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Place of Birth: Buffalo, NY, USA
Nationality: USA

Education

New York University (1997–2003)

PhD in Neural Science

Advisor: J Anthony Movshon, PhD

Thesis: Global Form Detection and Pattern Response Timing in Macaque Visual Cortex

Thesis Committee: Peter Lennie (chair), J Anthony Movshon (advisor), Eero Simoncelli, David Heeger, Jonathan Victor

Canisius College (1993–1997)

BS in Biology and Psychology, *summa cum laude*

Minors: Animal Behavior, Cognitive Science, Computer Science, Neuroscience

Academic Positions

Assistant Professor (2011–present)

Department of Ophthalmology; University of Pittsburgh, Pittsburgh, PA

Postdoctoral associate (2007–2010)

Advisor: Marc Sommer, PhD; University of Pittsburgh, Pittsburgh, PA

Postdoctoral associate (2003–2007)

Advisor: Tai Sing Lee, PhD; Carnegie Mellon University, Pittsburgh, PA

Graduate assistant (1997–2003)

Advisor: J Anthony Movshon, PhD; New York University, New York, NY

Honors and Awards

RPB Career Development Award

NIH K99/R00 Pathway to Independence Award (EY018894, 2009–present)

NIH NRSA Postdoctoral Fellowship (EY015958, 2004–2007)

NYU Dean's Dissertation Fellowship (2001–2002)

Honorable Mention - NSF Graduate Research Fellowship (1998)

Canisius College Psychology Department Student of the Year Award (1996–1997)

Hearst Foundation Research Assistantship (1995–1997)

Hughes Foundation Research Assistantship (1994–1995)

Alpha Sigma Nu, Psi Chi, and Beta Beta Beta National Honor Societies

Research Support

Ongoing Research Support

RPB Career Development Award (PI), 1/1/12–2/28/16
The interaction between eye movements and visual attention

NIH R00 EY018894 (PI), 02/01/2011–01/31/2014
Influence of attention and eye movement signals on population coding in area V4

Completed Research Support

NIH K99 EY018894 (PI), 01/15/2009–12/31/2010
Influence of attention and eye movement signals on population coding in area V4

NIH F32 EY015958 (PI), 07/01/2004–06/30/2007
Time course of learning perceptual pop-out in V1 and V2

Professional Societies and Service

Society for Neuroscience, 1997–present

American Physiological Society, 2007–present

Vision Sciences Society, 2001–present

Association for Research in Vision and Ophthalmology, 2000–present

Referee for: *Nature Neuroscience*, *Neuron*, *Journal of Neuroscience*, *Journal of Neurophysiology*, *Cerebral Cortex*, *PLoS Biology*, *Journal of Vision*, *Vision Research*, *Visual Neuroscience*, *Perception*, *Neuroscience Letters*, *Journal of Neuroscience Methods*, *Anatomical Record*, *Neurobiology of Aging*, *CoSyNe Abstract Reviewer*

Teaching Experience

2012 Spring: MSNBIO 2650 CNUP Journal Club, University of Pittsburgh

2011 Fall: NROSCI 3001 Apprenticeship, University of Pittsburgh (Roma Konecky)

2011 Guest lecturer: Scientific Basis of Vision, University of Pittsburgh

2011 Guest lecturer: Statistical Models of the Brain, Carnegie Mellon University

2007 Guest lecturer: Multi-modal Neuroimaging Training Program (MNTP) Summer Workshop in Neuroimaging, University of Pittsburgh and Carnegie Mellon University

2004 Guest lecturer: Computational Neuroscience, Carnegie Mellon University

2000 Guest lecturer: Behavioral & Integrative Neuroscience, New York University

2000 Teaching assistant: Behavioral & Integrative Neuroscience Lab, New York University

1999 Teaching assistant: Lab in Neural Science II, New York University

1997 Teaching assistant: Cellular Neurobiology Lab, Canisius College

Invited Talks and Workshops

2012 Carnegie Mellon Bioimage & Biosignal Processing Day, Pittsburgh, PA (February 2012)

Banbury Center Workshop: Neuronal Response Variability and Cortical Computation, The Banbury Center, Cold Spring Harbor Laboratory (April 2011)

Statistical Analysis of Neural Data Workshop (SAND5): “Synchrony Detection: Where are We?”, Pittsburgh, PA (May 2010)

Department of Neuroscience, University of Pittsburgh (January 2010)

Department of Ophthalmology, University of Pittsburgh (July 2009)

Center for the Neural Basis of Cognition, University of Pittsburgh and Carnegie Mellon University (April 2008)

Computational and Systems Neuroscience Workshop: “What can functional imaging tell us about population coding in sensory systems?: Bridging computation, single neurons and imaging.” (March 2008)

Department of Anatomy & Neurobiology, Washington University in St Louis (January 2008)

Neural Coding, Computation and Dynamics (NCCD), Hossegor, France (September 2007)

Computational and Systems Neuroscience Workshop: “What role does spike synchrony or correlation play in sensory processing?” (February 2007) [Co-organized by Jason Samonds and Matthew Smith]

Center for Visual Science, University of Rochester (January 2007)

Center for the Neural Basis of Cognition, Carnegie Mellon University (May 2002)

Publications: Research Reports

Smith MA, Jia X, Zandvakili A, Kohn A (2012) Laminar dependence of neuronal correlations in visual cortex. *In submission*

Smith MA, Sommer MA (2012) Spatial and temporal scales of correlation in macaque V4. *In preparation*

Smith MA, Kiorpes L, Movshon JA (2012) Analysis of functional circuitry in primary visual cortex of amblyopic macaque monkeys. *In preparation*

Jia X, **Smith MA**, Kohn A (2011) Flexible relationship between gamma components of the local field potential and spiking activity. *J Neurosci*, 31: 9390–9403

Kelly RC, **Smith MA**, Kass RE, Lee TS (2010) Accounting for network effects in neuronal responses using L1 penalized point process models. *Advances in Neural Information Processing Systems 22*

Kelly RC, **Smith MA**, Kass RE, Lee TS (2010) Local field potentials indicate network state and account for neuronal response variability. *J Comp Neurosci*, 29: 567–579

Churchland MM, Yu BM, Cunningham JP, Sugrue LP, Cohen MR, Corrado GS, Newsome WT, Clark AM, Hosseini P, Scott BB, Bradley DC, **Smith MA**, Kohn A, Movshon JA, Armstrong KM, Moore T, Chang SW, Snyder LH, Lisberger SG, Priebe NJ, Finn IM, Ferster D, Ryu SI, Santhanam G, Sahani M, and Shenoy KV (2010) Stimulus onset quenches neural variability: a widespread cortical phenomenon. *Nat Neurosci*, 13: 369–378

Smith MA, Kohn A (2008) Spatial and temporal scales of neuronal correlation in primary visual cortex. *J Neurosci*, 28: 12591–12603

- Smith MA**, Kelly RC, Lee TS (2007) Dynamics of response to perceptual pop-out stimuli in macaque V1. *J Neurophysiol*, 98: 3436–3449
- Montani F, Kohn A, **Smith MA**, Schultz S (2007) The role of correlations in direction and contrast coding in the primary visual cortex. *J Neurosci*, 27: 2338–2348
- Smith MA**, Kohn A, Movshon JA (2007) Glass pattern responses in macaque V2 neurons. *J Vis*, 7(3):5, 1-15. <http://journalofvision.org/7/3/5/>
- Smith MA**, Bair W, Movshon JA (2006) Dynamics of suppression in macaque V1. *J Neurosci*, 26: 4826–4834
- Smith TD, Bhatnagar KP, Burrows AM, Shimp KL, Dennis JC, **Smith MA**, Maico-Tan L, Morrison EE (2005) The vomeronasal organ of greater bushbabies (*Otolemur* spp.): Species, sex, and age differences. *J Neurocytol*, 34: 135-147
- Kohn A, **Smith MA** (2005) Stimulus dependence of neuronal correlation in primary visual cortex of the macaque. *J Neurosci*, 25: 3661–3673
- Smith MA**, Majaj N, Movshon JA (2005) Dynamics of motion signaling by neurons in macaque area MT. *Nat Neurosci*, 8: 220–228
- Smith MA**, Bair W, Movshon JA (2002) Signals in macaque striate cortical neurons that support the perception of Glass patterns. *J Neurosci*, 22: 8334–8345
- Bair W, Cavanaugh JR, **Smith MA**, Movshon JA (2002) The timing of response onset and offset in macaque visual neurons. *J Neurosci*, 22: 3189–3205
- Smith TD, Siegel MI, Bonar CJ, Bhatnagar KP, Mooney MP, Burrows AM, **Smith MA**, Maico LM (2001) The existence of the vomeronasal organ in postnatal chimpanzees and evidence for its homology to that of humans. *J Anat*, 198: 77–82
- Noonan M, **Smith MA**, Sanfilippo MA, Kelleher K, Axelrod S (1998) Sex differences in anterior commissure size in the rat. *Brain Res Bull*, 45: 101–104

Publications: Reviews, Chapters and Letters

- Glass L, **Smith MA** (2011). Glass patterns. *Scholarpedia*, 6(8):9594.
- Smith MA**, Majaj N, Movshon JA (2010) Dynamics of pattern motion computation. In *Dynamics of Visual Motion Processing: Neuronal, Behavioral and Computational Approaches*, eds. G Masson and U Ilg. Springer.
- Kohn A, Zandvakili A, **Smith MA** (2009) Correlations and brain states: from electrophysiology to functional imaging. *Curr Opin Neurobiol*, 19: 434–438.
- Kelly RC*, **Smith MA***, Samonds JM, Kohn A, Bonds AB, Movshon JA, Lee TS (2007) Comparison of recordings from microelectrode arrays and single electrodes in visual cortex. *J Neurosci*, 27: 261–264 [*contributed equally to this work]
- Smith MA** (2006) Surround suppression in the early visual system. *J Neurosci*, 26: 3624–3625
- Movshon JA, Albright TD, Stoner GR, Majaj N, **Smith MA** (2003) Cortical responses to visual motion in alert and anesthetized monkeys. *Nat Neurosci*, 6: 3