

# Sam Lewallen

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## Education and employment

### **Swartz Fellow**

Center for Brain Science, Harvard University  
*2018 - Present*

### **Postdoctoral Research Fellow**

Princeton Neuroscience Institute  
Advisor: David Tank  
*2014 - 2018*

### **Methods in Computational Neuroscience summer school**

MBL, Woods Hole, MA  
*2013*

### **Ph.D., Mathematics**

Princeton University  
Advisor: Zoltán Szabó  
General subject matter: Low-dimensional topology, Floer homology, topological quantum field theory, symplectic geometry  
*2008 - 2014*

### **B.A., Mathematics**

Harvard University  
Graduated with Highest Honors  
*2004 - 2008*

## 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*.

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\* 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*