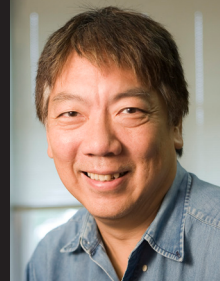




THE ZANVYL KRIEGER MIND/BRAIN INSTITUTE & BIOMEDICAL ENGINEERING

**The Kenneth O. Johnson & Steven S. Hsiao Memorial Lecture**



# **BEYOND IDENTIFICATION**

**How your brain signals whether  
you've seen it before**

**FRIDAY, OCTOBER 27, 2017 • 4PM**

**Johns Hopkins University**

**Mason Hall Auditorium, Homewood Campus**



## **Nicole Rust, PhD**

**Associate Professor  
Visual Memory Laboratory  
Department of Psychology  
University of Pennsylvania**

**ABSTRACT:** Under the right conditions, our ability to remember whether we have encountered a particular object or scene before is remarkable - we can make these determinations after viewing tens of thousands of images, each only once, and we store these memories with exceptional

visual detail. However, the neural processes that support single-exposure visual familiarity memory are poorly understood. I will describe a series of experiments designed to evaluate the proposal that visual memory signals are reflected as reductions in the responses of neurons in inferotemporal cortex (IT) with stimulus repetition. The results of these experiments rule out the strictest form of the “memory as repetition suppression” hypothesis, but suggest that behaviorally-relevant familiarity signals are in fact reflected as multiplicative response reductions within an IT subpopulation. Finally, I will describe how this form of multiplexing visual and visual memory representations is computationally advantageous for maintaining perceptual stability in the presence of rapid plasticity.

*Reception, Mason Hall Colonnade, immediately following.*

**For information: <http://krieger.jhu.edu/mbi>, 410-516-8640**



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