



# EINLADUNG

zum Vortrag im Rahmen des Seminars des SFB/TRR 31

**Freitag, 24. April 2009, 14 Uhr c.t.**

im Raum W2 1-143, Universität Oldenburg

und im Raum G26.1 – 010, Rechenzentrum  
der Universität Magdeburg (per Videoübertragung)

***"Visual-auditory integration  
and stimulus specific adaptation  
in the barn owl "***

**Yoram Gutfreund Ph.D.**

Department of Physiology and Biophysics Technion Israel Institute of  
Technology The Bruce Rappaport Faculty of Medicine Haifa 31096 - Israel

The barn owl (*Tyto alba*) evolved precise visual and auditory systems to detect small prey in acoustically noisy and dimly lit conditions. Consequently, this species provides us with an excellent model system for studying visual-auditory integration. In recent years, my lab concentrated on studying visual-auditory integration in the barn owl's brain. Our efforts led to the discovery of two previously unknown populations of multisensory neurons: in the thalamus and in the forebrain. These populations add to the well known multisensory neurons that exist in the midbrain (in the optic tectum). In my talk I will focus on the characterization of a neurocorrelate of novelty detection; stimulus specific adaptation (SSA). We have observed that SSA is highly ubiquitous in multisensory areas. The neurons tended to respond stronger to rare visual features such as movement direction and spatial location as well as to rare acoustic features such as binaural cues and sound frequencies. Finally we examined SSA in bimodal scenes and show that the novelty response is enhanced when a rare visual is presented synchronously with a rare auditory stimulus. The findings suggest that visual and auditory information is integrated to enhance novelty detection.