Austin Delany

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Education

Masters of Science, University of Wisconsin-Madison   August 2022
- Freshwater and Marine Sciences
  - Advisor: Dr. Paul Hanson

Bachelors of Science, University of Wisconsin-Madison   May 2017
- Major: Atmospheric and Oceanic Sciences
- Minor: Environmental Studies

Relevant Experience

Center for Limnology, UW-Madison
- Graduate Research Assistant   September 2020-Present
  - Developed an aquatic ecosystem model for assessing water resource issues related to metabolism dynamics in Wisconsin lakes using R
  - Applied statistical techniques to understand model prediction uncertainties, parameter covariance, and to interpret study results related to hydrology and lake water quality dynamics
  - Created automated workflows for statistical analysis and data visualization of study results
  - Worked with hydrologists and computer scientists to address complex water-resources issues
  - Provided planning and priority management for graduate research study
  - Exposure to machine learning projects and techniques using Python and PyTorch
  - Experience with high performance computing through AWS and on-campus services

- LAGOS Database Manager   October 2017-August 2020
  - Organized and maintained a multi-scaled PostgreSQL database system to store lake water quality data for the LAGOS project (https://lagoslakes.org/)
  - Regularly used R and SQL for aquatic data manipulation and data curation workflows
  - Created protocols and methods for database structure and use
  - Effectively advised large teams of limnologists, ecologists, and hydrologists to achieve long-range study objectives for water-resources investigations
  - Frequently adapted to new protocols and workflow modifications
  - High level of competence in group scientific work and independent problem solving

Riskpulse
- Data Science Consultant   May 2017 – September 2019
  - Assisted in meteorological and data science research for company clients
  - Used Python and numerical modeling to analyze global temperature patterns
  - Created detailed global weather graphics for research purposes using Python

Space Science and Engineering Center, UW-Madison
- Undergraduate Research Assistant   June 2016-August 2017
  - Validated and assessed several sophisticated satellite capabilities including automated detection of volcanic eruptions and automated ash cloud tracking
  - Worked independently to create and implement Python programs to support validation efforts

Computing Skills

Programming	Atmospheric Science Related	Other
R (5 years)	GEMPAK	Unix
Python (7 years)	Vis5d	XML
SQL (5 years)		AutoCad

Academic Appointments

- Undergraduate Mentor, UW-Madison Department of Integrative Biology — Fall 2021
  - Managed and provided leadership to an undergraduate student for water resource study
- Technology Teaching Assistant, UW-Madison Department of Integrative Biology — Spring 2021
- American Meteorological Society Undergraduate Chapter Officer, UW-Madison Department of Atmospheric and Oceanic Science — 2015-2017

Professional Development

- Co-hosted the *Aquatic Ecosystem Modeling* workshop at the International Society of Limnology Annual Meeting — August 2021
- Attended the Global Lake Ecological Observatory Network (GLEON) Annual Meeting — 2019, 2020, 2021
- Attended the Earth Science Information Partners (ESIP) Summer Meeting — July 2019
- Attended the American Meteorological Society (AMS) Annual Meeting — 2017, 2018

Public Outreach and Service

- Outreach volunteer, Clean Lakes Alliance Frozen Assets Festival (Madison, WI) — 2017 - 2022
- Eagle Scout (Highest honor in Boy Scouts) — 2013

Publications

Tadhg N. Moore, Jorrit P. Mesman, Robert Ladwig, Johannes Feldbauer, Freya Olsson, Rachel M. Pilla, Tom Shatwell, Jason J. Venkiteswaran, **Austin D. Delany**, Hilary Dugan, Kevin C. Rose, Jordan S. Read, LakeEnsemblR: An R package that facilitates ensemble modelling of lakes, Environmental Modelling & Software, Volume 143, 2021, 105101, ISSN 1364-8152, https://doi.org/10.1016/j.envsoft.2021.105101.

Ladwig, R., Appling, A.P., **Delany, A.**, Dugan, H.A., Gao, Q., Lottig, N., Stachelek, J. and Hanson, P.C. (2022), Long-term change in metabolism phenology in north temperate lakes. Limnology & Oceanography. https://doi.org/10.1002/lno.12098

In-preparation:
Austin D. Delany, Robert Ladwig, Cal Buelo, Ellen Albright, Paul C. Hanson, The Influence of Carbon Cycling on Metabolism and Oxygen Depletion in North-Temperate Lakes