

Unit Name

Sensory and Behavioural Neuroscience Unit

Collaborations

Shunichi Kasahara, Sony CSL; DJ Nick Luscombe, MSCTY; Paul Bavister, UCL, Japan/ United Kingdom, Sonic Lab
Cindy Poo, Allen Institute for Neural Dynamics, USA, Mesoscopic connectivity patterns of olfactory output
Svante Paabo from MPI for Evolutionary Biology/OIST, Xiangchun Ju, Shin-Yu Lee (OIST), Germany/Japan, Effect of humanising Adsl on behaviour
Vincent Laudet , OIST, Japan, Effect of environment on fish nerve system
Hiroto Sekiguchi, Toyohashi University of Technology, Japan, Development of mLED array for neuroscience research

Research Personnel

Patrick Stoney, Staff Scientist
Adam Mago, Postdoctoral Scholar
Yu-Pei Huang, Research Unit Technician
Maria Ines De Sa Ribeiro , Research Unit Technician
Sourjya Baibhabee Nath, PhD Student
Josefine Reuschenbach, PhD Student
Xiaochen Fu, PhD Student

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Fukunaga, Izumi. 2024. "Pattern Recognition Using Action Potential Timing." *Nature Reviews Neuroscience* 25 (July):452.
2. Peace, Shane T., Benjamin C. Johnson, Jesse C. Werth, Guoshi Li, Martin E. Kaiser, Izumi Fukunaga, Andreas T. Schaefer, Alyosha C. Molnar, and Thomas A. Cleland. 2024. "Coherent Olfactory Bulb Gamma Oscillations Arise from Coupling Independent Columnar Oscillators." *Journal of Neurophysiology*, January.
3. Lindeman, Sander, Xiaochen Fu, Janine K. Reinert, and Izumi Fukunaga. 2024. "Value-Related Learning in the Olfactory Bulb Occurs through Pathway-Dependent Perisomatic Inhibition of Mitral Cells." *PLoS Biology* 22 (March):e3002536.
4. Kitade, Taiki, Ryota Kanda, Kazuto Matsui, Atsushi Nishikawa, Alexander Loesing, Izumi Fukunaga, and Hiroto Sekiguchi. 2024. "Optimization of Gate Structure for Damageless MicroLED Thin Films in Optogenetic Applications." *Physica Status Solidi (a)* 221 (February):2300834.

Presentation at Conference

1. Fukunaga, Izumi. 2024. "Probing Stimulus Encoding in the Olfactory Bulb Using Synthetic Stimuli." EAJS, October.

2. Fukunaga, Izumi. 2024. "Investigating the Central Olfactory Representations Using a Working Memory Paradigm." ISOT, June.
3. Fukunaga, Izumi. 2024. "Temporal Coding and Olfactory Perception." Synapse Meeting, November.
4. Fukunaga, Izumi. 2024. "The Role of Inhibitory Circuits in Brain Functions." Japan Neuroscience Society Annual Meeting, July.
5. Fukunaga, Izumi. 2024. "Value-Related Learning in the Olfactory Bulb Occurs through Pathway-Dependent Peri-Somatic Inhibition of Mitral Cells." Japan Neuroscience Society Annual Meeting, July.

Scholarly Contributions (by Unit Members)

| Name of Unit Member | Type | Title |
|-----------------------|----------------------------|---|
| Josefine Reuschenbach | Presentation at Conference | Optimized Olfactory Working Memory Paradigm to Investigate Odour Coding |

Honors, Awards & Fellowships

2024 JSAP Outstanding Paper Award, 応用物理学会論文賞 優秀論文賞 , 2025, JSAP

Honors, Awards & Fellowships (only by unit members)

2024-05-21 Josefine Reuschenbach , Selected as finalists of the Open Air Carbon Removal Challenge 2024 , 2024 オープンエアー 『カーボン リムーバル チャレンジ』のファイナリストに選出 , 2024, The Open Air Carbon Removal Challenge, 2024年 5 月 21 日～23 日 ニューヨークで開催されたオープンエアー 『カーボン リムーバル チャレンジ』へチームで応募。ファイナリストに選出される

2024-04-01 - Ongoing Josefine Reuschenbach, JSPS Fellowship, 日本学術振興会特別研究員, 2024, Japan Society for the Promotion of Science, 日本学術振興会特別研究員

External Service

2025-01-01 - Ongoing Academic editor, PLoS Biology

2025-01-01 - Ongoing SfN Program Committee member, The Society for Neuroscience

2024-04 - Ongoing Associate editor, Neuroscience Research