

# YVETTE E. FISHER, PHD

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## EDUCATION

<b>Ph.D. Neuroscience</b> , Stanford University	2016
<b>B.S. Neuroscience</b> , <i>summa cum laude</i> , University of California Los Angeles	2009

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## RESEARCH

<b>Postdoctoral Fellow</b> , Dept. of Neurobiology, Harvard Medical School <b>Advisor: Dr. Rachel Wilson</b> Flexibility of visual inputs to a heading direction network in <i>Drosophila</i>	since June 2016
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<b>Ph.D. Student</b> , Stanford Neuroscience Graduate Program <b>Advisor: Dr. Thomas Clandinin</b> Cellular and circuit mechanisms of visual motion detection in <i>Drosophila</i>	2010 – 2016
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<b>Research Assistant</b> , UCLA Neuropsychiatric Institute <b>Advisor: Dr. Michael Levine</b> Mechanisms of neuronal dysfunction in the basal ganglia	2006 – 2010
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## HONORS AND AWARDS

<b>HHMI Hanna H. Gray Fellow</b>	2017 - present
<b>David Potter Outstanding Postdoctoral Fellow</b> (Neurobiology Dept., Harvard Medical School)	2019
<b>Life Science Research Foundation (LSRF)</b> HHMI Postdoctoral Fellowship - <i>declined</i>	2017
<b>National Science Foundation (NSF)</b> Graduate Fellow	2011 - 2015
<b>Departmental Highest Honors Thesis</b> (Neuroscience Major, UCLA)	2009

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## PUBLICATIONS

- 15) **Fisher, Y. E.**, Lu, J. D'Alessandro, I. Wilson, R. I. (2019) Sensorimotor experience remaps visual input to a heading direction network. *Nature*. *In press*
- 14) Isaacman-Back, J. Paik, K. C., Wienecke, C. F. R., Yang, H. H., **Fisher, Y. E.**, Wang, I. E., Ishida, I. G. Maimon, G. Wilson, R. I. Clandinin, T. R. (2019) SPARC: a method to genetically manipulate precise proportions of cells. *BioRxiv* doi: 10.1101/788679
- 13) Constance, W. D., Mukherjee, A., **Fisher, Y. E.**, Pop, S. Blanc, E., Toyama, Y., Williams, D. W. (2018) Neurexin and Neuroligin-based adhesion complexes drive axonal arborisation. *ELife* 7:e31659.
- 12) **Fisher, Y. E.** & Clandinin, T.R. (2017) Chapter 15: Combining Anatomy, Measurement and Manipulation of Neuronal Activity to Interrogate Circuit Function in *Drosophila*. In M. F. Wernet & A. Çelik (Eds.) *Decoding Neural Circuit Structure and Function* (pp. 371-391). Springer. 10.1007/978-3-319-57363-2.

11) **Fisher, Y. E.\***, Yang, H. H.\*, Isaacman-Beck, J., Xie, M., Gohl, D. M., Clandinin, T. R. (2017) FlpStop, a tool for conditional gene control in *Drosophila*. *ELife* 6: e22279 \* equal contributions

Research Highlight in Science “[Editor’s Choice](#)” 355, 6332 (1387-1388)

10) **Fisher, Y. E.\***, Leong, J. C. S.\*, Sporar, K., Ketkar, M. D., Gohl, D. M., Clandinin, T. R., Silies, M. (2015) A Class of Visual Neurons with Wide-Field Properties Is Required for Local Motion Detection. *Current Biology* 25(3178-3189) \* equal contributions

9) **Fisher, Y. E.\***, Silies, M.\*, Clandinin, T. R. (2015) Orientation Selectivity Sharpens Motion Detection in *Drosophila*. *Neuron* 88 (390-402) \* equal contributions

8) Holley, S., Joshi, P., Parievsky, A. Galvan, L., Chen, J., **Fisher, Y. E.**, Huynh, M., Cepeda, C., Levine, M. (2015) Enhanced GABAergic Inputs Contribute to Functional Alterations of Cholinergic Interneurons in the R6/2 Mouse Model of Huntington’s Disease. *eNeuro* 2015 10.1523

7) Esch, J.J., **Fisher, Y. E.**, Leong, J.C.S, Clandinin, T.R., (2015) Chapter 12: Genetic Pathways to Circuit Understanding in *Drosophila*. *Neural Tracing Methods, Tracing Neurons and Their connections*, 92(249-274)

6) Silies, M. S.\* Gohl, D.\*, **Fisher, Y. E.**, Freifeld, L., Clark, D., Clandinin, T. (2013) Modular Use of Peripheral Input Channels Tunes Motion-Detecting Circuitry. *Neuron*, 79(1), 111–12 \* equal contributions

5) Andre, V. M., **Fisher, Y. E.**, Levine, M. S. (2011) Altered balance of activity in the striatal direct and indirect pathways in mouse models of Huntington’s disease. *Frontiers in Systems Neurosci.* 5(46)

4) Andre, V. M., Cepeda, C., **Fisher, Y. E.**, Huynh, M. Bardakjian, N. Singh, S. Yang, X. W. Levine, M. (2011) Differential electrophysiological changes in striatal output neurons in Huntington's disease. *J. Neurosci*, 31(4):1170–1182.

3) Cummings, D. M., Andre, V. M., Uzgil, B. O., Gee, S. M., **Fisher, Y. E.**, Cepeda, C., Levine, M. S. (2009) Alterations in Cortical Excitation and Inhibition in Genetic Mouse Models of Huntington’s Disease. *J. Neuroscience* 29 (33)10371-86

2) Andre, V., Cepeda, C., Cummings, D., Jocoy, E., **Fisher, Y. E.**, Yang, W., Levine M. S. (2009) Dopamine Modulation of Excitatory Currents in Striatum is Dictated by the Expression of D1 or D2 Receptors and Modified by Endocannabinoids, *Eur. J. of Neuroscience* 31(1) 14-28

1) **Fisher, Y. E.**, Andre, V., Cepeda, C., Levine, M. (2008) Dopamine-glutamate interactions at the forefront of schizophrenia research, *Cell Science Reviews*, Vol 5 No 1.

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## PROFESSIONAL SEMINARS

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- **Fisher, Y. E.**, Lu, J. D’Alessandro, I. Wilson, R. I. (2019) How visual landmarks update a heading direction circuit in *Drosophila*. **Nominated speaker**, Broad Institute Next Generation in Biomedicine Symposium. Broad Institute, MA
- **Fisher, Y. E.**, Lu, J., Wilson, R. I. (2018) Burst firing conveys visual signals to a heading direction circuit in *Drosophila*. Structure and function of the Insect Central Complex. *Janelia Research Campus*, VA
- **Fisher, Y. E.**, Wilson, R. I. (2017) Burst Firing conveys visual signals to a heading direction circuit in *Drosophila*. HHMI Hanna H. Gray Fellows Orientation. Chevy Chase, MD
- **Fisher, Y. E.**, Silies, M., Clandinin, T. R. (2015) Inhibitory Signaling shapes Correlation-type Elementary Motion Detection. Insect Vision: Cells, Computation, and Behavior, *Janelia Farm*, VA
- **Fisher, Y. E.**, Silies, M., Clandinin, T. R. (2015) Circuit mechanisms of visual motion detection in *Drosophila*. **Invited seminar**, UCSC Neuroclub, Santa Cruz, CA.

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## TEACHING & SERVICE

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<b>Neural Systems &amp; Behavior (NS&amp;B) Faculty</b> , Marine Biological Laboratory	Summer 2018 & 2019
<b>Conference organizer</b> , Structure and Function of the Insect Central Complex	Fall 2018
<b>HGWISE mentoring program</b>	2017-present
<b>Teaching Assistant, Molecular and Cellular Neurobiology</b> (Stanford Bio 154)	Spring 2015
<b>Stanford Neuroscience 7<sup>th</sup> grade Brain Day Lead Coordinator</b>	2013 – 2014
<b>Community Representative</b> , Stanford Neuroscience Graduate Program	2011 – 2012
<b>Stanford Neuroscience 7<sup>th</sup> grade Brain Day Instructor</b>	2011 – 2015
<b>Electrophysiology Teaching Assistant</b> (Stanford Intensive Neuroscience “Boot Camp”)	Fall 2011

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## REFERENCES

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### **Rachel Wilson**

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### **Thomas Clandinin**

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### **Marion Silies**

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