

**Masayuki Matsumoto, Ph.D.**

Date of Birth: June 23, 1976

Affiliation:

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**Academic History:**

1999	B.A.	Division of Mechanical Engineering and Materials Science, College of Engineering, Yokohama National University
2001	M.A.	Department of Computational Intelligence and Systems Science, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology
2005	Ph.D.	Department of Physiological Sciences, School of Life Science, The Graduate University for Advanced Studies

**Professional/ Scientific Career:**

2005-2005	Postdoctoral Fellow	Division of Sensory and Cognitive Information, National Institute for Physiological Sciences, Japan
2005-2009	Postdoctoral Fellow	Laboratory of Sensorimotor Research, National Eye Institute, National Institutes of Health, USA
2009-2012	Assistant Professor	Primate Research Institute, Kyoto University, Japan
2011-present	Professor	Laboratory of Cognitive and Behavioral Neuroscience, Faculty of Medicine, University of Tsukuba, Japan

**Awards/ Professional Societies:**

2008	Japanese Neural Network Society Best Paper Award
2010	Japan Neuroscience Society Young Investigator Award
2013	The Young Scientists' Prize, The Commendation for Science and Technology by the

Minister of Education, Culture, Sports, Science and Technology

**Research Area/ Interests:**

The goal of our research is to understand neural mechanisms underlying cognition such as attention, memory, prediction, learning and decision making. In particular, we are investigating the role of monoamine systems, such as dopamine and serotonin, in cognitive functions. Experiments in our laboratory center on the brain of awake behaving monkeys as a model for similar systems in the human brain. Using electrophysiological and pharmacological techniques, we examine what signals monoamine neurons convey while monkeys are performing cognitive tasks and how the signals, released monoamine, work in targeted brain areas to achieve the tasks. These studies will provide more mechanistic accounts of cognitive disorders.

**Selected publications:**

1. McCairn KW, Nagai Y, Hori Y, Kikuchi E, Ninomiya T, Suhara T, Lee JY, Iriki A, Minamimoto T, Takada M, Isoda M & Matsumoto M, A primary role for nucleus accumbens and related limbic network in vocal tics. *Neuron*, Vol.89, No.2, pp.300-7, Jan, 2016
2. Kawai T, Yamada H, Sato N, Takada M & Matsumoto M, Roles of the lateral habenula and anterior cingulate cortex in negative outcome monitoring and behavioral adjustment in nonhuman primates. *Neuron*, Vol.88, No.4, pp.792-804, Oct, 2015
3. Inoue K, Takada M & Matsumoto M, Neuronal and behavioural modulations by pathway-selective optogenetic stimulation of the primate oculomotor system. *Nature Communications*, Vol.6 : 8378, Sep. 2015
4. Matsumoto M, Dopamine signals and physiological origin of cognitive dysfunction in Parkinson's disease. *Movement Disorders*, Vol.30, No.4, pp.472-83, Apr, 2015
5. Matsumoto M & Takada M, Distinct representations of cognitive and motivational signals in midbrain dopamine neurons. *Neuron*, Vol.79, No.5, pp.1011-24, Sep, 2013
6. Matsumoto M & Hikosaka O, Two types of dopamine neuron distinctly convey positive and negative motivational signals. *Nature*, Vol.459, No.7248, pp.837-41, Jun, 2009
7. Matsumoto M & Hikosaka O, Representation of negative motivational value in the primate lateral habenula. *Nature Neuroscience*, Vol.12, No.1, pp.77-84, Jan, 2009
8. Matsumoto M & Hikosaka O, Lateral habenula as a source of negative reward signals in dopamine neurons. *Nature*, Vol.447, No.7148, pp.1111-5, Jun, 2007