

C. Brock Kirwan, Ph.D.

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ACADEMIC & RESEARCH POSITIONS

<i>Assistant Professor:</i> Department of Psychology & Neuroscience Center, Brigham Young University, Provo, UT	2009-Present
<i>Adjunct Assistant Professor:</i> Department of Psychology, University of Utah, Salt Lake City, UT	2010-Present
<i>Adjunct Assistant Professor:</i> Department of Psychology, San Diego State University, San Diego, CA	2009-Present
<i>Postdoctoral Fellow:</i> Department of Psychiatry, University of California, San Diego (Research Adviser: Dr. Larry Squire).	2006-2009
<i>Lecturer:</i> Department of Psychology, San Diego State University	2006-2009
<i>Doctoral Research:</i> Department of Psychological and Brain Sciences, Johns Hopkins University (Doctoral Advisor: Dr. Craig Stark)	2002-2006
<i>Undergraduate Honors Research:</i> Department of Psychology, University of Utah (Honors Thesis Advisor: Dr. Raymond Kesner)	1999-2001

EDUCATION

Ph.D.	Johns Hopkins University: Psychological and Brain Sciences	2006
M.A.	Johns Hopkins University: Psychology	2004
B.S.	University of Utah: Psychology, <i>cum laude</i>	2001
B.S.	University of Utah: Philosophy, <i>cum laude</i>	2001

PUBLICATIONS

Jeneson, A., **Kirwan, C.B.**, & Squire, L.R. (2010). Recognition without awareness: An elusive phenomenon. *Learning and Memory*. 17:454-459.

Kirwan, C.B., Wixted, J.T., & Squire, L.R. (2010). A demonstration that the hippocampus supports both recollection and familiarity. *Proceedings of the National Academy of Sciences*. 107(1):344-348.

- Jeneson, A., **Kirwan, C.B.**, Hopkins, R.O., Wixted, J.T., & Squire, L.R. (2010). Recognition memory and the hippocampus: A test of the hippocampal contribution to recollection and familiarity. *Learning and Memory*. 17:852-859.
- Kirwan, C.B.**, Shrager, Y., & Squire, L.R. (2009). Medial temporal lobe activity can distinguish between old and new stimuli independently of overt behavioral choice. *Proceedings of the National Academy of Sciences*. 106(34):14617- 14621.
- Toner, C.K., Pirogovsky, E., **Kirwan, C.B.**, & Gilbert, P.E. (2009). Visual object pattern separation deficits in nondemented older adults. *Learning and Memory*. 16:338-342.
- Kirwan, C.B.**, Wixted, J.T., & Squire, L.R., (2008). Activity in the medial temporal lobe predicts memory strength, whereas activity in the prefrontal cortex predicts recollection. *Journal of Neuroscience*. 28(42):10541-10548
- Shrager, Y., **Kirwan, C.B.**, & Squire, L.R. (2008). Activity in both hippocampus and perirhinal cortex predicts the memory strength of subsequently remembered information. *Neuron*, 59(4):547-553.
- Shrager, Y., **Kirwan, C.B.**, & Squire, L.R. (2008). The neural basis of the cognitive map: path integration does not require hippocampus or entorhinal cortex. *Proceedings of the National Academy of Sciences*. 105(33):12034-12038.
- Bakker, A., **Kirwan, C.B.**, Miller, M.I., & Stark, C.E.L. (2008). Pattern Separation in the human hippocampal CA3 and dentate gyrus subfields. *Science*. 319(5870):1640-1642.
- Kirwan, C.B.**, Galvan, V.V., Bayley, P.B., & Squire, L.R. (2008). Detailed Recollection of Remote Autobiographical Memory After Damage to the Medial Temporal Lobe. *Proceedings of the National Academy of Sciences*. 105(7):2676-2680.
- Kirwan, C.B.**, Jones, C.K., Miller, M.I., & Stark, C.E.L. (2007). High-Resolution fMRI Investigation of the Medial Temporal Lobe. *Human Brain Mapping* 28(10):959-966.
- Kirwan, C.B.**, & Stark, C.E.L. (2007). Overcoming interference: An fMRI investigation of pattern separation in the medial temporal lobe. *Learning and Memory* 14(9):625-633.
- Kirwan, C.B.**, Gilbert, P.E., & Kesner, R.P. (2005). The role of the hippocampus in spatial location retrieval. *Neurobiology of Learning and Memory* 83(1):65-71.
- Kirwan, C.B.**, & Stark, C.E.L. (2004). Medial temporal lobe activation during encoding and retrieval of novel face-name pairs. *Hippocampus* 14(7):919-930.

INVITED PRESENTATIONS

“Hippocampal Function in Declarative Memory” Invited talk presented at the University of Utah, January 2010.

“Functional Anatomy of the Medial Temporal Lobe” Invited talk presented at Boston University, January 2009.

“Functional Anatomy of the Medial Temporal Lobe” Invited talk presented at the Johns Hopkins University, December 2008.

“Functional Anatomy of the Medial Temporal Lobe” Invited talk presented at the Ohio State University, December 2008.

“Functional Anatomy of the Medial Temporal Lobe” Invited talk presented at Brigham Young University, November 2008.

“High-resolution fMRI Investigation of Pattern Completion & Pattern Separation in the Medial Temporal Lobe” Invited talk presented at Stanford University, April 2008.

“A Method for Achieving Greater Cross-Participant Alignment for MTL Structures” Invited talk presented at San Diego State University, March 2008.

“The Effect of Memory Strength Manipulations in the Medial Temporal Lobe” Invited talk presented at Pázmány Péter Katolikus Egyetem (Pázmány Péter Catholic University), Budapest, Hungary, February 2008.

“Memory and Amnesia” Invited lecture to the Brain Myths course of the Discover Hopkins Pre-College Summer Program at Johns Hopkins University, July, 2007.

“Overcoming interference: Pattern separation processes in the medial temporal lobe” Invited talk presented at San Diego State University, November 2006.

ABSTRACTS AND CONFERENCE PRESENTATION

*Denotes mentored students

*Roper, J., & **Kirwan, C.B.** (2010) Metamemory and the neural correlates of recognition memory confidence. Society for Neuroscience Abstracts, Vol 36.

Kirwan, C.B. (2010) Intact Detailed Remote Episodic Memory Following Hippocampal Damage in Humans. Invited symposium presentation at the 34th Annual Conference on the Neurobiology of Learning and Memory, Park City, Utah, January 2010.

Kirwan, C.B., Shrager, Y., & Squire, L.R. (2009). Novelty and familiarity signals in the medial temporal lobe. Society for Neuroscience Abstracts, vol 35, Program No. 187.29.

Jeneson, A, **Kirwan, C.B.**, Wixted, J.T., & Squire, L.R. (2009). The Human Hippocampus and Recognition Memory: Evidence from Yes/No Tests and Forced-Choice Tests with either

Corresponding or Non-Corresponding Lures. Poster presentation at the Cognitive Neuroscience Society 16th Annual Meeting, San Francisco, March 2009.

Kirwan, C.B., Wixted, J.T., & Squire, L.R. (2009). Source memory following damage to the hippocampus. 33rd Annual Conference on the Neurobiology of Learning and Memory, Park City, Utah, January 2009.

Kirwan, C.B., Wixted, J.T., & Squire, L.R. (2008). Activity in the medial temporal lobe predicts memory strength, whereas activity in the prefrontal cortex predicts recollection. Society for Neuroscience Abstracts, vol. 34, Program No. 870.23.

Toner, C.K., Jones, S.N., Ranke, P.L., Bailey, B.M., Toletino, J., **Kirwan, C.B.**, & Gilbert, P.E. (2008). Age-related changes in visual object pattern separation. Society for Neuroscience Abstracts, vol. 34, Program No. 386.23

Shrager, Y., **Kirwan, C.B.**, & Squire, L.R. (2008). The neural basis of the cognitive map: Path integration does not require hippocampus or entorhinal cortex. Society for Neuroscience Abstracts, vol. 34, Program No. 118.2

Kirwan, C.B., & Squire, L.R. (2008). The medial temporal lobe responds to memory strength but not recollection and familiarity. Poster presentation at the Annual Inter-Science of Learning Center Student and Post-Doc Conference, Pittsburgh, PA, February 2008.

Kirwan, C.B., Shrager, Y., & Squire, L.R. (2007). Medial temporal lobe activity varies with strength of subsequent recognition memory. Society for Neuroscience Abstracts, vol. 33, Program No. 526.10.

Bakker, A., **Kirwan, C.B.**, Miller, M.I., & Stark, C.E.L. (2007). Pattern separation in the human hippocampal CA3 and dentate gyrus subfields. Society for Neuroscience Abstracts, vol 33, Program No. 667.2.

Kirwan, C.B., Stark, S., Goodrich-Hunsaker, N., Gordon, B., Hopkins, R., & Stark, C.E.L. (2007). Pattern separation processes in the human medial temporal lobe. Poster presentation at the Cognitive Neuroscience Society 14th Annual Meeting, New York, May 2007.

Kirwan, C.B., & Stark, C.E.L. (2006). High-resolution fMRI investigation of pattern completion and pattern separation in the medial temporal lobe: Evidence of dissociation. Society for Neuroscience Abstracts, vol. 32, Program No. 777.10.

Kirwan, C.B., Flanery, M.A., Jones, C.K., Pekar, J., & Stark, C.E.L. (2005). High-resolution fMRI investigation of the medial temporal lobe. Society for Neuroscience Abstracts, vol. 31, Program No. 315.11.

Kirwan, C.B., & Stark, C.E.L. (2004). Medial temporal lobe activation in a cued recall fMRI paradigm. Poster presentation at the Cognitive Neuroscience Society 11th Annual Meeting, San Francisco, April 2004.

Kirwan, C.B., & Stark, C.E.L. (2004). Medial temporal lobe activation in encoding and retrieval of novel face-name pairs. Poster presentation at the International Neuropsychological Society 32nd Annual Meeting, Baltimore, Feb. 2004.

Kirwan, C.B., & Stark, C.E.L. (2003). Medial temporal lobe activation in encoding and retrieval of novel face-name pairs. Society for Neuroscience Abstracts, vol. 29, Program No. 514.7.

Kirwan, C.B., Gilbert, P.E., and Kesner, R.P. (2001). The role of the hippocampus in spatial pattern completion. Society for Neuroscience Abstracts, vol. 27, Program No. 315.3.

Kirwan, C.B., Gilbert, P.E., & Kesner, R.P. (2001). The role of the hippocampus in spatial pattern completion. Poster presentation at the Intermountain Chapter of the Society for Neuroscience Fall Meeting, Lehi, UT, Oct. 2001.

GRANTS

The Cognitive Neuroscience of Long-Term Memory 2011-2012

Role: Principal Investigator

Source: Brigham Young University Office of Creative and Research Activities
Faculty Mentoring Environment Grant (MEG)

Award: \$20,000

Associative Memory in the Medial Temporal Lobe 2011-2012

Role: Principal Investigator

Source: Brigham Young University College of Family Home and Social Sciences
Research Grant

Award: \$6,160

Memory Processes in the Medial Temporal Lobe 2010-2011

Role: Principal Investigator

Source: The Brain Institute at the University of Utah Pilot Program in Imaging
Research

Award: \$5,000

Aging and Pattern Separation Processes in the Human Hippocampus 2010-2011

Role: Principal Investigator

Source: Brigham Young University College of Family Home and Social Sciences
Research Grant

Award: \$6,440

Cognitive and Neural Aspects of Memory Confidence

2010-2011

Role: Principal Investigator/Faculty Mentor

Source: Brigham Young University Graduate Mentoring Award (Student
Awardee: Jeremy Roper)

Award: \$4,000

COURSES TAUGHT

(Evaluations available upon request):

Brigham Young University

- NEURO 380: Behavioral Neuroscience (Fall '09, Fall '10)
- PSYCH 301: Psychological Statistics (Spring '10)
- PSYCH 370: Sensation and Perception (Winter '10, Fall '10)
- PSYCH 381: Behavioral Neurobiology (Winter '10, Fall '10)

San Diego State University

- PSYCH 380: Cognitive Psychology
- PSYCH 270: Statistical Methods in Psychology

Johns Hopkins University

- 200.173: Brain Myths: Neuroscience in Popular Culture and the Media
- 200.114: Laboratory in the Analysis of Psychological Data

AWARDS AND HONORS

Institutional National Research Service Award, Institute for Neural Computation Training Grant, University of California, San Diego	2006-2008
National Science Foundation Graduate Research Fellowship Honorable Mention	2004
Faculty for Undergraduate Neuroscience Travel Award	2001
National Science Foundation Research for Undergraduate Education (RUE) supplemental award	2000
National Merit Scholar, University of Utah	1995-2000

PROFESSIONAL AFFILIATIONS

The Brain Institute at the University of Utah	2009-present
Society for Neuroscience	2003-present
Cognitive Neuroscience Society	2003-present

UNIVERSITY & COMMUNITY SERVICE*Academic Committee Activities:*

College of Family Home & Social Sciences Research Committee	2010-Present
Psychology Dept. Learning Outcomes & Assessment Committee	2010-Present
Psychology Dept. Graduate Program Review Committee	2009-Present
Psychology Dept. Graduate Admissions Committee	2009-Present
Psychology Dept. Undergraduate Journal Peer Reviewer	2009-2010
UCSD fMRI Users Group Meeting Organizing Committee	2007-2008
Organizer, Institute for Neural Computation Fellows' Colloquium, UCSD	2007-2008

Community Activities:

Judge, Central Utah Science & Engineering Fair	Mar. 2010
Moderator, Student Research Symposium, San Diego State University	Feb. 2009
Brain Awareness Presentation at Show Low High School, Show Low, AZ	2007
Brain Awareness Week presentation at Baltimore Polytechnic High School, Baltimore, MD	2004-2006
Department Representative to the Graduate Representative Organization, Johns Hopkins University	2003-2004
Volunteer Assistant to the Hungarian National Olympic Committee at the 2002 Salt Lake Winter Olympic Games	Feb. 2002

AD-HOC REVIEWER

Brain, Brain Imaging and Behavior, Brain Research, Cerebral Cortex, Hippocampus, NeuroImage, Neuropsychologia, Neuroscience Letters