

Curriculum Vitae

Braden A. Purcell

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Education

Vanderbilt University, Nashville, TN (2007-)
PhD Candidate, Psychological Science, Cognition and Cognitive Neuroscience
Advisors: Dr. Jeffrey Schall and Dr. Thomas Palmeri
Expected completion: Spring 2013

Miami University, Oxford, OH (2003-2007)
B.A. in Psychology with Departmental Honors
Neuroscience Minor
Statistical Methods Minor

Fellowships and Awards

E.F. Patten Prize in Psychology, Miami University (2007)
University Tuition Scholarship, Vanderbilt University (2007)
National Science Foundation Graduate Research Fellowship Honorable Mention (2008)
Vanderbilt University Graduate Travel Award (2009, 2011)
Department of Psychology Scientific Development Award, Vanderbilt University (2010)
Graduate Training Fellowship, Vanderbilt Vision Research Center (2011)

Publications

Purcell, B.A., Schall, J.D., Woodman, G.F. (in press) On the origin of event-related potentials indexing covert attentional selection during visual search: Timing of selection during pop-out search. *Journal of Neurophysiology*.

Purcell, B.A., Heitz, R.P., Cohen, J.Y., Schall, J.D. (2012) Response variability of frontal eye field neurons modulates with sensory input and motor preparation, but not visual search salience. *Journal of Neurophysiology*.

Purcell, B.A., Weigand, P.K., Schall, J.D. (2012) Supplementary eye field during visual search: Salience, cognitive control, and performance monitoring. *Journal of Neuroscience*.

Reinhart, R.M.G., Heitz, R.P., **Purcell, B.A.**, Weigand, P.K., Schall, J.D., Woodman, G.F. (2012) Homologous mechanisms of visuospatial working memory maintenance in macaque and human: Properties and sources. *Journal of Neuroscience*.

Purcell, B.A., Schall, J.D., Logan, G.D., Palmeri, T.J. (2012) Multiple-alternative gated stochastic accumulator model of visual search. *Journal of Neuroscience*.

Schall, J.D., **Purcell, B.A.**, Heitz, R.P., Logan, G.D., Palmeri, T.J. (2011) Neural mechanisms of saccade target selection: gated accumulator model of visual-motor cascade. *European Journal of Neuroscience*.

Purcell, B.A., Heitz, R.P., Cohen, J.Y., Logan, G.D., Schall, J.D., & Palmeri, T.J. (2010). Neurally-constrained modeling of perceptual decision-making. *Psychological Review*.

Purcell, B.A., Schall, J.D., Palmeri, T.J. (2009) Relating neural activity and drift diffusion models. *Proceedings of the Thirty-First Annual Meeting of the Cognitive Science Society* (peer-reviewed proceedings paper), Amsterdam, The Netherlands.

Manuscripts in preparation

Purcell, B.A. & Palmeri, T.J. (*in preparation*) On the relation between neural measures and stochastic accumulator models: Inferring model parameters from model dynamics.

Purcell, B.A., Godlove, D.C., Schall, J.D. (*in preparation*) Performance monitoring by the frontal eye field.

Zandbelt, B.B., **Purcell, B.A.**, Palmeri, T.J., Logan, G.D., Schall, J.D. (*in preparation*) E Pluribus Unum: Out of many accumulators, one response time.

Invited Presentations

2012 Center for Neural Science, *New York University, New York, NY*

2012 Department of Cognitive Science, *University of California, San Diego, CA*

2012 Systems Neurobiology Laboratory, *Salk Institute, San Diego, CA*

2012 Temporal Dynamics of Learning Center, *University of California, San Diego, CA*

Conference Presentations

Purcell, B.A., Weigand, P.K., Heitz, R.P., Cohen, J.Y., Schall, J.D. (2012) Response variability of frontal eye field neurons reflects sensory input and motor

preparation, but not visual salience. *Poster presented at the Forty-second Annual Meeting of the Society for Neuroscience*. Washington, DC.

Zandbelt, B.B., **Purcell, B.A.**, Palmeri, T.J., Logan, G.D., Schall, J.D. (2012) E Pluribus Unum: Out of many accumulators, one response time. *Poster presented at the Forty-second Annual Meeting of the Society for Neuroscience*. Washington, DC.

Weigand, P.K., **Purcell, B.A.**, Schall, J.D. (2011) Supplementary eye field during visual search: Single-unit activity. *Poster presented at the Forty-first Annual Meeting of the Society for Neuroscience*, Washington, DC.

Purcell, B.A., Weigand, P.K., Schall, J.D., (2011) Supplementary eye field during visual search: Local-field potentials. *Poster presented at the Forty-first Annual Meeting of the Society for Neuroscience*, Washington, DC.

Purcell, B.A., Schall, J.D., Logan, G.D., Palmeri, T.J., (2011) Gated stochastic accumulator model of visual search. *Talk presented at the Sixteenth Annual Meeting of the European Conference on Eye Movements*, Marseille, France.

Purcell, B.A., Heitz, R.P., Logan, G.D., Schall, J.D., Palmeri, T.J., (2011) Multiple-accumulator model of decision making during visual search. *Poster presented at COSYNE (Computation and Systems Neuroscience)*, Salt Lake City, UT.

Howell-Young, M.S., Heitz, R.P., **Purcell, B.A.**, Schall, J.D., Woodman, G.F. (2011) Source localization of an event-related potential indexing covert shifts of attention in macaques. *Poster presented at the Eleventh Annual Meeting of the Vision Sciences Society*, Naples, FL.

Purcell, B.A., Heitz, R.P., Logan, G.D., Schall, J.D., Palmeri, T.J., (2010) Multiple-accumulator model of decision making during visual search. *Poster presented at the Fortieth Annual Meeting of the Society for Neuroscience*, San Diego, CA.

Purcell, B.A., Heitz, R.P., Cohen, J.Y., Woodman, G.F., Schall, J.D. (2010) Timing of attentional selection in frontal eye field and event-related potentials over extrastriate cortex during pop-out search. *Poster presented at the Tenth Annual Meeting of the Vision Sciences Society*, Naples, FL.

Purcell, B.A., Schall, J.D., Palmeri, T.J. (2009) Discrete versus continuous flow of information: Relating neural activity and the drift diffusion model. *Talk presented at the Thirty-First Annual Meeting of the Cognitive Sciences Society*, Amsterdam, Netherlands.

Purcell, B.A., R.P. Heitz, J.Y. Cohen, G.D. Logan, J.D. Schall, T.J. Palmeri (2009) Using neurophysiology to explore discrete versus continuous flow models of perceptual decision making. *Talk presented at the annual meeting of the Society for Mathematical Psychology*. Amsterdam, Netherlands.

Purcell, B.A., J.Y. Cohen, R.P. Heitz, J.D. Schall, G.D. Logan & T.J. Palmeri (2009) Developing a neuromimetic accumulator model of perceptual decisions. *Poster presented at the Ninth Annual Meeting of the Vision Sciences Society*, Naples, FL.

Palmeri, T.J., **Purcell, B.A.**, Cohen, J.Y., Heitz, R.P., Schall, J.D. & Logan, G.D. (2008). Stochastic accumulator model of saccade response time and neurophysiology. *Talk presented at the Fiftieth Annual Meeting of the Psychonomic Society*, Boston, MA.

Purcell, B.A., Heitz, R.P., Cohen, J.Y., Logan, G.D., Schall, J.D., & Palmeri, T.J. (2008). Modeling interactions between visually-responsive and movement-related neurons in FEF during saccade visual search. *Poster presented at the Eight Annual Meeting of the Vision Sciences Society*, Naples, FL.

Purcell, B.A., Thomas, R.D. (2007). Comparison of Three Analyses for Sorting Data Using Munsell Colors and Personality Traits. *Poster presented at the Annual symposium of the Miami University Center for the Advancement of Computational Research*, Oxford, OH.

Teaching Experience

Fall 2009 Teaching assistant, Neuroscience
(Dr. Leslie Smith)

Spring 2009 Teaching assistant, Quantitative Methods
(Dr. David Schlundt)

Fall 2008 Teaching assistant, Quantitative Methods
(Dr. Stephen Benning)

Ad hoc reviews

Journal of Neuroscience
Journal of Neurophysiology
Journal of Cognitive Neuroscience
Psychonomic Bulletin & Review
Attention, Perception, and Psychophysics
PLoS Computational Biology

Professional Societies

Society for Neuroscience, 2010-
Vision Sciences Society, 2008-2010
Cognitive Science Society, 2009
Society for Mathematical Psychology, 2009

Activities

Computational Neuroscience: Vision Course at Cold Spring Harbor Laboratory, 2012

Temporal Dynamics of Learning Center Fellows Committee, 2012-2013

Temporal Dynamics of Learning Center Summer Fellows Institute Lecturer, 2012

Brain Blast: Neuroscience Fair for Kids Presenter, Vanderbilt Health Center, 2011

Cognitive Modeling Journal Club Organizer, 2010-2011

Vanderbilt School for Science and Math Guest Lecturer, 2009