

Sam Lewallen

December 16, 2019

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Education and employment

Swartz Fellow, Harvard University

2018 - Present

Postdoctoral Research Fellow, Princeton Neuroscience Institute

Advisor: David Tank

2014 - 2018

Ph.D. in Mathematics, Princeton University

Advisor: Zoltán Szabó

Topics: low-dimensional topology, topological quantum field theory, symplectic geometry

2008 - 2013

B.A. in Mathematics, Harvard University

Graduated with Highest Honors

2004 - 2008

Courses

Junior Theorists Workshop on Theoretical Neuroscience

Janelia Research Campus

2018

Methods in Computational Neuroscience

MBL, Woods Hole

2013

Publications

“Probing variability in a cognitive map using manifold inference from neural dynamics.”

Ryan J Low*, **Sam Lewallen***, Dmitriy Aronov, Rhino Nevers, David W Tank (2018). *bioRxiv*.

“A map-like micro-organization of grid cells in the medial entorhinal cortex.”

Yi Gu, **Sam Lewallen**, Amina A Kinkhabwala, Cristina Domnisoru, Kijung Yoon, Jeffrey L Gauthier, Ila R Fiete, David W Tank (2018). *Cell*.

“Grid cell responses in 1D environments assessed as slices through a 2D lattice.”

KiJung Yoon*, **Sam Lewallen***, Amina A Kinkhabwala, David W Tank, Ila R Fiete (2016). *Neuron*.

“Stimulus-dependent correlations in threshold-crossing spiking neurons.”

Yoram Burak, **Sam Lewallen**, Haim Sompolinsky (2009). *Neural Computation*.

“(1,1) L-space knots.”

Joshua Evan Greene*, **Sam Lewallen***, Faramarz Vafaee* (2018). *Compositio Mathematica*.

“Strong L-spaces and left orderability.”

Adam Simon Levine*, **Sam Lewallen*** (2012). *Mathematical Research Letters*.

* Joint first authors

Awards and fellowships

NSF Nordic Fellowship, 2011

NSF Graduate Research Fellowship, 2008-2011

Centennial Fellowship, 2008-2011 (awarded to top few incoming Phd students by Princeton math department)

Other research experiences in neuroscience

Independent undergraduate research project advised by Haim Sompolinsky, Harvard University

Summer, 2007

Undergraduate research assistant with Maria Geffen and Marcello Magnasco, Rockefeller University

Summer, 2006