

ELIZABETH SHAY

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Education

UNIVERSITY OF ROCHESTER – PhD, Department of Brain and Cognitive Sciences – Rochester, NY – 2014 - 2019(Expected)

- Advisors: Jessica Cantlon, Bradford Mahon
- Committee to be determined

UNIVERSITY OF ROCHESTER – Master of Arts in Brain and Cognitive Sciences – Rochester, NY – 2014 - 2017

- Advisor: Rajeev Raizada
- Committee: Richard Aslin (chair), Steven Piantadosi, Rajeev Raizada

UNIVERSITY OF PENNSYLVANIA – Bachelor of Arts with Distinction *Cum Laude* in Linguistics – Philadelphia, PA – 2010 - 2014

- Math and Music minors
- Thesis: *Presupposition resolution in biclausal statements using “also”*
- Advisor: Florian Schwarz

UNIVERSITY OF PENNSYLVANIA – Bachelor of Applied Science *Cum Laude* in Computer and Cognitive Science – Philadelphia, PA – 2010 - 2014

- Thesis: *Statistical modeling of behavioral linguistic data*
- Advisor: Mitch Marcus

Research Experience

CONCEPTS, ACTIONS, AND OBJECTS (CAOS) LAB – University of Rochester - Department of Brain and Cognitive Sciences - Rochester, NY - Fall 2014 - Summer 2017

- Advisors: Jessica Cantlon, Bradford Mahon
- Research in neural representations and their combinations across domains
- Develop and execute independent and collaborative research projects
- Form bridges and collaborations between the CAOS lab and other labs

RAIZADA LAB – University of Rochester - Department of Brain and Cognitive Sciences - Rochester, NY - Fall 2014 - Summer 2017

- Advisor: Rajeev Raizada
- Research in psycholinguistics and neurolinguistics
- Develop and execute independent and collaborative research projects
- Form bridges and collaborations between the Raizada Lab and other labs

EXPERIMENTAL MEANING OF LANGUAGE LAB - University of Pennsylvania - Departments of Linguistics and Psychology - Philadelphia, PA - Fall 2012 - Spring 2014

- Advisor: Florian Schwarz
- Research in semantics and cognition
- Develop and execute an independent project
- Assist other researchers in gathering data using the visual world paradigm and eye-tracking equipment
- Create audio and visual stimuli and data collection set-ups for computer-run experiments

MITCH LAB - University of Pennsylvania - Departments of Computer and Information Sciences and Linguistics - Philadelphia, PA - Fall 2012 - Spring 2014

- Advisor: Mitch Marcus
- Research in statistical modeling of behavioral linguistics
- Develop and execute an independent project

- Program statistical models of behavioral linguistic data

ALAB – University of South Carolina - Departments of Psychology and Linguistics - Columbia, SC - Summer 2013

- Advisor: Amit Almor
- Research in neurolinguistics
- Develop and execute an experimental procedure using behavioral and fMRI methods
- Analyze findings and present them at a local colloquium and prepare for publication

CU LANGUAGE PROJECT - University of Colorado, Boulder - Departments of Psychology and Computer Science - Boulder, CO - Summer 2011 - Present

- Advisor: Eliana Colunga
- Research in developmental linguistics
- Model children’s vocabularies
- Assist in collecting data from young children, creating stimuli, and experimental design

STERNBERG LAB - University of Pennsylvania - Department of Psychology - Philadelphia, PA - Fall 2011

- Advisor: Saul Sternberg
- Research in psychophysics
- Develop and execute an independent project
- Programmed using unix command line and ftap (in R) to for all steps in the research process

TRENT-BROWN LAB - Hope College - Department of Psychology - Holland, MI - Fall 2009 - Spring 2010

- Advisor: Sonja Trent-Brown
- Research in psycholinguistics
- Develop and execute an independent project

Teaching Experience

NEURAL FOUNDATIONS OF BEHAVIOR – Teaching Assistant - University of Rochester - Rochester, NY - Spring 2018

- Assist the professor (Kevin Davis) in preparing the course, tests, and other course requirements
- Help students understand the material both in and out of class
- Work with the other TA to grade all assignments and tests

LAB IN DEVELOPMENT & LEARNING - Lecturer - University of Rochester - Rochester, NY - Fall 2017

- Co-teach with Stephen Ferrigno
- Develop and modify course materials for teaching the course
- Teach, develop assignments and test material, and grade all submissions.
- Assist students in understanding the materials both in and out of class.
- Meet with student groups on a regular basis to discuss their class research projects

FOUNDATIONS OF COGNITIVE SCIENCE - Lecturer - University of Rochester - Rochester, NY - Summer 2017

- Develop and modify course materials for teaching the course as a four-week summer session.
- Teach, develop assignments and test material, and grade all submissions.
- Assist students in understanding the materials both in and out of class.

MUSIC & THE MIND - Teaching Assistant - University of Rochester - Rochester, NY - Fall 2016

- Assist the professor (David Temperley) in preparing the course, tests, and other course requirements.
- Help students understand the material both in and out of class.
- Grade all assignments and tests.
- Teach lectures to the students.

FOUNDATIONS OF COGNITIVE SCIENCE - Lecturer - University of Rochester - Rochester, NY - Summer 2016

- Co-teach with Alyssa Ibarra
- Develop and modify course materials for teaching the course as a four-week summer session.
- Teach, develop assignments and test material, and grade all submissions.
- Assist students in understanding the materials both in and out of class.

ROCHESTER SCHOLARS - Teacher - University of Rochester - Rochester, NY - Summer 2016

- Develop a two-week-long course entitled *Building the Language Machine: Introduction to Computational Linguistics* for high school students
- Teach the course as part of the University of Rochester Pre-College summer program
- Modify the course for future sessions of the Rochester Scholars program

MUSIC & THE MIND - Teaching Assistant - University of Rochester - Rochester, NY - Fall 2015

- Assist the professor (Elizabeth West Marvin) in preparing the course, tests, and other course requirements.
- Help students understand the material both in and out of class.
- Grade all assignments and tests.
- Teach lectures to the students.

ROCHESTER SCHOLARS - Teacher - University of Rochester - Rochester, NY - Summer 2015

- Develop a week-long course entitled *The Language Scientist: Linguist, Psychologist, Computer Scientist* for high school students
- Teach the course as part of the University of Rochester Pre-College summer program
- Modify the course for future sessions of the Rochester Scholars program

PENN EMERGING SCHOLARS PROGRAM (PESP) - Teacher - School of Engineering and Applied Sciences, University of Pennsylvania - Philadelphia, PA - Spring 2014

- Work with other teachers to develop lesson plans and student exercises for each class
- Teach weekly classes aimed at freshmen and sophomores considering majors in Computer Science and Math

COLLEGE HOUSE COMPUTING - In-House Information Technology Advisor (ITA) Trainer - Gregory and Du Bois College Houses, University of Pennsylvania - Philadelphia, PA - Fall 2011 - Spring 2014

- Organize and lead the training program for new and returning ITAs in each house
- Develop training materials and reference packets for all ITAS

THE TUTORING CENTER – Single-Variable and Multivariable Tutor - University of Pennsylvania - Philadelphia, PA - Spring 2013

- Organized lessons to help students understand the difficult topics

SCIENCE OLYMPIAD – Assistant Coach - Grand Haven High School - Grand Haven, MI - Fall 2010 - Present

- Assist coaches in teaching high school students college-topics
- Write and grade tests

Presentations

Shay, E. A., Zinszer, B. D., & Raizada, R. D. S. (2017, September). *Between-subjects neural decoding of phrase representations outperforms Word2Vec decoding.* Poster to be given at the Cognitive Computational Neuroscience conference, New York, NY.

van Dam, W., Almor, A., Shinkareva, S., Kim, J., Boiteau, T., **Shay, E.**, & Desai, R. (2017, June). *Distinct neural mechanisms underlying conceptual knowledge of manner and instrument verbs.* Poster given at the meeting of the Organization for Human Brain Mapping, Vancouver, BC.

Shay, E. A. & Raizada, R. D. S. (2016, August). *A Brain-Based Feature Model of Adjective-Noun Composition.* Poster given at the meeting of the Cognitive Science Society, Philadelphia, PA.

Shay, E. A. & Raizada, R. D. S. (2016, August). *A Brain-Based Feature Model of Adjective-Noun Composition.* Poster given at the meeting of the Emergent Meaning Workshop, Lehigh Valley, PA.

Shay, E. A. & Raizada, R. D. S. (2015, November). *Using neurobiologically-motivated features to investigate the semantic composition of adjectives with nouns.* Talk given at the meeting of the Society for Computers in Psychology, Chicago, IL.

Shay, E. A. & Raizada, R. D. S. (2015, October). *Using neurobiologically-motivated features to investigate the semantic composition of adjectives with nouns.* Poster presented at the meeting of the Society for Neurobiology of Language, Chicago, IL.

- Shay, E. A.,** Almor, A., Van Dam, W., Boiteau, T., Desai, R. (2013, August). *Manner and instrument verb processing using fMRI*. Talk given at the Summer Research Experience in Brain and Cognitive Sciences Final Presentations, Columbia, SC.
- Shay, E. A.,** Kan, P. F., Colunga, E. (2013, April). *One or two lexicons? Semantic networks in sequential bilingual preschoolers*. Poster presented at the meeting of the Society for Research in Child Development, Seattle, WA.
- Shay, E. A.,** Colunga, E. (2011, September). *Noun and verb network connectivity in early and late talkers*. Poster presented at the National Science Foundation CRA-W Distributed Research Experience for Undergraduates grant review, Washington, D.C.
- Shay, E. A.,** Trent-Brown, S. (2011, March). *Information recall from non-attended passages in dichotic listening*. Talk given at the National Conference for Undergraduate Research, Ithaca, NY.
- Shay, E. A.,** Trent-Brown, S. (2010, October). *Information recall from non-attended passages in dichotic listening*. Poster presented at the University of Pennsylvania Undergraduate Research Conference, Philadelphia, PA.

Publications

- van Dam, W., Almor, A., Shinkareva, S. V., Kim, J., Boiteau, T. W., **Shay, E. A.,** & Desai, R. H. (submitted). Distinct neural mechanisms underlying conceptual knowledge of manner and instrument verbs.
- Shay, E. A.** Grimm, S. & Raizada, R. D. S. (2016). Commentary on Kemmerer: The challenges and rewards of trying to combine linguistics and cognitive neuroscience. *Language, Cognition and Neuroscience*. doi: 10.1080/23273798.2016.1259483.
- Shay, E. A.** & Raizada, R. D. S. (manuscript in progress). *Using neurobiologically-motivated features to investigate the semantic composition of adjectives with nouns*.
- Shay, E. A.,** Marvin, E. W. (manuscript in progress). *Comparisons of musical and linguistic rhythm within French, Italian, and American cultures*.
- Shay, E. A.,** Kan, P. F., Colunga, E. (manuscript in progress). *One or two lexicons? Semantic networks in sequential bilingual preschoolers*.
- Almor, A., Van Dam, W., **Shay, E. A.,** Boiteau, T., Desai, R. (manuscript in progress). *Manner and instrument verb processing using fMRI*.

Professional Experiences

STUDENT RESEARCH AWARD SUBMISSION REVIEWER - Association of Psychological Science Student Caucus - Spring 2015, Spring 2016, Spring 2017

MACHINE LEARNING SUMMER SCHOOL - Department of Computer Science, University of Texas, Austin - Austin, TX - January 2015

- Ten-day seminar in machine learning techniques
- Covered the broad spectrum of machine learning topics as well as applications to a variety of fields (including psychology and natural language processing)

SUMMER RESEARCH EXPERIENCE FOR THE BRAIN AND COGNITIVE SCIENCES (SREBCS) - Department of Psychology, University of South Carolina - Columbia, SC - Summer 2013

- Conducted research with Amit Almor and Rutvik Desai
- Attended a twice-weekly research seminar where researchers presented their work
- Attended weekly seminars about technology for psychological research (including fMRI, eye-tracking, EEG, statistical techniques,

data analysis)

Honors and Awards

EMERGENT MEANING TRAVEL GRANT - Emergent Meaning Workshop, Lehigh Valley University - 2016

HENRY HOENIGSWALD PRIZE IN LINGUISTICS - Department of Linguistics, University of Pennsylvania - 2014

NATIONAL SCIENCE FOUNDATION SUMMER FELLOWSHIP THROUGH UNIVERSITY OF SOUTH CAROLINA SREBCS - 2013

NATIONAL SCIENCE FOUNDATION SUMMER FELLOWSHIP THROUGH CRA-W DREU - 2011, 2012

UNIVERSITY OF PENNSYLVANIA COLLEGE OF ARTS AND SCIENCES TRAVEL GRANT – February 2011, February 2013

UNITED STATES COAST GUARD YOUTH AMBASSADOR– August 2010 - August 2011

Professional Organizations

SOCIETY FOR RESEARCH IN CHILD DEVELOPMENT - 2013 - Present

LINGUISTICS SOCIETY OF AMERICA - 2013 - Present

ASSOCIATION FOR PSYCHOLOGICAL SCIENCE- 2013 - Present

SOCIETY FOR THE NEUROBIOLOGY OF LANGUAGE - 2015 - Present

PSYCHONOMIC SOCIETY - 2015 - Present

SOCIETY FOR COMPUTERS IN PSYCHOLOGY - 2015 - Present

COGNITIVE SCIENCE SOCIETY - 2016 - Present