Curriculum Vitae

Atsuki HIRAMOTO Ph.D.

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POSITIONS

Postdoctoral research fellow

Institute of Molecular and Clinical Ophthalmology Basel Laboratory of Prof. Botond Roska

Postdoctoral research fellow

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo Laboratory of Prof. Akinao Nose

October–December 2016

HHMI Janelia Research Campus Visiting Student Researcher

Laboratory of Dr. Albert Cardona

EDUCATION

Doctor of Philosophy

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo Laboratory of Prof. Akinao Nose

Master of Science

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo Laboratory of Prof. Akinao Nose

March 2015

Bachelor of Engineering

Undergraduate Course Program of Environmental Engineering, Faculty of Engineering, Kyoto University Laboratory of Prof. Yuzuru Matsuoka

March 2020

March 2017

January 2021-current

April–December 2020

RESEARCH EXPERIENCE

January 2021–Current

Institute of Molecular and Clinical Ophthalmology Basel

- Prof. Botond Roska, Principal Investigator
- Research Project: Development of novel methods for visualizing neural activity and manipulating genes at the single-cell level in human and mouse retina To understand how the retina processes information and the mechanisms of retinal ganglion cell degeneration, I am developing techniques for visualizing neural activity and genetic manipulation at the single cell level in the human or mouse retina, including voltage imaging and patch sec.
- Techniques included: electrophysiology, 2-photon imaging, voltage imaging, Patch-seq, signal analysis, image analysis

April 2015–December 2020

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo

- Prof. Akinao Nose, Principal Investigator
- Research Project: Analysis of behavior-specific neural circuits controlling and generating muscle relaxation patterns in *Drosophila* larvae

During my Ph.D., I have found that pattern of muscular relaxation in *Drosophila* larval backward escape locomotion is regulated and generated by segmentally repeated ascending cholinergic interneurons that is input from command neurons and output inhibitory pre-motor neurons.

• Techniques included: optogenetics, calcium imaging, behavior assay, EM circuit mapping, signal analysis, image analysis

October–December 2016

HHMI Janelia Research Campus

- Dr. Albert Cardona, Group Leader
- Research Project: Characterizing neural circuits that induce backward locomotion
- Techniques included: EM circuit mapping

April 2014–March 2015

Undergraduate Course Program of Environmental Engineering, Faculty of Engineering, Kyoto University

- Prof. Yuzuru Matsuoka, Principal Investigator
- Research Project: A comparison of air pollutant from a global chemical transport model and satellite date
- Techniques included: computer simulation with supercomputer

TEACHING EXPERIENCE

September 2019–February 2020

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo

• Teaching assistant

April–July 2019

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo

Teaching assistant

June–August 2018

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo

Tutor

April–July 2018

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo

Teaching assistant

September 2017–April 2018

Department of Complexity Science and Engineering, Graduate School of Frontier Sciences, The University of Tokyo

Tutor

FELLOWSHIP

| June–November 2019 | |
|--------------------|---|
| | Academic Research Grant for GSFS Doctor Course Students |
| June–November 2018 | |
| | Academic Research Grant for GSFS Doctor Course Students |
| June–November 2017 | |
| | Academic Research Grant for GSFS Doctor Course Students |
| | |
| | AWARDS |

| | 2022 |
|---|------|
| Toshihiko Tokizane Memorial Award for Excellent Graduate Study in Neuroscience, The | |
| Japan Neuroscience Society. | |
| | 2020 |
| Repayment Exemption for Students with Excellent Grades, Japan Student Services | |
| Organization (JASSO) Type I (interest-free) scholarship. | |

2019

Travel award to attend The 42nd Annual Meeting of the Japan Neuroscience Society

Repayment Exemption for Students with Excellent Grades, Japan Student Services Organization (JASSO) Type I (interest-free) scholarship.

PUBLICATIONS

Sungmoo Lee, Guofeng Zhang, Laura C. Gomez, Guilherme Testa-Silva, Yukun Alex Hao, <u>Atsuki</u> <u>Hiramoto</u>, Dongyun Jiang, Richard H. Roth, Jun Ding, Thomas R. Clandinin, Botond Roska, Daniel Feldman, Na Ji, Michael Z. Lin. Improving positively tuned voltage indicators for brightness and kinetics. bioRxiv (2024) DOI: 10.1101/2024.06.21.599617

Julius Jonaitis, Karen L. Hibbard, Kaity McCafferty Layte, <u>Atsuki Hiramoto</u>, Albert Cardona, James W. Truman, Akinao Nose, Maarten F. Zwart, Stefan R. Pulver. Steering From the Rear: Coordination of Central Pattern Generators Underlying Navigation by Ascending Interneurons. bioRxiv (2024)

DOI: <u>10.1101/2024.06.17.598162</u>

<u>Atsuki Hiramoto</u>, Julius Jonaitis, Sawako Niki, Richard D. Fetter, Albert Cardona, Stefan R. Pulver, Akinao Nose. Regulation of coordinated muscular relaxation in *Drosophila* larvae by a pattern-regulating intersegmental circuit. Nature Communications 12, 2943 (2021) DOI: <u>10.1038/s41467-021-23273-y</u> <u>selected as Featured articles</u>

PRESENTATION

Oral presentation

July 25th, 2019, Niigata (Japan)

The 42nd Annual Meeting of the Japan Neuroscience Society

<u>Atsuki Hiramoto</u>, Julius Jonaitis, Sawako Niki, Richard Fetter, Albert Cardona, Stefan Pulver, Akinao Nose

"A neural circuit that orchestrates muscle relaxation in an escape behavior"

Poster presentation

July 26th-29th, 2018, Kobe (Japan)

The 41st Annual Meeting of the Japan Neuroscience Society

<u>Atsuki Hiramoto</u>, Julius Jonaitis, Sawako Niki, Richard Fetter, Albert Cardona, Stefan Pulver, Akinao Nose

"Identification of a neuronal circuit that can elicit backward locomotion in Drosophila larvae"

2017

July 20th–23rd, 2017, Makuhari (Japan)

The 40th Annual Meeting of the Japan Neuroscience Society

<u>Atsuki Hiramoto</u>, Julius Jonaitis, Sawako Niki, Richard Fetter, Albert Cardona, Stefan Pulver, Akinao Nose

"Identification of neuronal circuitry that regulate backward escape behavior in Drosophila larvae"

October 23rd–26th, 2016, HHMI Janelia Research Campus (USA)

Janelia conference: "Behavioral Neurogenetics of Drosophila Larva"

Atsuki Hiramoto, Sawako Niki, Dohjin Miyamoto, Akinao Nose

"Identification of interneurons that induce backward escape behavior in Drosophila larvae"

July 20th–22nd, 2016, Yokohama (Japan)

The 39th Annual Meeting of the Japan Neuroscience Society

Atsuki Hiramoto, Sawako Niki, Dohjin Miyamoto, Akinao Nose

"Identification of interneurons that induce backward escape behavior in Drosophila larvae"