

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

POSITIONS

Assistant Professor, Dept. of Molecular & Cell Biology & Helen Wills Neuroscience Institute, UC Berkeley July 2021 -
Flexibility of neural circuits for navigation

Postdoctoral Fellow, Dept. of Neurobiology, Harvard Medical School 2016 – 2021
Advisor: **Dr. Rachel Wilson**
Flexibility of visual input to the *Drosophila* compass network

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

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

HONORS & AWARDS

AAA C.J. Herrick Award in Comparative Neuroanatomy 2023

NIH Director's New Innovator Award (DP2) 2022

Klingenstein-Simons Fellow 2022-2025

Sloan Research Fellow 2022

CZ BioHub Investigator 2022-2027

Honorable Mention Rosalind Franklin Young Investigator, Genetics Society of America 2022

John P. Stock Faculty Fellow 2021

Allen Institute Next Generation Leader 2020

HHMI Hanna H. Gray Fellow (Postdoc-to-Faculty transition award) 2017 - 2025

David Potter Outstanding Postdoctoral Fellow (Neurobiology Dept., 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 (Neuroscience Major, UCLA) 2009

- 17) **Fisher Y. E.***, Marquis M.*, D'Alessandro I. Wilson R.I. (2022) Dopamine promotes head direction plasticity during orienting movements. *Nature* 612, 316–322 * equal contributions
- 16) **Fisher, Y. E.**, Flexible Navigational computations in the Drosophila central complex (2022) *Current Opinion in Neurobiology*, Vol 73, 2022:102514
- 15) Isaacman-Beck, 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. (2020) SPARC enables genetic manipulation of precise proportions of cells. *Nature Neuroscience*, 23, 9, Pp. 1168-1175
- 14) **Fisher, Y. E.**, Lu, J. D'Alessandro, I. Wilson, R. I. (2019) Sensorimotor experience remaps visual input to a heading-direction network. *Nature*, 576, 121-125.
[Preview](#) by M Campbell & L Giocomo, doi:10.1038/d41586-019-03443-1
- 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
[Highlighted](#) 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) Andre, V., Cepeda, C., Cummings, D., Jocoy, E., **Fisher, Y. E.**, Yang, W., Levine M. S. (2010) 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
- 2) 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
- 1) **Fisher, Y. E.**, Andre, V., Cepeda, C., Levine, M. (2008) Dopamine-glutamate interactions at the forefront of schizophrenia research, Commentary on Wiedholz et al. 2008. *Cell Science Reviews*, 5:7-16.

PROFESSIONAL SEMINARS & INVITATIONS

- Declined during parental leave* - Snowbird Symposium, University of Utah, **Invited Speaker**, October 2022
- Declined during parental leave* - Structure and Function of the Insect Central Complex, **Invited Speaker**, October 2022
- Redwood Center for Theoretical Neuroscience Seminar, **Invited Speaker**, June 2022
- Stanford Neuroscience IDP Student Retreat, **Invited Speaker**, June 2022
- University of Washington, Physiology and Biophysics Seminar Series, **Invited Speaker**, May 2022
- University of British Columbia, Dept. of Cellular and Physiological Science Clee Memorial Seminar, **Invited Speaker**, March 2022
- University of Toronto Scarborough Seminar Series, **Invited speaker**, Jan 2022 (*Virtual*)
- UC Berkeley Neuroscience Annual Conference, **Speaker**, Oct 2021
- Virtual Dopamine conference (ViDA) 2021, **Selected speaker**, *Virtual* (2021)
- Illinois State University Neuroscience and Physiology seminar, **Invited seminar**, *Virtual* (2021)
- Allen Institute Showcase Symposium, **Next generation leader speaker**, *Virtual* (2020)
- WVU department of Biology, **Invited seminar**, *Virtual* (2020)
- ISN Insect Navigation Workshop, **Selected speaker**, *Virtual* (2020)
- Federation of European Neuroscience Societies (FENS) Forum. **Invited Speaker**, *Virtual* (2020)
- Columbia Neurolunch Seminar, **Invited seminar**, *New York NY* (2020)
- Yale Neuroscience: Advanced Postdoc Extramural Series (SYNAPSES). **Selected speaker**, *New Haven, CT* (2019)
- Princeton Neuroscience Institute. **Invited seminar**, *Princeton NJ* (2019)
- Society for Neuroscience Nanosymposium: Learning and Memory: Genes and Signaling. *Chicago, IL* (2019)
- Broad Institute Next Generation in Biomedicine Symposium. **Nominated speaker**, *Broad Institute, MA* (2019)
- Structure and Function of the Insect Central Complex. *Janelia Research Campus, VA* (2018)
- HHMI Hanna H. Gray Fellows Orientation. *Chevy Chase, MD* (2017)

Insect Vision: Cells, Computation, and Behavior. *Janelia Farm, VA* (2015)

UC Santa Cruz Neuroclub. **Invited seminar**, *Santa Cruz, CA* (2015)

TEACHING & SERVICE

MCB Undergraduate Faculty Advisor	2021-2022
Ad-hoc Reviewer , Current Biology, PNAS, Nature	
Fiat Lux scholarship program mentor , UC Berkeley	2021-2022
Leading edge symposium for women & non-binary postdocs , application reviewer	Winter 2021
HGWISE mentorship program	2017-2020
Neural Systems & Behavior (NS&B) Faculty , Marine Biological Laboratory	Summer 2018 & 2019
Conference organizer , Structure and Function of the Insect Central Complex	Fall 2018
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