Nicholas Gubbins

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Phone: (414) 339–5406, Email: gubbinsnick@gmail.com

Education

Colorado State University, PhD student, Watershed Science 2020-Present
Academic Advisor: Dr. Matthew Ross

Indiana University-Bloomington, Graduate Non-Degree Coursework, Statistics 2019

University of Wisconsin-Madison, B.S. Environmental Science 2016
Thesis: Heterogeneous Distribution of Methane in Surface Waters of Multiple Northern Wisconsin Lakes: A High-Frequency Spatial Approach
Thesis Advisor: Dr. Emily Stanley

Research Experience

Research Assistant, Colorado State University, Department of Ecosystem Science and Sustainability 2020-Present
Project: Macrosheds (www.macrosheds.org)
Working with an inter-university team to design and create an open data platform for discharge, precipitation, and chemistry data from every NSF funded watershed ecosystem study. Leveraging this data to find insights across watersheds at the national scale. Developing R code to host, visualize, and analyze long term ecological data.

Hydrologic Technician (GS-8), United States Geological Survey 2016-2020
Collected field data, deployed in situ sensors for remote sensing, and configured telemetry. Performed data analysis and stewardship. Interpreted national policy and trained incoming technicians. Developed streamflow models (index-velocity and stage-discharge) and emerging streamflow technology (such as large scale particle imaging). Tools used: R, Python, Excel (including macros), PIVlab, acoustic Dopplers, cellular modems, GOES satellite network.

Research Technician, University of Wisconsin-Madison, Center for Limnology 2013-2016
Projects: FLAMe Fast Limnological Automated Measurements (2015-2016), Dane County Methane Survey (2014-2015), Allequash Stream Ebullition (2013-2014)
Worked on a variety of water chemistry projects, including cross-disciplinary projects. Collected field data through a wide range of protocols. Developed and deployed high-frequency sampling instrumentation and novel sampling apparati. Developed models for watershed analysis and analyzed large datasets in R. Processed wet chemical samples and dry sediment samples.

Lead Research Assistant, University of Wisconsin-Madison, Department of Atmospheric & Oceanic Sciences 2015
Developed data collection and validation protocol. Collected, managed, and cleaned soil respiration data. Developed R code to process and analyze data. Produced intraproject data reports for FLUXnet collaborative project.

Lead Research Technician (NSF REU), University of Wisconsin – Madison, Center for Limnology 2014
Project: Dane County Methane Survey
Collected water chemistry, aquatic gas, and sediment data. Lead site selection, data and sample management, and project logistics. Performed in-lab analysis of water and soil samples. Developed R code to process data from acoustic Dopplers and high-frequency sondes.

Laboratory Technician, University of Wisconsin-Madison, Department of Biochemistry 2012-2013
Performed vapor pressure osmometry assays and gel-electrophoresis in clean-lab setting. Transcribed, managed, and cleaned data for analysis.

Publications

Crawford, J. T., L. C. Loken, W. E. West, B. Crary, S. A. Spawn, **N. Gubbins**, S. E. Jones, R. G. Striegl, and E. H. Stanley (2017), *Spatial heterogeneity of within-stream methane concentrations*, J. Geophys. Res. Biogeosci.,122,1036–1048, doi:10.1002/2016JG003698.

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Presentations

Gubbins, N., L. C. Loken, E. H. Stanley. *Heterogeneous Distribution of Methane in Surface Waters of Multiple Northern Wisconsin Lakes: A High-Frequency Spatial Approach*. Poster presentation at the Association for Sciences of Limnology and Oceanography 2016 Summer Meeting. Santé Fe, NM, USA, June 2016.

Gubbins, N. *Gas Exchange in Small Streams of Dane County*. Oral presentation at Science in the Northwoods. Boulder Junction, WI, USA, October 2015.

Gubbins, N., E. H. Stanley. *Greenhouse Gas Exchange in Small Streams of Dane County: Using Precision Gradient and Turbulence Measurements to Determine Flux and the Potential Significance of Non-Dissolved Aquatic Gases.* Poster Presentation at UW Madison Undergraduate Research Symposium. Madison, WI, USA May 2014

Teaching Experience

Colorado State University, Teaching Assistant — Spring 2021
WR 418 - Land Use and Water Quality

Colorado State University, Teaching Assistant — Spring 2021
WR 419 - Water Quality Analyses

Purdue University - West Lafayette, Guest Instructor — Fall 2018
CE 597 - Environmental Fluid Mechanics

Service to Profession

Skills for Undergraduate Participation in Ecological Research Program, Mentor — 2020-2021
Ohio-Kentucky-Indiana Surface Water Working Group, Committee Member — 2017-2020
Ohio-Kentucky-Indiana Index Velocity Working Group, Committee Member — 2018-2020

Skills and Certifications

Motorboat Operator Certified (USGS)
Acoustic Doppler Certified (USGS)
Streamflow Record Computations Using Acoustic Doppler Velocimeter and Index Velocity Methods (USGS)
Scientific Ethics (USGS)
Python for Hydrology (USGS)
R for Scientific Research (UW Coursework, IU Coursework, CSU coursework)
Remote Sensing (USGS, CSU coursework)
Ecology: General, Grassland, Wetland, Forest, Fishes (UW Coursework),