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Using genome-resolved metagenomics to understand microbial contributions to ecosystem functioning

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Microbiomes mediate crucial ecosystem processes in terrestrial and marine environments, yet data regarding their precise responses to climate change remains limited. This knowledge deficit is especially true for extreme Antarctic environments where the importance of microbial communities is thought to be more pronounced due to the depauperate and oligotrophic nature of such systems. Here, I will discuss our work in understudied deserts (such as the McMurdo Dry Valleys) and oceans (such as the Southern Ocean) ecosystems. I will discuss key insights regarding the diversity and functional traits of microbiomes in these regions. I will also highlight how the application of mesocosms (such as ocean acidification experiments) has allowed us to predict the response of microbiomes to anthropogenic change. I will conclude by discussing key questions for future research in Antarctic environments.

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No

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