

# FY 2024 Annual Report



## Unit Name

Neurobiology Research Unit

## Students Supervised:

- Tanomi Yamamura (PhD Student)
- Dvyne Nosaka (PhD Student)
- Kang-Yu Chu (PhD Student)
- Mao-Ting Hsu (PhD Student)
- Arjun Manish Joshi (PhD Student)
- Miyu Nambu (PhD Student)
- Bozena Silic (PhD Student)
- Jannes Sonja P Olieslagers (Research Intern)

## Scholarly Contributions and Creative Productions (by Faculty)

### Journal Article

1. Lu, Xiaodong, Jeffery R. Wickens, and Brian Ia I. Hyland. 2024. "Multimodal Convergence in the Pedunculopontine Tegmental Nucleus: Motor, Sensory and Theta-Frequency Inputs Influence Activity of Single Neurons." *The European Journal of Neuroscience* 60:3643–58.
2. Tripp, Gail, and Jeff Wickens. 2024. "Using Rodent Data to Elucidate Dopaminergic Mechanisms of ADHD: Implications for Human Personality." *Personality Neuroscience* 7:e2.
3. Li, Yu-Tin T., Yi-Lin L. Huang, Jia-Jin Jaso J. Chen, Brian Ia I. Hyland, and Jeffery R. Wickens. 2024. "Phasic Dopamine Signals Are Reduced in the Spontaneously Hypertensive Rat and Increased by Methylphenidate." *The European Journal of Neuroscience* 59:1567–84.

### Presentation at Conference

1. Wickens, Jeff R. 2024a. "Dopamine-Acetylcholine Interactions in Striatal Synaptic Plasticity and Learning." OIST's Visiting Program: TSVP Symposium: Neuromodulation of Adaptive Learning, July.
2. Wickens, Jeff R. 2024b. "History of Computational Neuroscience." OIST Computational Neuroscience Course, OCNC 2024, June.

## Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Lorena Andreoli	Book Chapter	What Can Hippocampal Engrams Tell Us About Encoding Spatial Navigation?	Engrams: A Window into the Memory Trace, 195-214	Springer, Cham	2024
Mahapatra S	Journal Article	Physiological roles of endocytosis and presynaptic scaffold in vesicle	Elife. 12: RP90497		

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
		replenishment at fast and slow central synapses			
Kang-Yu Chu	Journal Article	Multiplexed Opto-Microfluidic Biosensing: Advanced Platform for Prostate Cancer Detection	ACS Sensors	American Chemistry Society Publications	2024
Dvyne Issei Nosaka	Poster Presentation at Conference	Quantification and Characterization of the Spatiotemporal Dynamics of Striatal Cholinergic Release	Japan Neuroscience Society, NEURO2024 「第 47 回日本神経科学大会」		
Rachel L Pass	Poster Presentation at Conference	Investigating the role of ventral striatum cholinergic interneurons in contextual conditioning	Japan Neuroscience Society, NEURO2024 「第 47 回日本神経科学大会」		

#### ***Outreach Activities (For Unit Members Only)***

2025-02-01	Rachel L, Pass, OIST Science Festival 2025, Okinawa Institute of Science and Technology Graduate University
2025-01-11	Yumiko Akamine, HiSci Lab 2025: “The science of food, clothing and shelter on our islands”, Okinawa Institute of Science and Technology Graduate University
2024-11-08	Yumiko Akamine, Work Experience Program for Okinawa AMICUS at OIST, Okinawa Institute of Science and Technology Graduate University
2024-04-01	Miyu Nambu, Organizer to OIST neuroscience online seminars, ONOS. (ongoing. Fiscal Year 2022, 2023, 2024, 2025), Okinawa Institute of Science and Technology Graduate University, OIST Neuroscience Club