

Unit Name

Sensory and Behavioural Neuroscience Unit
Associate Professor Izumi Fukunaga

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
Aurelio Cortese, Decnef Lab, Advanced Telecommunications Research (ATR), Kyoto, Japan, Olfactory decision making in humans
Carsten Janke, CNRS Institut Curie, Paris, France, Microtubule regulation and cognitive functions

Research Personnel

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

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Fu, X.; Reinert, J. K.; Reuschenbach, J.; Mago, A.; Lindeman, S.; Fukunaga, I.
Decoding Olfactory Bulb Output: A Behavioral Assessment of Rate, Synchrony, and Respiratory Phase Coding. *iScience* 2025, 28, 112755.
2. Ju, X.-C.; Lee, S.-Y.; ??gren, R.; Machado, L. C.; Xing, J.; Azama, C.; Roy, M. C.; Endo, T.; Huttner, W.; Siepel, A.; Fukunaga, I.; Zeberg, H.; Svante, P.
The Activity and Expression of Adenylosuccinate Lyase Were Reduced during Modern Human Evolution, Affecting Brain and Behavior. *Proceedings of the National Academy of Sciences* 2026, 122, e2508540122.

Poster Presentation at Conference

1. Fukunaga, I.
Probing Stimulus Encoding in the Olfactory Bulb Using Synthetic Olfactory Stimuli. A3 Symposium 2025 on "New Horizons in Multimodal Analysis of the Brain 2025.

Presentation at Conference

1. Fukunaga, I.
Hierarchy in the Frontal Cortex in Context-Dependent Olfactory Decision-Making. The 22nd International Symposium on Molecular and Neural mechanisms of Taste and Olfactory Perception (ISMNTOP XXII, YRUF XXII, AISCRIB XIII) 2026.
<https://www.okayama-u.ac.jp/user/oralphys/ISMNTOP/ISMNTOP.html>
2. Fukunaga, I.
Hierarchy in the Frontal Cortex in Context-Dependent Olfactory Decision-Making. 2026 edition of the UK-Japan Neuroscience Symposium 2026.
3. Fukunaga, I.
Value-Related Learning in the Olfactory Bulb Occurs through Pathway-Dependent Peri-Somatic Inhibition of Mitral Cells. a symposium on the regeneration and recovery of the sense of smell 2025.
4. Fukunaga, I.
“Decoding Olfactory Bulb Output: A Behavioural Assessment of Rate, Synchrony, and Respiratory Phase coding” “Olfactory Codes and Their Behavioral Relevance.” The 28th Annual Meeting of KSBNS K-Brain 2025 & The 3rd CJK Neuroscience Meeting 2025.
<https://ksbns2025.org/program/symposium.php>
5. Fukunaga, I.
Convergence and Divergence: The Glomerulus as a Physiological Unit. The European Chemoreception Research Organization (ECRO) 2025.
<https://ecro2025.com/>

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 [By Unit Members Only]

Term 2 2024 - 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 [Fiscal Year: 2024-04-01]

External Service

Term 2 2025 - Ongoing Academic editor, PLoS Biology [Fiscal Year: 2025-01-01]
Term 2 2024 - Ongoing SfN Program Committee member, The Society for Neuroscience [Fiscal Year: 2025-01-01]
Term 2 2023 - Ongoing Associate editor, Neuroscience Research [Fiscal Year: 2024-04]