Brian DePasquale

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Academic Positions	**Princeton University**	Princeton, NJ
	Postdoctoral Research Associate	2016–present
	Laboratories of Carlos Brody & Jonathan Pillow	
	Columbia University	New York, NY
	Ph.D. in Neurobiology & Behavior	2016
	Laboratory of Larry Abbott	
	Massachusetts Institute of Technology	Cambridge, MA
	Research and Technical Assistant	2005–2009
	Laboratory of Ann Graybiel	
	Fordham University	Bronx, NY
	B.S. in Physics, *cum laude*	2005
	Victor F. Hess Award (top graduating physics student)	

Publications

[1] DePasquale, B., Sussillo, D., Churchland, M.M., & Abbott, L.F. (2018). Using recurrent neural networks to approximate low-dimensional, nonlinear population dynamics. *in preparation*.

[2] Panichello, M.F., DePasquale, B., Pillow, J.W. & Buschman, T.J. (2018). Error-correcting dynamics in visual working memory. *bioRxiv*.

[3] Insanally, M.N., Carcea, I., Field, R.E., Rodgers, C., DePasquale, B., Rajan, K., DeWeese, M.R., Albanna, B.F. & Froemke, R.C. (2018). Nominally non-responsive frontal and sensory cortical cells encode task-relevant variables via ensemble consensus-building. *bioRxiv*.

[4] DePasquale, B., Cueva, C.J., Rajan, K., Escola, G.S. & Abbott, L.F. (2018). fullFORCE: A target-based method for training recurrent networks. PLoS ONE 13(2): e0191527.

[5] DePasquale, B. (2016). *Methods for Building Network Models of Neural Circuits*. Ph.D. thesis, Columbia University.

[6] Abbott, L.F., DePasquale, B. & Memmesheimer, R.-M. (2016). Building functional networks of spiking model neurons. Nature Neuroscience 19:350-355.

[7] DePasquale, B., Churchland, M.M. & Abbott, L.F. (2016). Using firing-rate dynamics to train recurrent networks of spiking model neurons. arXiv:1601.07620.

[8] Feingold, J., Gibson, D.J., DePasquale, B. & Graybiel, A.M. (2015). Bursts of beta oscillation differentiate postperformance activity in the striatum and motor cortex of monkeys performing movement tasks. PNAS 112(44):13687-13692.

[9] Paninski, L., Vidne, M., DePasquale, B. & Ferreira, D.G. (2012). Inferring synaptic inputs given a noisy voltage trace. Journal of Computational Neuroscience 33:1-19.

Research Support	National Science Foundation Graduate Research Fellow	2010–2013

Teaching &	**Princeton University**	Princeton, NJ
Mentorship	Undergraduate research co-advisor	2016–present
	Columbia University	New York, NY
	Instructor, General Physics (undergraduate)	2013–2014
	Summer Health Professions Education Program	
	TA, Introduction to Theoretical Neuroscience (graduate)	2011 & 2013

Service

Organizer, *Recurrent Spiking Neural Networks—Dynamics, Learning, Computation*. COSYNE Workshop (2016), Salt Lake City, UT.

Ad hoc reviewer: NIPS, Brain Research, eLife.

References

Carlos Brody, Ph.D.
Wilbur H. Gantz III '59 Professor in Neuroscience
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Mark M. Churchland, Ph.D.
Assistant Professor, Department of Neuroscience
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Tel: +1 212 853 1068, email: mc3502@columbia.edu

Ann M. Graybiel, Ph.D.
Institute Professor
Massachusetts Institute of Technology
Tel: +1 617 253 5785, email: graybiel@mit.edu

Conference Proceedings & Talks

Matthew Panichello, Brian DePasquale, Jonathan Pillow, Timothy Buschman (2018). Memory load modulates the dynamics of visual working memory. Vision Sciences Society 18th Annual Meeting, St. Pete Beach, FL.

Brian DePasquale, Mark M. Churchland, LF Abbott (2016). Using firing-rate dynamics to train recurrent spiking neural networks. Recurrent Spiking Neural Networks—Dynamics, Learning, Computation, COSYNE Workshop, Salt Lake City, UT.

Brian DePasquale, Christopher J. Cueva, Raoul-Martin Memmesheimer, LF Abbott, G. Sean Escola (2016). Full-rank regularized learning in recurrently connected firing rate networks. COSYNE, Salt Lake City, UT.

Brian DePasquale, Mark M. Churchland, LF Abbott (2015). Using firing-rate dynamics to train recurrent spiking neural networks. Annual Tri-Center Gatsby Meeting, Columbia University, NY, NY.

Brian DePasquale, Mark M. Churchland, LF Abbott (2014). Using firing rate dynamics to train spiking neural networks that perform tasks. Techniques and Approaches in Theoretical Neuroscience, Janelia Farms Research Campus, HHMI, Ashburn, VA.

Brian DePasquale, Mark M. Churchland, LF Abbott (2014). Constructing networks of spiking neurons that perform tasks. Department of Neuroscience retreat, Columbia University, NY, NY.

Brian DePasquale, Mark M. Churchland, LF Abbott (2014). Firing rate dynamics from spiking networks. COSYNE, Salt Lake City, UT.

Brian DePasquale, Mark M. Churchland, LF Abbott (2013). Low-rank connectivity induces firing rate fluctuations in a chaotic spiking model. Temporal Dynamics in Learning: Networks and Neural Data, Janelia Farms Research Campus, HHMI, Ashburn, VA.

Brian DePasquale, Mark M. Churchland, LF Abbott (2013). Low-rank connectivity induces firing rate fluctuations in a chaotic spiking model. COSYNE, Salt Lake City, UT.

J Feingold, Brian DePasquale, AM Graybiel (2009). Modulation of beta power in the prefrontal cortex and Caudate Nucleus of monkeys during self-timed sequential arm movements. SFN 39th Annual Meeting, Chicago, IL

J Feingold, Brian DePasquale, AM Graybiel (2007). Cortical 8-20 Hz oscillations in supplementary motor areas during self-timed sequential arm movements in monkey. SFN 37th Annual Meeting, San Diego, CA