

# Eve De Rosa

## Web Bio

### Information

#### Biography

##### Biographical Statement

My work can be best described as comparative cognitive neuroscience, which is characterized by two related approaches. One is a cross-species approach, comparing rat models of the neurochemistry of attention and learning to humans, focusing on the neurochemical acetylcholine. The other is an across the lifespan approach, examining the cholinergic hypothesis of age-related changes in cognition.

We use activity mapping from fMRI data to provide theoretical models that can then be more fully tested in rats combining local field potential recordings with immunotoxic lesions and pharmacology.

I received my B.A. in Biology-Psychology from Vassar College and then worked as a research assistant for a few years at Harvard University School of Medicine and fell in love with research. I was trained in animal neuroscience and received my Ph.D. in Experimental Psychology from Harvard University and then received training in human neuroscience as a postdoctoral fellow at Stanford University School of Medicine. I enjoy bringing both of these approaches together in my lab.

##### Department Website Summary

Co-director of the Affect and Cognition Laboratory: [aclab.human.cornell.edu](http://aclab.human.cornell.edu)

#### Teaching

##### Teaching and Advising Statement

Although I approach seminars and lectures differently, my teaching philosophy is to serve as a guide for students. Actually, I make that explicit statement on the first day of class in all of my courses. I attempt to inspire an enthusiasm and a curiosity about finding out more about cognitive neuroscience to keep students engaged enough that they want to come to the next lecture. I ask students come to class having read the assigned readings so that I can use our time together to introduce historic and current research to elucidate the concepts and details discussed in the readings. Therefore, through class interactions, they hopefully have the opportunity to consolidate and integrate the content. Overall, I try to make myself as approachable and engaging as possible to give the students an

opportunity for personal contact with a Professor.

I feel that my first responsibility in mentoring students, who have decided to gain research experience in my laboratory, is to make them aware of the ethics and responsibilities of being involved in research. For all independent research mechanisms I work to create a collaborative research experience. I have students work in teams, so that they are not just responsible to themselves, but also to each other. This is especially effective for the rat work, since the rats are run 7 days a week and will become ill if someone does not come into the laboratory. Thus far, this system has worked very well for both the human and rat experiments. The students have enjoyed the experience and they do not feel isolated, but rather part of a whole.

## **Professional**

### **Current Professional Activities**

Current member of a *National Science Foundation* grant review panel.

## **Research**

### **Current Research Activities**

My work can be best described as comparative cognitive neuroscience, which is characterized by two related approaches. One is a cross-species approach, comparing rat models of the neurochemistry of attention and learning to humans, focusing on the neurochemical acetylcholine. The other is an across lifespan approach, examining the cholinergic hypothesis of age-related changes in cognition, and more recently, the development of attentional control in children.

## **Extension**

## **Education**

### **Education**

Vassar College, B.A.; Biology-Psychology

Harvard University, Ph.D.; Experimental Psychology -- Cognition, Brain & Behavior

Stanford University School of Medicine, Postdoctoral Fellow; Psychiatry

## **Courses**

### **Courses Taught**

## HD3250: Neurochemical Basis of Human Behavior

### Websites

#### Related Websites

Co-director of the Affect & Cognition Laboratory: [aclab.human.cornell.edu](http://aclab.human.cornell.edu)

### Administration

#### Administrative Responsibilities

Member, Undergraduate Education Committee

Member, Executive Committee

Member, Mentoring Committee for Asst. Professor Nathan Spreng

Faculty Mentor, Human Ecology Peer Mentor Program

Cornell Representative, SUNY Brain Network Excellence

### Publications

#### Selected Publications

Schmitz, T.W.\*, Dixon, M.L.\*, Anderson, A.K. & **De Rosa, E.** (2014) Distinguishing attentional gain and tuning in young and older adults. *Neurobiology of Aging*, 5, 2514-25

Ljubojevic, V.\*, Luu, P.\* & **De Rosa, E.** (2014) Cholinergic contributions to supramodal attentional processes. *Journal of Neuroscience*, 34, 2264-2275

Botly, LCP\* & **De Rosa, E.** (2012) Using visual search to examine cholinergic contributions to feature binding in the rat *Cerebral Cortex*, 22, 2441-2453

Schmitz, T.W.\*, Cheng, F.\* & **De Rosa, E.** (2010) Failing to ignore: Paradoxical neural effects of perceptual load on early attentional selection in normal ageing. *Journal of Neuroscience*, 30, 14750-8

Dixon, M.L.\*, Zelazo, P. David & **De Rosa E.** (2010) Evidence for Intact Memory-guided Attention in School-Aged Children. *Developmental Science*, 13, 161-69

Schmitz, T.W.\*, **De Rosa, E.** & Anderson, A.K. (2009) Opposing influences of affective state valence on visual cortical encoding. *Journal of Neuroscience*, 29, 7199-207

Botly, L.C.P.\* & **De Rosa, E.** (2009) Cholinergic deafferentation of the neocortex using 192 IgG-saporin impairs feature binding in rats. *Journal of Neuroscience*,

29, 4120-4130. *Recommended by the Faculty of 1000*

Botly, L.C.P.\* & **De Rosa, E.** (2009) The role of the nucleus basalis magnocellularis in feature binding in rats. *Physiology & Behavior*, 97, 313-20

Dixon, M.L.\*, Ruppel, J.\*, Pratt, J. & **De Rosa, E.** (2009) Learning to Ignore: Acquisition of Sustained Attentional Suppression. *Psychonomic Bulletin & Review*, 16, 418-423.

Botly, L.C.P.\* & **De Rosa, E.** (2008) Acetylcholine, attention, and feature binding: A cross-species investigation. *Psychological Science*, 19, 1185-93

Caplan, J.B.\*, McIntosh, A.R. & **De Rosa, E.** (2007) Two Distinct Neuromodulatory Functional Networks for Successful Resolution of Proactive Interference. *Cerebral Cortex*. 17, 1650-1663.

Botly, L.C.P. \* & **De Rosa, E.** (2007) Cholinergic influences on feature binding. *Behavioral Neuroscience*, 121, 264-276.