Robin.Rohwer@gmail.com
Phone: 443-472-2086
ORCID: 0000-0002-2664-6489
Website: RobinRohwer.com

Robin R. Rohwer, PhD

Education

PhD, University of Wisconsin-Madison (Madison, WI)   2012 - 2019
    Environmental Chemistry and Technology Program
    Advisor: Katherine D. McMahon
    Thesis: Temporal and taxonomic scales of change in freshwater microbial
    community composition

BA, Oberlin College (Oberlin, OH)   2005 - 2009
    High departmental honors in Biochemistry
    Advisor: Robert Q. Thompson
    Thesis: An HPLC-MS method for determining Oberlin student exposure to
    bisphenol A from polycarbonate cups and water bottles

Professional Positions

The University of Texas at Austin (Austin, TX)   2022 -
    NSF Postdoctoral Fellow, Department of Integrative Biology
    Advisor: Dr. Brett Baker
    Microbial evolution in a freshwater metagenome time-series

Lawrence Berkeley National Lab (Berkeley, CA)   2020 - 2022
    Postdoctoral Fellow, The DOE Joint Genome Institute
    Advisor: Dr. Emiley Eloe-Fadrosh
    Environmental Metagenomics

The University of Wisconsin-Madison (Madison, WI)   2020
    Postdoctoral Fellow, Department of Microbiology
    Advisor: Dr. Katherine (Trina) McMahon
    Freshwater microbial ecology and evolution

The Pennsylvania State University (State College, PA)   2011 - 2012
    Research Technologist, Biochemistry and Molecular Biology Department
    Advisors: Dr. B. Tracy Nixon, Dr. Ming Tien
    Recombinant cloning to express tagged fungal cellulases

Martek Biosciences Corporation (Columbia, MD)   2010 - 2011
    Research Associate, Development Department
    Advisor: Dr. Wei Wang-Nolan
    DHA-fortified dairy product development and stability testing

Nanotech Innovations, LLC (Oberlin, OH)   2007 - 2008
    Research Assistant at month-old startup
    Advisor: Dr. Jesse Rowsell
    Carbon nanotube production optimization and purity analysis

Publications

PREPRINTS:

Rohwer RR*, Ladwig R*, Dugan HA, Hanson PC, Walsh JR, Vander Zanden MJ. 2023. The aftermath of a trophic cascade: Increased anoxia following species invasion of a eutrophic lake. bioRxiv https://doi.org/10.1101/2023.01.27.525925
*Equally contributing first authors.

Rohwer RR, McMahon KD. 2022. Lake iTag measurements over nineteen years, introducing the limony dataset. bioRxiv https://doi.org/10.1101/2022.08.04.502869.
Software: github.com/rrohwer/limony

PUBLICATIONS:

Vázquez Rosas Landa M, De Anda V, **Rohwer RR**, Angelova A, Waldram G, Gutierrez T, Baker BJ. 2023. Exploring novel alkane-degradation pathways in uncultured bacteria from the North Atlantic Ocean. mSystems 0:e00619-23.

Rohwer RR, Hale RJ, Vander Zanden MJ, Miller TR, McMahon KD. 2023. Species invasions shift microbial phenology in a two-decade freshwater time series. Proceedings of the National Academy of Sciences 120:e2211796120.

Linz AM, He S, Stevens SLR, Anantharaman K, **Rohwer RR**, Malmstrom RR, Bertilsson S, McMahon KD. 2018. Freshwater carbon and nutrient cycles revealed through reconstructed population genomes. PeerJ 6:e6075.

Rohwer RR, Hamilton JJ, Newton RJ, McMahon KD. 2018. TaxAss: Leveraging a Custom Freshwater Database Achieves Fine-Scale Taxonomic Resolution. mSphere 3:e00327-18.
Software: github.com/McMahonLab/TaxAss

Hall MW, **Rohwer RR**, Perrie J, McMahon KD, Beiko RG. 2017. Ananke: temporal clustering reveals ecological dynamics of microbial communities. PeerJ 5:e3812.
Software: github.com/beiko-lab/ananke

Datasets

Rohwer RR, McMahon KD. 2022. Lake Mendota Microbial Observatory Secchi Disk Measurements 2012-present. Environmental Data Initiative.

Rohwer RR, McMahon KD. 2022. Lake Mendota Microbial Observatory Temperature, Dissolved Oxygen, pH, and conductivity data, 2006-present. Environmental Data Initiative.

Patents

Wang-Nolan W, Pena POV, **Rohwer RR**. April 2014. Milk and dairy products containing omega-3 and omega-6 hufas and pasteurization processes thereof. WO2012122531A3.

Grants and Fellowships

- ESA 2023 Registration Grant, **$360**   2023
- Texas Advanced Computing Center Research Allocation, **20,000 node hours**   2023
- ASLO 2023 Travel Grant, **$500**   2023

- Texas Advanced Computing Center Research Allocation, **31,000 node hours**   2022
- NSF Postdoctoral Research Fellowship in Biology Supplement, **$69,000**   2021
- NSF Postdoctoral Research Fellowship in Biology, **$138,000**   2020
- E. Michael and Winona Foster WARF Wisconsin Idea Fellowship, **$29,500**   2018
- The ISME16 Travel Grant, **€300**   2016
- Anna Grant Birge Memorial Award for summer research in limnology, **$1,100**   2015
- Anna Grant Birge Memorial Award for summer research in limnology, **$2,050**   2014

Awards

- Best Early Career Flash Talk, EGSB Annual Meeting, $500   2022
- JW Costerton Award, €500   2014
  For research that best evolves new theories in microbial ecology and wider interdisciplinary significance, awarded through the International Society for Microbial Ecology at ISME15
- The International Society for Microbial Ecology (ISME15) Poster Award   2014
- High departmental honors in Biochemistry, Oberlin College   2009

Teaching and Mentoring

Peter Golightly, UT Austin Ecology, Evolution, and Behavior master's student   2023 –

Jasmine Yuan, UT Austin Biology undergraduate student   2023 -

Jacqueline Lemaire, UW-Madison Genetics PhD student   2023 -

Riley Hale, UC San Diego Scripts Institution of Oceanography PhD student   2018 -
  NSF Graduate Research Fellowship in Biology
  Masters Thesis: Characterization of the cyanobacterial community and cyanotoxins in Lake Mendota across time, space, and the water column
  North Temperate Lakes Long Term Ecological Research Program REU

Krys Kibler, UW-Madison Freshwater and Marine Sciences PhD student   2019

Kylie (Zhiyan) Huang, UW-Madison Industrial Engineering undergraduate student   2015 - 2018

Samuel Schmitz, UW-Madison Microbiology undergraduate student   2015 - 2016
  American Society of Microbiology Undergraduate Research Fellowship
  Willian Harmon Write Microbiology Undergraduate Research Scholarship

Joshua Breider, UW-Madison Microbiology undergraduate student   2015 - 2016

Patrick Dowd, UW-Madison Civil and Environmental Engineering undergraduate student   2014 - 2015
  Holstrom Environmental Fellowship Award
  Jean B. and E.T. Juday Award

Emily Hardcastle, UW-Madison Chemistry undergraduate student   2015

Kaitlin Jasper, UW-Madison Biology undergraduate student   2012 - 2015
  North Temperate Lakes Long Term Ecological Research Program REU
  Holstrom Environmental Fellowship Award
  Senior Biology Honors Thesis

Rachel Russel, McFarland High School student   2013

Invited Talks

Computational Barriers to Realistic Reproducibility: Examples From a 20-year, 471-metagenome Freshwater Time Series, Incorporating Data Science and Open Science in Aquatic Research (Hacking Limnology), Virtual Summit	2023
Species Invasions Shift Microbial Phenology in a Two-Decade Freshwater Time Series Mycotoxins and Phycotoxins Gordon Research Conference, Easton, MA (Cancelled due to positive COVID test)	2023
Seasonal Patterns and Decadal Shifts: Microbial Change in a 20-year Freshwater Time Series CEOAS Ocean Ecology and Biogeochemistry Seminar Oregon State University, Corvallis, OR	2023
Custom Databases in Amplicon Sequencing Leveraging Microbiome Research in Environmental Engineering and Science AEESP Workshop, St. Louis, MO	2022
Macro-scale Invasions Shift Microbial Phenology North Temperate Lakes LTER Science Meeting, Madison, WI	2022

Contributed Talks

Freshwater Bacteria Populations Shift on Decadal and Seasonal Time Scales Over 20 Years Ecological Society of America (ESA 2023), Portland, OR	2023
Freshwater Bacteria Populations Respond to Seasonal and Decadal Environmental Change Over 20 Years, Association for the Sciences of Limnology and Oceanography (ASLO23) Palma de Mallorca, Spain	2023
Species Invasions Shift Microbial Phenology in a Two-decade Freshwater Time Series 18th International Symposium on Microbial Ecology (ISME18), Lausanne, Switzerland	2022
Macro-species Invasions Shift Microbial Phenology over 19 years Joint Aquatic Sciences Meeting (JASM 2022), Grand Rapids, MI	2022
Invasive Species Shift Cyanobacterial Phenology EGSB Annual Meeting, Lawrence Berkeley National Lab, Berkeley, CA	2022
Temporal and Taxonomic Scales of Change in Freshwater Microbial Communities Defense, UW-Madison: https://youtu.be/Vl-H1KATQl0	2019
Facilitating further integration of microbes into long-term ecological research (workshop leader) Long-Term Ecological Research All Scientists' Meeting (LTER-ASM), Pacific Grove, CA	2018
Development of Quantum Dot Probes for Studies of Synergy Between Components of the Wood Degrading Fungal Enzymes, DOE Genomic Science Contractors Grantees Meeting	2012

Posters

Temporal Scales of Change in Freshwater Microbial Communities Long-Term Ecological Research All Scientists' Meeting (LTER-ASM), Pacific Grove, CA	2018

Temporal Scales of Change in Freshwater Microbial Communities   2018
    17th International Symposium on Microbial Ecology (ISME17), Leipzig, Germany

What Does Real Microbial Community Change Look Like? Incorporating Variability of Biological   2018
    Duplicates into 16S Analyses, Madison Microbiome Meeting, UW-Madison

17 Years of Bacterial Community Dynamics in Lake Mendota   2017
    Water@UW Poster Session, UW-Madison

Finer Taxonomic Resolution Achieved with a Custom Database: Introducing TaxAss   2016
    16th International Symposium on Microbial Ecology (ISME16), Montreal, Canada

Finer Taxonomic Resolution Achieved with a Custom Database: Introducing TaxAss   2016
    Kenneth B. Raper Symposium, UW-Madison

A Decade of Microbial Community Dynamics in Lake Mendota   2014
    15th International Symposium on Microbial Ecology (ISME15), Seoul, South Korea

Microbial Communities in Lake Mendota and Trout Bog   2013
    Intl. Water Association Microbial Ecology & Water Engineering Conference (MEWE),
    Ann Arbor, MI

Microbial Communities in Lake Mendota and Trout Bog   2013
    DOE Joint Genome Institute Microbial Genomics and Metagenomics Workshop,
    Walnut Creek, CA

Training

Introduction to Programming for Bioinformatics (Python short course)   2021
    Center for Computational Biology, University of California, Berkeley, Berkeley, CA

ASM Scientific Writing and Publishing Online Course   2018

Microbial Genomics and Metagenomics Workshop   2013
    US DOE Joint Genome Institute, Walnut Creek, CA

Dispersions in Liquids: Suspensions, Emulsions, and Foams   2012
    American Chemical Society Short Course, Anaheim, CA

Sea Education Association Oceanography Study Abroad Program   2008
    Accredited by Boston University, Woods Hole, MA, and North Pacific Gyre

Outreach

Press   Rivers Are Drowning in Toxic Sludge, by Chris Baraniuk   2023
    Wired

Radio   Species Invasions impact on Microbes and Toxins in Lake Mendota   2023
    15 min interview with Madison's WORT 89.9 FM on the 8 O'clock Buzz

Tweet   Viral tweet about long-term data, phenology, climate change, and data visualization   2023
    2.1M Views, 37.2K Likes

Press   Earlier Algae Blooms, Lingering Toxins, by Adam Hinterthuer   2023
    NSF News, Phys.org, UW-Madison News, and Center for Limnology Water Blogged

Mentor Big Sister in Big Brothers Big Sisters Madison Chapter   2014 - 2023

Demo	Sampling Methods walk-by hands-on lesson Annual Center For Limnology Open House	2013 - 2019
Demo	Sonde measurements paired with shiny app visualization of full time series Wisconsin Congressional Staffers Research Tour App: tiny.cc/mymendota Code: github.com/rrohwer/MyMendota/	2019
Press	Wading through Mendota's Mysteries, by Erik Ness GROW, Wisconsin's Magazine for the Life Sciences	2017
Talk	Limnology on Lake Mendota Hoofer Sailing Club Winter Ed Seminar Series	2016
Demo	Lake Stratification 30-minute hands-on lesson Expanding Your Horizons, program for middle school age girls	2015
Demo	Winogradsky Columns walk-by hands-on lesson Wisconsin Science Festival	2015

Professional Memberships

North Temperate Lakes Long-Term Ecological Research (NTL-LTER)

International Society for Microbial Ecology (ISME)

American Society for Microbiology (ASM)

American Society for Limnology and Oceanography (ASLO)

Ecological Society of America (ESA)

Service

Reviewer: Limnology and Oceanography, Nature Biotechnology, Freshwater Biology, Environmental Microbiology, Ecosphere, Scientific Reports, mSystems, mSphere, Water Research

Stack Overflow Contributor: Top 9% in 2023

Software Maintenance and Support: limony R package (https://github.com/rrohwer/limony)
TaxAss software pipeline (https://github.com/McMahonLab/TaxAss)