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## LOCKWOOD LECTURE

### **“Homogenous Selection and Dispersal Limitation Dominate Ecological Controls on Bacterial Community Composition in Antarctic Dry Valley Soils”**



### **Dr. Eric Bottos**

Thompson Rivers University  
Department of Biological Sciences  
Kamloops, BC, Canada

**Thursday, June 23, 2022**

Tea: 10:30 a.m. | Lecture: 11:00 a.m.

**Jones Auditorium, The Connecticut Agricultural Experiment Station  
123 Huntington Street, New Haven, CT**

The Dry Valleys of Antarctica possess a unique ecosystem where environmental influences on microbial communities are expected to be readily identified in the absence of complex trophic structures. As part of The New Zealand Terrestrial Antarctic Biocomplexity Survey (NZTABS), it was our goal to describe the composition of the microbial communities in the Dry Valleys and to elucidate the environmental factors and ecological drivers that influence their structure. Soil samples were collected at 480 sites from an area >250 square km encompassing the four valleys in the Dry Valleys system, and high-throughput DNA sequencing was used to characterize the bacterial community structure across samples. Bacterial community composition was found to vary significantly with respect to many of the landscape and physicochemical variables measured. Additionally, results of null modeling indicate that homogenous selection and dispersal limitation represent important ecological drivers of bacterial distribution across the landscape. This work contributes to an improved understanding of the microbial ecology of the Dry Valleys, with implications for understanding abiotic drivers of microbial distributions in terrestrial ecosystems.