



Ben-Gurion University of the Negev
Jacob Blaustein Institutes for Desert Research
The Swiss Institute for Dryland Environmental and Energy Research
Mitrani Department of Desert Ecology

Seminar



Sharon Swartz

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Evolutionary Biology,
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Tuesday, March 21, 2017, 12:00

Seminar Room, Old Administration Building

Participants are invited to meet the seminar speaker at the MDDE meeting room immediately after the seminar (~ 13:00). Please bring your lunch; snacks will be provided.

**Bats aren't birds or bugs: stretching, sensing,
spinning, and the uniqueness of bat flight**

In this talk, I will explore how the evolutionary origin of bat wings from mammalian hands has influenced the biomechanics of flight in bats and compare that to flight in birds and insects. I will discuss the nature of wing skin as a biomaterial, and how its mechanical properties may be actively modulated during flight by a unique group of muscles found only in bats, and speculate on how selection for reduced weight may interact with aspects of neural control in the most morphologically complex of animal wings. I will show that we can gain insight into the functional architecture of bat wings not only with sophisticated bioengineering approaches such as particle image velocimetry, multi-camera high speed videography, and dynamic modeling, but also low-tech methods including polarized light photography, basic histology, and dissection.