Timothy Spellman, Ph.D.

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Education

2014 Ph.D. in Physiology and Cellular Biophysics
Mentor: Joshua Gordon, M.D., Ph.D.
Columbia University, New York, NY

2004 B.A. in Psychology, *cum laude*
Dartmouth College, Hanover, NH

Positions

2018-2019 Instructor in Neuroscience, Brain and Mind Research Institute, Weill Cornell Medical College, New York, NY

2014-2018 Postdoctoral Research Fellow, Brain and Mind Research Institute, Weill Cornell Medical College, New York, NY. Mentor: Conor Liston, M.D., Ph.D.

2008-2014 Ph.D. Candidate, Program in Physiology and Cellular Biophysics, Columbia University, New York, NY. Mentor: Joshua Gordon, M.D., Ph.D.

2005-2008 Lab Manager, Research Coordinator, Division of Brain Stimulation, Columbia University, New York, NY. Mentor: Sarah H. Lisanby, M.D.

2003 Undergraduate Research Assistant, Dartmouth Hitchcock Medical Center, White River Jct, NH. Mentor: Sherry Bursztajn, Ph.D.

Honors

2016 *Samuel W. Perry III, MD Distinguished Award in Psychiatry Medicine*, Department of Psychiatry, Weill Cornell Medicine

2016 *Regeneron Prize for Creative Innovation Finalist*, Regeneron Pharmaceuticals

2014 *Dean's Award for Excellence in Research*, Columbia University Graduate School of Arts and Sciences

2014 *Finalist*, Winter Conference on Brain Research Poster Prize

1998-2000 *Member*, National Honor Society

2004 *Bachelor of Arts Cum Laude*, Dartmouth College

2002 *Winner*, Tuck Business School and Dartmouth Club of Entrepreneurs Business Idea Competition

2000 *National Merit Scholar with Distinction*, National Merit Scholarship Program

2000 *AP Scholar with Distinction*, The College Board

Publications

1) **Spellman TJ**, Svei M, Liston C (2019). *Prefrontal deep projection neurons enable cognitive flexibility via persistent feedback monitoring*. bioRxiv**.** doi: https://doi.org/10.1101/828590.
2) Tamura M, **Spellman TJ**, Rosen AM, Gogos JA, Gordon JA (2017). *Hippocampal-prefrontal theta-gamma coupling during performance of a spatial working memory task.* Nat Commun. 2017 Dec 19;8(1):2182.
3) Bolkan SS, Stujenske JM, Parnaudeau S, **Spellman TJ**, Rauffenbart C, Abbas AI, Harris AZ, Gordon JA, Kellendonk C (2017). *Thalamic projections sustain prefrontal activity during working memory maintenance.* Nat Neurosci. 2017 Jul;20(7):987-996.
4) Padilla-Coreano N, Bolkan SS, Pierce GM, Blackman DR, Hardin WD, Garcia-Garcia AL, **Spellman TJ**, Gordon JA (2016). *Direct Ventral Hippocampal-Prefrontal Input Is Required for Anxiety-Related Neural Activity and Behavior*. Neuron. 2016 Feb 17;89(4):857-66.
5) **Spellman TJ**, Rigotti M, Ahmari S, Fusi S, Gogos J, Gordon JA (2015). *Hippocampal-prefrontal input supports spatial encoding in working memory*. Nature, 522(7556): 309-14.
6) Stujenske JM, **Spellman TJ**, Gordon JA (2015). *Spatiotemporal dynamics of light and heat propagation during optical stimulation*. Cell Reports, 12(3):525-34.
7) Mukai J, Tamura M, Fénelon K, Rosen AM, **Spellman TJ**, Kang R, MacDermott AB, Karayiorgou M, Gordon JA, Gogos JA (2015). *Molecular substrates of altered axonal growth and brain connectivity in a mouse model of schizophrenia.* Neuron. 2015 May 6;86(3):680-95.
8) Rosen AM, **Spellman TJ**, Gordon JA (2015). *Electrophysiological endophenotypes in rodent models of schizophrenia and psychosis.* Biol Psychiatry. 2015 Jun 15;77(12):1041-9.
9) Ahmari S, **Spellman TJ**, Douglas N, Kheirbek M, Simpson B, Deisseroth K, Gordon JA, Hen R (2013). *Repeated cortico-striatal stimulation generates persistent OCD-like behavior*. Science, 340(6137):1234-9.
10) McClintock SM, DeWind NK, Husain MM, Rowny SB, **Spellman TJ**, Terrace H, Lisanby SH. (2013). *Disruption of component processes of spatial working memory by electroconvulsive shock but not magnetic seizure therapy.* Int J Neuropsychopharmacol. 2013 Feb;16(1):177-87.
11) Cycowicz YM, Luber B, **Spellman TJ**, Lisanby SH. (2009). *Neurophysiological characterization of high-dose magnetic seizure therapy: comparisons with electroconvulsive shock and cognitive outcomes*. J ECT. 2009 Sep;25(3):157-64.
12) Cycowicz YM, Luber B, **Spellman TJ**, Lisanby SH. *Differential neurophysiological effects of magnetic seizure therapy (MST) and electroconvulsive shock (ECS) in non-human primates.* Clin EEG Neurosci. 2008 Jul;39(3):144-9.

13) **Spellman TJ**, McClintock S, Terrace H, Husain M, Lisanby SH (2008). *Differential Effects of High Dose Magnetic Seizure Therapy (MST) and Electroconvulsive Shock (ECS) on Cognitive Function*. Biological Psychiatry. 15;63(12): 1163-70. PMID: 18262171

14) **Spellman TJ**, Peterchev A, Lisanby SH (2009). *Focal electrically administered seizure therapy: a novel form of ECT illustrates the roles of current directionality, polarity, and electrode configuration in seizure induction*. Neuropsychopharmacology. 34(8):2002-10. PMID: 19225453

Reviews/commentary:

Spellman TJ, Gordon JA (2015). *Synchrony in schizophrenia: a window into circuit-level pathophysiology*. Current Opinion in Neurobiology, 30:17-23.

Online bibliography: https://www.ncbi.nlm.nih.gov/pubmed/?term=timothy+spellman

Current Research Support

NARSAD Young Investigator Award 1/15/2018 – 1/14/2020 Role: PI

Source: Brain & Behavior Research Foundation $70,000 (direct costs/yr) Effort: 0.36 cal months

Prefrontal Circuits Underlying Attention Selection

The goal of this project is to identify output circuits within the mouse medial prefrontal cortex that support the flexible control of cross-modal attention selection.

K99/R00 K99MH117271 8/1/2018 – 7/31/2020 Role: PI

Source: National Institute of Mental Health $103,628 (direct costs/year) Effort: 11.4 cal months

Prefrontal Circuits Underlying Cognitive Flexibility

The goal of this project is to define mechanisms by which mPFC allows for selection of modality-specific targets of attention.

Leon Levy Fellowship in Neuroscience 2/1/2019 – 1/31/2020 Role: PI

Source: Leon Levy Foundation $100,000 Effor: 0 cal months

The goal of this project is to identify subnetworks within rodent prefrontal cortex that process behavioral and environmental cues associated with attentional control.

Completed Research Support.

2015-2017 *Hartwell Postdoctoral Fellowship*, Hartwell Foundation.