

## **Patrick E. Williams**

### **Postdoctoral Research Associate**

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University of Arizona  
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## **Education**

Ph.D. in Neural Science (2007) New York University Center for Neural Science  
*Thesis:* Temporal nonlinearities in primary visual cortex  
*Advisor:* Robert M. Shapley

B.S. in Biological Sciences (1993) Carnegie Mellon University  
*Advisor:* Alan P. Koretsky

## **Research**

University of Arizona ARL Division of Neurobiology, 2007 – present  
Characterizing the functional and anatomical properties of higher-order visual processing centers in insects.

New York University Center for Neural Science, 1999 - 2007  
Measuring and modeling nonlinear temporal properties of visual cortex using VEPs in humans and extracellularly-recorded spikes in macaque V1.

Carnegie Mellon University, 1989 - 1993  
Modeling and implementation of a novel MRI-based method of measuring brain blood flow using arterial labeling.

## **Publications**

Williams PE, Shapley RM (2007). A dynamic nonlinearity and spatial phase specificity in macaque V1 neurons. *J Neurosci* 27:5706-5718.

Williams PE, Mechler F, Gordon J, Shapley R, Hawken MJ (2004) Entrainment to video displays in primary visual cortex of macaque and humans. *J Neurosci* 24:8278-8288.

Carrasco M, Williams PE, and Yeshurun Y (2002) Covert attention increases spatial resolution with or without masks: Support for signal enhancement. *Journal of Vision* 2: 467-479, <http://www.journalofvision.org/2/6/4/>, doi:10.1167/2.6.4.

## **Selected Abstracts**

Williams PE, Xing D, Yeh C-I, Joshi S, Hawken MJ, Shapley RM (2007) Laminar differences in complex cell dynamics in macaque V1. *Society for Neuroscience* 2007.

Williams PE, Henrie JA, Xing D, Shapley RM (2005) Stimulus-dependent temporal dynamics in simple cells in macaque V1. Society for Neuroscience 2005.

Williams PE, Gordon J, Hau C, Kotenko K, Shapley RM (2003) Entrainment of human visual evoked responses to video refresh rate: the effect of spatial contrast. Society for Neuroscience 2003.

Williams P, Yeshurun Y, Carrasco M. (2001) Masked or not, covert attention enhances spatial resolution: Support for signal enhancement. Vision Sciences Society 2001.

## **Honors**

NIH/IRACDA Postdoctoral Excellence in Research and Teaching fellowship, University of Arizona

Faculty of 1000 recommended paper - Jose-Manuel Alonso: Faculty of 1000 Biology, 13 Jul 2007 <http://www.f1000biology.com/article/id/1087714/evaluation>

Award for Outstanding Undergraduate Research, Carnegie Mellon 1993

NSF Summer Undergraduate Research Scholar 1991

## **Teaching**

TA - Cellular and Molecular Neuroscience (lab for undergrad neuroscience majors)

TA - Brain and Behavior (lecture and lab for undergrad non-science majors)