Curriculum Vitae

**Atsuki HIRAMOTO Ph.D.**

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POSITIONS

***January 2021-current***

**Postdoctoral research fellow**

Institute of Molecular and Clinical Ophthalmology Basel

Laboratory of Prof. Botond Roska

***April***–***December 2020***

**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

***March 2020***

**Doctor of Philosophy**

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

Laboratory of Prof. Akinao Nose

***March 2017***

**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

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

***2017***

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, Atsuki Hiramoto, 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](https://doi.org/10.1101/2024.06.21.599617)

Julius Jonaitis, Karen L. Hibbard, Kaity McCafferty Layte, Atsuki Hiramoto, 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: [10.1101/2024.06.17.598162](https://doi.org/10.1101/2024.06.17.598162)

Atsuki Hiramoto, 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: [10.1038/s41467-021-23273-y](https://www.nature.com/articles/s41467-021-23273-y) [**selected as Featured articles**](https://www.nature.com/collections/mjkksldswr)

PRESENTATION

Oral presentation

***July 25th, 2019, Niigata (Japan)***

**The 42nd Annual Meeting of the Japan Neuroscience Society**

Atsuki Hiramoto, 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**

Atsuki Hiramoto, 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”

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

**The 40th Annual Meeting of the Japan Neuroscience Society**

Atsuki Hiramoto, 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”