

MEGAN L. LARSEN, PHD

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EDUCATION

- 2016 **Ph.D.** Evolution, Ecology, and Behavior
Department of Biology, Indiana University
- 2009 **B.S. with High Distinction**, Biochemistry and Molecular Biology
Department of Biology, Nebraska Wesleyan University

RESEARCH & PROFESSIONAL APPOINTMENTS

- 2020 – present **Data Scientist**, DAPPER Stats
- 2020 – present **MITACS Accelerate Postdoctoral Fellow**, Wilfrid Laurier University,
Department of Geography and Environmental Studies with Buffalo Pound Water
Treatment Plant
- 2017 – 2020 **Postdoctoral Fellow**, Wilfrid Laurier University, Department of Geography and
Environmental Studies with joint appointment at University of Waterloo,
Department of Earth and Environmental Science
- 2016 – 2017 **Research Technician/Interim Lab Manager**, University of Nebraska-Lincoln
Water Sciences Laboratory
- 2014 – 2015 **Graduate Research Assistant**, Indiana University, Women in Science,
Technology, Informatics, and Mathematics Living Learning Community
- 2012 – 2013 **Graduate Associate Instructor**, Indiana University, Department of Biology
- 2012 – 2015 **Graduate Research Assistant**, Indiana University, Department of Biology
- 2011 – 2012 **Graduate Research Assistant**, Michigan State University, Department of
Microbiology and Molecular Genetics
- 2010 **Graduate Teaching Assistant**, Michigan State University, Department of
Microbiology and Molecular Genetics
- 2007 – 2009 **Ernest F. Hollings Scholar**, National Oceanic and Atmospheric Administration,
Great Lakes Environmental Research Laboratory
- 2007 – 2009 **Nebraska IDEa Network for Biomedical Research Excellence Scholar** (NE
INBRE), Nebraska Wesleyan University, University of Nebraska-Lincoln
- 2006 – 2007 **Research Technician**, University of Nebraska-Lincoln Water Sciences
Laboratory

PUBLICATIONS

Journal articles

In Review, In Revision, and/or In Preprint:

Larsen ML, HM Baulch, SL Schiff, DF Simon, S Sauve, and JJ Venkiteswaran (2019). Extreme midsummer rainfall drives early onset cyanobacterial bloom. bioRxiv 570275; doi: <https://doi.org/10.1101/570275>

In Press, and Published:

Wisnoski, N. I., Muscarella, M. E., Larsen, M. L., Peralta, A. L., and Lennon, J. T. (2020). Metabolic insight into bacterial community assembly across ecosystem boundaries. *Ecology* 101(4):e02968. 10.1002/ecy.2968

K. J. Locey, M. E. Muscarella, M. L. Larsen, S. R. Bray, S. E. Jones and J. T. Lennon (2020) Dormancy dampens the microbial distance–decay relationship *Phil. Trans. R. Soc. B* 375:20190243 <https://doi.org/10.1098/rstb.2019.0243>

Larsen ML, SW Wilhelm, JT Lennon (2019) Nutrient stoichiometry shapes microbial coevolution. *Ecology Letters*, bioRxiv. doi: <https://doi.org/10.1101/183657>

Snow, DD, DA Cassada, ML Larsen, NA Mware, X Li, M D'Alessio, Y Zhang, JB Sallach (2017) Detection, occurrence and fate of emerging contaminants in agricultural environments. *Water Environment Research* 89(10): 897-920

Muscarella, ME, KC Bird, ML Larsen, SA Placella, and JT Lennon (2014) Phosphorus resource heterogeneity in microbial food webs. *Aquatic Microbial Ecology* 73: 259-272

Jeanniard A, DD Dunnigan, JR Gurnon, IV Agarkova, M Kang, J Vitek, G Duncan, W McClung, M Larsen, J Claverie, JL Van Etten and G Blanc (2013) Towards defining the chloroviruses: a genomic journey through a genus of large DNA viruses. *BMC Genomics* 14: 158

Technical Reports

Simonis, J. L. and M. L. Larsen. 2020. American Wind Wildlife Information Center Analysis Software. Prepared for American Wind Wildlife Institute. DAPPER Stats, Portland, OR. 6 pp.

SOFTWARE

Applications

Simonis, J. L. and M. L. Larsen. 2020. American Wind Wildlife Information Center Analyses. R Software Package. v.1.0.0.

GRANTS AND FELLOWSHIPS

2018 Mitacs Accelerate in association with Buffalo Pound Water Treatment Plant, Wilfrid Laurier University. “The nexus of high frequency, big, and long-term data – catalysing new opportunities to support drinking water treatment.” \$165,000

- 2018 Mitacs Accelerate in association with IISD Experimental Lakes Area, Wilfrid Laurier University. Intern with K. Salk. "Responses of lakes to experimental fertilization: harmful algal blooms and trace metal cycling" \$80,000
- 2009 Fleming Student-Faculty Collaborative Research Grant, Nebraska Wesleyan University. "Molecular evaluation of *mcyB* and PC-IGS genes in wintering cyanobacterial populations in Pawnee and Branched Oak Lakes of Nebraska" \$1,577
- 2007 Fleming Student-Faculty Collaborative Research Grant, Nebraska Wesleyan University. "Biosynthesis of Anatoxin-a(s): preparation of a standard for LC/MS algal toxin analysis." \$1,200

AWARDS AND HONORS

- 2019 Society of Canadian Limnologists Travel Award
- 2015 Provost's Travel Award for Women in Science, Indiana University
- 2013 Floyd Fellowship, Indiana University
- 2010 W.K. Kellogg Biological Station (KBS) Porter Research Scholar Award, Michigan State University
- 2009 Early Start Fellowship, Michigan State University
- 2009 Plant Sciences Fellowship, Michigan State University
- 2009 Phi Kappa Phi National Honorary Award of Excellence, Nebraska Wesleyan University
- 2009 Dr. C.J. Shirk Memorial Biology Achievement Award, Nebraska Wesleyan University
- 2008 Nebraska Academy of Sciences C. Bertrand Schultz Scholarship, Nebraska Wesleyan University
- 2007 National Oceanic and Atmospheric Administration Ernest F. Hollings Fellowship, Nebraska Wesleyan University
- 2007 National Institutes of Health IDeA Networks of Biomedical Research Excellence, Nebraska Wesleyan University

INVITED TALKS and WORKSHOPS

- 2019 Partners FOR Saskatchewan River Basin. "Is cyanobacterial bloom mitigation a moving target?"
- 2019 Interdisciplinary Freshwater Harmful Algal Blooms Workshop. "Cyanobacterial blooms -- the effects of an extreme rainfall event on bloom onset"
- 2018 Department of Biology, Wilfrid Laurier University. "Its not easy being (blue) green: identifying the precursors to harmful algal bloom development"
- 2018 IISD Experimental Lakes Area. "Cyanobacterial bloom dynamics in Conestogo Lake."
- 2016 Department of Biology, Nebraska Wesleyan University. "Shaping evolution from the bottom-up: Understanding how limiting resources change microbial interaction one molecule at a time."

- 2015 CEWiT-REU, Indiana University. "Scientific Poster Design and Presentation for Undergraduates."
- 2014 Associate Instructor Orientation and Training, Indiana University. "Engaged Learning in Sciences."
- 2011 Department of Biology, University of Texas-Austin. "Current understanding of *Synechococcus* adaptation to phage predation."

SELECTED PRESENTATIONS

- Larsen, ML, Venkiteswaran, JJ, Baulch, HM, Simon DF and Sauvé S (2019) Heavy rainfall and increased phosphorus concentrations drive early onset bloom in an Ontario reservoir. Society of Canadian Limnology, London ON Canada.
- Larsen ML, Salk KR, Venkiteswaran JJ, Baulch HM, Wolfe J, and Higgins SN (2018) When one becomes two! Longer summers lead to multiple cyanobacterial blooms. American Society of Limnology and Oceanography, Victoria BC Canada.
- Larsen ML, Salk KR, Venkiteswaran JJ, Baulch HM, Wolfe J, and Higgins SN (2018) Longer summers drive multiple cyanobacterial blooms on Lake 227. Global Water Futures Annual Meeting, Hamilton, ON Canada.
- Larsen ML, Barrick JE, and Lennon JT (2015) Rapid Evolution in Marine Cyanobacteria: Genetic and Physiological Responses to Phage Predation and Nutrient Stoichiometry. American Society of Microbiology, New Orleans, LA.
- Larsen, ML, Wilhelm SW, Lennon JT (2012) Nutrient stoichiometry influences rapid eco-evolutionary feedbacks in marine cyanobacteria and phage. International Society of Microbial Ecology 14, Copenhagen, Denmark.
- Larsen, ML, Wilhelm SW, Lennon JT (2011) Nutrient stoichiometry generates rapid eco-evolutionary feedbacks between marine cyanobacteria and their phage. Aquatic Viruses Workshop 5, Texel, Netherlands.
- Larsen, ML, Dunnigan DD, and J Van Etten (2009) Molecular characterization of overwintering cyanobacterial populations in reservoirs of Nebraska. West Coast Undergraduate Biological Sciences Conference, San Diego, CA.

NON-DEGREE EDUCATION

- 2019 Environmental models and Bayesian methods, University of Waterloo Department of Engineering, Waterloo, Ontario
- 2017 NASA Applied Remote Sensing Training: Introduction to Remote Sensing of Harmful Algal Blooms
- 2016 Software carpentry: Github and RMarkdown, Indiana University, Bloomington, IN
- 2007 NOAA Ernest F. Hollings Fellowship at the Great Lakes Environmental Research Laboratory, Ann Arbor, MI

SERVICE

- Panelist for “Health and Safety in field research” with Norther Water Futures at Wilfrid Laurier University (2019)
- Girl Guide Career Night (2019)
- PRIDE in SCIENCE in collaboration with the Rainbow Centre at Wilfrid Laurier University, Waterloo, ON, Canada (2018)
- Real Life Science, WonderLab Science Outreach Program, Bloomington, IN
- Reviewer, *International Society of Microbial Ecology, Proceedings of the National Academy of Science, PLoS One*
- Graduate Student Recruitment prospective host, Indiana University (2013-2015)
- Graduate Student Seminar organizer (*EcoLunch*), Indiana University (2013)

TEACHING and MENTORSHIP

Wilfrid Laurier University

SP2018 Intro to experimental design, reproducibility, and statistics in R
 FA2017 Data Management and R for graduate students

Indiana University – Women in Science Technology Informatics and Mathematics Living Learning Center (As TA I designed and sole-taught all courses listed here)

SP2015 Research Skills Seminar for Undergraduate Researchers
 FA2014 Professional Development Seminar
 2013 – 2014 Mentor Circle Leader
 2013 – 2014 Biology Graduate Consultant

Indiana University – Department of Biology

FA2015 Introductory Biology Lab
 SP2014 Environmental Biology for non-majors
 FA2013 Entomology
 SP2013 Biological Mechanisms – responsible for undergraduate teaching assistant preparation

Michigan State University

SP2010 Introductory Biology Lab

PROFESSIONAL AFFILIATIONS

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| American Society of Limnology and Oceanography | Ecological Society of America |
| American Society of Microbiology | Global Lake Ecological Observatory Network |
| American Society of Virology | International Society of Microbial Ecology |

ACADEMIC ADVISORS

Jason Venkiteswaran, Wilfrid Laurier University & Helen Baulch, University of Saskatchewan (Postdoc)

Jay T. Lennon, Indiana University (Ph.D.)

Jerald Bricker and Jodi Ryter, Nebraska Wesleyan University (B.S.)

ACADEMIC ADVISEES

Undergraduate mentees: Anthony Baron (University of Saskatchewan), Moyosore Lanisa (University of Waterloo), Heather Jovanovic, Matthew Soares-Paquin (Wilfrid Laurier University); Victoria Wickham (University of Nebraska Lincoln); Zac Wakefield, Jordan Hyde, Andrew Koultourides (Indiana University); Shanika Daniels (IU STEM Summers Scholars Program, Indiana University); Claire Freeman (Michigan State University REU, Colorado State University)

High School mentees: Dakayla Calhoun (Shortridge International Baccalaureate High School, Indianapolis, IN; IU Jim Holland Summer Research Program), Nick Nelson (Bishop Noll High School, Hammond, IN; IU Jim Holland Summer Research Program)