

平成 30 年 7 月 20 日

大学院学生各位  
To All Graduate Students

平成 30 年度  
**基盤医学特論 開講通知**  
Information on Special Lecture Tokuron AY2018

**Title: : Cortical state control of visual perception**

**Teaching Staff: Bilal Haider, PhD**  
**Assistant Professor, Biomedical Engineering,**  
**Georgia Tech & Emory University**

**日時 : 平成 30 年 7 月 30 日 (月) 15:00 ~ 16:30**

**Time and Date: 30th July (Mon), 2018 15:00~16:30**

**場所 : 名古屋大学 環境医学研究所 南館大会議室 (東山)**

**Room: Research Institute of Environmental Medicine, South Building, S204 (Higashiyama Campus)**

**\* 関係講座部門等の連絡担当者 : 環境医学研究所・神経性調節学 山下貴之 (3864)**

**Contact: Takayuki Yamashita (3864)**

**使用言語 : 英語 \* 事前連絡は不要です。Lecture in English. No registration required.**

Many factors modulate the state of cortical activity, but the importance of cortical states for sensory perception remains debated. We trained mice to detect spatially localized visual stimuli, and simultaneously measured local field potentials and excitatory and inhibitory neuron populations across layers of primary visual cortex (V1). Cortical states with low firing rates and correlations between excitatory neurons, and reduced oscillatory activity in Layer 4, accurately predicted single trials of visual spatial detection behavior. Our results show that cortical states exert strong effects at the initial stage of cortical processing in V1, and play a decisive role for visual spatial behavior in mice.

参考文献

Haider, Schulz, Hausser, Carandini. Millisecond coupling of local field potentials to synaptic currents in the awake visual cortex. *Neuron*, 2016.

Speed, Del Rosario, Burgess, Haider. Cortical states control visual spatial perception. *bioRxiv*, 2018. doi:  
<https://doi.org/10.1101/316398>