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Matthew Whiteway

EDUCATION	University of Maryland , College Park, MD Ph.D. in Applied Mathematics and Scientific Computing Dissertation: <i>A latent variable modeling framework for analyzing neural population activity</i> Advisor: Dr. Daniel A Butts	2012-2018
	University of Oklahoma , Norman, OK B.Sc. in Physics, B.A. in Mathematics	2006-2011
RESEARCH POSITIONS	The International Brain Laboratory Postdoctoral Research Scientist	2019-present
	Columbia University , New York, NY Postdoctoral Research Scientist Zuckerman Mind Brain Behavior Institute Advisor: Dr. Liam Paninski	2018-present
	University of Maryland , College Park, MD Graduate research in computational neuroscience Advisor: Dr. Daniel Butts	2014-2018
	University of Maryland , College Park, MD Undergraduate research in network science Advisors: Drs. Michelle Girvan and Ed Ott	2010
HONORS AND AWARDS	Center for Comparative and Evolutionary Biology of Hearing Trainee Grant	2015-2016
	University of Maryland Department of Mathematics Excellence in Teaching Award	2013
	University of Oklahoma Department of Physics and Astronomy J. Clarence Karcher Scholarship	2009-2011
	National Merit Scholarship	2006-2011
PUBLICATIONS	Batty E*, Whiteway MR* , Saxena S, Biderman B, Abe T, Musall S, Gillis W, Markowitz JE, Churchland AK, Cunningham J, Datta SR, Linderman S & Paninski L <i>BehaveNet: nonlinear embedding and Bayesian neural decoding of behavioral videos</i> Advances in Neural Information Processing Systems	2019
	Whiteway MR & Butts DA <i>The quest for interpretable models of neural population activity</i> Current Opinion in Neurobiology	2019

	<p>Whiteway MR, Socha K, Bonin V & Butts DA <i>Characterizing the nonlinear structure of shared variability in cortical neuron populations using latent variable models</i> Neurons, Behavior, Data analysis, and Theory</p>	2019
	<p>Liu J, Whiteway MR, Sheikhattar A, Butts DA, Babadi B & Kanold PO <i>Parallel processing of sound dynamics across mouse auditory cortex via spatially patterned thalamic inputs and distinct areal intracortical circuits</i> Cell Reports</p>	2019
	<p>Whiteway MR & Butts DA <i>Revealing unobserved factors underlying cortical activity using a rectified latent variable model applied to neural population recordings</i> Journal of Neurophysiology</p>	2017
	<p>Stout J, Whiteway MR, Ott E, Girvan M & Antonsen TM <i>Local synchronization in complex networks of coupled oscillators</i> Chaos</p>	2011
SELECTED CONFERENCE ABSTRACTS	<p>Whiteway MR*, Batty E*, Saxena S, Biderman B, Abe T, Musall S, Gillis W, Markowitz JE, Churchland AK, Datta SR, Linderman S & Paninski L. <i>BehaveNet: behavioral video embedding and neural analysis toolbox</i> Society for Neuroscience, Chicago, IL</p>	2019
	<p>Glaser J, Linderman S, Whiteway MR, Perich M, Dekleva B, Miller L, Paninski L & Cunningham J <i>State space models for multiple interacting neural populations</i> Computational and Systems Neuroscience, Lisbon, Portugal</p>	2019
	<p>Whiteway MR, Bartolo R, Averbeck BB & Butts DA <i>Decoding neural population activity within a latent variable framework</i> Computational and Systems Neuroscience, Denver, CO</p>	2018
	<p>Whiteway MR, Bartolo R, Averbeck BB & Butts DA <i>Unsupervised nonlinear dimensionality reduction of large-scale neural recordings in prefrontal cortex</i> Society for Neuroscience, Washington, DC</p>	2017
	<p>Whiteway MR, Socha K, Bonin V & Butts DA <i>Nonlinear latent variable approaches for understanding population activity in sensory cortex</i> Computational and Systems Neuroscience, Salt Lake City, UT</p>	2017
	<p>Whiteway MR & Butts DA <i>Hidden sources of variability modulate populations of sensory neurons</i> Society for Neuroscience, San Diego, CA</p>	2016
	<p>Stout J, Whiteway MR, Ott E, Girvan M & Antonsen TM <i>The effect of network structure on the path to synchronization in large systems of coupled oscillators</i> SIAM Conference on Applications of Dynamical Systems, Snowbird, UT</p>	2011
TEACHING EXPERIENCE	<p>Advanced Topics in Theoretical Neuroscience, Columbia University</p>	Spring 2019
	<p>Guest Lecturer - Static Dimensionality Reduction Methods</p>	
	<p>Introductory Statistics, University of Maryland</p>	Spring 2015
	<p>Teaching Assistant</p>	

	Multivariable Calculus , University of Maryland Teaching Assistant	Fall 2014
	Integral Calculus , University of Maryland Lecturer	Summer 2014
	Multivariable Calculus , University of Maryland Teaching Assistant	Spring 2014
	Linear Algebra , University of Maryland Teaching Assistant	Fall 2013
	Introductory Statistics , University of Maryland Lecturer	Spring 2013
	Integral Calculus , University of Maryland Teaching Assistant	Fall 2012
MENTORING	Linking neural activity and behavior using variational autoencoders Graduate student, Columbia University	Fall 2018
	Deep generative models for understanding natural images Undergraduate student, University of Maryland	Spring 2017
	An introduction to neural networks for image classification Undergraduate student, University of Maryland	Fall 2016
	Theory and applications of the generalized linear model Undergraduate student, University of Maryland	Summer 2015
	Linear programming and its applications to economics Undergraduate student, University of Maryland	Spring 2015