

# 20<sup>th</sup> WPI IIIS Seminar

## “Odor-evoked innate and learned fear responses are controlled by distinct neuronal mechanisms”

We screened artificially synthetic chemical libraries and identified a series of fear odors which can induce extremely strong freezing behaviors. Using fear odors, we clarified that innate and learned fears are controlled by distinct neuronal mechanisms. We also developed emotional markers which can discriminate both fear states. In this seminar, I will talk about two different fear states: innate cold-fear and learned warm-fear.



Speaker: Dr. Ko Kobayakawa

Osaka Bioscience Institute

Department of Functional Neuroscience

**Date: Wednesday, June 12, 2013**

**Time: 15:00-16:00**

**Venue: Room #402, 4F, Health and Medical Science  
Innovation Laboratory, University of Tsukuba**



# IIIS

INTERNATIONAL INSTITUTE FOR INTEGRATIVE  
SLEEP MEDICINE



**Contact: International Institute for Integrative Sleep Medicine  
Phone: 029-853-5857 (ext. 5857)**