

## Karin Cox || Curriculum Vitae

Pittsburgh, PA, USA || kmc51@pitt.edu || <https://github.com/kc13> || <https://www.cs.pitt.edu/~kmc51>

### EDUCATION

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#### Ph.D.: Computer Science

April 2024 || University of Pittsburgh, Pittsburgh, PA

#### Ph.D.: Cognitive Psychology

December 2011 || University of Pittsburgh, Pittsburgh, PA

#### Certificate: Cognitive Neuroscience

December 2011 || University of Pittsburgh, Pittsburgh, PA

#### B.A.: Psychology and Spanish

May 2003 || Macalester College, St. Paul, MN

### EMPLOYMENT

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#### Postdoctoral Scholar: Lab of Dr. Robert Turner

2024-present || Department of Neurobiology, University of Pittsburgh, Pittsburgh, PA

#### Graduate Student Researcher: Lab of Dr. Robert Turner

2020-present || Department of Neurobiology, University of Pittsburgh, Pittsburgh, PA

#### Graduate Teaching Assistant

2016-2020 || Department of Computer Science, University of Pittsburgh, Pittsburgh, PA

#### Research Principal: Geriatric Psychiatry Neuroimaging Lab (PI: Dr. Howard Aizenstein)

2014-2015 || Department of Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA

#### Postdoctoral Researcher: Lab of Dr. Joseph Kable

2011-2014 || Department of Psychology, University of Pennsylvania, Philadelphia, PA

#### Graduate Student Researcher: Lab of Dr. Julie Fiez

2004-2011 || Department of Psychology, University of Pittsburgh, Pittsburgh, PA

#### Lab Coordinator: Pediatric Autonomic Lab (PI: Dr. Elizabeth Gilles)

2003-2004 || Center for Neurobehavioral Development, University of Minnesota, Minneapolis, MN

#### Research Assistant: Reading and Language Investigations Lab (PI: Dr. Brooke Lea)

2002-2003 || Department of Psychology, Macalester College, St. Paul, MN

### PUBLICATIONS

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#### Peer-Reviewed Publications

Kase D, Zimnik AJ, Han Y, Harsch DR, Bacha S, Cox KM, Bostan AC, Richardson RM, Turner RS. Movement-related activity in the internal globus pallidus of the parkinsonian macaque. *Journal of Neurophysiology*. 2025 Aug 1;134(2):741-65.

Cox KM, Kase D, Znati T, Turner RS.

Detecting rhythmic spiking through the power spectra of point process model residuals. *Journal of Neural Engineering*. 2024;21(4):046041.

Cox KM, Fiez JA. Abstract inference of unchosen option values.

*European Journal of Neuroscience*. 2020;51(3):909-21.

Cox KM, Kable JW. BOLD subjective value signals exhibit robust range adaptation. *Journal of Neuroscience*. 2014;34(49):16533-43.

Cox KM, Aizenstein HJ, Fiez JA. Striatal outcome processing in healthy aging.

Cognitive, Affective, & Behavioral Neuroscience. 2008;8:304-17.

## **PEER-REVIEWED CONFERENCE ABSTRACTS**

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Cox KM, Kase, D, Turner RS.

Detecting rhythmic spiking through the power spectra of point process model residuals.  
COSYNE Abstracts 2023.

## **TECHNICAL EXPERIENCE**

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### **Programming / Scripting:**

Most experience:	MATLAB, Java
Substantial experience:	Python, C/C++
Moderate experience:	R, shell (.bash, .csh), assembly (MIPS)
Basic experience:	git, Android

### **Specific Application Areas:**

Neural data analysis and modeling:	Spike sorting/curation tools: (Kilosort, Phy, Offline Sorter, MountainSort) fMRI analysis software (AFNI, FSL, AIR) Other imaging analysis tools (ITK-SNAP, HistoloZee) Dynamical systems modeling (XPP)
Video analysis:	DeepLabCut, Anipose, OpenCV, YOLO
Communication:	Socket programming (TCP/UDP, Bluetooth)
Embedded/Mobile:	Raspberry Pi, Arduino, Android phones
Nonhuman primate (NHP) lab:	Electrophysiology (ongoing training: microcraniotomy, mapping, Neuropixels) EMG (percutaneous, surface) Rig construction and wiring, DAQ boards Basic NHP handling

## **TEACHING EXPERIENCE**

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All entries refer to teaching assistant positions held at the University of Pittsburgh:

CS 0449: Introduction to Systems Software	Summer 2020
CS 1652: Data Communication and Computer Networks	Summer 2019, Fall 2019
CS 1567: Programming and System Design on a Mobile Robot Platform	Summer 2019
CS 2520: Wide Area Networks	Spring 2019
CS 2731: Introduction to Natural Language Processing	Spring 2019
CS 1675: Introduction to Machine Learning	Fall 2018
CS 1501: Algorithm Implementation	Spring 2017, Fall 2017, Fall 2019
CS 1699: Introduction to Information Security Policy and Compliance	Spring 2017
CS 0447: Computer Organization and Assembly Language	Fall 2016, Spring 2018, Summer 2018, Summer 2020
CS 0401: Intermediate Programming Using Java	Summer 2016, Spring 2020
CS 0445: Data Structures	Spring 2016
PSY 0505: Introduction to Biopsychology	Spring 2011
PSY 0310: Developmental Psychology	Fall 2010
PSY 0420: Laboratory in Cognitive Psychology	Spring 2009

## **PROFESSIONAL MEMBERSHIPS**

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Society for Industrial and Applied Mathematics	2020-2024
Society for Neuroscience	2005-2015
Society for Neuroeconomics	2012
Cognitive Neuroscience Society	2005-2012

## **AWARDS AND HONORS**

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Postdoctoral Trainee, Neurobiology of Neurological Disease (NINDS T32 NS086749)	May 2024-present
Andrew Mellon Predoctoral Fellowship	2008-2009
NSF IGERT Fellowship	September-October 2006
University of Pittsburgh / Faculty of Arts & Sciences Fellowship	2004-2005

Phi Beta Kappa	2003
National Merit Scholarship	1999-2003

## **PROFESSIONAL SERVICE ACTIVITIES**

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### **Public Outreach**

"Open-source code for detecting rhythmic spiking using power spectra of point process model residuals."  
(2024, Sept. 27). Discover ASAP series, Aligning Science Across Parkinson's.  
[https://youtu.be/r0EIuGzbUWw?si=oXT\\_X7WvvLTiUp2W](https://youtu.be/r0EIuGzbUWw?si=oXT_X7WvvLTiUp2W)

### **Ad hoc reviewing:**

Cerebral Cortex	Human Brain Mapping
Cognitive, Affective, & Behavioral Neuroscience	Neuroimage
Journal of Cognitive Neuroscience	PLOS One
Journal of Neuroscience	Social, Cognitive, & Affective Neuroscience
Journal of Neurophysiology	

### **Training Program Service:**

Colloquium Committee, Center for the Neural Basis of Cognition	2009-2010
Cognitive Psychology Program Student Representative, University of Pittsburgh	2006-2007
Cognitive Psychology Brown Bag Series Coordinator, University of Pittsburgh	2005-2006