Ben-Gurion University of the Negev
Jacob Blaustein Institutes for Desert Research
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Seminar

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The Zuckerberg Institute
for Water Research,
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Tuesday, December 12, 2017, 12:00
Seminar Room, Old Administration Building

Rain Mediated Dynamics of Soil Microbial Communities in Arid Environments

Vast regions of the Earth's surface are arid, characterized by sparse vegetation interspaced with dry and barren soil surfaces. Microbial life in these soils is shaped by infrequent rainfall events that drastically modify activity rates and the interactions mediated by elevated soil water. Detailed monitoring of a natural microbial community in desert soil after a rainfall event revealed a remarkable decrease in species richness and diversity; these were gradually restored during soil desiccation. Modeling results supported these observations and suggested a critical role for the connected aqueous phase in suppressing diversity under wet conditions and promoting it upon drying and fragmentation of aquatic habitats. The drastic changes in microbial community composition may be reflected in soil ecological function and provide new insight into the mechanisms that promote and maintain the unparalleled microbial diversity found in soils.