

Scott M. Hayes, Ph.D.

Contact Information

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Center for Cognitive Neuroscience
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Employment & Education

Current Position: NRSA Postdoctoral Fellow, Duke University
Center for Cognitive Neuroscience
Bryan Alzheimer's Disease Research Center
Mentors: Roberto Cabeza, Ph.D.
Kathleen Welsh-Bohmer, Ph.D.

Licensure 2008 Provisional Licensed Psychologist (NC)
Health Services Provider Psychologist, Provisional (NC)

Ph.D. 2006 University of Arizona, Tucson, AZ
Major: Clinical Psychology
Emphasis: Neuropsychology, Cognitive Neuroscience
Dissertation Advisors: Drs. Lee Ryan, Lynn Nadel,
Elizabeth Glisky, Alfred Kaszniak
Dissertation Title: The effect of visual context on episodic
object recognition.

Internship 2006 Boston Veterans Affairs Health Care System
Major Rotation: Geriatric Research, Education, &
Clinical Center (GRECC)
Minor Rotation: General Mental Health Outpatient Clinic

M.A. 2002 University of Arizona, Tucson, AZ
Major: Clinical Psychology
Advisor: Lee Ryan, Ph.D.
Thesis Title: An fMRI study of episodic memory:
Retrieval of object, spatial, and temporal
order information.

B.A. 1998 Skidmore College, Saratoga Springs, NY
Major: Biology (Honors); Psychology (Honors)

Research Interests

Cognitive Neuroscience of Memory: Episodic, Semantic, and Autobiographical Memory

Neuropsychology of Memory: Healthy and Pathological Aging, Psychological Disorders

Neuroimaging: functional Magnetic Resonance Imaging (fMRI),
Diffusion Tensor Imaging (DTI)

Fellowships and Grants

Ruth L. Kirschstein National Research Service Award (NRSA)

Agency: **National Institute of Aging F32-AG029738**
Title: The effect of aging on item and context memory, neural function and neural structure.
Duration: 08/01/2007 - 07/31/2010
Mentors: Roberto Cabeza, Ph.D., *Professor*
Psychology & Neuroscience, Duke University
Kathleen Welsh-Bohmer, Ph.D., *Director*
Bryan Alzheimer's Disease Research Center
Professor, Psychiatry, Duke University
Medical Center

National Institutes of Health Clinical Research Loan Repayment Program

Agency: **National Institutes of Health**
Duration: 07/01/2007 – 06/30/2009

Summer Training on Aging Research Topics: Mental Health Fellowship (2004)

Agency: **National Institutes of Mental Health**
Title: Reduced fractional anisotropy in frontal lobe white matter in older adults.
Mentor: Suzanne Corkin, Ph.D. (M.I.T.)

The Vivian Smith Advanced Studies Summer Institute (2004). Declined

Agency: International Neuropsychological Society
Title: The Human Frontal Lobes.

The Vivian Smith Advanced Studies Summer Institute (2003)

Agency: International Neuropsychological Society
Title: Medial Temporal Lobes and Amnesia

University of Arizona Imaging Fellowship (2001-2002)

Agency: State of Arizona Prop. 301.

University of Arizona Pre-doctoral Research Grant (2001)

Agency: Social and Behavioral Sciences Research Institute

Academic and Professional Honors

- 2007-2010 Ruth L. Kirschstein National Research Service Award (NRSA)
 2004 Organization of Human Brain Mapping Student Travel Award
 2002 National Science Foundation Graduate Research Fellowship: Honorable Mention.
 1998 Graduated cum laude with departmental honors in Biology & Psychology
 1998 Awarded Best Senior Research Project (Skidmore Biology Department)
 1994-1998 Kettering-Williamson Scholarship Recipient (Skidmore College)

Professional Associations

Cognitive Neuroscience Society (CNS)
 Society for Neuroscience (SfN)
 Organization for Human Brain Mapping (OHBM)
 International Neuropsychological Society (INS)
 American Psychological Association (APA)

Publications

Peer Reviewed Journals:



Dennis, N.A., **Hayes, S.M.**, Prince, S.E., Madden, D.J., Huettel, S.A., & Cabeza, R. (2008). Effects of aging on the neural correlates of successful item and source memory encoding. *Journal of Experimental Psychology: Learning, Memory & Cognition*.



Ryan, L., Cox, C., **Hayes, S.M.**, & Nadel, L. (2008). Hippocampal activation during episodic and semantic memory retrieval: Comparing category production and category cued recall. *Neuropsychologia*.



Hayes, S.M., Nadel, L., & Ryan, L. (2007). The effect of scene context on episodic object recognition: Parahippocampal cortex mediates memory encoding and retrieval success. *Hippocampus*, 17(9), 873-889.



Hayes, S.M., Ryan, L., Schnyer, D., & Nadel, L. (2004). An fMRI study of episodic memory: Retrieval of object, spatial, and temporal information. *Behavioral Neuroscience*, 118(5), 885-896.



Glisky, E.L., Ryan, L., Reminger, S., Hardt, O., **Hayes, S.M.**, Hupbach, A. (2004). A case of psychogenic fugue: I understand, aber ich verstehe nichts. *Neuropsychologia*, 42, 1132-1147.

Book Chapters:

Hayes, S.M. and Cabeza, R.C. (2008). Imaging Aging. In S. M. Hofer and D.F. Alwin (Eds), *The Handbook on Cognitive Aging: Interdisciplinary Perspectives*, Thousand Oaks: Sage Publications.



Nadel, L., Ryan, L., **Hayes, S.M.**, Gilboa, A., & Moscovitch, M. (2003). The role of the hippocampal complex in episodic long-term memory. In T. Ono, G. Matsumoto, R.R. Llinas, A. Berthoz, R. Norgren, H. Nishijo & R., Tamura (Eds), *Cognition and Emotion in the Brain: Selected Topics of the International Symposium on Limbic and Association Cortical Systems*, Toyama, Japan 7-12 October 2002 (Excerpta Medica International Congress Series, 1250, pp. 215-235), Amsterdam, Elsevier Science.



Johnson, M.K., **Hayes, S.M.**, D'Esposito, M., & Raye, C.L. (2000). Confabulation. In J. Grafman & F. Boller (Eds.), *Handbook of Neuropsychology* (2nd ed., pp. 359-383). Amsterdam, Netherlands: Elsevier Science.

Manuscripts In Preparation:

Hayes, S.M. and Cabeza, R. Places influencing faces: An fMRI study of the effects of visual context on episodic face recognition memory.

Hayes, S.M., Glisky, E.L., Nadel, L., & Ryan, L., Age resistant context effects: Evidence for intact binding and successful aging in older adults.

Hayes, S.M., Truong, T-K., Song, A.W., & Cabeza, R. Assessing the the BOLD signal in orbitofrontal cortex and medial temporal lobes: Comparison of spiral-in, spiral-out and spiral-in/out SENSE functional MRI at 3 Tesla.

Hayes, S.M., Baena, E., & Cabeza, R. Man versus machine: Is the CANTAB a valid indicator of neuropsychological status of older adults?

Invited Talks & Presentations

Dec 2007	Duke University, Center for Cognitive Neuroscience
Nov 2007	University of Arizona, Memory Group Meeting
Jan 2006	M.I.T., Charles River Association for Memory
Apr 2005	Arizona Alzheimer's Research Center, Alzheimer's Disease Core Center
Apr 2004	Arizona Alzheimer's Research Center, Alzheimer's Disease Core Center

Conference Presentations

Hayes, S.M. & Cabeza, R. (April, 2008). Places influencing faces: An fMRI study of the effects of visual context on episodic face recognition memory. Abstracted accepted for the annual meeting of the Cognitive Neuroscience Society. New York, NY.

Hayes, S.M., Dennis, N.A., Prince, S.E., Huettel, S.A., Madden, D.J & Cabeza, R. (2007, May). *Effects of aging on neural correlates of item and relational memory*. Abstracted accepted for the annual meeting of the Cognitive Neuroscience Society. New York, NY.

Cox, C.L., **Hayes, S.M.**, Patterson, D., Nadel, L., & Ryan, L. (2006, November). *Precuneus deactivations in a semantic memory retrieval task as measured by fMRI*. Poster presented at the annual meeting of the Society for Neuroscience. Atlanta, GA.

Ziegler, D.A., Salat, D.H., **Hayes, S.M.**, Prince, K., Connally, E., Piguet, O., & Corkin, S. (2005, November). *DTI-based measures of white matter integrity predict cognitive performance in healthy aging*. Poster presented at the annual meeting of the Society for Neuroscience. Washington, D.C.

Hayes, S.M., Glisky, E.L., McAllister, C., Greenleaf, J., Ketcham, K., Nadel, L., & Ryan, L. (2005, April). *Contextual enhancement of object recognition is not influenced by aging*. Poster presented at the annual meeting of the Cognitive Neuroscience Society. New York, NY.

Hayes, S.M., Ryan, L., & Nadel, L. (2004, November). *The effect of visual context on episodic object recognition*. Poster presented at the annual meeting of the Society for Neuroscience. San Diego, CA.

Hayes, S.M., Ryan, L., Patterson, D., & Nadel, L. (2004, June). *The role of the hippocampal complex in episodic and semantic memory retrieval*. Poster presented at the annual meeting of the Organization for Human Brain Mapping. Budapest, Hungary.

Hayes, S.M., Ryan, L., Glisky, E.L., Hardt, O., Hupbach, A., & Reminger, S. (2004, June). *An fMRI case study of psychogenic fugue: I understand, aber ich verstehe nichts*. Poster presented at the annual meeting of the Organization for Human Brain Mapping. Budapest, Hungary.

Hayes, S.M., Ryan, L., Schnyer, D., & Nadel, L. (2003, April). *An fMRI study of episodic memory: Retrieval of object, spatial, and temporal information*. Poster presented at the annual meeting of the Cognitive Neuroscience Society. New York.

Hayes, S.M., Ryan, L., Nadel, L. (2002, April). *An fMRI study of region-specific*

patterns of activation while retrieving aspects of episodic memory. Poster presented at the annual meeting of the Cognitive Neuroscience Society. San Francisco, CA.

Hayes, S.M., Ryan, L., Nadel, L., Perschler, P. Spitler, K. (2001, November). A comparison of fMRI hippocampal activation during semantic and episodic retrieval using a category production task. Poster presented at the annual meeting of the Society for Neuroscience. San Diego, CA.

Journal Reviewing (ad hoc)

Hippocampus
NeuroImage
Neuroscience Letters

Clinical Experience

- 2007- **NRSA Postdoctoral Fellow**
Joseph & Kathleen Bryan Alzheimer's Disease Research Center
Duke University Medical Center, Durham, NC
Duties: neuropsychological assessment, clinical interviews, diagnosis, report writing, treatment recommendations
Populations: adults experiencing cognitive impairment, often as a result of a dementing illness, vascular event, traumatic brain injury, depression, anxiety or other psychological disorder
- 2005-2006 **Psychology Intern**
Boston Veterans Affairs Health Care System, Boston, MA
Major Rotation: Geriatric Research, Education, & Clinical Center
Minor Rotation: Outpatient Clinic (General Mental Health, Mood Disorders, PTSD Clinics)
Duties: neuropsychological testing, diagnostic interviews, interpretation, diagnosis, report writing, treatment recommendations, group, couples, and individual therapy
Populations: young to older adults, suffering from dementing illnesses, traumatic brain injury, aphasia, depression, anxiety, post-traumatic stress disorder, and other psychological disorders
- 2003-2004 **Psychology Extern**
Psychiatry Department, University Medical Center, Tucson, AZ
Duties: Assessment of probationers for special needs caseload, evaluation of chronic pain patients for surgical intervention, assessment of young adults for learning disabilities and attention deficit disorders
Populations: chronic pain patients, probationers, young adults
- 2002-2003 **Psychology Extern**
Marana Health Center, Marana, AZ

Duties: assessment, diagnosis, psychosocial intervention

Populations: adults, children, and families, suffering from a variety of disorders including depression, anxiety, panic attacks, substance abuse, and relational issues.

2002-2003 **Neuropsychology Practicum**

Memory Disorders Clinic, University Medical Center, Tucson, AZ

Duties: neuropsychological testing, interpretation, report writing

Population: older adults

2001-2002 **Psychosocial Intervention Practicum**

Psychology Clinic, University of Arizona, Tucson, AZ

Duties: individual and family therapy with clients using a cognitive behavioral and family systems approach

Populations: college students, families from the Tucson community

2000-2001 **Assessment & Diagnosis Practicum**

Psychology Clinic, University of Arizona, Tucson, AZ

La Frontera Partial Hospitalization Facility, Tucson, AZ

Duties: psychological assessment, diagnosis, report writing

Populations: low functioning undergraduates and psychiatric inpatients

Teaching Experience

2007-2008 **Guest Lecturer**, Duke University
Course Title: Principles of Cognitive Neuroscience

2005 **Instructor**, University of Arizona
Course Title: Human Memory

2002 **Teaching Assistant**, University of Arizona
Course Title: Environmental Psychology

2001 **Teaching Assistant**, University of Arizona
Course Title: Environmental Psychology

Teaching Interests

Neuroanatomy • Brain & Behavior • Human Memory • Cognitive Neuroscience of Memory • Cognitive Neuroscience of Aging • Introduction to Neuroimaging
Clinical Neuropsychology • Geriatric Neuropsychology •

Supervision Experience

2001- Supervised undergraduate and full-time research assistants and graduate students at the University of Arizona and Duke University on participant recruitment, data collection, development, design, and analysis of behavioral, neuropsychological, and fMRI research projects

References

Roberto Cabeza, Ph.D.
Professor
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Lee Ryan, Ph.D.
Associate Professor
Department of Psychology
University of Arizona
Tucson, AZ 85719

Kathleen Welsh-Bohmer
Director, Bryan ADRC
Professor, Division of Medical Psychology
Department of Psychiatry & Behavioral
Sciences
Duke University Medical Center
Durham, NC 27710

Lynn Nadel, Ph.D.
Professor
Department of Psychology
University of Arizona
Tucson, AZ 85719

ADDITIONAL REFERENCES AVAILABLE UPON REQUEST:

William P. Milberg, Ph.D.
Associate Professor Psychiatry, Harvard Medical School
Associate Director: Geriatric Research, Education, & Clinical Center
Boston Veterans Affairs Medical Center, Boston, MA 02130

Alfred W. Kaszniak, Ph.D.
Professor, Psychology Department Head

Elizabeth L. Glisky, Ph.D.
Professor, Psychology, University of Arizona

Varda Shoham, Ph.D.
Professor, Director of Clinical Training, University of Arizona