

Marie P. Suver, Ph.D.

Curriculum Vitae

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- Appointments** **Postdoctoral Scholar, New York University Medical Center**, Feb 2015-present
NYU Neuroscience Institute
Laboratory of Dr. Katherine Nagel
- Education** **Ph.D., California Institute of Technology**, June 2014
Computation and Neural Systems. Advisor: Dr. Michael Dickinson.
Dissertation title: "Octopamine neurons mediate flight-induced modulation of visual processing in *Drosophila melanogaster*"
- B.S. University of Washington**, 2007 Biology and Computer Science (dual degree)
- Other Education** **2019** DeepLabCut Workshop, Rowland Institute, Harvard University, Cambridge, MA
2010 Neural Systems and Behavior, Marine Biological Laboratory, Woods Hole, MA
2008 *Drosophila* species workshop. University of California, San Diego, CA
- Current Support** **2019** BRAIN Initiative K99, *Mechanisms of active sensing in Drosophila*, 1K99NS114179
2018 Leon Levy Postdoctoral Fellowship (\$139,693 over 2 years)
- Awards and Honors** **2020** McKnight Foundation Allison Doupe Fellowship
2018 NYU Outstanding Postdoc Award
2012 Heiligenberg Student Travel Award. International Congress of Neuroethology
2010 Horace W. Stunkard Scholarship. Neural Systems and Behavior Course, Woods Hole, MA
2007 Mary Gates Research Scholarship. Advisor: Dr. Thomas Daniel, University of Washington Department of Biology
- Original Reports** **Suver., M.P.**, Matheson, A.M.M., Sarkar, S., Damiata, M., Schoppik, D. and K.I. Nagel. (2019) "Encoding of wind direction by central neurons in *Drosophila*." *Neuron*. 102 (4): 828-842.
- Suver, M.P.**, A. Huda, N. Iwasaki, S. Safarik and M.H. Dickinson (2016) "An array of descending visual interneurons encoding self-motion in *Drosophila*." *Journal of Neuroscience*. 36(46): 11768-11780.
- van Breugel, F., **M.P. Suver**, and M.H. Dickinson (2014) "Octopaminergic modulation of the visual flight speed regulator of *Drosophila*." *The Journal of Experimental Biology* 217 (10): 1737-1744.
- Suver, M.P.**, A. Mamiya, and M.H. Dickinson (2012) "Octopamine neurons mediate flight-induced modulation of visual processing in *Drosophila*." *Current Biology* 22(24): 2294-2302.

Sprayberry, J.D.H., and **M. Suver** (2011) "Hawkmoths' innate flower preferences: a potential selective force on floral biomechanics." *Arthropod-Plant Interactions* 5(4): 263-268.

Reviews

Baker, K., Dickinson, M.H., Findley, T., Gire, D., Louis, M., **Suver, M.P.**, Verhagen, J., Nagel, K.I. and M. Smear. (2018) "Algorithms for olfactory search across species." *The Journal of Neuroscience*. 38(44): 9383-9389.

Weir, P.T., and **M.P. Suver** "From Dendritic Compartments to Neuronal Networks: A Multilevel Analysis of Motion Vision." (2013) *The Journal of Neuroscience* 33(24): 9876-9878.

Seminars and Lectures

Suver, M.P. and Nagel, K.I. Neural circuits underlying active mechanosensation in the *Drosophila* mechanosensory and motor system. Society for Neuroscience nanosymposium "Information Seeking from Flies to Human". November 2019.

Suver, M.P. "Neural circuits for wind direction encoding and active mechanosensation in *Drosophila*." Brandeis **Invited** Postdoc Colloquium Series. Waltham, MA. October 2019.

Suver, M.P., Matheson, A.M.M., Sarkar, S., Damiata, M. and Nagel, K.I. Central neurons encoding wind direction in *Drosophila*. Society for Neuroscience Minisymposium "Algorithms for olfactory search across species," **invited** speaker. November 2018.

Suver, M.P., Alvarez-Salvado, E., Matheson, A.M., Sarkar, S., Damiata, M. and Nagel, K.I. Wind direction encoding by central neurons in *Drosophila melanogaster*. Neuro-Evo: A Comparative Approach to Cracking Circuit Function II, Janelia Farm. May 2018.

Suver, M.P., Alvarez-Salvado, E., Matheson, A.M., Sarkar, S., Damiata, M. and Nagel, K.I. Wind direction encoding in the fruit fly. The Society for Integrative and Comparative Biology, selected speaker. January 2018.

Suver, M.P., Alvarez-Salvado, E., Matheson, A.M., and Nagel, K.I. Wind direction encoding by central neurons in *Drosophila melanogaster*. Neurobiology of *Drosophila* Meeting, Cold Spring Harbor Laboratory, Long Island, NY, selected speaker. October 2017.

Suver, M.P., Alvarez-Salvado, E., and Nagel, K.I. Wind direction encoding in the fruit fly. Neuroscience Institute Annual Retreat, Sensation & Perception session, Mohonk Mountain Resort, New York, selected speaker. April 2017.

Suver, M.P. and Nagel, K.I. Central circuits encoding wind direction in the fruit fly. Insect Navigation Workshop, Janelia Farm, Ashburn, VA, selected speaker. December 2016.

Suver, M.P., Huda, Ainul, Iwasaki, Nicole, Safarik, Steve, and Dickinson, M.H. Sensory integration by descending neurons in *Drosophila melanogaster*. The Society for Integrative & Comparative Biology. Neuroecology Symposium, Portland, OR, **invited** speaker. January 2016.

Suver, M.P., Mamiya, A. & Dickinson, M.H. Behavioral modulation of vision in *Drosophila melanogaster*. The International Conference on Invertebrate Vision. Backaskog Castle, Sweden, symposium speaker. August 2013.

Suver, M.P., Mamiya, A. & Dickinson, M.H. Endogenous release of octopamine mediates flight-induced modulation of visual interneurons in *Drosophila melanogaster*. Tenth International Congress of Neuroethology, Activity generated modulation of motion vision responses symposium. University of Maryland, **invited** speaker. August 2012

Posters

Suver, M.P. and Nagel, Katherine. Neural circuits underlying active mechanosensation in the *Drosophila* mechanosensory and motor system. Gordon Research Conference on Neuroethology: Behavior, Evolution and Neurobiology. July 28 -Aug 2 2019.

Suver, M.P., Alvarez-Salvado, E. and Nagel, Katherine. Central circuits encoding wind direction in the fruit fly. COSYNE. Salt Lake City, Utah. February 27, 2017.

Suver, M.P., and Nagel, Katherine. Neural circuits underlying wind and odor integration in *Drosophila*. Neuronal Circuits, Cold Spring Harbor Laboratory. Cold Spring Harbor, NY. April 6, 2016.

Suver, M.P., Maimon, G. and Dickinson, M.H. Modulation of visual interneurons by octopamine in *Drosophila melanogaster*. ESF-EMBO conference "Functional Neurobiology in Minibrains: From flies to robots, and back again." October 17-22, 2010

Suver, M.P., Maimon, G. and Dickinson, M.H. Modulation of visual interneurons by octopamine in *Drosophila melanogaster*. Society for Neuroscience. San Diego, California. October 14, 2010.

Weir, P.T., **Suver, M.P.** and Dickinson, M.H. Polarization vision behavior in *Drosophila*. Society for Neuroscience. Chicago, Illinois. October 18, 2009.

Sprayberry, J. and **Suver, M.** Innate preferences for flower motion dynamics in the hovering hawkmoth *Manduca sexta*. Final Program and Abstracts of the Society for Integrative and Comparative Biology. Phoenix, Arizona. 5 January 2007.

Other Presentations

Guest speaker, Biology senior seminar course, Colby College, ME. Instructor: Joshua Martin. November 6, 2020 (virtual).

Guest speaker, Neural Circuits course, Bucknell University, PA. Instructor: Matthew Clark. September 18, 2020 (virtual).

Students Mentored

Ashley Medina, NYU undergraduate, June 2019 – current (NYU Neuroscience major)
Sinekdha Sarkar, NYC public high school student, 2017-2018 (NYU Neuroscience major)
Matthew Damiata, NYC public high school student, 2017 (Computer Science major at Binghamton University)
Corrine Stonebraker, NYC public high school student, 2016 (Neuroscience and Biology major at the University of Chicago)
Nicole Iwasaki, University of Washington Biology undergraduate, 2013-2015 (Software Engineer)
Ainul Huda, University of Washington Biology undergraduate, 2013-2015 (Lab manager at Caltech)

Manuscript Referee	<i>Journal of Neuroscience, Proceedings of the Royal Society B, Nature Communications</i>
Teaching Experience	Teaching assistant, The Physiology of Motion, 2009. (Instructors: Michael Dickinson and Scott Fraser)
Outreach and Activities	<p>NYU Covid-19 literature review production contributor March-June 2020</p> <p>NYU Neuroscience Postdoc Leadership Committee, July 2019-current</p> <p>Co-teacher, NYU Sackler Graduate Student Research Adventure, NY, NY, August 2019</p> <p>Mentor, Lyons Community School neuroscience graduation projects, Bushwick, Brooklyn, NY. 2019</p> <p>Winner, NYU Neuroscience Institute bake-off. With Andrew Matheson. December 2017 (“Olfactory navigation”) and 2019 (“My first amplifier”).</p> <p>Presenter, NYU Science and Technology Entry Program (STEP). NYU Medical Center. 2018.</p> <p>Presenter, Applied Research Innovations in Science and Engineering (ARISE) program. NYU Tandon School of Engineering. 2018.</p> <p>Committee member, NYU Neuroscience Institute SPiNES (Seminars from Post-docs in Neuroscience), 2015-2017</p> <p>Volunteer/presenter, NYU Langone Medical Center Brain Awareness Week, 2015-2019</p> <p>Volunteer/presenter, University of Washington Brain Awareness Week, 2012-2014</p> <p>Workshop organizer/presenter, Seattle Expanding Your Horizons. Seattle, WA, 2012-2013</p> <p>Attendee and organizer, “Why is it so hard to swat a fly?” Exploratorium Teacher Institute Workshop. San Francisco Exploratorium, October 24, 2009</p> <p>Graduate Fellow, Caltech-Exploratorium Teacher Institute. San Francisco Exploratorium, July-Aug 2009</p> <p>Co-organizer, “Eat Bug Eat” workshop. The Machine Project, Los Angeles, CA, 2009</p> <p>Co-founder and president, California Institute of Technology Entomological Society, 2007-2010</p>
Other Research Experience	<p>Undergraduate research, University of Washington Department of Biology. Advisor: Tom Daniel. 2006-2007.</p> <p>Undergraduate Technical Intern, Intel Research Seattle. 2004. Advisor: Ken Fishkin.</p>
Conferences and Workshops Organized	“Natural Reality: Neural and behavioral responses to naturalistic stimuli.” NYU Leon Levy Minisymposium, NYU Langone, August 15, 2019. Organized by Rebecca Martin, Muge Sertel, Marie Sver, and Silvana Valcheva. Hosted panel discussion on the path towards and being a scientist.