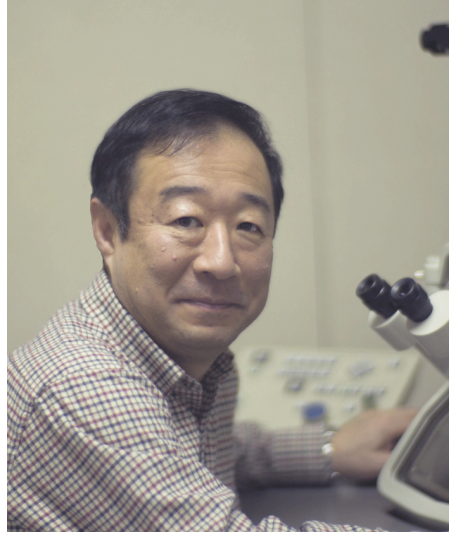


SPECIAL SEMINAR – NEUROSCIENCE DPAG

Synaptic Organization of the Olfactory Bulb; individual labeling and correlated Laser-volume EM microscopy, from one neuron to circuit.



Professor Kazunori Toida MD, PhD

Professor and Chairman, Department of Anatomy,
Director, Bio-imaging Unit of Central Research Institute, Kawasaki Medical School
Specially appointed Professor, Research Center for Ultra High-Voltage Electron
Microscopy, Osaka University
Visiting Academic Fellow, Green Templeton College, University of Oxford

4-5PM, Tuesday, 21st March, 2017

Large Lecture Theatre, **Le Gros Clark Building**, Department of Physiology, Anatomy
and Genetics, University of Oxford.

Olfaction is one of the chemical senses in both vertebrate and invertebrate animals essential for a variety of social behaviors. Recent molecular biological and physiological studies using optical recording have indicated elaborate mechanisms in the main olfactory bulb for processing input from olfactory receptor neurons and control of output to higher centers in the brain. Our current challenge is to establish a structural basis for understanding such elaborate molecular and functional organization. Modern advanced technologies have enabled us to label bulbar neurons selectively, and even individually, and they have shown that the olfactory bulb has much greater heterogeneity in chemical and structural neuronal organization and in synaptic connectivity than previously believed. This time, I show how the rodent olfactory bulb is fine-structurally organized with an enormous amount of findings collected from directly correlated laser scanning microscopy and digital wide-field electron microscopy as well as electron tomography. Current uncertainties and issues that need to be clarified in the future are also discussed.

Toida K. 2008, Kiyokage et al 2010, Suzuki et al 2015, Hamamoto et al 2016, Kiyokage et al 2017, Matsuno et al 2017

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