of freshwater zooplankton.

GRANTS & AWARDS

2016	Anna Grant Birge Memorial Fund, Center for Limnology, \$1500
2015	Outstanding Environmental Scientist Award, University of Notre Dame
2014	College of Science Summer Undergraduate Research Fund, \$4000

PEER-REVIEWED PUBLICATIONS

J.A. Hart, H.A. Dugan, C.C. Carey, E.H. Stanley, and P.C. Hanson. 2017. Organic carbon cycling and greenhouse gas formation on a eutrophic lake. *Limnology and Oceanography*. (In Review).

J.A. Hart, C. Vizza, W.E. West, S.E. Jones, and G.A. Lamberti. 2017. Methane cycling contributes to distinctive patterns in carbon stable isotopes of wetland detritus. *Freshwater Biology*. (In Review).

E.K. Read, L. Carr, L. De Cicco, H.A. Dugan, P.C. Hanson, **J.A. Hart**, J. Kreft, J.S. Read, and L.A. Winslow. 2017. Water quality data for national-scale aquatic research: The Water Quality Portal. *Water Resources Research*. Technical reports: data. DOI: 10.1002/2016WRO19993.

C. Vizza, W.E. West, S.E. Jones, **J.A. Hart**, and G.A. Lamberti. 2016. Regulators of coastal wetland methane production and responses to simulated global change. *Biogeosciences* 14:431-446.

PUBLISHED DATA PRODUCTS

J.A. Hart, H. Dugan, C. Carey, E.H. Stanley, P.C. Hanson. 2017. Lake Mendota Carbon and Greenhouse Gas Measurements at North Temperate Lakes LTER 2016. DOI: 10.6073/pasta/c50d70814e94266851d13cfdde18b6f6.

J.A. Hart, H. Dugan, C. Carey, E.H. Stanley, P.C. Hanson. 2017. North Temperate Lakes LTER General Lake Model Parameter Set for Lake Mendota, Summer 2016 Calibration. DOI: 10.6073/pasta/68cbbeca8ae2c6c0d54e3215866b7d9.

SCIENCE COMMUNICATION PUBLICATIONS

J.A. Hart. 2015. "Dear Mom: Letter Explains Carbon Cycle via Christmas Ornaments." UW-Madison Center For Limnology Blog. December 22, 2015. <http://limnology.wisc.edu/blog/2015/12/>

J.A. Hart. 2015. "Conservation on the Colorado River." The River Blog, American Rivers. July 9, 2015.

J.A. Hart. 2014. "Unlikely Atmospheric Offenders." *University of Western Australia News* Vol. 33 September 2014: 15.

POSTER PRESENTATIONS

J.A. Hart, H. Dugan, C. Carey, E.H. Stanley, P.C. Hanson. 2017. "Greenhouse Gas Formation and Organic Carbon Dynamics in a Eutrophic Lake." CNH Lake Catchments Year 2 Workshop, Madison, WI.

J.A. Hart, E.H. Stanley, P.C. Hanson. 2016. "Overlooked Consequences of Cultural Eutrophication: Carbon Budgets and Enhanced Greenhouse Effects." Global Lakes Ecological Observatory Network Annual Meeting, Gaming, Austria.

J.A. Hart, C. Vizza, W.E. West, G.A. Lamberti. 2015. "Linking Decomposition to Methane Production in Alaskan Ponds." Society for Freshwater Science (SFS) Annual Meeting, Milwaukee, WI.

J.A. Hart, C. Vizza, W.E. West, G.A. Lamberti. 2015. "Linking Decomposition to Methane Production in Alaskan Ponds." College of Science Joint Annual Meeting, University of Notre Dame, Notre Dame, IN.

J.A. Hart, P. Kelly. 2013. "The effect of dissolved organic carbon on the diel vertical and horizontal migration of zooplankton." College of Science Fall Undergraduate Research Fair, University of Notre Dame, Notre Dame, IN.

SEMINAR PRESENTATIONS

J.A. Hart. 26 April 2017. "Greenhouse Gas Formation and Organic Carbon Dynamics in a Eutrophic Lake." Center for Limnology Seminar—ZOO911.

TEACHING EXPERIENCE

University of Wisconsin-Madison, Department of Zoology

2016 ZOO316—Conservation of Aquatic Resources (*Lead Teaching Assistant*)

2015 ZOO316—Conservation of Aquatic Resources

University of Notre Dame, University of Notre Dame Environmental Research Center

2015 BIOS35502—Practicum in Environmental Field Biology

University of Notre Dame, Department of Biological Sciences

2015 BIOS40411—Biostatistics

MENTORING & SUPERVISING

- Nora Beckemeyer, 2016-2017
- Natalie Schmer, 2016-2017
- Kye Hanson, Summer 2016
- Charmaye OldElk, Summer 2015

RELEVANT SKILLS

- Science Communication & Writing
- Exceptional statistical and analytical skills
- 5+ years experience with R Statistical Software
- Experience integrating GitHub into programming and analytical work flows
- Proficient with the General Lake Model (GLM)
- Expert with Microsoft Office Suite
- Boater's Safety Training
- Experience with 4WD vehicles