K. Alexandria Bond, PhD

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INTERESTS

dynamic decision-making | abstraction & structure learning | curiosity | exploration algorithms | *in silico* & human learning systems

EDUCATION

CARNEGIE MELLON UNIVERSITY | CARNEGIE MELLON NEUROSCIENCE INSTITUTE
PhD in Cognitive Neuroscience with computational emphasis
May 2022 | Pittsburgh, PA

EXPERIENCE

CARNEGIE MELLON UNIVERSITY Cognitive Axon Lab | Researcher
May 2022 – Present | Pittsburgh, PA

CARNEGIE MELLON UNIVERSITY Cognitive Axon Lab | Graduate Student Researcher
July 2017 – May 2022 | Pittsburgh, PA

PRINCETON UNIVERSITY Intelligent Performance and Adaptation Lab | Lab Manager
May 2014 – July 2017 | Princeton, NJ

HONORS

2020	1 of 8	Carnegie Mellon Graduate Student Representative Award
2019	1 of 6	Carnegie Mellon Neuroscience Institute Presidential Fellow
2017	1 of 10	National Institutes of Health (NIH) Behavioral Brain Research Training Fellowship

PUBLICATIONS

Bond K., Rubin, J., Verstynen, T. Underlying decision policy promotes exploration for metalearning. *In prep.*

Bond K., Rasero J., Madan, R., Bahuguna, J., Rubin, J., Verstynen, T. Corticostriatal network competition slows evidence accumulation for adaptive exploration. *In prep.*

Bond K., Dunovan, K., Alexis Porter, Jonathan E Rubin, and Timothy Verstynen. Dynamic decision policy reconfiguration. **eLife.** December; 2021;10:e65540.

Bond K. and Taylor J.A. Structural learning in a visuomotor adaptation task is explicitly accessible. **eNeuro.** August; 10.1523/eneuro.0122-17.2017.

Bond K. and Taylor J.A. Flexible explicit but rigid implicit learning in a visuomotor adaptation task. **The Journal of Neurophysiology.** March; 10.1152/jn.00009.2015.

McDougle S.M., **Bond K.**, and Taylor J.A. Implications of plan-based generalization in sensorimotor adaptation. **The Journal of Neurophysiology.** April; 10.1152/jn.00974.2016.

McDougle S.M., **Bond K.**, and Taylor J.A. Explicit and implicit processes constitute the fast and slow processes of sensorimotor learning. **The Journal of Neuroscience.** July; 10.1523/jneurosci.5061-14.2015.

LEADERSHIP

CMU GRADUATE STUDENT ASSEMBLY EXECUTIVE BOARD 1 of 8 | Vice President of Academic Affairs
October 2021 – May 2022

Elected GSA Executive Board member. Collaborated with Vice Provost of Education and other University leadership to meet academic needs of GS. Selection of successful initiatives:

- Completely free health insurance for all GS, minimum stipend of 27k across departments, and reasonable leave policies. Implemented in Fall 2022.
- Assessed need for empirically supported mentorship skills for both GS and advisors. Enabled informed, targeted development of University-level mentorship training and time-sensitive mental health checks by GS year.

CMU VICE PROVOST OF RESEARCH SEARCH COMMITTEE | Selected advisor
UNIVERSITY STUDENT ADVISING COMMITTEE | Selected advisor
UNIVERSITY EDUCATION COUNCIL | Selected advisor
ASSOCIATE DEANS FOR GRADUATE PROGRAMS | Selected advisor
THREE MINUTE THESIS (3MT) COMPETITION JUDGE 1 of 1 | Selected Graduate Student Thesis Judge for CMU

SCIENTIFIC OUTREACH

- Carnegie Mellon University Psychology and Cognitive Neuroscience Outreach Program for underserved communities (2017 - present)
- Trenton STEM-to-Civics Charter School | Science Outreach Voluntseer (2017)
- Hopewell Elementary School | Science Fair Judge (2017)

ADVISING & TEACHING

- Advised Raghav Madan, Engineering & Tech. M.S. student (2019-2020) | now: PhD candidate at Washington University in Biomedical and Health Informatics
- Advised Jadelyn Flores, New Brunswick High School student participating in the Princeton Laboratory Learning Program (2015) | now: graduate of Princeton University
- Designed data science tutorials (coauthored Jupyter book; Spring 2019) | Teaching Assistant, Data Science for Psychology and Neuroscience
- Designed evaluation methods and managed a team of UG Teaching Assistants (Fall 2018) | Teaching Assistant, Cognitive Psychology

SKILLS

Computational Modeling | Causal inference | Computational Neuroimaging | Multimodal physiological recording (e.g. concurrent fMRI, pupillometry, eye-tracking, pulse oximetry) | Bayesian analysis and numerical estimation | Simulation | Behavioral analysis | Time series analysis | Python | R