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

Reed warblers (*Acrocephalus scirpaceus*) are migrating birds. A study that was carried out in our lab found higher new neuronal recruitment in brains of these birds, compared with that in brains of birds from a closely related and resident species, the Clamorous warbler (*A. Stentoreus*). The hypothesis is that this phenomenon enables enhanced navigational abilities that are required for the migratory lifestyle (Barkan et al., 2015; Developmental Neurobiology). Photographed by Asaf Rahamim

Seminar

Anat Barnea

Department of Natural Sciences,
the Open University of Israel

Tuesday, January 16, 2018, 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.

Bird's Brain?

Relationships between behavior and brain plasticity

Neurogenesis (birth of new neurons) occurs in many vertebrates, including humans. The new neurons migrate to various brain regions, replace older ones and connect to existing circuits. Evidence suggests that this replacement is related to acquisition of new information. Therefore, neuronal replacement is seen as a form of brain plasticity that enables organisms to update memories and adjust to environmental changes.

I will present studies in which we used birds as a model to study conditions (food storing, social change, reproductive cycle, migration, light pollution) that influence neuronal recruitment and survival, and how these phenomena relate to the life of birds. The hypothesis is that an increase in new neuron recruitment is associated with increase in memory load, in brain regions that process and store this new information. Moreover, since neuronal recruitment is a turnover process, we assume that the same conditions that favor the survival of some neurons induce the death of others.

The talk will offer a frame and rationale for comparing neuronal replacement in the adult avian brain, by trying to uncover the pressures, rules, and mechanisms that govern its constant rejuvenation.