Institut Spatial de McGill

McGill Space Institute

Seminar Series

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McMaster University

Packing for Mars:

Integrating biomarker and exploration field science in Earth analogue environments

The ubiquitous nature and metabolic diversity of microbes enables survival in a wide array of environments and locations, including some of the harshest conditions on Earth. Microbial interactions with their environment can result in the creation of unambiguous signatures of life, or 'biosignatures'. Mounting evidence for periods of liquid water on the surface of Mars suggests the possibility that there may once have been abundant microbial life. As it is likely that such life is long extinct, biosignatures represent the primary measures by which we can search for evidence that it may once have existed beyond the Earth.

Analogue sites on Earth are locations with environmental, geological and/or biological conditions that are representative of early Earth or other planets. Real space missions come with constraints and challenges, for example life support limitations and communications delays with scientific experts back on Earth. Analogue research that combines both field science and simulated Mars operational conditions is used to assess the impacts of these constraints on scientific productivity.

In this talk I will present an overview of NASA analogue projects that integrate both biomarker and exploration science to inform future space missions with an eye towards life detection and sample return.

25 Oct. 3:30 pm

MSI conference room, 3550 University

Refreshments following the seminar in the MSI lounge

For more information: msi.mcgill.ca/Seminars.htm