

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Literature, Science, and the Arts

Melissa B. Duhaime, assistant professor of ecology and evolutionary biology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of ecology and evolutionary biology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2010	Max Planck Institute for Marine Microbiology, Bremen, Germany
M.A.	2007	Max Planck Institute for Marine Microbiology, Bremen, Germany
B.A.	2005	Cornell University, Ithaca, New York

Professional Record:

2017-present	Assistant Professor, Department of Ecology and Evolutionary Biology, University of Michigan
2012- present	Faculty Affiliate, Center for Computational Medicine and Bioinformatics, University of Michigan
2012-2016	Assistant Research Scientist, Department of Ecology and Evolutionary Biology, University of Michigan
2010- 2011	Post-doctoral fellow, Department of Ecology and Evolutionary Biology, University of Arizona

Summary of Evaluation:

Teaching: Professor Duhaime teaches an innovative “Microbes in the Wild” course that was developed as part of the university’s Third Century Initiative. This course includes an intensive lab course taught during the summer term at the University of Michigan Biostation as well as a combined lecture and lab course taught on the main campus in the fall term. She also co-teaches the undergraduate “Introduction to Microbiology” course required for some majors in the Program in Biology. Professor Duhaime has received a UM Large Course Initiative grant to support more active learning in this introductory large lecture course. In her research laboratory, Professor Duhaime has served as an excellent mentor to seven high school, twenty-nine undergraduate, one master’s, and seven Ph.D. students, as well as six post-doctoral scholars. She has also mentored six visiting or rotation students and is a member of five other student committees.

Research: Professor Duhaime studies microbes and their impact on aquatic ecosystems, emphasizing connections among people, land, and wildlife. She is recognized as a leader in aquatic—especially oceanic—viruses that infect bacteria and other organisms and contribute to nutrient cycling in the ecosystem that affects other species. She also studies the impacts of microplastics on aquatic ecosystems and has talked to members of the U.S. Congress and other groups about the impact of this problem. She is involved in other interdisciplinary projects that connect research to the community, such as the Detroit River Story Lab. During her time as an assistant professor, Professor Duhaime has published nineteen peer-reviewed papers, including one selected as the Paper of the Year in a top journal in her field. Professor Duhaime has received grants to support her work from the National Science Foundation, the National Oceanic and Atmospheric Association, Department of Energy, Dow, Inc., and the Flu Lab Foundation, among others. She is well-positioned to continue these important lines of work in the future, continuing to advance our understanding of these important topics.

### Recent and Significant Publications -

- Saini, J.S., Hassler, C., Cable, R., Fourquez, M., Danza, F., Roman, S., Tonolla, M., Storelli, N., Jacquet, S., Zdobnov, E.M., & Duhaime, M.B. (2022). Bacterial, phytoplankton and viral distributions and their biogeochemical contexts in meromictic Lake Cadagno offer insights into the Proterozoic ocean microbial loop. *mBio*, *13*(4), e00052-22.
- Hegarty, B.E., Dai, Z., Raskin, L., Pinto, A.J., Wigginton, K., & Duhaime, M.B. (2022). A snapshot of the global drinking water virome: diversity and metabolic potential vary with residual disinfectant use. *Water Research*, *218*, 118484.
- Crossette, E., Gumm, J., Langenfeld, K., Raskin, L., Duhaime, M.B., & Wigginton, K. (2021). Metagenomic quantification of genes with internal standards. *mBio*, *12*(1), e03173-20.
- Howard-Varona, C., Lindback, M.M., Bastien, G.E., Solonenko, N., Zayed, A.A., Jang, H., Andreopoulos, B., Brewer, H.M., Glavina del Rio, T., Adkins, J.N., Subhadeep, P., Sullivan, M.B., & Duhaime, M.B. (2020). Phage-specific reprogramming of virocells. *The ISME Journal*, *14*(4), 881-895. <https://doi.org/10.1038/s41396-019-0580-z>

Service: Professor Duhaime has made significant contributions to departmental and college service, as well as to her scientific community and the broader public. At the departmental level, she has served on the Diversity Committee, Executive Committee, and Frontiers Graduate Student Admissions Committee. Beyond the department, she has served on the LSA College Nominating Committee and Ginsberg Center's Workshop on "Remote Togetherness: How We're Reimagining Community Engagement within a New Context." She has served as a member of the "Microbes and Social Equity Working Group" for the American Society for Microbiology, and is a reviewer for both leading journals and funding agencies in her field. Professor Duhaime has also been exceptionally active in outreach activities bringing scientific information to the general public, and has been proactive about developing skills for inclusive leadership.

### External Reviewers:

Reviewer (A): "I am impressed with the thoughtful teaching approaches Dr. Duhaime applies, and it is nice to see the emphasis on inclusion and the use of actual tools such as the Social Identity Wheel lesson plan. I really like the original 'Microbes in the Wild' project-based environmental microbiology laboratory courses, truly engaging the students in all aspects of science as well as having them involved in exercise review."

Reviewer (B): "Professor Melissa Duhaime is a highly accomplished internationally recognized researcher in aquatic microbial ecology and virology. She is a thought leader in microbial ecology research, is well funded, published and cited, and appears in no danger of losing steam. She continues to be a leader and pioneer in the study of microbial ecology and microbiology writ large."

Reviewer (C): "Her main research initially focused on environmental 'omics of microorganisms, moving towards a focus on the roles of viruses in aquatic systems, but has expanded...continues to be at or near the leading edge of this extremely relevant and timely collection of topics. The work wisely involves creative use of state-of-the-art molecular techniques, in addition to more classical approaches, and I expect this combination to continue into the near future."

Reviewer (D): "Dr. Duhaime has consistently been a leading thinker in the field as when she entered it we were struggling to advance from 'counting dots' (SYBR-stained virus particles) to developing sequence-based approaches, and she has helped bring those 'dots' to life by reading their genomic

stories. Dr. Duhaime's contributions are of the highest and most well-considered quality and have helped shape the emergent field of viral ecogenomics."

Reviewer (E): "She is doing high quality science in two complementary areas, has had her work recognized as being exceptional...is regularly invited to speak at peer universities and conferences, is taking a leadership role in both viral ecology and microplastic/water quality research initiatives, and is training (and placing) PhD students postdocs into academic and industry positions... She has done all of this while developing innovative teaching, service, and outreach programs."

Reviewer (F): "Dr. Duhaime's work is high quality and novel, answering new questions and leading the field toward standards of excellence, reproducibility, and predictive models for microbial complexity. Moreover, the scholarly impact results from a breadth that keeps Dr. Duhaime's science grounded in a big-picture view that is rare and often inappropriately discouraged at this career stage but essential to science."

Summary of Recommendation:

Professor Duhaime is a recognized leader in aquatic, microbial ecosystems, with a focus on viruses, and has also done important work on the impacts of microplastics in the environment. She is a dedicated and supportive advisor to students both in the classroom and in her research laboratory, as well as a significant contributor to service at the university and beyond. Her leadership roles in major environmental outreach initiatives are expected to have long-lasting impacts in our local communities, especially marginalized communities. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Melissa Duhaime be promoted to the rank of professor of ecology and evolutionary biology, with tenure, College of Literature, Science, and the Arts.



Anne Curzan, Dean  
Geneva Smitherman Collegiate Professor of  
English Language and Literature, Linguistics,  
and Education  
Arthur F. Thurnau Professor  
College of Literature, Science, and the Arts

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