Valerie A Carr, PhD

Department of Psychology
Jordan Hall, Building 420
Stanford, CA 94305

Phone: 650-724-2821
Fax: 650-725-5699
valerie.carr@stanford.edu

EDUCATION

PhD, Neuroscience, University of California Los Angeles, 2008
Dissertation: *A selective role for the hippocampus in the formation and retrieval of distinct episodic memories*
Advisor: Dr. Barbara Knowlton

BS, *Cum laude*, Biological Psychology, The College of William and Mary, 2001
Advisor: Dr. Robert Lennartz

POSITIONS

2008-current	Post-doctoral fellow Department of Psychology, Stanford University Advisor: Dr. Anthony Wagner
2002-2003	Chief MEG Technician MGH/MIT/HMS Martinos Center for Biomedical Imaging Supervisor: Dr. Matti Hamalainen
2001-2002	Research Assistant MGH/MIT/HMS Martinos Center for Biomedical Imaging Supervisor: Dr. Eric Halgren

FELLOWSHIPS, AWARDS, AND GRANTS

2010-2013	NIH Ruth L. Kirschstein National Research Service Award Individual Postdoctoral Fellowship
2012	Alzheimer's Imaging Consortium Fellowship
2012	Alzheimer's Association International Conference Travel Fellowship
2003-2008	Achievement Rewards for College Scientists
2007-2008	UCLA Graduate Division Dissertation Year Fellowship
2007, '08	Organization for Human Brain Mapping Travel Award
2006, '07, '08	UCLA Graduate Division Travel Award
2005, '08	UCLA Quality of Graduate Education Program
2004-2005	NIH Ruth L. Kirschstein National Research Service Award Institutional Predoctoral Fellowship
2000	NSF Research Experience for Undergraduates Fellowship

PUBLICATIONS

Carr V. A., Viskontas, I. V., Engel, S. A., and Knowlton, B. J. (2010). Neural activity in the hippocampus and perirhinal cortex during encoding is associated with the durability of episodic memory. *Journal of Cognitive Neuroscience*, 22, 2652-2662.

Carr, V. A., Rissman, J., and Wagner, A.D. (2010). Imaging the human medial temporal lobe with high-resolution fMRI. *Neuron*, 65, 298-308.

Poldrack, R. A., **Carr, V. A.**, and Foerde, K. E. (2010). Flexibility and generalization in memory systems. In Banich, M.T. and Caccamise, D. (Eds), *Generalization of Knowledge: Multidisciplinary perspectives*, pp. 53-70. New York, NY: Psychology Press.

Viskontas, I. V.,*** Carr V. A.**,***** Engel, S. A., and Knowlton, B. J. (2009). The neural correlates of recollection: Hippocampal activation declines as episodic memory fades. *Hippocampus*, 19, 265-272.

*****Authors contributed equally

Carr V. A. and Viskontas, I. V. (2007). A unique role for the hippocampus in recollecting the past and remembering the future. *Behavioral and Brain Sciences*, 30, 319-320.

Heckman, G., Bouvier, S. E., **Carr, V. A.**, Harley, E. M., Cardinal, K. S., and Engel, S. A. (2007). Nonlinearities in rapid event-related fMRI explained by stimulus scaling. *NeuroImage*, 34, 651-660.

Knake, S., Halgren, E., Shiraishi, H., Hara, K., Hamer, H. M., Grant, P. E., **Carr, V. A.**, Foxe, D., Camposano, S., Busa, E., Witzel, T., Hamalainen, M. S., Ahlfors, S. P., Bromfield, E. B., Black, P. M., Bourgeois, B. F., Cole, A. J., Cosgrove, G. R., Dworetzky, B. A., Madsen, J. R., Larsson, P. G., Schomer, D. L., Thiele, E. A., Dale, A. M., Rosen, B. R., and Stufflebeam, S. M. (2006). The value of multichannel MEG and EEG in the presurgical evaluation of 70 epilepsy patients. *Epilepsy Research*, 69, 80-86.

Marinkovic, K., Dhond, R. P., Dale, A. M., Glessner, M., **Carr, V**., and Halgren, E. (2003). Spatio-temporal dynamics of modality-specific and supramodal word processing. *Neuron*, 38, 487-97.

Manuscripts:

LaRocque, K.F., Smith, M.E., **Carr, V.A.**, Witthoft, N., Grill-Spector, K. and Wagner. A.D. (submitted). Global similarity and pattern separation in the human medial temporal lobe predict subsequent memory.

Carr, V. A., Favila, S. E. and Wagner, A. D. (in preparation). High-resolution investigation of relational pattern separation in the medial temporal lobe using a rapid fMR-adaptation approach.

Carr V. A., Engel, S. A., and Knowlton, B. J. (in preparation). Greater recruitment of hippocampal circuitry while attending to distinctiveness than similarity.

Carr V. A., Castel, A.D., and Knowlton, B. J. (in preparation). Age-related reduction in the beneficial effects of attending to distinctiveness on recollection.

CONFERENCE PRESENTATIONS

Carr, V. A., Favila, S. E., Arena, D., Bailenson, J. N. and Wagner, A. D. (October 2012). Modulation of medial temporal lobe activity by reward value during virtual navigation: A high-resolution fMRI study. Society for Neuroscience, New Orleans. Oral presentation.

Carr, V.A., Favila, S. E., Bernstein, J. D., Wagner, A. D. and Kerchner, G. A. (2012). Successful associative memory formation and retrieval in healthy older adults is associated with hippocampal subfield activation. Alzheimer's Association International Conference, Vancouver, Canada.

Carr, V.A., Deutsch, G., Zeineh, M., Rutt, B., Wagner, A. D. and Kerchner, G. A. (2011). Hippocampal microstructure and memory performance in Alzheimer's disease: A 7-Tesla MRI study. Bay Area Memory Meeting, Berkeley. Oral presentation.

Carr, V.A. and Wagner, A. D. (2011). High-resolution functional MRI: A window onto mechanism and representation in the human medial temporal lobe. International Conference on Memory, York, England. Oral presentation.

Carr, V.A., Favila, S. E., and Wagner, A. D. (2010). High-resolution investigation of relational pattern separation in the medial temporal lobe using a rapid fMR-adaptation approach. Society for Neuroscience, San Diego.

Carr, V.A., Favila, S. E., and Wagner, A. D. (2010). High-resolution fMRI of relational pattern separation in the human medial temporal lobe. Cognitive Neuroscience Society, Montreal.

Carr, V. A., Castel, A. D., and Knowlton, B. J. (2008). Age-related reduction in the beneficial effects of attending to distinctiveness on recollection. Society for Neuroscience, Washington, DC. Oral presentation.

Carr, V. A., Engel, S. A., and Knowlton, B. J. (2008). Hippocampal activation is associated with encoding the distinctiveness of items. Human Brain Mapping, Melbourne.

Carr, V. A. and Knowlton, B. J. (2008). Do learning strategies emphasizing distinctiveness vs. similarity differentially engage the hippocampus? Annual Meeting of the Center for the Neurobiology of Learning and Memory, University of California Irvine. Oral Presentation.

Carr, V. A., Viskontas, I. V., Engel, S. A., and Knowlton, B. J. (2007). Subregional activation in the hippocampus during retrieval reflects quality but not durability of memory. Human Brain Mapping, Chicago. Oral presentation.

Carr, V. A., Viskontas, I. V., Engel, S. A., and Knowlton, B. J. (2006). Activation in the parahippocampal gyrus during retrieval at a short delay predicts durability of episodic details. Cognitive Neuroscience Society, San Francisco.

Carr, V. A., Knake, S., Shiraishi, H., Halgren, H., Schomer, D., Dale, A., and Stufflebeam, S. (2003). Unilateral giant somatosensory evoked magnetic fields as a lateralizing sign in focal epilepsy: A case report. Human Brain Mapping, New York: 1559.

TEACHING AND ADVISING

Guest Lecturer, Stanford University:
Art as Documentation and Memory as Art, Drama Department: Fall 2011
The Nervous System, School of Medicine: Winter 2011

Teaching Associate, UCLA:
Fundamentals of Learning: Spring 2007, Summer 2007
Laboratory in Cognitive Psychology: Winter 2007
Sensation and Perception: Fall 2006

Teaching Assistant, UCLA:
Fundamentals of Learning: Spring 2006, Summer 2006
Introductory Psychobiology: Winter 2006
Sensation and Perception: Fall 2005

Advising:
Mentor, Stanford University research assistants: 2008-present
Supervisor, Stanford University undergraduate honors thesis: 2010-2011

Supervisor, Stanford human biology research exploration program: 2009, '10
Mentor, UCLA research assistants: 2003-2008

PROFESSIONAL ACTIVITIES

Ad Hoc Reviewer:
Brain Research; *Hippocampus*; *Journal of Neuroscience*; *NeuroCase; Neuropsychologia*; *Proceedings of the National Academy of Sciences*; *Psychological Science*

Memberships:
Cognitive Neuroscience Society
Society for Neuroscience
Organization for Human Brain Mapping

Editing:
English manuscript editor, Tokyo Medical and Dental University

REFERENCES

Dr. Anthony Wagner
Stanford University, Department of Psychology
Jordan Hall, Building 420
Mail Code 2130
Stanford, CA 94305
(650) 723-4048
awagner@stanford.edu

Dr. Geoffrey Kerchner
Stanford University, Department of Neurology and Neurological Sciences
300 Pasteur Dr, Rm A343
Mail Code 5235
Stanford, CA 94305
(650) 723-2078
kerchner@stanford.edu

Dr. Barbara Knowlton
University of California, Los Angeles, Department of Psychology
1285 Franz Hall, Box 951563
Los Angeles, CA 90095-1563
(310) 825-5917
knowlton@psych.ucla.edu