

# ELI B. POLLOCK

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## EDUCATION

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)**  
*Candidate for PhD in Brain and Cognitive Sciences*

Cambridge, MA  
September 2016 – Present

**UNIVERSITY OF PENNSYLVANIA**  
*College of Arts and Sciences*

Philadelphia, PA  
September 2012 – May 2016

- Graduated magna cum laude from the Vagelos Scholars Program in the Molecular Life Sciences
- Bachelor of Arts, Majors in Biophysics and Physics, Minor in Engineering Entrepreneurship

## RESEARCH EXPERIENCE

**JAZAYERI LAB, MIT**  
*Graduate Researcher*

Cambridge, MA  
April 2017 – Present

- Uses recurrent neural networks (RNNs) to uncover the computational role of neural dynamics.
- Created a Python module for working with (RNNs).
- Designed and ran human psychophysical experiments to test model hypotheses.

**BALASUBRAMANIAN LAB, UNIVERSITY OF PENNSYLVANIA**  
*Undergraduate Researcher*

Philadelphia, PA  
May 2015 – August 2016

- Developed computational model for neural navigation systems involving grid cells and border cells.
- Implemented novel learning mechanisms for correcting shortcomings in existing models.
- Gained familiarity with key computational and mathematical techniques of theoretical neuroscience.

## TEACHING EXPERIENCE

**MIT COURSE 9.014**  
*Teaching Assistant*

Cambridge, MA  
Fall 2017, Fall 2018

- Taught lab sessions of class to improve students' understanding of course material.
- Held office hours to assist students with computational skills and mathematical concepts.
- Graded problem sets to provide useful feedback for students.

**MIT EDUCATIONAL STUDIES PROGRAM (ESP)**  
*Teacher*

Cambridge, MA  
Fall 2016, Summer 2017, Summer 2018

- Created lesson plans and taught middle and high school students in ESP's Splash and HSSP programs.
- Introduced young students to ideas in neuroscience, sparking their interest.

**PENN WRITING CENTER**  
*Writing Tutor*

Philadelphia, PA  
January 2013 – May 2016

- Provided peers with help to communicate more effectively in their writing.

## LEADERSHIP AND ACTIVITIES

**MIT SCIENCE POLICY INITIATIVE**  
*President*

Cambridge, MA  
June 2017 – June 2018

- Raised funds from various MIT departments.
- Provided opportunities for graduate students to engage with science policy on local and national levels.
- Ensured smooth operation of extensive programming including peer discussions, faculty lunches, and trips to Washington, D.C.

**THE POLYBIAN SOCIETY**  
**President and Co-Founder**

Philadelphia, PA  
September 2013 – December 2015

- Provided an inclusive forum for increasing intellectual discourse about societal issues on campus.
- Founded and led a club with over 150 members initiated.

**AWARDS AND HONORS**

- Inducted member of Nu Rho Psi Neuroscience Honor Society (September 2015)
- University of Pennsylvania Dean's List (2012-2013, 2014-2015, 2015-2016)
- National Science Foundation (NSF) Graduate Research Fellowship Program Honorable Mention (April 2018)

**PUBLICATIONS**

- Tang, Evelyn, Chad Giusti, Graham Baum, Shi Gu, Eli Pollock, Ari Kahn, David Roalf, Tyler Moore, Kosha Ruparel, Ruben Gur, Raquel Gur, Theodore Satterthwaite, and Danielle Bassett. 2017. "Developmental increases in white matter network controllability support a growing diversity of brain dynamics." *Nature Communications*, 8(1252).

**PRESENTATIONS**

- Hosseini, Eghbal, and Eli Pollock. 2017. "Eye movement-based probabilistic models for physical scene understanding." Poster presented at the 39<sup>th</sup> Annual Meeting of the Cognitive Science Society; July 26-29, 2017; London, UK.
- Pollock, Eli, Niral Desai, Xue-Xin Wei, and Vijay Balasubramanian. 2017. "A mechanism for self-organized error-correction of grid cells by border cells." Poster presented at the Computational and Systems Neuroscience (COSYNE) meeting; Feb 23-26, 2017; Salt Lake City, UT.
- Pollock, Eli, and Mehrdad Jazayeri. 2018. "A recurrent neural network model of a timing and working memory task." Poster presented at the MIT Intelligence Quest Launch; March 1, 2018; Cambridge, MA.