

Srinivas Gorur-Shandilya
NRSA Postdoctoral Fellow, Brandeis University
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Education

Ph.D. 2017 Yale University, USA.
M.Sc. 2010 University of Göttingen, Germany.
B.Sc. 2008 St. Stephen's College, University of Delhi, India.

Research Positions

2018-present NRSA Postdoctoral Fellow, Brandeis University, USA. Advisor: Eve Marder
2017-2018 Postdoctoral Associate, Brandeis University, USA. Advisor: Eve Marder
2010-2017 Doctoral student at Yale University, USA. Advisor: Thierry Emonet
2009-2010 Research Fellow at the Max Planck Institute for Nonlinear Dynamics and Self-Organisation, Göttingen, Germany. Advisor: Marc Timme

Professional Activities and Awards

ad-hoc reviewer for *Scientific Reports*, *New Journal of Physics*, *Brain Sciences* and *Europhysics Letters*

- * Accepted into the Junior Scientist Workshop on Theoretical Neuroscience, Howard Hughes Medical Institute, USA (2019)
- * Named Distinguished Referee by the European Physical Society (2018)
- * Presenters' Travel Grant, Cosyne, USA (2016)
- * Conference Travel Fellowship, Graduate Student Assembly, Yale University, USA (2015)
- * Anne S. And William H. Macmillan Fellowship, Yale University, USA (2011-2013)
- * Editor's selection in "Highlights of 2011" for first-author paper in *New Journal of Physics*
- * Research Fellowship, Max Planck Society, Germany (2009-2010)
- * Fellowship from the Excellence Foundation for the Promotion of the Max Planck Society, Max Planck Society (2008-2009) that paid for tuition and living expenses at the University of Göttingen, Germany. One of 10 Fellows selected by worldwide competition.
- * KVPY Fellowship, The Department of Science and Technology, India (2005-2008). One of 89 Fellows selected by nationwide competition out of ~100,000 applicants.

Manuscripts

1. Powell, D.[†], Haddad, S.[†], **Gorur-Shandilya, S.[†]**, & Marder E. (2020). Coupling between fast and slow oscillator circuits in *Cancer borealis* is temperature compensated ([†] = equal contribution) *bioRxiv* <https://www.biorxiv.org/content/10.1101/2020.06.26.173427v1> (being revised for *eLife*)

Peer-reviewed Publications

1. **Gorur-Shandilya, S.**, Marder, E. & O’Leary, T. (2020). Activity-dependent compensation of cell size is vulnerable to targeted deletion of ion channels. *Scientific Reports* **10**, 15989
2. **Gorur-Shandilya, S.**, Martelli, C., Demir, M., & Emonet, T. (2019). Controlling and measuring dynamic odorant stimuli in the laboratory. *Journal of Experimental Biology*, **222**(23), 207787
3. **Gorur-Shandilya, S.**[†], Hoyland, A.[†], & Marder, E. (2018). Xolotl: an intuitive and approachable neuron and network simulator for research and teaching. *Frontiers in neuroinformatics*, **12**(87) († = equal contribution)
4. Bronk, P., Kuklin, E. A., **Gorur-Shandilya, S.**, Liu, C., Wiggin, T. D., Reed, M. L., Marder, E. & Griffith, L. C. (2018). Regulation of EAG by Ca²⁺/calmodulin controls presynaptic excitability in *Drosophila*. *Journal of neurophysiology*, **119**(5):1665-1680.
5. **Gorur-Shandilya, S.**[†], Demir, M.[†], Long, J., Clark, D. A., & Emonet, T. (2017). Olfactory receptor neurons use gain control and complementary kinetics to encode intermittent odorant stimuli. *Elife*, **6**, e27670 († = equal contribution)
6. Raccuglia, D., McCurdy, L. Y., Demir, M., **Gorur-Shandilya, S.**, Kunst, M., Emonet, T., & Nitabach, M. N. (2016). Presynaptic GABA receptors mediate temporal contrast enhancement in *Drosophila* olfactory sensory neurons and modulate odor-driven behavioral kinetics. *ENeuro*, **3**(4)
7. Koh, T. W., He, Z., **Gorur-Shandilya, S.**, Menuz, K., Larter, N. K., Stewart, S., & Carlson, J. R. (2014). The *Drosophila* IR20a clade of ionotropic receptors are candidate taste and pheromone receptors. *Neuron*, **83**(4):850-865
8. **Shandilya, S. G.**, & Timme, M. (2011). Inferring network topology from complex dynamics. *New Journal of Physics*, **13**(1), 013004

Extramural Talks and Lectures

1. “The self-tuning neuron: how homeostasis can compensate for size changes”. Invited talk at the Physics of Living Systems Seminar Series, MIT, USA. (2019)
2. “Homeostasis in neuron models and implications for size compensation”. Invited seminar at the Allen Center for Discovery, Tufts University, USA. (2019)
3. “Sequential gain control in *Drosophila* olfactory receptor neurons.” Accepted talk at Sense2Synapse, New York, USA. (2016)
4. “Topology Predicts Dynamics; Dynamics Constrain Topology.” Invited talk at SIAM Conference on Applications of Dynamical Systems (DS15), Snowbird, USA. (2015)
5. “Why is anything the way it is?” Accepted lightning talk at the 30th Chaos Communication Congress (30C3), Hamburg, Germany. (2013)

Additional Training

- * 1 of 20 accepted into the Quantitative Approaches to Behavior Summer School under the Cajal Advanced Neuroscience Training Program, Lisbon, Portugal (2018)
- * Accepted into the Junior Scientist Workshop on Theoretical Neuroscience, Howard Hughes Medical Institute, USA (2019)

Teaching and Mentorship

2020	Created and taught a workshop on the Visual Display of Quantitative Information at Brandeis University
2019-present	Fellow at the Scientific Communication Laboratory, Brandeis University. Train junior scientists in one-on-one sessions to improve written and oral presentations.
2017-2018	Thesis supervisor for a M.Sc. student at Brandeis University (later a scientific programmer at Boston University)
2015	Organized and taught a workshop on encryption and cryptography at the Center for Engineering Innovation and Design, Yale University.
2014	Teaching Fellow for Dynamical Systems in Biology (MCDB 361) at Yale University, taught by Profs. Emonet, Clark and Howard.
2010	Teaching Fellow for Neurobiology (MCDB 320a) at Yale University, taught by Profs. Keshishian and Forscher.

Selected Projects & Code

crabsort	a general-purpose multi-channel extracellular spike sorter with machine learning. https://github.com/sg-s/crabsort
xolotl	a fast and easy-to-use neuron and network simulator. https://github.com/sg-s/xolotl
condalab	transparent interface to use Anaconda from within MATLAB. https://github.com/sg-s/condalab
cpplab	toolbox that allows C++ classes to be natively used in MATLAB. https://github.com/sg-s/cpplab

Programming languages

MATLAB	15+ years, 68,000+ lines of code
C++	10+ years, 19,000+ lines of code
Python	7+ years, 11,000+ lines of code
Swift	1+ year, 1000+ lines of code

Other projects and code available at <https://github.com/sg-s/>