

Scientist of the Month



Mario Muscarella

Dr. Mario Muscarella is an assistant professor of microbiology at the Institute of Biology and Department of Biology & Wildlife at UAF. He received a BLaST faculty pilot project award for 2021-2023. He earned his Ph.D. in biology from Indiana University with an emphasis in both ecology and evolution and microbiology. He completed his postdoctoral training at the University of Illinois at the University of Quebec at Montreal. He enjoys outdoor activities including hiking, camping and skiing and doing projects around the home.

Research

Muscarella joined UAF in July 2020 and has since recruited a number of undergraduate, graduate students, and a research professional to join his lab. Research in the Muscarella Lab focuses on the role of microorganisms in natural, host, and managed ecosystems. This includes exploring factors that contribute to and impact microbial biodiversity for ecosystem function. He is the PI of a BLaST faculty pilot project that focuses on wild Alaskan berries and the importance of their microbiomes. He and his students are looking at impacts of climate change that causes low-quality berry conditions such as berry rot and desiccation, and the role of microorganisms in the environment and how environmental changes alter the structure and function of microbial communities. For

this work, the team is collecting berries from around the UAF campus and at the Caribou Poker Creeks Research Watershed located ~50 km northeast of Fairbanks, Alaska.

Teaching

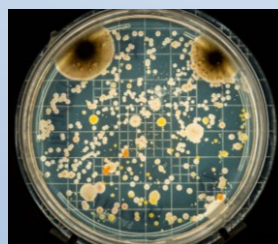
Muscarella teaches numerous courses including BIOL 342: Microbiology, BIOL 694: Computational Skills in Biology, and BIOL 692: Environmental Microbiology and Microbial Ecology Seminar. He recently taught a portion of BLaST's Biomedical Science BMSC 224: Entering Research: Undergraduate Research Experience course to the Rural Alaska Honors Institute's (RAHI) 2022 Summer Research students. Muscarella encourages students to be highly engaged and to think critically about the course content. His goal is to promote scholarship and strengthen students' ability to apply what they learn rather than memorize facts.

Mentoring

Since joining UAF, Muscarella has mentored six undergraduate researchers including two BLaST Scholars: Jill Jacobs and Tyler Baker-Chapman; and two other undergraduates from Skidmore College and Oberlin College. In addition, he mentors two UAF graduate students and will be welcoming a third this fall. The Muscarella Lab believes in an open, inclusive, collaborative lab atmosphere that promotes personal well-being and research enthusiasm. This includes establishing mentorship plans that acknowledge the mentees desired outcomes and mentee/mentor expectations. His lab also encourages undergraduates to seek career and professional development opportunities through the Ecological Society of America and the American Society for Microbiology and other organizations.



Photo Top: Muscarella (far left) explaining the role of bacteria in natural ecosystems to 2022 RAHI students (Credit RAHI, July 2022)



Bottom: Bacteria and Fungi isolated from highbush cranberry. (Credit JR Ancheta, April 2021)