

# Youssef Ezzyat, PhD

Department of Psychology, University of Pennsylvania  
433 S. University Ave, Room 262  
Philadelphia, PA 19104  
yezzyat@sas.upenn.edu

## EDUCATION

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- 2014 **New York University**, Ph.D. Psychology  
Advisor: Dr. Lila Davachi  
*Dissertation: The influence of event structure on episodic memory encoding and retrieval.*
- 2005 **Princeton University**, B.S.E. Electrical Engineering  
*Thesis: Spatial convergence of novelty-related brain activity in the medial temporal lobe.*

## ACADEMIC POSITIONS AND RESEARCH EXPERIENCE

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- 2017- Senior Data Scientist, University of Pennsylvania
- 2014-2016 Postdoctoral Fellow, University of Pennsylvania  
Advisor: Dr. Michael Kahana
- 2013-2014 Core Curriculum Teaching Fellow, NYU
- 2005-2007 Research Specialist, Center for Cognitive Neuroscience  
University of Pennsylvania. P.I. Dr. Ingrid Olson  
*Conducted patient and fMRI research on the interactions between attention, working memory and long-term memory.*
- 2004-2005 Senior Thesis Advisee, Computational Memory Lab  
Princeton University, Advisor: Dr. Ken Norman  
*Used multivariate fMRI analysis methods to study stimulus representations in the medial temporal lobe.*

## MANUSCRIPTS IN PREP

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Heusser AC, **Ezzyat Y**, Shiff I & Davachi L (in revision). Context novelty cuts both ways: memory for details occurring at perceptual boundaries is enhanced while temporal order memory across boundaries is impaired.

**Ezzyat Y**, Inhoff M & Davachi L. (in prep). Context-driven differentiation of human medial prefrontal cortex activity predicts long-term resistance to forgetting.

## PUBLICATIONS

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Kragel J, **Ezzyat Y**, Sperling MR, Gorniak R, Worrell GA, Berry BM, Inman C, Lin J-J, Davis KA, Das SR, Stein JM, Jobst BC, Zaghoul KA, Sheth SA, Rizzuto DS & Kahana MJ (in press). Similar patterns of neural activity predict memory function during encoding and retrieval. *NeuroImage*.

- Ezzyat Y**, Kragel JE, Burke JF, Levy DF, Lyalenko A, Wanda P, O'Sullivan L, Hurley KB, Busygin S, Pedisich I, Sperling MR, Worrell GA, Kucewicz MT, Davis KA, Lucas TH, Inman CS, Lega BC, Jobst BC, Sheth SA, Zaghoul K, Jutras MJ, Stein JM, Das SR, Gorniak R, Rizzuto DS & Kahana MJ (2017). Direct brain stimulation modulates encoding states and memory performance in humans. *Current Biology*, 27(9), 1251-1258.
- Jacobs J, Miller J, Lee SA, Coffey T, Watrous AJ, Sperling MR, Sharan A, Worrell G, Berry B, Lega B, Jobst B, Davis K, Gross RE, Sheth SA, **Ezzyat Y**, Das SR, Stein J, Gorniak R, Kahana MJ & Rizzuto DS (2016). Direct electrical stimulation of the human entorhinal region and hippocampus impairs memory. *Neuron*, 92(5), 983-990.
- Heusser AC, Poeppel D, **Ezzyat Y** & Davachi L (2016). Episodic sequence memory is supported by a theta-gamma phase code. *Nature Neuroscience*, 19, 1374-1380.
- Olson IR, **Ezzyat Y**, Plotzker A & Chatterjee A (2014). The endpoint of the ventral visual stream: face and non-face perceptual deficits following anterior temporal lobe damage. *Neurocase*, 21(5), 554-562.
- Ezzyat Y** & Davachi L (2014). Similarity breeds proximity: pattern similarity within and across contexts is related to later mnemonic judgments of temporal proximity. *Neuron*, 81(5), 1179-1189.
- Ezzyat Y** & Davachi L (2011). What constitutes an episode in episodic memory? *Psychological Science*, 22(2), 243-252.
- Ezzyat Y** & Olson IR (2008). The medial temporal lobe and visual working memory: comparisons across tasks, delays, and visual similarity. *Cognitive, Affective & Behavioral Neuroscience*, 8(1), 32-40.
- Olson IR, Plotzker A, & **Ezzyat Y** (2007). The enigmatic temporal pole: a review of findings on social and emotional processing. *Brain*, 130(7), 1718-1731.

## **CONFERENCE PRESENTATIONS**

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- Ezzyat Y** et al (2017). Direct brain stimulation in closed-loop to modulate human episodic memory encoding. Context and Episodic Memory Symposium, Philadelphia PA (**talk**).
- Ezzyat Y** et al (2016). Targeted brain stimulation to modulate memory in humans. Society for Neuroscience, San Diego CA (**poster**).
- Kahana MJ, **Ezzyat Y** et al (2016). Large-scale assessment of the effects of direct electrical stimulation on brain network activity. Society for Neuroscience, San Diego CA (**poster**).

Kragel JE, **Ezzyat Y** et al (2016). Core episodic encoding and retrieval processes revealed by dynamics of neural activity. Society for Neuroscience, San Diego CA (**poster**).

Kucewicz MT, Berry BM, **Ezzyat Y** et al (2016). Human memory enhancement through stimulation of middle temporal gyrus. Society for Neuroscience, San Diego CA (**poster**).

**Ezzyat Y**, Kragel J et al (2016). Targeted brain stimulation to modulate memory encoding in humans. Context and Episodic Memory Symposium, Philadelphia PA (**talk**).

**Ezzyat Y**, Burke J et al (2015). Multivariate analysis of electrical stimulation to predict memory performance. Society for Neuroscience Annual Meeting, Chicago, IL (**poster**).

Tiganj Z, Di Lascio JM, Burke JF, **Ezzyat Y**, Sederberg PB, Kahana MJ, Rizzuto D & Howard MW (2015). Using a detailed computational model of behavior to decompose the subsequent memory effect in free recall. Society for Neuroscience Annual Meeting, Chicago, IL (**poster**).

Heusser AC, **Ezzyat Y**, Poeppel D & Davachi L (2015). The influence of perceptual boundaries on the formation and organization of events in episodic memory. Society for Neuroscience Annual Meeting, Chicago, IL (**poster**).

**Ezzyat Y**, Inhoff M & Davachi L (2014). Learning across days leads to differentiated neural representations of learned information following a long delay. Society for Neuroscience Annual Meeting, Washington, DC (**poster**).

Heusser AC, **Ezzyat Y**, Davachi L (2014). The impact of perceptual event boundaries on memory-related neural oscillations. Context and Episodic Memory Symposium, Philadelphia, PA (**poster**).

Heusser AC, **Ezzyat Y**, Davachi L (2014). The impact of perceptual event boundaries on memory-related neural oscillations. Cognitive Neuroscience Society, Boston, MA (**poster**).

Heusser AC, **Ezzyat Y**, Shiff I, Davachi L (2013). The impact of perceptual event boundaries on memory-related neural oscillations. Society for Neuroscience, San Diego, CA (**poster**).

**Ezzyat Y**, Davachi L (2013). Neural mechanisms supporting the temporal organization of episodic long-term memory. Context and Episodic Memory Symposium, Philadelphia, PA (**talk**).

Heusser AC, **Ezzyat Y**, Shiff I, Davachi L (2013). Perceptual event boundaries disrupt temporal order but facilitate item-feature binding. Context and Episodic Memory Symposium, Philadelphia, PA (**poster**).

**Ezzyat Y**, Davachi L (2012). Linking representations across time: shared representational context as a mechanism for organization in episodic memory. Society for Neuroscience, New Orleans, LA (**poster**).

**Ezzyat Y**, Davachi L (2011). Neural mechanisms supporting the temporal organization of episodic long-term memory. Society for Neuroscience, Washington, DC (**poster**).

**Ezzyat Y**, Davachi L (2009). Event perception influences the organization of long-term memory. Society for Neuroscience, Chicago, IL (**poster**).

**Ezzyat Y** & Davachi L (2009). Event perception influences the organization of long-term memory. Cognitive Neuroscience Society, San Francisco, CA (**talk**).

**Ezzyat Y** & Davachi L (2008). The influence of event perception on long-term memory formation. Cognitive Neuroscience Society, San Francisco, CA (**poster**).

**Ezzyat Y**, Moore KS & Olson IR (2007). Learning modulates neural activity in visual working memory. Cognitive Neuroscience Society, New York, NY (**poster**).

Olson IR, Plotzker A & **Ezzyat Y** (2007). The human perirhinal cortex: involvement in visual perception is task specific. Cognitive Neuroscience Society, New York City (**poster**).

**Ezzyat Y** & Olson IR (2006). The hippocampus and the fidelity of representations in visual working memory. Vision Sciences Society, Sarasota, FL (**poster**).

Moore KS, **Ezzyat Y**, Wallen T & Olson IR (2006). How information value modulates task preparation in the human cerebral cortex. Cognitive Neuroscience Society, San Francisco, CA (**poster**).

## **AWARDS AND FELLOWSHIPS**

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2014	Douglas and Katharine Fryer Thesis Fellowship, New York University
2012	American Psychological Association Dissertation Research Award
2011	Katzell Summer Fellowship in Psychology, New York University
2009, 2012	GSAS Student Travel Grant, New York University
2007-2012	McCracken Fellowship, New York University

## **TEACHING AND MENTORING**

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2015	<b>Big Data, Memory and the Human Brain</b> , Teaching Assistant, University of Pennsylvania
2014	<b>Fundamentals of Neuropsychology</b> , Instructor, Barnard College
2013	<b>Molecules of Life</b> , Teaching Fellow, NYU
2011, 2012	<b>Cognition</b> , Instructor, NYU
2009	<b>Developmental Psychology</b> , Grader/TA, NYU
2008, 2010	<b>Cognitive Neuroscience</b> , Teaching Assistant, NYU
2008	<b>Statistics for the Behavioral Sciences</b> , Teaching Assistant, NYU
2003	<b>Extended Analytical Physics</b> , Teaching Assistant, Rutgers University

### *Student Research Mentoring:*

2016-	Kevin DeCorso (Penn undergraduate)
2015-	Michael Randazzo (Penn medical student)
2012	Aaron Apple (NYU undergraduate)
2010-2012	Nicole Spector (Honors Thesis; New York University DURF Grant recipient)

2009-2010 Lucia Liu (NYU undergraduate, Honors Thesis)  
2008-2009 Caitlin Bowman (NYU undergraduate)

### **PROFESSIONAL MEMBERSHIP**

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American Psychological Association  
Cognitive Neuroscience Society  
Society for Neuroscience

Ad hoc reviewer:

*Current Biology, Journal of Experimental Psychology: General, Journal of Neuroscience, Learning & Memory, Neuron, Psychological Review*

### **TALKS, WORKSHOPS AND SERVICE**

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2016 Temple University, Brain and Cognitive Sciences Brown Bag  
2016 Active Learning in STEM Courses, University of Pennsylvania (4 week mini-course)  
2016 Hospital of the University of Pennsylvania, Neurosurgery Grand Rounds  
2013-2014 NYU College Core Curriculum Teaching & Learning Colloquium co-organizer  
2011-2013 Guest Lecturer (*Memory*), NeuroLeadership Post-Grad Certificate Program  
2010 NYU Science Communication Workshop participant (6 week seminar)  
2009-2010 Cognition & Perception Graduate Student Brown Bag Series co-coordinator