

## Joseph Schmidt, Ph.D.

Curriculum Vitae

August, 2015

### Mailing Address:

Joseph Schmidt, Ph.D.  
University of Central Florida  
Department of Psychology  
College of Sciences  
4111 Pictor Lane  
Orlando, FL 32816-1390

Office: (407) 823-5860

Fax: 407-823-5862

[Joseph.Schmidt@ucf.edu](mailto:Joseph.Schmidt@ucf.edu)

### Professional Experience

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**Assistant Professor**, 2015 – present

University of Central Florida, Department of Psychology

**Research Support Specialist**, 2014 – 2015

SR Research Ltd.

**Postdoctoral Research Fellow**, 2012 - 2014

Advisor: John M. Henderson

Visual Cognition Laboratory

*Institute for Mind and Brain, & Department of Psychology, University of South Carolina*

### EDUCATION

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**Ph.D. in Experimental / Cognitive Psychology**, 2012

Dissertation: **Relational information between objects is available to guide search.**

(Advisor: Gregory J. Zelinsky)

Stony Brook University

**M.A. in Psychology**, 2008

Thesis: **Visual search guidance is best after a short delay**

(Advisor: Gregory J. Zelinsky)

Stony Brook University

**B.A. in Psychology (Magna cum Laude)**, 2005

Stony Brook University

### RESEARCH FOCUS & TECHNIQUES

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Techniques: Eye Tracking, Event-Related Potentials (ERP), Functional Magnetic Resonance Imaging (fMRI), and the Co-Registration of Eye Tracking with ERP or fMRI

Research (Areas): Visual Cognition, Sensation and Perception, Attention, Visual Working Memory (VWM), and Oculomotor Control

Research (Specific): My research focuses on the interaction of VWM, attention and oculomotor control. I have investigated how memory of visually complex, real-world objects and scenes impacts our eye movements and, thus, our allocation of attention as we interact with the world. Likewise, I have also investigated how our eye movements affect our memory for objects and scenes. By integrating eye tracking with ERP or fMRI, I have investigated the behavioral, oculomotor, and neural instantiations of VWM and attentional processes. By better understanding how VWM representations interact with attentional processes, I hope to gain insights into how these processes are integrated into our broader cognitive function.

## PUBLICATIONS

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- Kardan, O., Berman, M. G., Yourganov, G., **Schmidt, J.**, Henderson, J. M. (accepted) Classifying Mental States From Eye Movements During Scene Viewing *Journal of Experimental Psychology: Human Perception and Performance*
- Luke, S. G., Smith, T. J., **Schmidt, J.**, & Henderson J. M. (2014) Dissociating temporal inhibition of return and saccadic momentum across multiple eye-movement tasks. *Journal of Vision*, 14(9). doi:10.1167/14.14.9
- Alexander, R. G., **Schmidt, J.**, & Zelinsky, G. J. (2014). Are summary statistics enough? Evidence for the importance of shape in guiding visual search. *Visual Cognition*, 22(3-4), 595-609. doi: 10.1080/13506285.2014.890989
- Henderson, J. M., Olejarczyk, J., Luke, S. G., & **Schmidt, J.** (2014). Eye movement control during scene viewing: Immediate degradation and enhancement effects of spatial frequency filtering. *Visual Cognition*, 22(3-4), 486-502. doi: 10.1080/13506285.2014.897662
- Schmidt, J.**, MacNamara, A., Proudfit, G. H., & Zelinsky, G. J. (2014). More target features in visual working memory leads to poorer search guidance: Evidence from contralateral decay activity. *Journal of Vision*, 14(3):8, 1–19. <http://www.journalofvision.org/content/14/3/8>, doi:10.1167/14.3.8.
- Luke, S. G., **Schmidt, J.**, & Henderson, J. M. (2013). Temporal Oculomotor Inhibition of Return and Spatial Facilitation of Return in a Visual Encoding Task. *Frontiers in Psychology*, 4. doi: 10.3389/fpsyg.2013.00400
- Henderson, J. M., Luke, S. G., **Schmidt, J.**, & Richards, J. E. (2013). Co-registration of Eye Movements and Event-Related Potentials in Connected-Text Paragraph Reading. *Frontiers in Systems Neuroscience*, 7. doi: 10.3389/fnsys.2013.00028
- Ferri, J., **Schmidt, J.**, Hajcak, G., & Canli, T. (2013). Neural correlates of attentional deployment within unpleasant pictures. *NeuroImage*, 70(0), 268-277. doi: 10.1016/j.neuroimage.2012.12.030
- Macnamara, A., **Schmidt, J.**, Zelinsky, G. J., & Hajcak, G. (2012). Electrooculographic and ocular indices of attention to fearful and neutral faces presented under high and low working memory load. *Biol Psychol*, 91(3), 349-356. doi: 10.1016/j.biopsycho.2012.08.005
- Schmidt, J.**, & Zelinsky, G. J. (2011). Visual search guidance is best after a short delay. *Vision Research*, 51(6), 535-545. doi: 10.1016/j.visres.2011.01.013
- Schmidt, J.**, & Zelinsky, G. J. (2009). Search guidance is proportional to the categorical specificity of a target cue. *The Quarterly Journal of Experimental Psychology*, 62(10), 1904-1914. doi: 10.1080/17470210902853530
- Zelinsky, G. J., & **Schmidt, J.** (2009). An effect of referential scene constraint on search implies scene segmentation. *Visual Cognition*, 17(6-7), 1004-1028. doi: 10.1080/13506280902764315

## PUBLICATIONS IN PREPARATION

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- Schmidt, J.**, & Zelinsky, G. J. (submitted) Adding details to a target representation mitigates search difficulty: Evidence from Contralateral Delay Activity (CDA)
- Schmidt, J.**, Olejarczyk, J., Luke, S. G., Brixius, W., & Henderson, J. M. (submitted) Insensitivity to changes in spatiotemporal continuity when watching video.
- Ferri, J., **Schmidt, J.**, Proudfit, G. H., & Canli, T. (submitted) Emotion regulation and amygdala-precuneus connectivity: Focusing on attentional deployment

- Brixius, W., **Schmidt, J.**, Luke, S. G., Rorden., C., & Henderson, J. M. (submitted) The neural correlates of change detection revisited: an fMRI study.
- Schmidt, J.**, & Zelinsky, G. J. (in preparation) Relational information between objects is available to guide search.
- Smith, K.G., **Schmidt, J.**, Henderson, J.M., & Fridriksson, J. (in preparation). Task based changes of eye movements in individuals with aphasia
- Smith, K.G., **Schmidt, J.**, Henderson, J.M., & Fridriksson, J. (in preparation). Eye movement patterns in individuals with aphasia during reading and pseudo-reading
- Tonnsen, B. L., **Schmidt, J.**, Henderson, J. M., & Roberts, J. E. (in preparation). Eye movements and attention in children with fragile-X disorder or autism spectrum disorder
- Klusek, J., **Schmidt, J.**, Henderson, J. M., & Roberts, J. E. (in preparation). Fragile-X permutation, anxiety, and eye movement control when viewing faces
- Henderson, J. M., Luke, S. G., Choi, W., **Schmidt, J.**, & DeSai, R. (in preparation) Fixation duration reflects attention in natural reading: Evidence from fixation-related (FIRE) fMRI
- Huang, A., **Schmidt, J.**, Yang, H., Oh, H., Leung, H.-C., & Zelinsky, G. J. (in preparation) Frontal and parietal activity differences in eye movements and visual search
- Schmidt, J.**, & Zelinsky, G. J. (data collected) ERP correlates of the categorical search template.
- Schmidt, J.**, & Zelinsky, G. J., (data collected) Functionally related and interacting objects are more easily encoded in VWM as indicated by Contralateral Delay Activity and search performance.
- Schmidt, J.**, Alexander, R., & Zelinsky, G. J. (data collected) Updating and recency effects within a single spatiotemporal object.
- Schmidt, J.**, & Zelinsky, G. J. (data collected) Relational information in categorical cues do not guide attention but they do affect target verification.
- Schmidt, J.**, Moore, R. & Zelinsky, G. J. (data collected) Working memory load leads to saccadic suppression of eye movements and avoidance of complex visual stimuli
- Ferri, J., **Schmidt, J.**, Hajcak, G. & Canli, T. (data collected) Individual differences in the neural correlates of attentional deployment within unpleasant pictures.
- Zelinsky, G. J., Huang, A., **Schmidt, J.**, Yang, H., Oh, H., & Leung, H.-C. (data collected) Multiple target search guidance: an fMRI study of target load

## **TEACHING AND MENTORING EXPERIENCE**

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### *Mentoring / Student supervision:*

- 2005-2014      Oversaw three to eight undergraduate research assistants per semester, Stony Brook University & University of South Carolina
- 2012-2014      Assisted in mentoring two Ph.D. graduate students in the visual cognition lab and one in the aphasia lab, University of South Carolina
- 2009-2012      Mentored one undergraduate student conducting a series of independent research projects, Stony Brook University

### *Direct Instruction:*

- Fall 15            Instructor for graduate Human Cognition and Learning
- Spring 08        Recitation Instructor for Research Design and Methods
- Lead Instructor: Anne Moyer, Ph.D., Stony Brook University

Fall 06 Recitation Instructor for Research Methods in Human Factors  
Lead Instructor: Susan Brennan, Ph.D., Stony Brook University

*Teaching Assistant:*

Spring 09 Teaching Assistant for Sensation & Perception  
Lead Instructor: Gregory Zelinsky, Ph.D., Stony Brook University

Fall 08 Teaching Assistant for Special Topics in Biopsychology: Drugs in the Brain  
Lead Instructor: Patricia Whitaker, Ph.D., Stony Brook University

Fall 07 Teaching Assistant for Survey in Cognition & Perception  
Lead Instructor: Susan Brennan, Ph.D., Stony Brook University

Spring 07 Teaching Assistant for Survey in Biopsychology  
Lead Instructor: Patricia Whitaker, Ph.D., Stony Brook University

## **GUEST LECTURES / COLLOQUIA / INVITED TALKS**

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### **ADD Job Talk**

- Spring 12 “Information availability and how search performance is affected by the guiding representation” Department of Psychology Colloquium, University of South Carolina
- Spring 12 “How search performance is affected by the guiding representation” Department of Computer Science and the Department of Psychology Colloquium, University of Massachusetts at Boston
- Fall 11 “CDA, VWM, Search Guidance, Processing Speed and Their Intertwined Relationship” Experimental & Cognitive Psychology Colloquium, Stony Brook University
- Fall 10 “Searching for two objects: Does knowing the spatial relationship between the objects produce greater search guidance?” Experimental & Cognitive Psychology Colloquium, Stony Brook University
- Spring 10 “Visual search guidance is best after a short delay” 2nd/4th Year Department Symposium, Stony Brook University
- Fall 09 “When is information loaded into visual working memory to guide search?” Experimental & Cognitive Psychology Colloquium, Stony Brook University
- Spring 09 “Search & Object Based Attention” Guest lecture for Sensation & Perception, Stony Brook University
- Spring 09 “Psychophysical Techniques” Guest lecture for Sensation & Perception, Stony Brook University
- Fall 08 “Visual Search Guidance Changes with a Delay between Target Cue and Search” Experimental & Cognitive Psychology Colloquium, Stony Brook University
- Spring 08 “Manipulating the Availability of Visual Information in Search” 2nd/4th Year Department Symposium, Stony Brook University
- Fall 07 “Manipulating the Availability of Visual Information in a Target Cue Mediates Guidance in Visual Search” Experimental & Cognitive Psychology Colloquium, Stony Brook University
- Fall 07 “Attention part I” Guest lecture for Survey in Cognition & Perception, Stony Brook University
- Fall 06 “Gaze Aversion as it Relates to Visual Stimuli” Experimental & Cognitive Psychology Colloquium, Stony Brook University

**PRESENTATIONS**

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- Smith, K. G., **Schmidt, J.**, Henderson, J.M., Fridriksson, J. (2014). Eye Movements are Not Task Specific in Individuals with Aphasia. Poster presented at the Clinical Aphasiology Conference, St. Simons Island, GA.
- Schmidt, J.**, Olejarczyk, J., Luke, S. G., Brixius, W., & Henderson, J. M. (2014). Insensitivity to changes in spatiotemporal continuity when watching video. *Journal of Vision*
- Brixius, W., **Schmidt, J.**, Luke, S. G., Rorden., C., & Henderson, J. M. (2014) Neural correlates of trans-saccadic change detection and change blindness in response to global contrast changes. *Journal of Vision*
- Luke, S. G., Smith, T. J., **Schmidt, J.**, & Henderson, J. M. (2014). Temporal Oculomotor Inhibition of Return and Spatial Facilitation of Return in a Visual Encoding Task. *Journal of Vision*
- Smith, K. G., **Schmidt, J.**, Henderson, J.M., Fridriksson, J. (2014). Characterizing Alexia and Aphasia: An Eye Tracking Study. Speech-Language-Hearing Association of Virginia, Williamsburg, VA.
- Smith, K. G., **Schmidt, J.**, Henderson, J. M., & Fridriksson, J. (2013). Characterizing Aphasia and Alexia Using Eye Movements. The 5<sup>th</sup> Annual Society for the Neurobiology of Language Conference in San Diego, CA
- Schmidt, J.**, Luke, S. G., Henderson, J. M., & Richards, J. E. (2013). Co-registration of eye movements and event-related potentials in connected-text paragraph reading. The 53rd Annual Meeting of the Society for Psychophysiological Research (SPR) in Florence, Italy. October
- Ferri, J., **Schmidt, J.**, Hajcak, G., & Canli, T. (2013). Neural marker of emotional processing and attentional deployment. The 53rd Annual Meeting of the Society for Psychophysiological Research (SPR) in Florence, Italy. October
- Luke, S. G., **Schmidt, J.**, & Henderson, J. M. (2013). Temporal Oculomotor Inhibition of Return and Spatial Facilitation of Return in a Visual Encoding Task. *Journal of Vision*, 13(9), 921. doi: 10.1167/13.9.921
- Olejarczyk, J., Luke, S. G., **Schmidt, J.**, & Henderson, J. M. (2013). Effects of spatial frequency on fixation durations within scenes. *Journal of Vision*, 13(9), 1209. doi: 10.1167/13.9.1209
- Schmidt, J.**, Luke, S. G., Richards, J. E., & Henderson, J. M. (2013). Co-registration of eye movements and event-related potentials in reading. *Journal of Vision*, 13(9), 795. doi: 10.1167/13.9.795
- Henderson, J. M., Luke, S. G., **Schmidt, J.**, & Richards, J. E. (2012) Co-registration of Eye Movements and ERPs in Normal and Mindless Reading. The 4<sup>th</sup> Annual Society for the Neurobiology of Language Conference in San Sebastian, Spain
- Huang, A. S., **Schmidt, J.**, Yang, H., Oh, H., Zelinsky, G., & Leung, H. C. (2012). Neural Correlates of Behavioral Performance During a Visual Search Task. The Society for Neuroscience conference in New Orleans
- Huang, A. S., **Schmidt, J.**, Yang, H., Oh, H., Leung, H. C., & Zelinsky, G. (2012). Search is guided by two targets: Evidence from a combined fMRI and eye movements study. *Journal of Vision*, 12(9), 737. doi: 10.1167/12.9.737
- Schmidt, J.**, MacNamara, A., Hajcak, G., & Zelinsky, G. (2012). A neural marker of the representation used to guide visual search. *Journal of Vision*, 12(9), 729. doi: 10.1167/12.9.729
- MacNamara, A., **Schmidt, J.**, Zelinsky, G. J. & Hajcak, G. (2011). *Attention toward fearful and neutral faces presented under high and low working memory load: a combined ERP and eye-tracking*

*study*. Presented at the 51<sup>st</sup> annual meeting of the Society for Psychophysiological Research, Boston, MA.

**Schmidt, J.**, MacNamara, A., Hajcak, G., & Zelinsky, G. (2011). ERP correlates of the target representation used to guide search. *Journal of Vision*, 11(11), 1345. doi: 10.1167/11.11.1345

MacNamara, A., **Schmidt, J.**, Zelinsky, G. J. & Hajcak, G. (2011). *The effect of working memory load on electrocortical and ocular measures of attention to fearful and neutral faces*. Presented at the annual Determinants of Executive Function and Dysfunction (DEFD) conference, "How do Executive Function and Emotion Interact?", Boulder, CO.

**Schmidt, J.**, & Zelinsky, G. J. (2010). *Searching for two objects: Does knowing their relational alignment produce greater search guidance?* *Journal of Vision*, 10(7), 1310a

**Schmidt, J.**, & Zelinsky, G. (2010) *When is visual information sampled?* Annual meeting of the Eastern Psychological Association. Brooklyn, New York.

Zelinsky, G. J., & **Schmidt, J.** (2009). *Searching aerial images: Evidence for scene constraints in the absence of global context*. *Journal of Vision*, 9(8), 1195a

**Schmidt, J.**, & Zelinsky, G. J. (2009). *Visual search guidance is best shortly after target preview offset*. *Journal of Vision*, 9(8), 1183a

Zelinsky, G. J., Yang, H., & **Schmidt, J.** (November 21, 2009). Categorical visual search. (Part of the symposium on Visual Knowledge) *Abstracts of the 50th Annual Meeting of the Psychonomic Society*, 14, 25-26. Boston, MA.

**Schmidt, J.**, & Zelinsky, G. J. (2008). *Visual search guidance increases with a delay between target cue and search*. *Journal of Vision*, 8(6), 317a.

**Schmidt, J.**, & Zelinsky, G. J. (2007). *Manipulating the availability of visual information in search*. *Journal of Vision*, 7(9), 715a.

**Schmidt, J.**, & Zelinsky, G. J. (2006). *How is gaze affected by cognitive load and visual complexity?* *Journal of Vision*, 6(6), 363a.

## **SERVICE**

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Member of the Editorial Review Board at *Frontiers in Perception Science*

Ad hoc reviewer for *Journal of Experimental Psychology: Human Perception and Performance*, *Attention, Perception & Psychophysics*, *Journal of Vision*, *Psychonomic Bulletin & Review*, and *Vision Research*

## **PROFESSIONAL AFFILIATIONS**

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Vision Sciences Society

Eastern Psychological Association

Psi Chi

Phi Beta Kappa Honor Society

**ACADEMIC REFERENCES**

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Dr. John M. Henderson  
Professor  
Center for Mind and Brain  
Department of Psychology  
University of California, Davis  
267 Cousteau Place  
Davis, CA 95618  
Email: [johnhenderson@ucdavis.edu](mailto:johnhenderson@ucdavis.edu)

Dr. Gregory J. Zelinsky  
Professor  
Stony Brook University  
Department of Psychology  
Stony Brook, NY 11794  
Phone: 631-632-7827  
Email: [gregory.zelinsky@stonybrook.edu](mailto:gregory.zelinsky@stonybrook.edu)

Dr. Mark Neider  
Assistant Professor  
University of Central Florida  
Department of Psychology  
4000 Central Florida Blvd.  
Orlando, FL 32816-1390  
Phone: 407-823-4201  
Email: [mark.neider@ucf.edu](mailto:mark.neider@ucf.edu)

Dr. Susan E. Brennan  
Professor  
Stony Brook University  
Department of Psychology  
Stony Brook, NY 11794  
Phone: 631-632-9145  
Email: [Susan.Brennan@stonybrook.edu](mailto:Susan.Brennan@stonybrook.edu)