LIN Colloquium

out of turn

Who: **Dr. Ana Parabucki**

Weizman Institute, Rehovot, Israel
Ilan Lampl Lab **(new SAB member of the LIN)**
http://www.weizmann.ac.il/neurobiology/labs/lampl/

What: **Coding for the dynamic stimuli – neuronal mechanisms underlying change in sensory input**

Thursday, Feb 20, 2020, at 15:00h

Seminar Office, room 363 (3rd floor)

Brenneckestr. 6, 39118 Magdeburg
Leibniz Institute for Neurobiology

Matthias Prigge
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Abstract: Detecting relevant shifts in different parameters of sensory input shapes every aspect of animals' behavior and is therefore crucial for survival. However, it is not clear how and which parts of the brain detect sudden changes in sensory stimulation. Rodents mostly rely on olfaction and whisking when exploring their environment. Hence, in first part of the talk we will focus on how the mouse olfactory system represents odor concentration changes across consecutive inhalations. In our recently published work, we have demonstrated that a subset of neurons in the olfactory bulb represent odor concentration changes across consecutive inhalations. Given that the concentration steps are perceptible to mice, we propose that olfactory bulb provides the signal that may instruct olfactory guided navigation. In the second part I will share our findings on how the somatosensory system of mice encodes abrupt changes in the frequency of whisker stimulation. Using intracellular recording and calcium imaging we have discovered that a subset of layer 4 excitatory neurons facilitates response to the abrupt switch in the stimulation frequency. Additionally, our results shed a new light on the center-surround receptive field organization, as the responses to the change of the stimulation frequency were dependent on whether the input came from principal or adjacent whisker. Together, these results add to our understanding of the mechanisms behind detection of dynamic stimuli of two sensory modalities.

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