

# CURRICULUM VITAE

JAMES B. BREWER, M.D., PH.D.

## CONTACT INFORMATION

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## EDUCATION AND TRAINING

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2004-Present Assistant Professor, UCSD Departments of Radiology and Neurosciences  
2001-2004 Neurology Residency, Johns Hopkins  
2000-2001 Medical Internship, Saint Vincents' Hospital, Manhattan  
1993-2000 M.D./Ph.D., Medical Scientist Training Program, Stanford University  
1992-1993 Fulbright Scholarship, Weizmann Institute of Science, Rehovot, Israel  
1990 University of California-Berkeley, Integrative Biology Program  
1988-1992 B.S., Southwest Missouri State University, Biology and Psychology

## HONORS AND AWARDS

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2000 Graduation Address, Stanford School of Medicine Convocation  
1993 Fulbright Scholarship – Neuroscience Research in Israel  
1992 National Institutes of Health – Medical Scientist Training Program Grant  
1992 Graduation Address, Southwest Missouri State University  
1992 Outstanding Graduating Senior Award – SMSU College of Science and Mathematics

## RESEARCH EXPERIENCE

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- 1994-2000      Stanford University Neurosciences Program  
Department of Psychology  
Advisor: John D.E. Gabrieli  
Ph.D. Thesis: *Functional imaging of the medial temporal lobe during memory formation and retrieval*
- 1992-1993      Weizmann Institute of Science  
Department of Structural Biology  
Advisor: Joel Sussman and Israel Silman  
Research Subject: *X-ray crystallography of acetylcholinesterase and its inhibitors*
- 1992              Mayo Clinic-Jacksonville, Florida  
Department of Medicinal Chemistry  
Advisor: Alan Kozikowski  
Research Subject: *Computer modeling studies of the anticholinesterase activity of Huperzine A*
- 1991              Mayo Clinic-Rochester, Minnesota  
Department of Physiology and Biophysics  
Scholl Foundation Fellowship in the Neurosciences  
Advisor: Joseph Szurszewski  
Research Subject: *Three-dimensional reconstruction and analysis of autonomic neurons using confocal microscopy and image reconstruction software*
- 1990              Lawrence Berkeley Laboratories  
Department of Energy, Science and Engineering Research Semester  
Department of Research Medicine  
Advisor: William Jagust and Thomas Budinger  
Research Subject: *MRI, PET and SPECT imaging studies of Alzheimer's disease*
- 1990              University of Southern California  
National Science Foundation Research in Residence Program  
Loker Hydrocarbon Research Institute  
Advisor: George Olah, Nobel laureate  
Research Subject: *Selective benzylic oxidation using ozone and pyridine*

## RESEARCH INTERESTS

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- Goal**              (1) to advance our understanding of the neural basis of memory formation and retrieval  
(2) to apply technical advances and discoveries to the early diagnosis and treatment of memory disorders
- Techniques**      Event-related functional MRI; electrophysiologic recordings from scalp, surface and depth electrodes to obtain event-related potentials (ERP) and gamma-band activity related to memory; combining functional imaging techniques to improve spatial and temporal resolution.

## TEACHING EXPERIENCE

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2001-present	Mentor and teacher for Johns Hopkins medical students Average teacher rating=3.89 on scale of 1 to 4
2001-present	Invited instructor, Falcon Reviews USMLE review course-Dallas, Texas Teach neuroscience section to classes of U.S. and foreign medical students
1995-1998	Research mentor, Stanford University Undergraduate Research Program
1995	Instructor, <i>The biological basis of learning and memory</i> Summer course for Stanford University Department of Psychology
1994-1997	Principal Teaching Assistant, <i>Neurobiology 200</i> Stanford Medical School; Responsible for organizing teaching activities of other teaching assistants and lecturing on topics of neuroanatomy.

## PROFESSIONAL ASSOCIATIONS

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American Academy of Neurology  
Society for Neuroscience  
Cognitive Neuroscience Society

## AD HOC REVIEWER

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Trends in Neurosciences  
Journal of Child Psychology and Psychiatry  
Neurology

## PUBLICATIONS

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**Brewer JB** and Moghekar A. (2002). Imaging the medial temporal lobe: exploring new dimensions. *Trends in Cognitive Science*, 6, 217-223.

Golby, AJ, Poldrack RA, **Brewer JB**, Spencer D, Desmond JE, Aron A P, Gabrieli JDE. (2001). Material-specific lateralization in the medial temporal lobe and prefrontal cortex during memory encoding. *Brain*, 124, 1841-1854.

Canli T, Zhao Z, **Brewer JB**, Gabrieli JD, Cahill L. (2000). Event-related activation in the human amygdala associates with later memory for individual emotional experience. *Journal of Neuroscience*. 20, RC99

Gabrieli JDE, **Brewer JB**, Vaidya CJ. (1999). Memory. In CG Goetz & EJ Pappert (Eds) Textbook of Clinical Neurology. (pp 56-69). Philadelphia: W.B. Saunders Company.

Fernandez G, **Brewer JB**, Zhao Z, Glover GH, Gabrieli JD. (1999). Level of sustained entorhinal activity at study correlates with subsequent cued-recall performance: a functional magnetic resonance imaging study with high acquisition rate. *Hippocampus*, 9, 35-44.

Gabrieli JDE, **Brewer JB**, Poldrack RA (1998). Images of medial temporal lobe function in human learning and memory. *Neurobiology of Learning and Memory*, 70, 275-283.

**Brewer JB**, Zhao Z, Desmond JE, Glover GH, Gabrieli JD (1998). Making Memories: brain activity that predicts how well visual experience will be remembered. *Science*, 281, 1185-1187.

**Brewer JB**, Gabrieli JD (1997). Focusing in on the medial temporal lobe. *Molecular Psychiatry*, 2, 427-431.

Gabrieli JDE, **Brewer JB**, Desmond JE, Glover GH (1997). Separate neural bases of two fundamental memory processes in the human medial temporal lobe. *Science*, 276, 264-266.

Kozikowski AP, Ma D, **Brewer J**, Sun S, Costa E, Romeo E, Guidotti A (1993). Chemistry, binding affinities, and behavioral properties of a new class of “antineophobic” mitochondrial DBI receptor complex (mDRC) ligands. *Journal of Medicinal Chemistry*, 36, 2908-2920.

## CONVENTION PRESENTATIONS

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### PAPERS PRESENTED

**Brewer JB**, Zhao Z, Glover GH, Gabrieli JDE. Parahippocampal responses to single events predict whether those events are remembered or forgotten. Paper presented at the 28<sup>th</sup> Annual Meeting of the Society for Neuroscience, Los Angeles, California, USA, November 7-12, 1998. Society for Neuroscience Abstracts, 1998, 24, no.1-2, p. 761.

**Brewer JB**, Desmond JE, Glover GH, Gabrieli JDE. Parahippocampal cortex involvement in the encoding of both visual and auditory stimuli: an fMRI study. Paper presented at the 27<sup>th</sup> Annual Meeting of the Society for Neuroscience, New Orleans, Louisiana, USA, October 25-30, 1997. Society for Neuroscience Abstracts, 1997, 23, no. 1-2, p. 566.

**Brewer JB**, Desmond JE, Glover GH, Gabrieli JDE. Dissociation of medial temporal lobe structures involved in encoding and retrieval: an fMRI study. Paper presented at the 26<sup>th</sup> Annual Meeting of the Society for Neuroscience, Washington, D.C., USA, November 16-21, 1996. Society for Neuroscience Abstracts, 1996, 22, no. 1-3, p. 1450.

### POSTERS PRESENTED

Golby AJ, Poldrack RA, Illes J, **Brewer JB**, Shuer, LM, Chen DR, Desmond JE, Gabrieli JDE. Novelty-associated mesial temporal lobe activation during memory encoding in patients with mesial temporal

lobe epilepsy. Poster presented at the 30<sup>th</sup> Annual Meeting of the Society for Neuroscience, New Orleans, Louisiana, USA, November 4-9, 2000. Society for Neuroscience Abstracts, 26, no. 1, p. 463.

Golby AJ, Poldrack RA, **Brewer JB**, Spencer D, Gabrieli JDE. Material-specific lateralization of memory encoding processes in the medial temporal lobe. Poster presented at the 29<sup>th</sup> Annual Meeting of the Society for Neuroscience, Miami, Florida, USA, October 1999. Society for Neuroscience Abstracts, 25, no. 1, p. 646.

**Brewer JB**, Zhao Z, Desmond JE, Fine EM, Gabrieli JDE. Human perirhinal cortex participates in associative encoding. Poster presented at the 29<sup>th</sup> Annual Meeting of the Society for Neuroscience, Miami, Florida, USA, October 1999. Society for Neuroscience Abstracts, 25, no. 1, p. 647.

**Brewer JB**, Zhao Z, Marling TS, Desmond JE, Glover GH, Gabrieli JDE. Event-related fMRI of medial temporal lobe involvement in declarative memory formation. Poster presented at the 5<sup>th</sup> Annual Meeting of the Society for Cognitive Neuroscience, San Francisco, California, USA, April 5-7, 1998. Cognitive Neuroscience Society 1998 Annual Meeting Abstract Program, p. 121.

**Brewer JB**, Zhao Z, Marling TS, Desmond JE, Glover GH, Gabrieli JDE. Averaged single trial fMRI of medial temporal lobe involvement in declarative memory formation. Poster presented at the 6<sup>th</sup> Conference on the Neurobiology of Learning and Memory, Irvine, California, USA, October 21-24, 1997.

Miller S, **Brewer J**, Tarara J, Schmalz P, Szurszewski JH. 3-D reconstruction of abdominal prevertebral ganglion neurons. Poster presented at the Digestive Disease Week and the 93<sup>rd</sup> Annual Meeting of the American Gastroenterological Association, San Francisco, California, USA, May 9-15, 1992, 102, no. 4 part 2, p. A486.

Miller S, Tarara J, **Brewer J**, Ma R, Schmalz P, Szurszewski JH. 3-D imaging of lucifer yellow filled sympathetic and parasympathetic neurons. Poster presented at the 1992 Meeting of the Federation of American Societies for Experimental Biology (FASEB), Anaheim, California, USA, April 5-9, 1992. FASEB Journal, 1992, 6, no. 4, p. A956.

#### INVITED TALKS

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New York Medical College, Grand Rounds Address, "Advances in Functional Brain Imaging" June 13<sup>th</sup>, 2000.

University of California, Irvine, Grand Rounds Address, "Functional Imaging of the Medial Temporal Lobe" January 14<sup>th</sup>, 2004

#### MEDIA COVERAGE

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Work featured in Scientific American, Psychology Today, Discovery Channel News, Los Angeles Times, and New York Times. Interviews given for BBC, CNN, CBS Evening News, Lancet Journal and National Public Radio Science Friday.

#### COMMUNITY AND ORGANIZATIONAL ACTIVITIES

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2003-2004	Resident representative, Inpatient Neurosciences Work Group: Nursing staff and physicians from Neurology and Neurosurgery meet to address various issues related to improving patient care.
2002-2004	Computer and networking troubleshooter for residency program: First call for computer and networking difficulties in order to restore computing services in timely manner. Arranged videoconferencing between hospital sites for daily teaching sessions.
1996	Founding member of the Stanford Papua New Guinea Project: Helped to organize ongoing project to teach basic medical skills to volunteer health workers in the Sepik region of Papua New Guinea.
1995	SMILE project: Organized and taught classes to California high school students allowing "hands-on" experience with neuroanatomy and neuroscience.

#### GRANTS AWARDED

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Functional Imaging of the Medial Temporal Lobe	Fidelity Foundation	\$90,000	10/2004-10/2005	PI
MTL Structure and Function in MCI and AD	Johns Hopkins Department of Medicine	\$325,000	7/2004-6/2006	PI
MRI Studies of MTL Structure and Function in MCI and AD	NINDS	\$879,934	12/2004-11/2009	PI
High-Resolution MRI of the MTL in Diseases of Memory Impairment	General Electric	\$190,124	11/2005-11/2006	PI