YVETTE E. FISHER, PHD

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EDUCATION

Ph.D. Neuroscience, Stanford University 2016

B.S. Neuroscience, *summa cum laude*, University of California Los Angeles 2009

RESEARCH

Postdoctoral Fellow, Dept. of Neurobiology, Harvard Medical School
Advisor: Dr. Rachel Wilson since June 2016
Flexibility of visual inputs to a heading direction network in *Drosophila*

Ph.D. Student, Stanford Neuroscience Graduate Program
Advisor: Dr. Thomas Clandinin 2010 – 2016
Cellular and circuit mechanisms of visual motion detection in *Drosophila*

Research Assistant, UCLA Neuropsychiatric Institute
Advisor: Dr. Michael Levine 2006 – 2010
Mechanisms of neuronal dysfunction in the basal ganglia

HONORS AND AWARDS

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

PUBLICATIONS

14) **Fisher, Y. E.**, Lu, J. D'Alessandro, I. Wilson, R. I. Sensorimotor experience remaps visual input to a heading direction network. *in review*

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.Neurosci*, 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 Neurosci*. 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.

PRESENTATIONS - CONFERENCE ABSTRACTS

- **Fisher, Y. E.,** Lu, J., Wilson, R. I. (2018) Burst firing conveys visual signals to a heading direction circuit in Drosophila. (Talk) Structure and function of the Insect Central Complex. *Janelia Research Campus, VA*
- **Fisher, Y. E.,** Lu, J., Wilson, R. I. (2018) How visual landmarks update a heading direction circuit in *Drosophila*. (Poster) HHMI meeting. *Janelia Research Campus, VA*
- **Fisher, Y. E.,** Wilson, R. I. (2017) Burst Firing conveys visual signals to a heading direction circuit in *Drosophila*. (Talk & Poster) HHMI Hanna H. Gray Orientation / HHMI Investigator meeting. 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* (Speaker)
- **Fisher, Y. E.,** Silies, M., Gohl, D. Clandinin, T. R. (2015) Cell-type specific control of gene function in the *Drosophila* visual system, *Gordon Research Conference: Dendrites: Molecules, Structure and Function, Ventura, CA.*
- **Fisher, Y. E.,** Silies, M., Clandinin, T. R. (2015) Circuit mechanisms of visual motion detection in *Drosophila*. *UCSC Neuroclub* invited speaker, Santa Cruz, CA.
- **Fisher, Y. E.,** Gohl, D. Clandinin, T. R. (2014) Cell-type specific control of gene function in *Drosophila* melanogaster, *Society for Neuroscience, Washington DC.*
- **Fisher, Y. E.,** Silies, M., Gohl, D., Clandinin, T. R. (2013) Towards a circuit level understanding of visual motion detection in Drosophila. Insect Vision: Cells, Computation, and Behavior, *Janelia Research Campus, VA*
- Silies, M. Gohl, D., **Fisher, Y. E.,** Clandinin, T. R. (2011) A forward genetic screen to identify neurons required for motion vision in drosophlia. Neurobiology of Drosophila, *Cold Spring Harbor*
- Andre, V. M., **Fisher, Y. E.,** Bardakjian, N., Singh, S., Cepeda, C., Yang, W., Levine, M. S. (2010) Differential electrophysiological alterations in striatal output neurons in Huntinton's disease. *Society for Neuroscience.*
- Joshi, P. R., **Fisher, Y. E.,** Levine, M. S. (2010) "Altered GABAergic function in striatal large cholinergic interneurons in the R6/2 mouse model of Huntinton's disease". *Society for Neuroscience, San Diego.*

- **Fisher, Y. E.**, Andre V. M., Jocoy E. L, Cepeda, C., Levine, M. S. (2009) Dopamine modulation of $GABA_A$ receptor-mediated currents in D1- and D2-receptor expressing medium-sized spiny neurons. *UCLA Neuroscience Undergraduate Poster Session*
- Cummings D. M. Gee, S. M. Andre, V. M. **Fisher, Y. E.**, Cepeda, C. Levine, M. S. (2009) "Increased probability of glutamate and GABA release at cortical synapses in the R6/2 mouse model of Huntington's disease". *Society for Neuroscience, Chicago.*
- Andre, V. M., Cepeda, C., Cummings, D. M., Jocoy, E. L., **Fisher, Y. E.**, 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". *Society for Neuroscience, Chicago.*

Teaching & Service

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