

# ELIZABETH A. HIRSHORN

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## EDUCATION

### **University of Rochester**

PhD in Brain and Cognitive Sciences, Expected Spring/Summer 2011  
Research Advisor: Daphne Bavelier

**Honors:** NSF Graduate Research Fellowship Program, Honorable Mention, 2006

### **Wellesley College**

B.A., Cognitive Science & Spanish, May 2003

**Honors:** Cum Laude, Psi Chi National Honor Society in Psychology,  
First-year Academic Distinction.

## RESEARCH EXPERIENCE

Sept. 2005

### **University of Rochester**

-Present

*Doctoral Student.* Department of Brain and Cognitive Sciences  
Advisor: Daphne Bavelier, Ph.D.

*Exploring alternate routes to literacy in deaf individuals. Investigating the effects of language experience and deafness on reading and memory processing.*

Ran large study looking at 3 deaf populations with different language experience. Developed 'deaf-friendly' picture-based phonological skill tasks. Designed, and ran fMRI experiments of lexical processing and sentence comprehension. Analyzed fMRI data looking at correlations with behavior, functional connectivity, and group differences. Designed novel tasks to explore semantic coding in short-term memory in deaf individuals. Organized intensive data collection trip to Gallaudet University.

June 2003

### **University of Pennsylvania**

-July 2005

*Research Specialist.* Center for Cognitive Neuroscience.  
Supervisor: Sharon L. Thompson-Schill, Ph.D.

*Research involving domain-general executive functions of the Left Inferior Frontal Gyrus in language and semantic processing.*

Duties include: designing, programming, and running computer driven cognitive psychology behavioral and fMRI experiments; fMRI and behavioral data analysis; presenting work at professional conferences; mentoring independent study undergraduate students; administrative duties.

Summers

### **Children's Hospital of Philadelphia**

2001 & 2002

*Neurology Research Intern.*  
Performed tissue culture and immunohistochemistry of neuronal cells. Carried out general lab maintenance. Attended lectures and weekly lab meetings.

## INVITED TALKS

Symposium Talk presented at Inter-Science of Learning Center Conference.

"Exploring Alternate Routes to Literacy in Profoundly Deaf Individuals."

Boston, MA, May 24, 2010.

Guest Lecturer, *Cognition*, University of Rochester

Lecture on Reading and the Brain

Spring, 2010

Invited talk for the HEAD Seminar Series at Linköping University.

Principal Investigators: Jerker Rönnerberg and Mary Rudner

"Reading Skill in Profoundly Deaf Individuals: How Language Experience Affects Reading Ability."

Linköping, Sweden, December 16, 2009.

Invited talk at INSERM CEA Cognitive Neuroimaging Unit.

Principal Investigator: Stanislas Dehaene.

"Reading in deaf people."

Paris, France, December 11, 2009.

Guest Lecturer, *Language and the Brain*, University of Rochester

Lecture on Sign Language Processing and the Brain

Spring, 2009

Brain and Cognitive Sciences Lunch talk.

"Alternate routes to achieving literacy: How do deafness and language experience affect reading processes?"

Rochester, NY, November 5, 2008.

## CONFERENCE PRESENTATIONS

**Elizabeth A. Hirshorn**, Matthew W.G. Dye, Peter C., Hauser, & Daphne Bavelier. (2010).

Exploring Alternate Routes to Literacy in Profoundly Deaf Native Signers. Poster presented at the Neurobiology of Language Conference, San Diego.

Niki Spotwood, Laurel Lawyer, **Elizabeth A. Hirshorn**, Heather Patterson, Peter Hauser, Guinevere Eden, Mary C. Mendoza, & David Corina. (2010). An fMRI study of implicit sign processing: Functional neuro-anatomy of lexical recognition in American Sign Language. Poster presented at the Theoretical Issues in Sign Language Research Meeting, Purdue University, IN.

**Elizabeth A. Hirshorn**, Nina Fernandez, & Daphne Bavelier. (2009). Phonological and episodic buffer contribution to short-term memory in deaf signers. Poster presented at the Cognitive Science Society Annual Meeting, Amsterdam, Netherlands.

**Elizabeth A. Hirshorn**, Matthew W.G. Dye, Peter C., Hauser, & Daphne Bavelier. (2009). Relative contribution of phonological skills and memory in reading in profoundly deaf individuals. Poster presented at the International Mind, Brain, and Education Society Biannual Meeting, Philadelphia.

**Elizabeth A. Hirshorn**, Matthew W.G. Dye, Peter C., Hauser, & Daphne Bavelier. (2009). Relative contribution of phonological skills and memory in reading: The case of profoundly deaf individuals. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco.

**Elizabeth A. Hirshorn**, Merry Mani, Arnaud Guidon, & Daphne Bavelier (2008). White matter pathways underlying reading skills in profoundly deaf adults. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.

**Elizabeth A. Hirshorn**, Matthew W.G. Dye, Peter C., Hauser, & Daphne Bavelier. (2008). Routes to achieving literacy in deaf readers: The case of native American Sign Language (ASL) users. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco.

**Elizabeth A. Hirshorn**, Geoffrey K. Aguirre, & Sharon L. Thompson-Schill (2005). Proactive and reactive cognitive control during semantic retrieval. Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York City, NY.

Tatiana T. Schnur, **Elizabeth A. Hirshorn**, & Sharon L. Thompson-Schill (2005). Mapping semantic interference during picture naming: an fMRI study. Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York City, NY.

Ranjani Prabhakaran, Melissa Brandon, **Elizabeth A. Hirshorn**, Amishi P. Jha, & Sharon L. Thompson-Schill, (2005). An event-related fMRI investigation of proactive interference resolution in a nonverbal working memory task. Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York City, NY.

**Elizabeth A. Hirshorn**, Julia C. Lemos, & Sharon L. Thompson-Schill (2004). Role of the left inferior frontal gyrus in covert word retrieval: Neural correlates of switching during verbal fluency. Human Brain Mapping Annual Meeting, Budapest, Hungary.

Melissa Brandon, **Elizabeth A. Hirshorn**, Amishi P. Jha, & Sharon L. Thompson-Schill (2004). Proactive interference resolution during nonverbal working memory: Evidence for domain-general processing in LIFG. Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.

## **PUBLICATIONS**

**Elizabeth A. Hirshorn**, Nina Fernandez, & Daphne Bavelier (in preparation). Routes to short term memory indexing: Insights from deaf individuals.

Daphne Bavelier & **Elizabeth A Hirshorn** (2010). I see where you're hearing: how cross-modal plasticity may exploit homologous brain structures. *Nature Neuroscience: News and Views*. 13 (11): 1-2.

Tatiana T. Schnur, Myrna, F. Schwartz, Daniel Y. Kimberg, **Elizabeth A. Hirshorn**, H. Branch Coslett, & Sharon L. Thompson-Schill. (2008). Localizing Interference during Speech Production: Convergent Neuroimaging and Neuropsychological Evidence for the Function of Broca's Area. *Proceedings of the National Academy of Sciences*. 106(1): 322-327

Sharon L. Thompson-Schill, Tatiana T. Schnur, **Elizabeth A. Hirshorn**, Myran F. Schwartz, & Daniel Y. Kimberg. (2007). Regulatory functions of prefrontal cortex during single word production. *Brain and Language*. 103, 171-172.

**Elizabeth A. Hirshorn** & Sharon L. Thompson-Schill (2006). Role of the left inferior frontal gyrus in covert word retrieval: Neural correlates of switching during verbal fluency. *Neuropsychologia*, 44, 2547-2557.

## TEACHING AND MENTORING EXPERIENCE

### Teaching Assistant

*Neural Foundations of Behavior*, University of Rochester

Held weekly recitations, monthly exam reviews, and outside tutoring.

Fall 2007 & 2008

*Language Development*, University of Rochester

Graded weekly homework and exam essays, held weekly recitations.

Spring 2006 & 2007

### Research Supervisor

Training and advising undergraduate researcher on a project exploring the effects of deafness and sign language on conceptual categorization.

To be written up as journal article.

Fall 2008-present

## PROFESSIONAL SERVICE AND AFFILIATION

### Journal Reviews in Collaboration with Advisor

Nature Neuroscience

Journal of Neuroscience

NeuroImage

Developmental Psychology

### Member of Professional Societies

Cognitive Neuroscience Society

Neurobiology of Language

International Mind Brain and Education Society

Society for Neuroscience

## COMPUTER SOFTWARE SKILLS

fMRI analysis in AFNI and VoxBo

Stimulus presentation experience with Eprime, Presentation, PsyScope

Statistical analysis in SPSS