

Adam C. Snyder, Ph.D.

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

Education

The City University of New York (2007–2011)

Ph.D. in Cognitive Neuroscience

Advisor: John J. Foxe, Ph.D.

Thesis: The Countervailing Forces of Selection and Binding in Vision

Thesis Committee: Steven A. Hillyard, Steven Yantis, Jonathan B. Levitt, Simon P. Kelly, Sophie Molholm, and John J. Foxe (advisor).

New York University (2002–2006)

B.A. in Language and Mind, *magna cum laude*

Academic Positions

Assistant Professor (2018, prospective)

Department of Brain and Cognitive Sciences, University of Rochester, Rochester, NY

Department of Neuroscience, University of Rochester, Rochester, NY

Postdoctoral Fellow (2015–present)

Advisor: Byron M. Yu, Ph.D.; Carnegie Mellon University, Pittsburgh, PA

Postdoctoral Fellow (2012–present)

Advisor: Matthew A. Smith, Ph.D.; University of Pittsburgh, Pittsburgh, PA

Postdoctoral Fellow (2011–2012)

Advisor: Sophie Molholm, Ph.D.; Albert Einstein College of Medicine, Pittsburgh, PA

Honors and Awards

Ripple Promising Investigator Research Award (2015)

Center for the Neural Basis of Cognition Outstanding Paper Award (2015)

NIH Pathway to Independence (K99) Award (2015–)

Neural Coding, Computation and Dynamics (NCCD) Travel Award (2015)

COSYNE Travel Award (2014)

NIH NRSA Individual Postdoctoral (F32) Fellowship (2014–2015)

SfN Postdoctoral Fellow Travel Award (2013)

NIH NRSA Institutional Postdoctoral (T32) Fellowship (2012–2013)

NIH National Graduate Student Conference Travel Fellowship (2011)

NIH NRSA Individual Predoctoral (F31) Fellowship (2010–2011)

CUNY Science Research Fellowship (2007–2011)

NYU Presidential Honors Scholarship (2002–2006)

Professional Societies and Service

Society for Neuroscience, 2008–present

Cognitive Neuroscience Society, 2010–2011

Ad hoc reviewer: *Current Biology*, *Cerebral Cortex*, *Journal of Neurophysiology*, *Journal of Cognitive Neuroscience*, *Brain*, *European Journal of Neuroscience*, *Brain Topography*, *International Journal of Psychophysiology*, *Frontiers in Neuroscience*, *PLoS ONE*

Teaching Experience

Lecturer, University of Pittsburgh. Bioengineering 1586: Quantitative Systems Neuroscience. 2015–2017.

Pitt-CIRTL Certification in Teaching the STEM Disciplines. Associate level. 2015.

Mentor. University of Pittsburgh Department of Bioengineering Undergraduate Research Training. 2013–2017.

Mentor. Carnegie Mellon University and University of Pittsburgh Undergraduate Training Program in Computational Neuroscience. 2013–2015.

Lecturer. Cognitive Neurophysiology Laboratory Summer Seminar Series, Albert Einstein College of Medicine. 2010–2011.

Mentor. Cognitive Neurophysiology Laboratory Summer Internship Program, Albert Einstein College of Medicine. 2010–2011.

Invited Talks and Workshops

Carnegie Mellon University “BrainHub” Workshop, *What is Attention?*, April 2017.

University of Rochester Medical Center Dept. of Neurobiology and Anatomy colloquium, October 2016.

Donders Institute for Brain, Cognition and Behaviour (Radboud University) colloquium, September 2016.

Stanford University Dept. of Neurobiology colloquium, August 2016.

University of Rochester Medical Center Dept. of Neurobiology and Anatomy colloquium, January 2016.

University of Hawaii Manoa Dept. of Psychology colloquium, November 2015.

Center for the Neural Basis of Cognition (Univ. of Pittsburgh and Carnegie-Mellon Univ.) colloquium, August 2011.

University of Hawaii Manoa Dept. of Psychology colloquium, November 2010.

NIMH workshop, *Using electrophysiological methods to understand neural mechanisms of, and treatment effects in, mental illness in children and adolescents*, September 2009.

Other Professional Activities

Organization of University of Pittsburgh Postdoctoral Training Program in Neurobiology annual retreat, 2013.

Scientific consultant, National Geographic, 2010.

Organizational and administrative assistance for the 10th annual meeting of the International Multisensory Research Form (IMRF), 2009.

Internship at the NIH with Michael J. Iadarola, Ph.D., 2000.

Community Outreach

Volunteer. University of Pittsburgh “Sciencepalooza” outreach fair for K-8th graders. 2014.

Consultant. “Technology and your health” program at University of Pittsburgh Science Outreach summer science camp. 2014.

Sponsor. Pittsburgh Public Schools Pittsburgh Science and Technology Academy (SciTech) Executive Experience. The SciTech Executive Experience is an intense field-based internship program for 12th grade students attending SciTech. 2013-2014.

Organization and participation for outreach initiatives for children with developmental disorders for Albert Einstein College of Medicine’s Children’s Evaluation and Rehabilitation Center. 2010-2011.

Publications: Research Reports

- [1] S.R. Bittner, R.C. Williamson, **A.C. Snyder**, A. Litwin-Kumar, B. Doiron, S.M. Chase, M.A. Smith, and B.M. Yu. Population activity structure of excitatory and inhibitory neurons. *PLoS ONE*, 12(8):e0181773, 2017.
- [2] **A.C. Snyder**, M.J. Morais, and M.A. Smith. Dynamics of excitatory and inhibitory networks are differentially altered by selective attention. *Journal of Neurophysiology*, 116(4):1807–1820, 2016.
- [3] **A.C. Snyder**, M.J. Morais, C.M. Willis, and M.A. Smith. Global network influences on local functional connectivity. *Nature Neuroscience*, 18:736–743, 2015.
- [4] **A.C. Snyder** and M.A. Smith. Stimulus-dependent spiking relationships with the EEG. *Journal of Neurophysiology*, 114(3):1468–1482, 2015.
- [5] P.C. Zhou, S.D. Burton, **A.C. Snyder**, M.A. Smith, N.N. Urban, and R.E. Kass. Establishing a statistical link between network oscillations and neural synchrony. *PLoS Computational Biology*, 11(10):e1004549, 2015.
- [6] **A.C. Snyder**, M.J. Morais, A. Kohn, and M.A. Smith. Correlations in V1 are reduced by stimulation outside the receptive field. *Journal of Neuroscience*, 34(34):11222–11227, 2014.
- [7] D. Belyusar, **A.C. Snyder**, H.P. Frey, M.R. Harwood, J. Wallman, and J.J. Foxe. Oscillatory alpha-band suppression mechanisms during the rapid attentional shifts required to perform an anti-saccade task. *NeuroImage*, 65:395–407, 2013.
- [8] I.C. Fiebelkorn, **A.C. Snyder**, M.R. Mercier, J.S. Butler, S. Molholm, and J.J. Foxe. Cortical cross-frequency coupling predicts perceptual outcomes. *NeuroImage*, 69:126–137, 2013.

- [9] **A.C. Snyder**, M.J. Morais, and M.A. Smith. Variance in population firing rate as a measure of slow timescale correlation. *Frontiers in Computational Neuroscience*, 7(176):1–10, 2013.
- [10] P. De Sanctis, J.S. Butler, J. Green, **A.C. Snyder**, and Foxe J.J.. Mobile brain/body imaging: adjusting inhibitory control while walking. *Engineering in Medicine and Biology Society (EMBS), International Conference of the IEEE*, pages 1542–1545, 2012.
- [11] **A.C. Snyder**, I.C. Fiebelkorn, and J.J. Foxe. Pitting binding against selection—electrophysiological measures of feature-based attention are attenuated by gestalt object grouping. *European Journal of Neuroscience*, 35(6):960–967, 2012.
- [12] **A.C. Snyder** and J.J. Foxe. The countervailing forces of binding and selection in vision. *Cortex*, 48(8):1035–1042, 2012.
- [13] **A.C. Snyder**, M. Shpaner, S. Molholm, and J.J. Foxe. Visual object processing as a function of stimulus energy, retinal eccentricity and gestalt configuration: a high-density electrical mapping study. *Neuroscience*, 221:1–11, 2012.
- [14] T.S. Altschuler, S. Molholm, N.N. Russo, **A.C. Snyder**, A.B. Brandwein, D. Blanco, and J.J. Foxe. Early electrophysiological indices of illusory contour processing within the lateral occipital complex are virtually impervious to manipulations of illusion strength. *NeuroImage*, 59:4074–4085, 2011.
- [15] S. Banerjee, **A.C. Snyder**, S. Molholm, and J.J. Foxe. Oscillatory alpha-band mechanisms and the deployment of spatial attention to anticipated auditory and visual target locations: Supramodal or sensory-specific control mechanisms?. *The Journal of Neuroscience*, 31(27):9923–9932, 2011.
- [16] I.C. Fiebelkorn, J.J. Foxe, J.S. Butler, M.R. Mercier, **A.C. Snyder**, and S. Molholm. Ready, set, reset: stimulus-locked periodicity in behavioral performance demonstrates the consequences of cross-sensory phase reset. *The Journal of Neuroscience*, 31(27):9971–9981, 2011.
- [17] J.J. Foxe and **A.C. Snyder**. The role of alpha-band brain oscillations as a sensory suppression mechanism during selective attention. *Frontiers in Psychology*, 2:154, 2011.
- [18] A.I. Krakowski, L.A. Ross, **A.C. Snyder**, P. Sehatpour, S.P. Kelly, and J.J. Foxe. The neurophysiology of human biological motion processing: A high-density electrical mapping study. *Neuroimage*, 56:373–383, 2011.
- [19] J.J. Foxe, S. Yeap, **A.C. Snyder**, S.P. Kelly, J.H. Thakore, and S. Molholm. The N1 auditory evoked potential component as an endophenotype for schizophrenia: high-density electrical mapping in clinically unaffected first-degree relatives, first-episode, and chronic schizophrenia patients. *European Archives of Psychiatry and Clinical Neuroscience*, 261:331–339, 2010.
- [20] **A.C. Snyder** and J.J. Foxe. Anticipatory attentional suppression of visual features indexed by oscillatory alpha-band power increases: a high-density electrical mapping study. *The Journal of Neuroscience*, 30(11):4024–4032, 2010.

Publications: Conference Abstracts

- [1] D. Issar, **A.C. Snyder**, and M.A. Smith. Frequency filtering effects of the skull on scalp EEG. In *Society for Neuroscience*, 2017.

- [2] S.B. Khanna, U.K. Jagadisan, **A.C. Snyder**, N.J. Gandhi, and M.A. Smith. Correlated variability during eye movement planning in the frontal eye fields and superior colliculus. In *Society for Neuroscience*, 2017.
- [3] **A.C. Snyder**, B.M. Yu, and M.A. Smith. A diverse neural code gives rise to attentional preparation. In *Society for Neuroscience*, 2017.
- [4] S. Bittner, R.C. Williamson, **A.C. Snyder**, A. Litwin-Kumar, B. Doiron, S.M. Chase, M.A. Smith, and B.M. Yu. Effects of excitatory versus inhibitory neuron sampling on outputs of dimensionality reduction. In *Computational and Systems Neuroscience (COSYNE)*, 2016.
- [5] D. Issar, **A.C. Snyder**, and M.A. Smith. Mapping and modeling EEG signals before and after a craniotomy procedure. In *Society for Neuroscience*, 2016.
- [6] S.B. Khanna, **A.C. Snyder**, and M.A. Smith. Spiking correlations in the frontal eye fields during eye movement planning. In *Society for Neuroscience*, 2016.
- [7] **A.C. Snyder**, B.M. Yu, and M.A. Smith. Population encoding of attentional states in the absence of visual stimulation. In *Society for Neuroscience*, 2016.
- [8] A. Umakantha, **A.C. Snyder**, B.M. Yu, and M.A. Smith. Moment-to-moment fluctuations of attention in macaque area V4. In *Society for Neuroscience*, 2016.
- [9] S.K. Vempati, **A.C. Snyder**, and M.A. Smith. Catch the wave: Using prior knowledge of action potentials to identify neurons in chronic recordings. In *Biomedical Engineering Society*, 2016.
- [10] D. Issar, **A.C. Snyder**, and M.A. Smith. Mapping and modeling EEG signals before and after a craniotomy procedure. In *Biomedical Engineering Society*, 2015.
- [11] **A.C. Snyder**, M.J. Morais, and M.A. Smith. Differential effects of attention on correlated variability of inhibitory and excitatory populations in V4. In *Society for Neuroscience*, 2015.
- [12] **A.C. Snyder**, M.J. Morais, and M.A. Smith. Inhibitory subpopulations in V4 receive a selective common input during spatial attention. In *Neural Coding, Computation and Dynamics*, 2015.
- [13] **A.C. Snyder**, M.J. Morais, and M.A. Smith. Decoding time-varying attentional states using high-dimensional population activity. In *Statistical Analysis of Neural Data*, 2015.
- [14] S.B. Khanna, **A.C. Snyder**, and M.A. Smith. Structure of local field potential coherence within and between FEF and V4 during eye movement planning. In *Society for Neuroscience*, 2014.
- [15] S.B. Khanna, **A.C. Snyder**, and M.A. Smith. Structure of neuronal correlation during eye movement planning in FEF. In *Computational and Systems Neuroscience (COSYNE)*, 2014.
- [16] M.J. Morais, **A.C. Snyder**, and M.A. Smith. High-dimensional neural correlates of choice and attention in V4. In *Society for Neuroscience*, 2014.
- [17] **A.C. Snyder** and M.A. Smith. Selective attention independently modulates both spiking correlations and EEG oscillations. In *Society for Neuroscience*, 2014.
- [18] **A.C. Snyder**, C.M. Willis, and M.A. Smith. Spike count correlation relates to the phase and amplitude of EEG oscillations measured at the scalp. In *Computational and Systems Neuroscience (COSYNE)*, 2014.

- [19] T.S. Altschuler, S. Molholm, **A.C. Snyder**, A.B. Brandwein, N.N. Russo, H. Gomes, and J.J. Foxe. The development of contour completion processes across childhood and adolescence in autism spectrum disorders. In *International Meeting for Autism Research*, 2013.
- [20] S.B. Khanna, **A.C. Snyder**, and M.A. Smith. Structure of neuronal correlation during eye-movement planning in FEF. In *Society for Neuroscience*, 2013.
- [21] M.J. Morais, **A.C. Snyder**, and M.A. Smith. Variance in population firing rate as a measure of slow time-scale correlation. In *Society for Neuroscience*, 2013.
- [22] **A.C. Snyder**, C.M. Willis, and M.A. Smith. The amplitude and phase of EEG oscillations index the spiking correlation of underlying brain areas. In *Society for Neuroscience*, 2013. [Selected as a “Hot Topic”].
- [23] S. Banerjee, **A.C. Snyder**, S. Molholm, and J.J. Foxe. The role of alpha-band oscillatory activity in voluntary attentional control across sensory modalities: an assessment of supramodal attention theory. In *European Conference on Visual Perception*, 2012.
- [24] D. Belyusar, H.P. Frey, **A.C. Snyder**, M. Harwood, and J.J. Foxe. Electrophysiological error signals drive rapid sensorimotor learning. In *Society for Neuroscience*, 2012.
- [25] D. Belyusar, **A.C. Snyder**, H.P. Frey, M. Harwood, and J.J. Foxe. Rapid alpha lateralization in pro- and anti- saccade task: electrophysical evidence of high-speed oscillatory attentional mechanisms. In *European Conference on Visual Perception*, 2012.
- [26] I.C. Fiebelkorn, **A.C. Snyder**, M.R. Mercier, J.S. Butler, S. Molholm, and Foxe J.J.. Cross-sensory cuing drives cross-frequency neural coupling, dramatically altering performance of a taxing visual-detection task. In *International Multisensory Research Forum*, 2012.
- [27] I.C. Fiebelkorn, **A.C. Snyder**, M.R. Mercier, J.S. Butler, S. Molholm, and Foxe J.J.. Cortical cross-frequency coupling dramatically affects performance during a taxing visual-detection task. In *European Conference on Visual Perception*, 2012.
- [28] **A.C. Snyder**, I.C. Fiebelkorn, and Foxe J.J.. The countervailing forces of selection and binding in vision: a human EEG study. In *ANT Burgundy Neurometing*, 2012.
- [29] **A.C. Snyder** and J.J. Foxe. Using blind source separation to improve statistical power for EEG analysis. In *Statistical Analysis of Neural Data*, 2012.
- [30] **A.C. Snyder**, M.J. Morais, A. Kohn, and M.A. Smith. Spike count correlations in V1 are reduced by stimulation outside the receptive field. In *Society for Neuroscience*, 2012.
- [31] T.S. Altschuler, S. Molholm, **A.C. Snyder**, A.B. Brandwein, N.N. Russo, H. Gomes, and J.J. Foxe. Spatial processing and contour integration in children with autism 6-16 years of age. In *International Meeting for Autism Research*, 2011.
- [32] Foxe J.J., I.C. Fiebelkorn, and **A.C. Snyder**. The countervailing forces of feature-based selection and gestalt object binding: behavioural and electrophysiological investigations in human observers. In *Neuroscience Ireland*, 2011.
- [33] **A.C. Snyder**, I.C. Fiebelkorn, and Foxe J.J.. Pitting binding against selection: electrophysiological measures of feature-based attention are attenuated and delayed by gestalt object grouping. In *Society for Neuroscience*, 2011.

- [34] **A.C. Snyder**, I.C. Fiebelkorn, and Foxe J.J.. The countervailing forces of selection and binding in vision: a human EEG study. In *NIH National Graduate Student Research Conference*, 2011.
- [35] S. Banerjee, **A.C. Snyder**, S. Molholm, and J.J. Foxe. The role of anticipatory alpha-band oscillatory activity in the deployment of spatial attention to auditory and visual target locations: evidence for supramodal and modality-specific control mechanisms. In *Society for Neuroscience*, 2010.
- [36] S. Banerjee, **A.C. Snyder**, S. Molholm, and J.J. Foxe. Oscillatory alpha-band mechanisms and the deployment of spatial attention to anticipated auditory and visual target locations: common or separable control mechanisms?. In *International Multisensory Research Forum*, 2010.
- [37] D. Belyusar, **A.C. Snyder**, H.P. Frey, J. Wallman, and J.J. Foxe. Oscillatory changes in cross-modal pro- and anti-saccade task: electrophysiological indications of a shared attentional mechanism. In *Society for Neuroscience*, 2010.
- [38] D. Belyusar, **A.C. Snyder**, H.P. Frey, J. Wallman, and J.J. Foxe. Auditory and visual cues in a pro- and anti-saccadic task. In *International Multisensory Research Forum*, 2010.
- [39] L. Fields, A. Krakowski, A. Nemzeyano, **I. Snyder, A.C. Prehogan**, and J.J. Foxe. The neural substrates of concept formation II: high-density electrical mapping of equivalence classes. In *Cognitive Neuroscience Society*, 2010.
- [40] J.J. Foxe, A. Krakowski, A. Nemzeyano, **I. Snyder, A.C. Prehogan**, and L. Fields. The neural substrates of concept formation I: a behavioral paradigm. In *Cognitive Neuroscience Society*, 2010.
- [41] **A.C. Snyder** and J.J. Foxe. Visual object processing interferes with feature-based selective attention. In *Society for Neuroscience*, 2010.
- [42] **A.C. Snyder** and J.J. Foxe. Alpha-mediated attentional suppression of irrelevant visual features. In *Cognitive Neuroscience Society*, 2010.
- [43] S. Adise, **A.C. Snyder**, J.J. Foxe, and S. Molholm. Electrophysiological correlates of cross-sensory effects on exogenous attention. In *Society for Neuroscience*, 2009.
- [44] T.S. Altschuler, S. Molholm, D. Blanco, **A.C. Snyder**, A.B. Brandwein, N.N. Russo, and J.J. Foxe. Filling-in autism: a high-density electrical mapping study of visual object binding mechanisms. In *International Meeting for Autism Research*, 2009.
- [45] S. Banerjee, **A.C. Snyder**, S. Molholm, and J.J. Foxe. Cross sensory effects on anticipatory deployment of multisensory attention. In *Society for Neuroscience*, 2009.
- [46] I.C. Fiebelkorn, S. Molholm, **A.C. Snyder**, and J.J. Foxe. Multisensory feature binding: does visual object processing modulate the cross-sensory spread of attention?. In *International Multisensory Research Forum*, 2009.
- [47] **A.C. Snyder** and J.J. Foxe. The role of alpha-band oscillations in feature-based selective attention. In *Society for Neuroscience*, 2009.