

Kim M. Curby
Department of Psychology
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Research Field & Current Interests

Cognitive Neuroscience: My research aims 1) to investigate the extent to which effects of visual learning and/or perceptual expertise permeate basic cognitive functions, 2) to elucidate the cognitive and neural mechanisms of successful learning in the visual domain, and 3) to apply insights about successful visual learning towards understanding why it can sometimes fail to develop normally. I focus on cognitive questions that also are of developmental, social, and clinical interest.

Education

Ph.D., Vanderbilt University, Nashville, TN. Degree in psychology received in 2006

Dissertation advisor: Isabel Gauthier

Dissertation topic: *Perceptual expertise affects visual short-term memory and the time-course of perceptual encoding*

M.A., Vanderbilt University, Nashville, TN. Degree received in 2002

Masters advisor: Isabel Gauthier

Masters topic: *Interference between face and car processing in dual experts*

B.S., University of Wollongong, NSW, Australia. Degree received in 1999

Double major in biology and psychology (1st Class Honors).

Honors advisor: William Hayward

Appointments

Assistant Professor, Department of Psychology, Temple University, 2007-present

Post-doctoral Research Fellow, Yale Child Study Center, Yale University, 2006-2007

Post-doctoral adviser: Robert Schultz

Post-doctoral research area: Clinical Developmental Neuroimaging

Post-doctoral research agenda: *Applying insights about the development of visual expertise towards understanding perceptual processing abnormalities in autism*

Fellowships and Academic Awards

Research fellowships and awards

James H. Brown – Alexander B. Coxe Post-doctoral Fellowship in Medical Sciences, 2007
(\$40,356, declined)

Vanderbilt Summer Research Award, 2005 (\$2,500)

Lisa M. Quesenberry Award, Quesenberry Foundation, 2005 (\$1,500)
Competitive memorial research funds

Member of the Golden Key Honor Society, 2003 – present
Invited membership to international cross-discipline honor society
Vanderbilt Graduate Fellowship, 2000 (\$11,500)

Teaching awards

William F. Hodges Award, 2003, Vanderbilt University

Travel awards

Organization for Human Brain Mapping Travel Fellow, 2004 (\$500)
Vanderbilt Graduate School Travel Grant, 2004 (\$1000)
Vanderbilt Graduate School Travel Grant, 2002 (\$1000)

Teaching Experience

Course Instructor, *Honors Research Seminar*, Temple University
Fall 2008

Course Instructor, *Psychology as a Natural Science*, Temple University
Fall 2007, Spring 2008, Fall 2008, Fall 2009, Spring 2010

Teaching Assistant & Guest Lecturer, *Introductory Psychology*, Vanderbilt University
Spring 2003

Teaching Assistant & Guest Lecturer, *Perception*, Vanderbilt University
Fall 2002

Teaching Assistant, *Research Methods and Design*, Vanderbilt University
Spring 2002

Teaching Assistant, *Brain Damage and Cognition*, Vanderbilt University
Fall 2001

Advising

Doctoral Advisor, Department of Psychology, Temple University
Kara Blacker (Fall 2009 – present), Jessica Collins (Fall 2009 – present)

Dissertation Committee Member. Department of Psychology, Temple University
Brian Iacoviello (Spring 2009), Jonathan Lytle (Spring 2009), Jonathan Raybuck (summer 2009), Leanne Magee (Fall 2009), Michael Tobia (Spring 2010), George Portugal (Fall 2010), Tilbe Goksun (Summer 2010), Derek Wilkinson (expected Spring 2011), Kelly Fisher (Summer 2010), Emily Izbicki (expected Summer 2012), Connor Puleo (expected Summer 2012).

Undergraduate Research Supervisor. Department of Psychology, Temple University
Roger Beaty (Fall 2007); Alyssa Tyson (Spring 2008, Summer 2008, Fall 2008, Spring 2009); Jolene Stouffer (Spring 2007); Francisco Arroyo (Summer 2008, Fall 2008; Spring 2009); Christopher Brown (Summer 2008, Fall 2008); Elizabeth Klobusicky (Fall 2008; Spring 2009); Jordan Paul (Spring 2009); Elizabeth Myrtetus (Fall 2009; Spring 2010; Fall 2010; Spring 2011); Jonah Kazman (Fall 2009); Jose Amaro (Spring 2010); Alexander Naveiro (Summer 2010); Katherine Ridge (Summer 2010); Morgan Cagle (Fall 2010); Jessica Evans (Spring 2011); Kelly Carleton (Spring, 2011); Jordan Szenicer (Summer 2011).

Diamond Peer Teacher Supervisor, Department of Psychology, Temple University
Jennifer Conner (Fall 2007, Spring, 2008)

Diamond Research Scholar Supervisor, Department of Psychology, Temple University
Elizabeth Myrtetus (Summer 2010, Fall 2010)

Publications (* denotes graduate student co-authors; ** denotes undergraduate student co-authors)

Published and In press

Curby, K. M., Johnson, K., & Tyson**, A. (in press). Holistic processing has an emotional side: Holistic face processing is modulated by observers' emotional state. *Cognition and Emotion*.

Herrington, J. D., Taylor, J., Grupe, D., **Curby, K. M.**, & Schultz, R. T. (in press) Bidirectional communication between amygdala and fusiform gyrus during facial recognition. *Neuroimage*.

Holden*, M. P., **Curby, K. M.**, Newcombe, N., & Shipley, T. F. (2010). A Category Adjustment Approach to Memory for Spatial Location in Natural Scenes. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 36(3), 590-604.

Curby, K. M., & Gauthier, I. (2010). To the trained eye: Expertise alters visual processing. *Topics in Cognitive Science*, 2, 189-201.

Curby, K. M., Willenbockel*, V., Tanaka, J., & Schultz, R. T. (2009). Face processing in autism: Insights from the Perceptual Expertise Framework. In D. Bub, M. J. Tarr, & I. Gauthier (Eds.), *Perceptual Expertise: Bridging Brain and Behavior*.

Curby, K. M. & Rossion, B. (2009). *Competition between face and non-face domains of expertise*. In D. Bub, M. J. Tarr, & I. Gauthier (Eds.), *Perceptual Expertise: Bridging Brain and Behavior*.

Curby, K. M., & Gauthier, I. (2009). The temporal advantage for individuating objects of expertise: Perceptual expertise is an early riser. *Journal of Vision*, 9(6):7, 1-13.

Curby, K. M., Glazek*, K. & Gauthier, I. (2009). A visual short-term memory advantage for objects of expertise. *Journal of Experimental Psychology: Human Perception & Performance*, 35, 1, 94 - 107.

Curby, K. M., & Gauthier, I. (2007). A visual short-term memory advantage for faces. *Psychonomic Bulletin and Review*, 14(4), 620-628.

Gauthier, I., **Curby, K. M.**, Skudlarski, P., & Epstein, R. (2005). Activity in the human fusiform gyrus reflects separate spatial frequency channels. *Cognitive, Affective and Behavioral Neuroscience*, 5(2), 222-234.

Gauthier, I. & **Curby, K. M.**, (2005). A Perceptual Traffic-Jam on Highway N170: Interference between face and car expertise. *Current Directions in Psychological Science*, 14(1), 30-33.

Curby, K. M., Hayward, W. G. & Gauthier, I. (2004). Laterality effects in the Recognition of Depth Rotated Novel Objects. *Cognitive, Affective and Behavioral Neuroscience*, 4(1), 100-111.

Gauthier, I., Curran, T., **Curby, K. M.**, & Collins, D. (2003). Perceptual interference supports a non-modular account of face processing. *Nature Neuroscience*, 6(4), 428-32.

Gauthier, I., James, T. W., **Curby, K. M.** & Tarr, M. J. (2003). The influence of conceptual knowledge on visual discrimination. *Cognitive Neuropsychology*, 20(3-6), 507-523.

In Progress

Curby, K. M., Riley, M., Jones, W., Grupe*, D., Herrington, J., Price, E., Wolf, J. & Schultz, R. T. (in revision). A spatial frequency account of fusiform hypoactivation to faces in autism.

Dickerson*, E., Babaian, C., Curby, K. M., Hershey, B. L., Faro, S.H., & Mohamed, F. B. (under review). A comparison of the neuroanatomical substrates of 3D mental object manipulation and the interpretation of a medical imaging task.

Curby, K.M., & Schultz, R.T. (in revision). High and low spatial frequency information contributes to behavioral and neural markers of face-specific processes.

Curby, K. M., & Gauthier, I. (in revision). The dark side of expertise: Interference between face and non-face domains of perceptual expertise.

Curby, K. M. & Smith, S. (in preparation). Visual short-term memory is impaired for emotional stimuli.

Conference Presentations

Curby, K. M. (2011). Contextual grouping cues modulate holistic face perception. Presented at the 11th annual meeting of the Vision Sciences Society, Naples FL, May, 2011.

Blacker*, K. J. & Curby, K. M (2010). Perceptual expertise attenuate the attentional blink. Talk presented at the OPAM workshop, St Louis, Missouri, November, 2010.

Collins*, J., & Curby, K. M. (2010). Attentional disengagement from stimuli with learned emotional associations. Poster presented at the OPAM workshop, St Louis, Missouri, November, 2010.

Curby, K. M., Riley, M., Grupe, D. W., Hunyadi, E. T., & Schultz, R. T. Abnormal Fusiform Gyrus Response to Low but Not High Spatial Frequency face Information in Autism. Talk presented at the 9th Annual International Meeting For Autism Research (IMFAR), Philadelphia, PA, May, 2010.

Curby, K. M. & Schultz, R. T. High spatial frequency information contributes to hallmarks of face-specific processes. Poster presented at the 50th Annual Meeting of the Psychonomic Society, Boston, MA, November, 2009.

Curby, K. M., Johnson, K., & Tyson**, A. Perceptual expertise has an emotional side: Holistic face processing is modulated by observers' emotional state. Poster presented at the 9th annual meeting of the Vision Sciences Society, Naples FL, May, 2009.

Curby, K. M. & Smith, S. D. Effect of emotional expression on VSTM for faces: A matter of time. Talk presented at the 49th Annual Meeting of the Psychonomic Society, Chicago, Illinois, November, 2008.

Most S. B., Wang*, L., Engelhardt**, D., & Curby, K. M. Selective effects of emotion on visual short-term memory. Poster presented at the 8th annual meeting of the Vision Sciences Society, Naples FL, May, 2008.

Curby, K. M. & Smith, S. D. Facing Fear: The effect of emotional expression of visual short-term memory for faces. Poster presented at the 8th annual meeting of the Vision Sciences Society, Naples, Florida, May, 2008.

Curby, K. M. & Gauthier, I. The time-course of expert and novice visual object encoding. Poster presented at the 6th annual Meeting of the Vision Sciences Society, Sarasota, Florida, May, 2006.

Curby, K. M. & Gauthier, I. Dissociating visual short-term memory and perceptual capacity for faces and

objects. Poster presented at the 5th annual meeting of the Vision Sciences Society, Sarasota, Florida, May, 2005.

Curby, K. M. & Gauthier, I. Capacity Limitations in Category Selective Areas. Talk presented at the annual meeting of The Organization for Human Brain Mapping (OHBM), Budapest, Hungary, June, 2004.
Received NIH/OHBM sponsored travel award for top trainees in human brain mapping.

Curby, K. M., Schyns, P., Gosselin, F., & Gauthier, I. Face-selective fusiform activation in Asperger's Syndrome: A matter of tuning to the right (spatial) frequency. Poster presented at the 22nd Attention & Performance meeting in Denver, Colorado, 2004.

Curby, K. M., Schyns, P., Gosselin, F., & Gauthier, I. Spatial Frequency Use in Asperger's Syndrome. Poster presented at the 3rd annual Meeting of the Vision Science Society, Sarasota, Florida, May, 2003.

Gauthier, I., Curran, T., Curby, K. M. & Collins, D. Perceptual interference evidence for a non-modular account of face processing. Poster presented at the Cognitive Neuroscience Meeting, New York, March, 2003.

Curby, K. M., Hayward, W. G. & Gauthier, I. Left-hemisphere viewpoint-independent recognition depends on semantic information. Poster presented at the 43rd Annual meeting of the Psychonomic Society, Kansas City, November, 2002.

Curby, K. M. & Gauthier, I. Face-selectivity in the fusiform gyrus to highpass but not unfiltered images in a person with Asperger's syndrome. Poster presented at the annual meeting of The Human Brain Mapping Meeting, Sendai, Japan, June, 2002.

Gauthier, I., Curby, K. M. & Epstein, R. Spatial Frequency Channels in the Human FFA. Poster presented at the annual meeting of The Human Brain Mapping Meeting, Sendai, Japan, June, 2002. Also presented as a poster at the 20th Attention & Performance meeting in Erice, Sicily, July, 2002.

Curby, K. M. & Gauthier, I. Interference between car and face expertise. Talk presented at the OPAM workshop, Orlando, Florida, November, 2001.

Invited Colloquia

Curby, K. M. Curby, K. M. Probing perceptual and emotional contributions to face perception. Visual Cognition Series, University of Sydney, NSW, Australia, August, 2010.

Curby, K. M. Probing perceptual and emotional contributions to face perception. Neuropsychology Seminar Series, University of Pennsylvania, February, 2010.

Curby, K. M. Bridging Visual Cognitive Research and Autism. Talk given to the University of Pennsylvania / Children's Hospital of Philadelphia Center for Autism Research, Distinguished Lecture Series. March, 2009.

Curby, K. M. Higher order visual perception and its neural correlates: Insights from normal and abnormal perceptual expertise. Functional MRI symposium, Temple University School of Medicine, October, 2008.

Curby, K. M. Face-selectivity in ASD: A matter of tuning to the right (spatial) frequency? Talk given to the Autism Science Meeting, Yale Child Study Center, May 2007.

Curby, K. M. To the trained eye: Expertise alters visual processing. Talk given to the Department of Psychology, Temple University, February, 2007.

Curby, K. M. To the trained eye: Expertise alters visual processing. Talk given at the Department of Psychology's Cognition Colloquium Series, University of Delaware, February, 2007.

Curby, K. M. Perceptual expertise increases visual short-term memory capacity. Talk given at the Department of Psychology's Current Work in Cognition Series, Yale University, September, 2006.

Curby, K. M. Face-selective fusiform activation in Asperger Syndrome: A matter of tuning to the right (spatial) frequency. Talk given to the Vanderbilt Kennedy Center and the Center on Child Development Grand Rounds, Vanderbilt University, October 2004.

Curby, K. M. Visual Expertise: What can cognitive neuroscientists learn from surgical pathologists? Talk given to the Surgical Pathology Grand Rounds, Department of Pathology, University of New Mexico Medical School, May 2003.

Funding

Training the developing ADHD brain: Does a lab-informed working memory training intervention translate to real-world benefits in the classroom? Co-PI with C. Fiorello & K. Thurman. Temple University Faculty Research Collaboration grant (*funded*, \$49,292)

Selected Media Coverage of Research

For Gauthier, Curran, Curby, & Collins' (2003) research on perceptual interference in dual experts
New York Times, Scientific American, BBC news, CNN news, Science Daily, ABC news, United Press International, New Scientist, Reuters, Daily Telegraph London, Yahoo News, Car and Driver.

For Curby & Gauthier's (2007) research on the visual short-term memory advantage for faces
United Press International, Science Daily, Medical News Today, Newswise.com, Psychologie Heute.

Professional Service

Editorial board member, *Psychological Science*, January 2011 - present

Review Editor, *Frontiers in Cognitive Science*, Spring 2010 – present.

Organizer, 15th & 16th Annual *Object Perception, Attention, and Memory* (OPAM) Conference. This is a satellite conference associated with the larger annual meeting of the Psychonomic Society. 2006 - 2008.

Ad-hoc reviewer for:

Cerebral Cortex, Trends in Cognitive Science, Proceedings of the Royal Society B (Biological Science), Neuroimage, Brain and Cognition, Perception and Psychophysics, Psychological Science, Autism Research, Memory and Cognition, Frontiers in Cognitive Science, Psychological Research, Visual Cognition, Journal of Vision, Journal of Experimental Psychology: Human Perception and Performance, Economic & Social Research Council (one of the UK's leading research and training agencies)

Departmental Service

Member, Temple University Research in Neuroimaging Group (RiNG), Fall 2009 – present.

Member, Provost's Task Force to establish closer relations among faculty at Temple who do research on the science of learning, Spring 2009 - present.

Member, Diversity Committee, Department of Psychology, Fall 2010 – present

Member, Colloquium Committee, Department of Psychology, Fall 2009 – Spring 2010

Member, Social Studies Committee, Department of Psychology, Temple University. Fall 2008 – Spring 2009.

Professional Memberships

Vision Sciences Society

Psychonomic Society

International Society for Autism Research

Association of Psychological Science (APS).

International Society for Research on Emotion (ISRE)