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DOB: August 27, 1975 (Reading, PA)

POSITIONS

Princeton University

Associate Professor (2016 - present)
Assistant Professor (2010 - 2016)
McDonnell Preceptor in Neuroscience
Princeton Neuroscience Institute and Department of Molecular Biology

California Institute of Technology

Helen Hay Whitney Postdoctoral Fellow (2005-2009)
Advisor: Gilles Laurent

EDUCATION

Stanford University

Ph.D., Neuroscience, 2004
Thesis: Membrane Trafficking and the *Drosophila* Exocyst Complex
Advisor: Thomas Schwarz
Committee: Richard Scheller, Matthew Scott, Richard Tsien, W. James Nelson, and Margaret Fuller

Cold Spring Harbor Labs

Summer Course - Imaging Structure and Function in the Nervous System, 2002

Massachusetts Institute of Technology

S.B., Biology, 1997
Undergraduate Thesis: Characterization of Genes Involved in Aging in *S. cerevisiae*
Advisor: Leonard Guarente

PUBLICATIONS

Crocker, A, Guan, XJ, Murphy, CT, and **Murthy, M.** Cell Type-Specific Transcriptome Analysis in the *Drosophila* Mushroom Body Reveals Memory-Related Changes in Gene Expression. *in press at Cell Reports.*

Coen, P and **Murthy, M.** Singing on the Fly: Sensorimotor Integration and Acoustic Communication in *Drosophila*. *Curr Opin Neurobiol.* 2016 Feb 10;38:38-45. doi: 10.1016/j.conb.2016.01.013.

Coen, P, Xie, M, Clemens, J, and **Murthy, M.** Sensorimotor transformations underlying variability in song intensity during *Drosophila* courtship. *Neuron.* 2016 Feb 3;89(3):629-44. doi: 10.1016/j.neuron.2015.12.035.

Clemens, J*, Girardin, C*, Coen, P, Guan, XJ, Dickson, BJ, and **Murthy, M**. Connecting neural codes with behavior in the auditory system of *Drosophila*. **Neuron**. 2015 Sep 23;87(6):1332-43. doi: 10.1016/j.neuron.2015.08.014.
*equal authors

LaRue, KM, Clemens, J, Berman, G, and **Murthy, M**. Acoustic duetting in *Drosophila virilis* relies on the integration of auditory and tactile signals. **eLife**. 2015 June 5. doi: 10.7554/eLife.07277

Coen, P, Clemens, J, Weinstein, A, Pacheco, D, Deng, Y, and **Murthy, M**. Dynamic sensory cues shape song structure in *Drosophila*. **Nature**. 2014 Mar 13;507(7491):233-7. doi: 10.1038/nature13131.

Sun, XR, Badura, A, Pacheco, DA, Lynch, LA, Schneider, ER, Taylor, MA, Hogue, IB, Enquist, LW, **Murthy, M**, and Wang, S,S-H. Fast GCaMPs for improved tracking of neuronal activity. **Nat Commun**. 2013;4:2170. doi: 10.1038/ncomms3170.

Murthy, M and Turner, G. Whole-cell *in vivo* patch clamp recordings in the *Drosophila* brain. **Cold Spring Harb Protoc**. 2013 Feb 1;2013(2):140-8. doi: 10.1101/pdb.prot071704.

Murthy M, and Turner, G. Dissection of the head cuticle and sheath of living flies for whole-cell patch clamp recordings in the *Drosophila* brain. **Cold Spring Harb Protoc**. 2013 Feb 1;2013(2):134-9. doi: 10.1101/pdb.prot071696.

Arthur, BJ, Sunayama-Morita, T, Coen, P, **Murthy M***, and Stern DL*. Multi-channel acoustic recording and automated analysis of *Drosophila* courtship songs. **BMC Biol**. 2013 Jan 31;11:11. doi: 10.1186/1741-7007-11-11.
*co-corresponding authors

Taylor, TD, Pacheco, D, Hergarden, AC, **Murthy, M**, and Anderson, DJ. A neuropeptide circuit that coordinates sperm transfer and copulation duration in *Drosophila*. **Proc Natl Acad Sci U S A**. 2012 Dec 11;109(50):20697-702. doi: 10.1073/pnas.1218246109.

Tootoonian, S, Coen, P, Kawai, R, and **Murthy, M**. Neural representations of courtship song in the *Drosophila* brain. **J Neurosci**. 2012 Jan 18;32(3):787-98. doi: 10.1523/JNEUROSCI.5104-11.2012.

Murthy, M*, Teodoro, R*, Miller, TP, and Schwarz, TL. Sec5, a member of the exocyst complex, mediates *Drosophila* embryo cellularization. **Development**. 2010 Aug;137(16):2773-83. doi: 10.1242/dev.048330. *equal authors

Murthy, M. Unraveling the auditory system of *Drosophila*. **Curr Opin Neurobiol**. 2010 Jun;20(3):281-7. doi: 10.1016/j.conb.2010.02.016. Review.

Menon, K, Andrews, S, **Murthy, M**, Gavis, E, and Zinn, K. The translational repressors Nanos and Pumilio have divergent effects on presynaptic terminal growth and postsynaptic glutamate receptor subunit composition. **J Neurosci**. 2009 Apr 29;29(17):5558-72. doi: 10.1523/JNEUROSCI.0520-09.2009.

Murthy, M, Fiete, I, and Laurent, G. Testing odor response stereotypy in the *Drosophila* mushroom body. **Neuron**. 2008 Sep 25;59(6):1009-23. doi: 10.1016/j.neuron.2008.07.040.

Langevin J, Morgan MJ, Sibarita JB, Aresta S, **Murthy M**, Schwarz T, Camonis J, Bellaiche Y. *Drosophila* exocyst components Sec5, Sec6, and Sec15 regulate DE-Cadherin trafficking from recycling endosomes to the plasma membrane. **Developmental Cell**. 2005 Sep;9(3):355-76.

Murthy, M, Ranjan, R, Deneff, N, Higashi, M, Schupbach, T, and Schwarz TL. Sec6 mutations and the *Drosophila* exocyst complex. *Journal of Cell Science*. 2005 Mar 15;118(Pt 6):1139-50.

Murthy, M and Schwarz, TL. The exocyst component sec5 is required for membrane traffic and polarity in the *Drosophila* ovary. *Development*. 2004 Jan 131(02): 377-388.

Murthy, M, Garza, D, Scheller, RH, and Schwarz, TL. Mutations in the exocyst component sec5 disrupt neuronal membrane traffic, but neurotransmitter release persists. *Neuron*. 2003 Feb 6;37(3):433-47.

Chen, YA, Scales, SJ, Duvvuri, V, **Murthy, M**, Patel, SM, Schulman, H, and Scheller, RH. Calcium regulation of exocytosis in PC12 cells. *J Biol Chem*. 2001 Jul 13;276(28):26680-7.

Kennedy, BK, Gotta, M, Sinclair, DA, Mills, K, McNabb, DS, **Murthy, M**, Pak, SM, Laroche, T, Gasser, SM, and Guarente, L. Redistribution of silencing proteins from telomeres to the nucleolus is associated with extension of life span in *S. cerevisiae*. *Cell*. 1997 May 2;89(3):381-91.

AWARDS AND HONORS

NIH New Innovator Award (R01, NINDS), 2014-2019
Attended White House BRAIN Conference, 2014
NSF BRAIN Initiative EAGER Award, 2014-2016
McDonnell Preceptorship in Neuroscience, Princeton University, 2013-2016
Princeton-Humboldt Collaborative Research Grant, 2013-2014
Princeton Neuroscience Institute Innovation Fund, 2013
Janelia/HHMI Visiting Scholar, 2012-2014, 2015-present
McKnight Foundation Scholar Award, 2012-2015
Klingenstein-Simons Fellowship Award in the Neurosciences, 2012-2015
Princeton-Oxford Collaborative Research Grant, 2012-2014
Human Frontiers Science Program Young Investigator Award, 2011-2014
Alfred P. Sloan Foundation Research Fellow, 2011-2013
NSF CAREER Award, 2011-2016
Caltech Baxter postdoctoral fellowship, 2008-2009
Helen Hay Whitney Foundation postdoctoral fellowship, 2005-2008
Caltech Della Martin postdoctoral fellowship, 2004-2005
Damon Runyon Cancer Research Foundation postdoctoral fellowship (declined)
MIT John Asinari award for outstanding research in the life sciences, 1997
MIT Burchards Scholar in the humanities, 1996

TEACHING (2007-present)

Instructor for NEU 301/MOL 310 "Cellular Neurobiology" (undergraduate, Princeton), 2015-present
Co-Instructor for NEU/MOL 408 "Cellular and Systems Neuroscience" (undergraduate, Princeton), 2013
Co-Instructor for NEU/MOL 403 "Neurogenetics of Behavior" (undergraduate, Princeton), 2012 and 2015
Co-Instructor for ISC/MOL 235/236 "An Integrated and Quantitative Introduction to the Natural Sciences" (undergraduate, Princeton), 2011-2015
Co-Instructor for MOL 214 "Introduction to Molecular and Cellular Biology" (undergraduate, Princeton), 2011-2014
Co-Instructor for NEU 501A/502A and 501B "Intro to Neuroscience: From Molecules to Systems to Behavior" (graduate, Princeton), 2009-present
Guest Lecturer for the Princeton Neuroscience Institute NAND Summer Course (Princeton), 2012-present

Guest lecturer for “Topics in Systems Neuroscience” (graduate, Caltech), 2007-2008
Guest Lecturer for Neurobiology of *Drosophila* summer research course (graduate and post-graduate, CSHL), 2007 & 2011

INVITED TALKS (2010-present)

Departmental Seminars:

Sloan Kettering Memorial Hospital, Department of Developmental Biology (May 2016)
Columbia University (Schuetze Award Lecture; May 2016)
University of Chicago Neuroscience (May 2016)
Northwestern University Neuroscience (May 2016)
NYU Center for Neural Science (April 2016)
University of Pennsylvania Mahoney Institute for Neuroscience (Feb 2016)
UCSD Neuroscience (Feb 2016)
University of Delaware Behavioral Neuroscience (Feb 2016)
Scripps Neuroscience Research Institute (Feb 2016)
Columbia University Center for Neurotheory (Jan 2016)
Harvard University Center for Brain Science (Dec 2015)
MIT McGovern Institute for Brain Research (Oct 2015)
Johns Hopkins University Neuroscience (Apr 2015)
Emory University Institute for Quantitative Theory and Methods (Apr 2015)
NYU Neuroscience Institute (Feb 2015)
Harvard Medical School Neurobiology (Jan 2015)
Cornell University, Neurobiology and Behavior (Sept 2014)
UCSF, Neuroscience (Sept 2014)
Bernstein Center for Computational Neuroscience, Berlin (Nov 2013)
Max Planck Institute for Neurobiology, Munich (Nov 2013)
UC Berkeley, Neuroscience (Sept 2013)
Stanford University, Department of Neurobiology (May 2013)
Harvard University, Biophysics Program (Apr 2013)
University of Texas Austin, Institute for Neuroscience (Mar 2013)

Talks at International Meetings:

Champalimaud Neuroscience Symposium (Sept 2016)
Simons Foundation Quantitative Behavior Workshop (July 2016)
Columbia University Grossman Center Workshop (May 2016)
Columbia University Workshop on Brain Circuits, Memory, and Computation (Mar 2016)
Computational Systems Neuroscience (CoSyNe) Conference Keynote Speaker (Feb 2016)
BRAIN Initiative Investigators Meeting (Dec 2015)
EMBO/Kavli Foundation Neural Circuits and Behavior of *Drosophila* Conference, Crete (July 2015)
McKnight Foundation Neuroscience Conference, Aspen, CO (June 2015)
Klingenstein-Simons Foundation Neuroscience Conference, NYC (May 2015)
Swartz Foundation Banbury Center Workshop on Neuronal Response Variability (Apr 2015)
HHMI Conference on Neural Circuits Controlling Sexual Behavior (Nov 2014)
HHMI Conference on Mechanisms and Features of Social Dynamics (Oct 2014)
Sloan-Swartz Theoretical Neuroscience Annual Conference Keynote Speaker (Jun 2014)
Bi-Annual CSHL Synapses, Circuits, & Behavior Conference (Apr 2013)
Annual *Drosophila* Research Conference (Behavior and Physiology session chair; Apr 2013)
New York Area Sense to Synapse Symposium Keynote Speaker (Apr 2013)
HHMI Conference on the Evolution and Neurobiology of Insect Acoustic Communication (Co-Organizer; May 2012)

Bi-Annual CSHL Neurobiology of *Drosophila* Conference (Neural Circuits session chair; Oct 2011)
Titisee Conference on the Genetic Analysis of Neural Circuits (Mar 2011)
EMBO Conference on Neurobiology in Minibrains (Oct 2010)

SERVICE

Reviewer for several scholarly journals, including *Science*, *Nature Communications*, *Journal of Neuroscience*, *Current Biology*, *Neuron*, *Cell Reports*, *Genetics*, *eLife*, *Nature Neuroscience*
Princeton Department of Molecular Biology graduate school advisor, 2012-present
Princeton Department of Molecular Biology undergraduate curriculum committee, 2014-present
Princeton Department of Molecular Biology tech innovations committee, 2014-present
Princeton Neuroscience Institute curriculum committee, 2014-present
Princeton Neuroscience Institute faculty search committee, 2011-2012, 2013-2014
Princeton Neuroscience graduate program admissions committee, 2009-2013
Princeton Neuroscience Institute seminar committee co-chair, 2011-2014
Princeton Neuroscience Institute “in-house” seminar series chair, 2011-2013
Princeton Neuroscience Institute retreat committee co-chair, 2013 and 2015
Princeton Neuroscience Institute shared molecular equipment committee chair, 2013-2014
Princeton University, Committee on the Course of Study, 2016-present
Princeton University Committee on Undergraduate Life, 2011-2013
Faculty adviser, Rockefeller College, Princeton, 2010-2014
Faculty adviser, Wilson College, Princeton, 2014-2015
NIH grant review study section (MNG), 2015
NSF grant review study section (Neural Systems), 2012
NIH grant review study section (BRAIN Initiative), 2014
Member, Editorial Board, *Cell Reports*, 2015-present