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

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Molecular Biology
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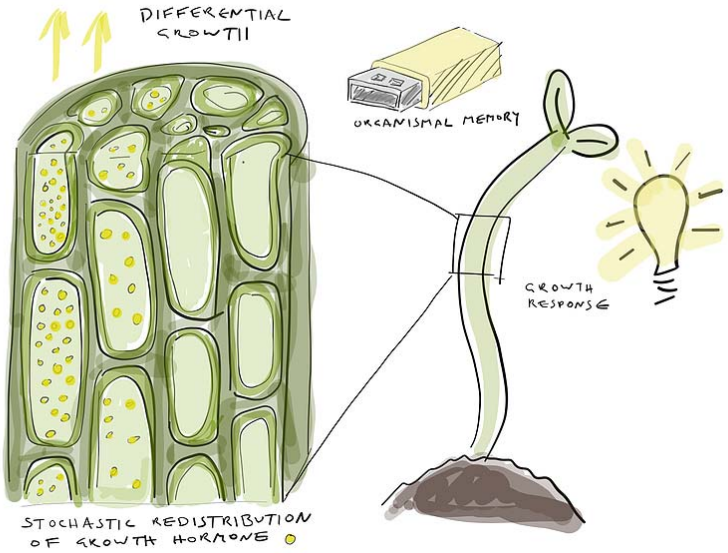

Tuesday, May 15, 2018, 12:**20**
Seminar Room, Old Administration Building

Participants are invited to meet the seminar speaker at the MDDE meeting room immediately after the seminar (~ 13:**20**). Please bring your lunch; snacks will be provided.

Temporal Integration in Plant Tropisms

Over a century ago, various experiments both in gravitropism and phototropism, revealed that plants respond to an integrated history of stimuli rather than responding instantaneously. Particularly, experimental observations have shown that plants respond identically to different combinations of stimuli - intermittent in time or with reciprocal ratios of intensity and duration - as long as the total dose of these stimuli is the same. Current mathematical descriptions of the kinematics of tropic responses are instantaneous and limited to constant stimuli. In this work we adopt the well-established approach of response theory, which describes the non-trivial input-output relationship of a signal transducer, in this case a plant turning an external stimulus into a growth response. This model is experimentally tractable, allowing a quantitative description of the ability of plants to integrate stimuli over time, laying the foundation for an understanding of decision-making in plant tropisms.