



*School of Education  
Colloquium Series*

**Learning and the Brain:  
Contributions of  
Neuroscience to Education**

**November 28**  
1:25–2:25 pm  
Willard Hall 207

*featuring*  
**Miriam Rosenberg-Lee**  
Psychology Department  
Rutgers University

## **Advancing Educational Neuroscience through Learning Studies: Examples from Math Cognition**

The promise of educational neuroscience lies in its potential to uncover the mechanisms of successful learning and instruction. Miriam Rosenberg-Lee proposes that a specific experimental design—neuroimaging before and after real-world learning—can be instrumental in realizing this promise. Application of this design has already yielded insights into the typical development of arithmetic skills and their remediation in children with mathematical learning difficulties. In the realm of rational numbers, she will describe preliminary work investigating the neural basis of the ubiquitous difficulties with this class of number, as well as plans for using neuroimaging to test and refine fraction and decimal instruction. Together, these examples illustrate how this design can address questions of interest to educators and neuroscientists alike, generate classroom-applicable knowledge, and build the educational neuroscience community.

### **About Miriam Rosenberg-Lee**

Dr. Miriam Rosenberg-Lee is an Assistant Professor in the Psychology Department at Rutgers University, Newark, NJ campus. She completed her undergraduate degree in mathematics at McGill University and her PhD in cognitive psychology at Carnegie Mellon University. She was a post-doctoral fellow and then Instructor at Stanford University. Her work focuses on understanding the brain basis of math cognition in typical and atypical development.