SCHOOL OF BIOLOGICAL SCIENCES SEMINAR

Dr. Betsy Swanner

Iowa State University

"Rethinking nutrient limitation for the early marine biosphere"

Numerous paradigms shape our thinking about which nutrients may have limited primary productivity by an early marine biosphere. My group investigates microbial processes in meromictic and Fe-rich ("ferruginous") lakes in the Midwest that can approximate some of the chemical and biological characteristics present during the Archean Eon (before 2.5 billion years ago). Two prevailing paradigms are that phosphate was the limiting macronutrient during this time, and that the low availability of molybdenum would have limited biological nitrogen fixation, resulting in low availability of fixed nitrogen as well. Our recent work in Deming Lake in northern Minnesota, which is dominated by Cyanobacteria, the architects of Earth's oxygenation, raises questions about these assumptions. I will share these stories and how they urge us to avoid broad generalizations about the early Earth. I'll also share some thought on what elements might have limited the early biosphere.

Hosted by

Karrie Weber

Thursday, November 5th, 2026 at 3:30 p.m.
Hamilton Hall 112
Zoom Link: https://unl.zoom.us/j/94081044933
Password: sbsseminar

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