

# Biology Seminar



Western  
UNIVERSITY · CANADA

12:30 - 1:30 pm  
Friday, March 3, 2023  
BGS 0165



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## **Towards a mechanistic science of global change: from cells to ecosystems and human well-being**

Biodiversity and ecosystems sustain human well-being. Global change is threatening the benefits that natural systems provide to people, fundamentally altering our ability to secure a sustainable and equitable future for humanity. The challenge for ecological science is clear: we need to understand ongoing environmental changes in mechanistic ways and at multiple scales that matter for ecosystems and people. In this talk, I will present recent work that addresses this challenge by linking physiological processes to higher order ecological processes governing the dynamics of populations and ecosystems, and the benefits to human well-being they provide. I will demonstrate how understanding living systems in terms of the core chemical and physical processes that sustain life (i.e. metabolism) has created inroads to predicting biological responses to environmental change. I will also present new work that bridges the gap between biodiversity science and human health in the context of seafood, by extending statistical and theoretical approaches from ecosystem science to human nutrition science. This work has shown that biodiversity (species diversity and ecological functional diversity) directly enhances nutritional benefits at global and local scales, with the potential to combat the problem of micronutrient deficiencies in coastal communities.

