

Systems physiology

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Major Scientific Interests of the Group

We aim to understand the neural mechanisms of adaptive behavior as a system that links sensory input to behavioral output.

Projects for Regular Students in Doctoral or Master's Programs

- 1) The effects of breathing on cognitive function
- 2) The neural circuits underlying social behavior
- 3) The neuronal mechanisms of voluntary control of breathing.

Study Programs for Short Stay Students (one week – one semester)

- 1) Human psychophysics
- 2) Neuronal or behavioral data analysis

Selected Publications

- 1) **Kunimatsu J.**, Amita H., & Hikosaka O. (2024) Neuronal response of the primate striatum tail to face of socially familiar persons. *iScience* 27(6)
- 2) **Kunimatsu J.**, Akiyama Y., Toyoshima O. & Matsumoto M. (2022) A noninvasive method for monitoring breathing patterns in non-human primates using a nasal thermosensor. *eNeuro* 9(6)
- 3) **Kunimatsu J.**, Yamamoto S., Maeda K. & Hikosaka O. (2021) Environment-based object values learned by local network in the striatum tail. *PNAS* 118 (4): e2013623118.
- 4) **Kunimatsu J.**, Maeda K. & Hikosaka O. (2019) The caudal part of putamen represents the historical object value information. *Journal of Neuroscience* 39(9): 1709–1719.
- 5) **Kunimatsu J.**, Suzuki W.T., Ohmae S. & Tanaka M. (2018) Different contributions of preparatory activity in the basal ganglia and cerebellum for self-timing. *eLife* 7: e35676.