

Carly J. Leonard

curriculum vitae

Department of Psychology
University of Colorado, Denver
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Education

- 2003 - 2008 Johns Hopkins University
 Psychological and Brain Sciences
 M.A., 2005; Ph.D., 2008
 Advisor: Dr. Howard Egeth
- 1998 - 2002 Rutgers University (Rutgers College)
 summa cum laude: B.A. in Psychology; B.A. in Economics
 Minor in Cognitive Science
 Advisor: Dr. Zenon Pylyshyn

Positions Held

- 2016 - Assistant Professor, University of Colorado, Denver
- 2014 - 2016 Project Scientist, University of California, Davis
- 2008 - 2014 Postdoctoral Fellow, University of California, Davis
 Training with Dr. Steven Luck and Dr. James Gold of the
 Maryland Psychiatric Research Center, University of Maryland School of Medicine
- 2003 - 2008 Graduate Research Fellow, Johns Hopkins University
 Graduate Teaching Assistant, Johns Hopkins University
- 2002 - 2003 Research Assistant, Rutgers Center for Cognitive Science
- 2000 - 2002 Undergraduate Research Assistant, Rutgers Center for Cognitive Science

Professional Affiliations

American Psychological Association, Member
Cognitive Neuroscience Society, Member
Psychonomic Society, Fellow (Full member)
Vision Sciences Society, Member

Publications

- Gaspelin, N., **Leonard, C. J.**, Luck, S. J. (in press). Suppression of overt attentional capture by salient-but-irrelevant color singletons. *Attention, Perception, & Psychophysics*.
- Sawaki, R., **Leonard, C. J.**, Kaiser, S. T., Hahn, B., Gold, J.M., Luck, S. J. (in press). Hyperfocusing of attention on goal-related information in schizophrenia: Evidence from electrophysiology. *Journal of Abnormal Psychology*.
- Gaspelin, J., **Leonard, C. J.**, & Luck, S. J. (2015). Direct evidence for active suppression of salient-but-irrelevant sensory inputs. *Psychological Science*, 26(11), 1740-1750.
- Leonard, C. J.**, Balestreri, A., & Luck, S. J. (2015). Interactions between space-based and feature-based attention. *Journal of Experimental Psychology: Human Perception and Performance*, 41(1), 11-16.
- Erickson, M. A., Hahn, B., **Leonard, C. J.**, Robinson, B., Gray, B., Luck, S. J., & Gold, J. M. (2015). Impaired working memory capacity is not caused by failures of selective attention in schizophrenia. *Schizophrenia Bulletin*, 41(2), 366-373.
- Erickson, M. A., Hahn, B., **Leonard, C. J.**, Robinson, B., Luck, S. J., & Gold, J. M. (2014). Enhanced vulnerability to distraction does not account for working memory capacity reduction in people with schizophrenia. *Schizophrenia Research: Cognition*, 1(3), 149-154.
- Luck, S. J., McClenon, C., Beck, V. M., Hollingworth, A., **Leonard, C. J.**, Hahn, B., Robinson, B., & Gold, J. M. (2014). Hyperfocusing in schizophrenia: Evidence from interactions between working memory and eye movements. *Journal of Abnormal Psychology*, 123(4), 783-795.
- Gray, B. E., Hahn, B., Robinson, B., Harvey, A., **Leonard, C. J.**, Luck, S. J., & Gold, J. M. (2014). Relationships between divided attention and working memory impairment in people with schizophrenia. *Schizophrenia Bulletin*, 40(6), 1462-1471.
- Leonard, C. J.**, Robinson, B. M., Hahn, B., Gold, J. M., & Luck, S. J. (2014). Enhanced distraction by magnocellular salience signals in schizophrenia. *Neuropsychologia*, 56, 359-366.
- Leonard, C. J.**, Robinson, B. M., Kaiser, S. T., Hahn, B., McClenon, C., Gold, J. M., & Luck, S. J. (2013). Testing sensory and cognitive explanations of the antisaccade deficit in schizophrenia. *Journal of Abnormal Psychology*, 122(4), 1111-1120.
- Leonard, C. J.**, Lopez-Calderon, J., Kreither, J., & Luck, S. J. (2013). Rapid feature-driven changes in the attentional window. *Journal of Cognitive Neuroscience*, 25(7), 1100-1110.
- Johnson, M. K., McMahon, R. P., Robinson, B. M., Harvey, A. N., Hahn, B., **Leonard, C. J.**, Luck, S. J., & Gold, J. M. (2013). The relationship between working memory capacity and broad measures of cognitive ability in healthy adults and people with schizophrenia. *Neuropsychology*, 27(2), 220-229.

- Leonard, C. J.**, Kaiser, S. T., Robinson, B. M., Kappenman, E. S., Hahn, B., Gold, J. M., & Luck, S. J. (2013). Toward the neural mechanisms of reduced working memory capacity in schizophrenia. *Cerebral Cortex*, 23, 1582-1592.
- Hahn, B., Robinson, B. M., Harvey, A. N., Kaiser, S. T., **Leonard, C. J.**, Luck, S. J., & Gold, J. M. (2012). Visuospatial attention in schizophrenia: Deficits in broad monitoring. *Journal of Abnormal Psychology*, 121(1), 119-128.
- Kappenman, E. S., Kaiser, S. T., Robinson, B. M., Morris, S. E., Hahn, B., Beck, V., **Leonard, C. J.**, Gold, J. M., & Luck, S. J. (2012). Response activation impairments in schizophrenia: Evidence from the lateralized readiness potential. *Psychophysiology*, 49(1), 73-84.
- Hahn, B., Hollingworth, A., Robinson, B. M., Kaiser, S. T., **Leonard, C. J.**, Beck, V. M., Kappenman, E. S., Luck, S. J., & Gold, J. M. (2012). Control of working memory content in schizophrenia. *Schizophrenia Research*, 134(1), 70-75.
- Leonard, C. J.** & Luck, S. J. (2011). The role of magnocellular input in oculomotor attentional capture. *Journal of Vision*, 11(13), 1-12.
- Leonard, C. J.** & Luck, S. J. (2010). Temporal dynamics of spatial attention. *Visual Cognition*, 18(10), 1522-1525.
- Egeth, H., **Leonard, C. J.**, & Leber, A. J. (2010). Why salience is not enough: Reflections on top-down selection in vision. *Acta Psychologica*, 135, 130-132. (Impact factor: 2.25)
- Hahn, B., Robinson, B. M., Kaiser, S. T., Harvey, A. N., Beck, V.M., **Leonard, C. J.**, Kappenman, E. S., Luck, S. J., Gold, J. M. (2010). Failure of schizophrenia patients to overcome salient distractors during working memory encoding. *Biological Psychiatry*, 68(7), 603-609.
- Leonard, C. J.**, & Egeth, H. E. (2008). Attentional guidance in singleton search: An examination of top-down, bottom-up, and intertrial factors. *Visual Cognition*, 16(8), 1078-1091.
- Egeth, H., **Leonard, C. J.**, & Palomares, M. (2008). The role of attention in subitizing: Is the magical number one? *Visual Cognition*, 16(4), 463-473.
- Leonard, C. J.**, & Chiu, Y. (2007). What you set is not what you see: Unconscious activation of cognitive control. *Journal of Neuroscience*, 27, 11170-11171.

Manuscripts in Progress

- Leonard, C. J.**, Robinson, B. M., Hahn, B., Luck, S. J., & Gold, J. M. (in prep). Altered spatial profile of distraction in people with schizophrenia.
- Leonard, C. J.**, Robinson, B. M., Hahn, B., Luck, S. J., & Gold, J. M. (in prep). Increased influence of a previously attended feature in people with schizophrenia.

Leonard, C. J., Carlisle, N. B., & Luck, S. J. (in prep). Translating the precision of color representations in working memory to attentional guidance in visual search.

Conference Talks and Invited Talks

Gaspelin, N., **Leonard, C. J.**, & Luck, S. J. (2016). Suppression of covert and overt attentional capture. Talk to be read at the annual meeting of the Vision Sciences Society in St. Pete's Beach, FL.

Leonard, C. J. (January 2016). Visual attention and working memory in health and disorder. Invited talk at Oregon State University, Department of Psychology.

Leonard, C. J., (December 2015). Visual attention and working memory in health and disorder. Invited talk at University of Colorado, Denver, Department of Psychology.

Leonard, C. J., (November 2015). Visual attention and working memory in health and disorder. Invited talk at Trinity College, Department of Psychology.

Leonard, C. J., Hahn, B., Robinson, B., Luck, S. J., Gold, J. G. (2015). Atypical interactions of spatial and feature-based attentional guidance in people with schizophrenia. Talk read at the annual meeting of the Psychonomic Society in Chicago, IL.

Lee, J., **Leonard, C. J.**, Geng, J. J. (2015). Expectancies about target-similar distractors impact target selection. Talk read at the annual meeting of the Society for Neuroscience in Chicago, IL.

Leonard, C. J. (October 2015). Mechanisms of attention and their relationship to impairments in people with schizophrenia. Invited talk for Cognitive and Behavioral Sciences Colloquium Series at Illinois State University, Department of Psychology.

Leonard, C. J. (2015). Troubles with a taxonomy of (visual) attention. Talk read at the Cognitive Science Association for Interdisciplinary Learning conference in Hood River, OR.

Leonard, C. J. (March 2015). Mechanisms of attention and their relationship to impairments in people with schizophrenia. Invited talk at Brigham Young University, Department of Psychology, Provo, UT.

Leonard, C. J. (January 2015). Mechanisms of attention: Leveraging visual neuroscience to better understand schizophrenia. Invited talk at Rutgers University, Department of Psychology, New Brunswick, NJ.

Leonard, C. J., & Luck, S. J. (2014). Probability of spatially proximal distractors modulates feature-driven capture. Talk read at the annual meeting of the Psychonomic Society in Long Beach, CA.

Leonard, C. J. (2014). Troubles with a taxonomy of attention and awareness. Talk read at the 2nd annual Northern California Consciousness meeting in Davis, CA.

Leonard, C. J. & Luck, S. J. (2014). Dissecting distraction: Interactions of feature-based attention and spatial attention. Talk read at the Cognitive Science Association for Interdisciplinary Learning conference in Hood River, OR.

Leonard, C. J. (December 2013). Visual attention and working memory in health and disorder. Invited talk at the University of Utah, Department of Psychology, Salt Lake City, UT.

Leonard, C. J. (January 2013). The functional integration of working memory, attention, and visual perception. Invited talk at Hamilton College, Department of Psychology, Colgate, NY.

Leonard, C. J., Hahn, B., Gold, J. M., & Luck, S. J. (2012). Understanding variation in working memory capacity: A translational approach. Talk read at the Cognitive Science Association for Interdisciplinary Learning conference in Hood River, OR.

Leonard, C. J. (December 2012). Integrating working memory and visual perception: Attention in time and space. Invited talk at Drexel University, Department of Psychology, Philadelphia, PA.

Gold, J. M., **Leonard, C. J.**, Kaiser, S., Robinson, B., Kappenman, E., Hahn, B., & Luck, S. J. (2012). Toward a neural mechanism of reduced working memory capacity in schizophrenia. Talk read (by J.M. Gold) at the annual meeting of the Society for Research in Psychopathology in Ann Arbor, MI.

Leonard, C. J. & Luck, S. J. (2011). Tracking changes in the attentional window with visual event related potentials. Talk read at the Cognitive Science Association for Interdisciplinary Learning conference in Hood River, OR.

Leonard, C. J., & Luck, S. J. (2010). Temporal dynamics of spatial attention. Talk read at the Object, Perception, Attention, and Memory meeting in St. Louis, MI.

Leonard, C. J. (2009-2011). Instructional presentation on using EEGLAB and ERPLAB to perform Independent Component Analysis (ICA) for artifact correction. Invited presentation at Steve Luck's ERP Bootcamp course, University of California, Davis, CA.

Leonard, C. J. (June 2008). Subitizing and detection during the attentional blink. Invited talk at the University of California, Davis, Center for Mind and Brain, Davis, CA

Leonard, C. J. (May 2008). The role of attention in subitizing: Is the magical number 1? Invited talk at Temple University / University of Pennsylvania, Center for Cognitive Neuroscience, Philadelphia, PA.

Leonard, C. J. (February 2008). Attentional guidance in singleton search: An examination of top-down, bottom-up, and intertribal factors. Invited talk at the University College of London, Institute for Cognitive Neuroscience, London, UK.

Leonard, C. J. (March 2007). On the nature of attentional mechanisms and enumeration. Invited talk at the Johns Hopkins University, Laboratory for Child Development, Baltimore, MD.

Leonard, C. J., & Egeth, H. (2007). Is top-down guidance possible in singleton search? Talk read (by H. Egeth) at the annual meeting of the Psychonomic Society in Long Beach, CA.

Conference Poster Presentations

Leonard, C. J., Robinson, B., Hahn, B., Gold, J. M., & Luck, S. J. (2016). Increased influence of previously attended features in people with schizophrenia. Poster to be presented at the annual meeting of the Vision Sciences Society in St. Pete's Beach, FL.

Beck, V., **Leonard, C. J., Robinson, B., Hahn, B., Hollingworth, A., Gold, J. M., & Luck, S. J. (2016).** People with schizophrenia demonstrate more optimal feature-guided visual search in a probabilistic search task. Poster to be presented at the annual meeting of the Vision Sciences Society in St. Pete's Beach, FL.

Gaspelin, N., **Leonard, C. J., & Luck, S. J. (2015).** Evidence of active suppression of covert and overt attentional capture. Poster to be presented at the annual meeting of Psychonomic Society in Chicago, IL.

Leonard, C. J. & Luck, S. J. (2015). Feature-driven attentional capture is modulated by the distribution of spatial attention. Poster presented at the annual meeting of the Vision Sciences Society (VSS) in St. Pete's Beach, FL.

Lee, J., **Leonard, C. J., Geng, J. J. (2015).** Expectancies about the frequency of a target-similar distractor impact target selection. Poster presented at the annual meeting of the Vision Sciences Society (VSS) in St. Pete's Beach, FL.

Leonard, C. J., & Luck, S. J. (2013). Feature-driven capture is spatially constrained, not global. Poster presented at the annual meeting of the Psychonomic Society in Toronto, Canada.

Leonard, C. J., Robinson, B., Hahn, B., Luck, S. J., & Gold, J. M. (2013). Amplification of magnocellular salience signals modulate attentional capture in schizophrenia. Poster presented at the annual meeting of the Society for Research in Psychopathology (SRP) in Oakland, CA.

Leonard, C. J., & Luck, S. J. (2013). Understanding peripheral interference: the effects of distractor relevance and eccentricity on capture. Poster presented at the annual meeting of the Vision Sciences Society (VSS) in Naples, FL.

Leonard, C. J., Carlisle, N. B., & Luck, S. J. (2012). Integrating working memory and perception: the precision of attentional guidance in visual search. Poster presented at the annual meeting of the Psychonomic Society in Minneapolis, MN.

Leonard, C. J., Carlisle, N. B., & Luck, S. J. (2012). Comparing the resolution of a working-memory based target template with the resolution of visual working memory itself. Poster presented at annual meeting of the Vision Sciences Society (VSS) in Naples, FL.

- Leonard, C. J., & Luck, S. J.** (2011). The influence of target-distractor spatial proximity on covert competition and overt saccadic selection. Poster presented at the annual meeting of the Psychonomic Society in Seattle, WA.
- Leonard, C. J.,** Robinson, B., Kaiser, S., Hahn, B., McClenon, C., Gold, J. M., & Luck, S. J. (2011). Dissecting the role of magnocellular and parvocellular input on saccade production in schizophrenia. Poster presented at the Bay Area Vision Research Day (BAVRD) in Berkeley, CA.
- Leonard, C. J., & Luck, S. J.** (2011). The attentional blink impairs saccade production. Poster presented at annual meeting of the Vision Sciences Society (VSS) in Naples, FL.
- Leonard, C. J., & Luck, S. J.** (2010). Overt and covert capture of attention by magnocellular and parvocellular singletons. Poster presented at annual meeting of the Vision Sciences Society (VSS) in Naples, FL.
- Markley, C. C., Luck, S. J., **Leonard, C. J.** (2010). Links between perceptual hypotheses and response preparation in the human brain. Poster presented at the 2010 California Cognitive Science Conference at the University of California, Berkeley.
- Leonard, C. J. & Egeth, H.** (2009). Feature-based guidance improves singleton detection during the attentional blink. Poster presented at the annual meeting of the Vision Sciences Society (VSS) in Naples, FL.
- Leonard, C. J.,** Moher, J., & Egeth, H. (2008). Finding top-down guidance in singleton search: an exploration of critical conditions. Poster presented at annual meeting of the Vision Sciences Society (VSS) in Naples, FL.
- Leonard, C. J., & Egeth, H.** (2007). Feature-based attention alleviates the attentional blink for a popout target. Poster presented at the annual Object Perception, Attention, and Memory meeting in Long Beach, CA.
- Leonard, C. J., & Egeth, H.** (2007). Differential effects of attention on subitizing and estimation processes. Poster presented at the annual meeting of the Vision Science Society (VSS) in Sarasota, FL.
- Leonard, C. J.,** Pierson, R., Palomares, M., & Egeth, H. (2006). Selection and enumeration of moving objects. Poster presented at the annual meeting of the Vision Science Society (VSS) in Sarasota, FL.
- Palomares, M., Torres, L., **Leonard, C.** & Egeth, H. (2006). Does subitizing require attention? Poster presented at the annual meeting of the Vision Science Society (VSS) in Sarasota, FL
- Liu, J., Palomares, M., **Leonard, C.** & Egeth, H. (2005). Are enumeration and visual short term memory independent? Poster presented at the annual meeting of the Vision Science Society (VSS) in Sarasota, FL.

- Leonard, C. J., & Egeth, H. E. (2004).** The contribution of feature-based attentional guidance to singleton search. Poster presented at the annual Object Perception, Attention, and Memory meeting in Minneapolis, MN.
- Leonard, C. J., & Pylyshyn, Z.W. (2003).** Measuring the attentional demand during Multiple Object Tracking. Poster presented at annual meeting of the Vision Science Society (VSS) in Sarasota, FL.
- Pylyshyn, Z.W. & **Leonard, C. J. (2003).** Inhibition of nontargets during Multiple Object Tracking. Poster presented at annual meeting of the Vision Science Society (VSS) in Sarasota, FL.
- Leonard, C. J., Pylyshyn, Z. W., Cohen, E. H., & Dennis, J. D. (2002).** The effect of a secondary monitoring task on Multiple Object Tracking. Poster presented at annual meeting of the Vision Science Society (VSS) in Sarasota, FL.

Teaching Experience

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| 2016 | Instructor, University of Colorado, Denver
Psychology of Perception |
| 2015 | Instructor, University of California, Davis
Undergraduate lab meeting teaching basic Matlab programming |
| 2013 | Co-Instructor, University of California, Davis
Perception |
| 2012 | Instructor, University of California, Davis
Undergraduate lab meeting for the Laboratory for Basic and
Translational Cognitive Neuroscience |
| 2010 | Instructor, University of California, Davis
Introduction to Programming: Matlab (graduate course) |
| 2005, 2006 | Instructor, Johns Hopkins University
Laboratory in the Analysis of Psychological Data (undergraduate course) |
| 2003 - 2007 | Teaching Assistant, Johns Hopkins University
Behavioral Medicine, Prof. Rachel Piferi
Abnormal Psychology, Prof. Aaron Noonberg
Developmental Cognitive Neuroscience, Prof. Amy Shelton
Neuroscience of Sleep, Dreams, & Altered States, Prof. Richard Allen
Behavioral Finance: Psychology of Decision Making, Prof. L. Raifman |

Awards and Honors

UC Davis Academic Federation Research Travel Award, 2015
UC Davis Social Sciences Dean's Postdoctoral Fellowship for Excellence, 2012
Fellowship to Event-Related Potential Bootcamp, 2008
Fellowship to Summer Institute in Cognitive Neuroscience at Dartmouth College, 2006
NIH Visual Neuroscience Training Grant, Wilmer Eye Institute, 2004-2006
Rutgers College Honors Program Research Grant, 2002
Richard E. Gruen Memorial Scholarship, 2002
Henry Rutgers Scholars Program, 2001-2002

Ad Hoc Reviewing

Journals:

<i>Acta Psychologica</i>	<i>Journal of Psychopharmacology</i>
<i>Applied Cognitive Psychology</i>	<i>Neuroimage: Clinical</i>
<i>Attention, Perception & Psychophysics</i>	<i>Neuropsychologia</i>
<i>Annals of the New York Academy of Science</i>	<i>PLoS ONE</i>
<i>Cognition</i>	<i>Philosophical Psychology</i>
<i>Cognitive, Affective, and Behavioral Neuroscience</i>	<i>Psychiatry Research</i>
<i>Cognitive Psychology</i>	<i>Psychological Science</i>
<i>European Archives of Psychiatry and Clinical Neuroscience</i>	<i>Psychonomic Bulletin & Review</i>
<i>Journal of Cognitive Neuroscience</i>	<i>Psychophysiology</i>
<i>Journal of Experimental Psychology: General</i>	<i>Quarterly Journal of Experimental Psychology</i>
<i>Journal of Experimental Psychology: Human Perception & Performance</i>	<i>Visual Cognition</i>
<i>Journal of Neurophysiology</i>	<i>Vision Research</i>
<i>Journal of Neuroscience</i>	

Grants:

Israel Science Foundation
National Science Foundation Perception, Action, and Cognition Program

Meeting Organization

2013 - 2014 Northern California Consciousness conference, assistant organizer
2010 - 2012 Object Perception, Attention & Memory (OPAM) conference, co-organizer
Funded by NIH NEI grant, R13 EY021087-03

Departmental Service

- 2016 - Committee member for Human Subjects Research Pool at CU Denver
- 2008 - 2016 Organizer of informal attention journal club at UC Davis
- 2014 - 2015 Organizer of weekly cognitive seminar at Center for Mind and Brain
- 2014 Departmental faculty promotion review committee at UC Davis
- 2003 - 2008 Graduate program Steering Committee representative at the
Johns Hopkins Department of Psychological & Brain Sciences

Community Service

- 2012 - 2016 Brain Awareness Week presenter at Northern California high schools
- 2007 - 2008 Brain Awareness Week presenter at Baltimore Polytechnic Institute