

VITAE:

March, 2008

**Edward J. Golob**

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**Education**

1999-2001            Postdoctoral fellow  
                         Department of Neurology  
                         University of California, Irvine

1993-1999            Ph.D., Experimental Psychology  
                         Department of Psychology  
                         Dartmouth College

1987-1991            B.A., Psychology  
                         Capital University  
                         Columbus, OH.

**Academic Positions**

2004-Present        Assistant Professor  
                         Department of Psychology, Program in Neuroscience,  
                         Tulane Center for Aging (2007-Present)  
                         Tulane University

2005-Present        Visiting Research Professor  
                         Department of Neurology  
                         University of California, Irvine

2001-2004            Assistant Researcher  
                         Institute for Brain Aging and Dementia  
                         University of California, Irvine

**Research Interests**

- auditory system
- normal aging
- memory
- attention and motor preparation
- Alzheimer's disease and other cognitive disorders
- spatial cognition

### **Technical Experience**

- Event-related potentials and EEG recording in humans
- Transcranial magnetic stimulation in humans
- Extracellular single-unit recording in freely behaving rats
- Stereotaxic surgery, neurotoxic lesions, and electrode implantation

### **Membership in Professional Societies**

- Society for Neuroscience
- Association for Research in Otolaryngology (ARO)
- International Evoked Response Audiometry Study group

### **Grants and Contracts**

NIH R01 (2002-2007). Co-investigator. "Cognitive and neurophysiological changes in mild cognitive impairment". \$700,000 direct costs

Tulane Research Enhancement Fund. Principal investigator. "Cognition and brain function in healthy aging". \$16,800

UC Irvine Health Sciences Research Imaging Center (2002). Principal Investigator. "Functional neuroanatomy of episodic memory in mild cognitive impairment". \$4,000

### **Courses**

Undergraduate:

- Cognitive Neuroscience
- Cognitive Neuroscience lab

Graduate:

- Cognitive Neuroscience
- Cognitive Psychology

### **Administrative experience**

Department of Psychology, Tulane University

- Graduate training committee (2004 – Present)
- Colloquium committee (2006 – Present)
- Academic appeals committee (2007 – Present)
- Various faculty search committees

### **Publications**

#### **2008**

Rader S.K., Holmes, J.L., & **Golob E.J.** (2008). Auditory event-related potentials during a spatial working memory task. *Clinical Neurophysiology*, 119: 1176-1189.

Wang H., **Golob E.J.**, Bert A., Nie K, Chu Y., Dick M, Mandelkern M., Su MY (In Press). Alterations in regional brain volume and individual MRI-guided perfusion in mild cognitive impairment correlated with memory function.

**2007**

**Golob E.J.**, Irimajiri R., Starr A. (2007). Auditory cortical activity in amnesic mild cognitive impairment: relationship to subtype and conversion to dementia. *Brain*, 130(3): 740-52.

Irimajiri R., Michalewski H.J., **E.J. Golob**, Starr A. (2007). Cholinesterase inhibitors affect somatosensory but not visual cortical activities in amnesic mild cognitive impairment. *Brain Research*, 1145:108-16.

**2006**

Wang H., **Golob E.J.**, Su M.Y. (2006). Vascular volume and blood-brain barrier permeability in hippocampus and cerebellum measured with dynamic contrast-enhanced MRI in mild cognitive impairment. *Journal of Magnetic Resonance Imaging*, 24(3): 695-700.

Bennett I.J., **Golob E.J.**, Parker E.S., Starr A. (2006). Memory evaluation in mild cognitive impairment using recall and recognition tasks. *Journal of Clinical and Experimental Neuropsychology*, 28(8): 1408-1422.

Scalise A., Pittaro-Cadore I., **Golob E.J.**, Gigli G.L. (2006). Cortical excitability and restless legs syndrome: Neurophysiological findings. *Sleep*, 29(6): 770-775.

**2005**

**Golob E.J.**, Ovasapyan V., Starr A. (2005). Event-related potentials accompanying motor preparation and stimulus expectancy in the young, young-old and oldest-old. *Neurobiology of Aging*, 26(4): 531-542

Bassett J.P., Zugaro M.B., Muir G.M., **Golob E.J.**, Wiener S.I., Muller R.U., Taube J.S. (2005). Passive movements of the head do not abolish anticipatory firing properties of head direction cells. *Journal of Neurophysiology*, 93(3): 1304-1316.

Irimajiri R., **Golob E.J.**, Starr A. (2005). Auditory brainstem, middle- and long-latency evoked potentials in mild cognitive impairment. *Clinical Neurophysiology*, 116(8): 1918-29.

**2004**

**Golob E.J.** & Starr A. (2004). Serial position effects in auditory event-related potentials during working memory retrieval. *Journal of Cognitive Neuroscience*, 16(1): 40-52.

**Golob E.J.** & Starr A. (2004). Visual encoding differentially affects event-related potentials during working memory retrieval. *Psychophysiology*, 41(2): 186-192.

Bennett I.J., **Golob E.J.**, Starr A. (2004). Age-related differences in auditory event

-related potentials during a cued attention task. *Clinical Neurophysiology*, 115(11): 2602-2615.

### 2003

Stackman R.W., **Golob E.J.**, Bassett J. P., Taube J.S. (2003). Passive transport disrupts directional path integration by rat head direction cells. *Journal of Neurophysiology*, 90(5): 2862-2874.

### 2002

**Golob E.J.**, Pratt H., Starr A. (2002). Preparatory slow potentials and event-related potentials in an auditory cued attention task. *Clinical Neurophysiology*, 113(10): 1544-1557.

**Golob E.J.**, Johnson J.K., Starr A. (2002). Auditory event-related potentials during target detection are abnormal in mild cognitive impairment. *Clinical Neurophysiology*, 113(1): 151-161.

**Golob E.J.** & Taube J.S. (2002). Influence of aversive reinforcement on reorientation in a spatial working memory task. *Behavioural Brain Research*, 136(1): 309-316.

### 2001

**Golob E.J.**, Miranda G.G., Johnson J.K., Starr A. (2001). Sensory cortical interactions in aging, mild cognitive impairment, and Alzheimer's disease. *Neurobiology of Aging*, 22(5): 755-763.

**Golob E.J.**, Stackman R.W., Wong A.C., & Taube J.S. (2001). On the behavioral significance of head direction cells: Neural and behavioral dynamics on spatial reference and working memory tasks. *Behavioral Neuroscience*, 115(2): 285-304.

### 2000

**Golob E.J.** & Starr A. (2000). Age-related qualitative differences in auditory cortex responsiveness as a function of memory load. *Clinical Neurophysiology*, 111(12): 2234-2244.

**Golob E.J.** & Starr A. (2000). Effects of stimulus sequence on event-related potentials and reaction time during target detection in Alzheimer's disease. *Clinical Neurophysiology*, 111(8): 1438-1449.

### 1999

**Golob E.J.** & Taube J.S. (1999). Head direction cells in rats with hippocampal or overlying neocortical lesions: Evidence for impaired angular path integration. *Journal of Neuroscience*, 19(16): 7198-7211.

### 1998

**Golob E.J.** & Taube J.S. (1998). Recordings of postsubiculum head direction

cells following lesions of the laterodorsal thalamic nucleus. *Brain Research*, 780(1): 9-19.

Goodridge J.P., Dudchenko P.A., Worboys K.A., **Golob E.J.**, & Taube J.S. (1998). Cue control and head direction cells. *Behavioral Neuroscience*, 112(4): 749-761.

### 1997

**Golob E.J.** & Taube J.S. (1997). Head direction cells and episodic spatial information in rats without a hippocampus. *Proceedings of the National Academy of Sciences, U.S.A.*, 94, 7645-7650.

Taube J.S. & **Golob E.J.** (1997). Computational functions of the hippocampus: Does it encode all episodic memories? *Molecular Psychiatry*, 2(6), 442-445.

### 1996

Taube J.S., Goodridge J.P., **Golob E.J.**, Dudchenko P.A., & Stackman R.W. (1996). Processing the head direction cell signal: A review and commentary. *Brain Research Bulletin*, 40(5-6), 477-484.

### Book Chapters

**Golob E.J.**, Pratt H., Starr A. (In Press). Learning and memory in normal aging: Event-related potentials, EEG, and reaction time. in *New Encyclopedia of Neuroscience*. Larry R. Squire (Editor-in-Chief). Elsevier.

Starr A. & **Golob E.J.** (2006). Cognitive Factors Modulating Auditory Cortical Potentials. in *Auditory Evoked Potentials: Basic Principles and Clinical Application*. Robert Burkhard, Manny Don, Jos Eggermont (Eds.). Lippincott Williams & Wilkins.

Blair H.T., Sharp P.E., Cho J., Goodridge J.P., Stackman R.W., **Golob E.J.**, Taube J.S. (1998). Path integration in the rat head-direction circuit. In: *Advances in Neural Information Processing Systems*. Vol. 10. D.S. Touretzky, M.C. Mozer, M.E. Hasselmo (Eds.). MIT Press.

### Abstracts

Smith L.M. & Golob E.J. (submitted). Assessment of stimulus-feature selectivity in self-monitoring using the Lombard effect. *American Speech-Language-Hearing Association*.

Holmes J.L. & Golob E.J. (2007). The influence of spatial attention and sound location on auditory event-related potentials. *Society for Neuroscience Abstracts*, 33.

Autin K.M. & Golob E.J. (2007). Pre and post stimulus activity in dichotic listening: an auditory ERP study. *Society for Neuroscience Abstracts*, 33.

Autin K.M. & Golob E.J. (2007). Auditory event-related potentials and perceptual

- judgments of speech. XX Biennial Symposium of the International Evoked Response Audiometry Study Group.
- Starr A., Golob E.J., Irimajiri R, Michalewski H.J. (2007). Sensory cortical changes accompany aging, mild cognitive decline, and dementia. XX Biennial Symposium of the International Evoked Response Audiometry Study Group.
- Golob E.J., Irimajiri R., Starr A. (2007). Auditory cortical activity is abnormal in early cognitive decline and anticipates subsequent conversion to dementia. 5<sup>th</sup> International Symposium and Workshop on "Objective Measures in Cochlear and Brainstem Implants".
- Golob E.J., Manning L.M., & Rader S.K. (2006). ERP correlates of attention and working memory. *International Organization for Psychophysiology*.
- Golob E.J. & Rader S.K (2006). Influence of sound location and behavioral relevance on auditory event-related potentials. *Society for Neuroscience Abstracts*, 32.
- Rader S.K., Manning L.K., & Golob E.J. (2006). Auditory event-related potentials and processing of speech and musical sounds during passive listening and target detection. *Society for Neuroscience Abstracts*, 32.
- Manning L.K., Brown L.E., & Golob E.J. (2005). Lateralization of auditory processing for speech and music: an event-related potential analysis. *Society for Neuroscience Abstracts*, 31.
- Rader S.K., & Golob E.J. (2005). Auditory event-related potentials during a spatial working memory task. *Society for Neuroscience Abstracts*, 31.
- Irimajiri R., Golob E.J., Michalewski H.J., & Starr A (2005). Cholinesterase inhibitors influence both memory functions and sensory (auditory, somatosensory) evoked cortical potentials in mild cognitive impairment. *Society for Neuroscience Abstracts*, 31.
- Golob E.J. (2004). Event-related potentials and mild cognitive impairment. *Clinical Electroencephalography*, 35(4), 211.
- Irimajiri R., Golob E.J., & Starr A. (2004). Auditory event-related potentials in mild cognitive impairment. *Cognitive Neuroscience Society*.
- Wang H, Chu Y, Bert A, Chang V, Golob E, Hill MA, Mandelkern M, Nalcioglu O, & Su MY (2004). Regional cerebral hypoperfusion of medial temporal lobe in mild cognitive impairment. *Neurobiology of Aging*, 25(S2).
- Wang H., Su MY, Chu Y, Bert A, Golob E, Mandelkern M, Chang V, Nalcioglu O. (2004). Regional cerebral hypoperfusion of medial temporal lobe in mild

- cognitive impairment. *International Society of Magnetic Resonance in Medicine*, 12.
- Golob E.J. (2003). Neurophysiological analysis of processing speed reductions in aging and mild cognitive impairment. *Clinical Electroencephalography*, 34(3), 172.
- Bennett I., Golob E.J., Ovasapyan V., & Starr A. (2003). Age-related differences in auditory event-related potentials during a cued attention task. *Society for Neuroscience Abstracts*, 29.
- Golob E.J., & Starr A (2002). Processing speed in aging: Event-related potentials in stimulus evaluation and response preparation. *Society for Neuroscience Abstracts*, 28.
- Ovasapyan V., Golob E.J., & Starr A. (2002). Changes in pre-stimulus slow potentials in normals between 60 and 100 years of age. *Society for Neuroscience Abstracts*, 28.
- Starr A., & Golob E.J. (2002). Event-related potentials in mild cognitive impairment. *International Journal of Psychophysiology*. 45(1-2), 35.
- Golob E.J., & Starr A. (2001). Primacy and recency effects during working memory retrieval. *Society for Neuroscience Abstracts*, 27.
- Ovasapyan V., Golob E.J., & Starr A. (2001). Pre-stimulus potentials in target detection consist of motor preparation and stimulus expectancy components. *Society for Neuroscience Abstracts*, 27.
- Taube J.S., & Golob E.J. (2001). Influence of aversive reinforcement on reorientation in a spatial working memory task. *Society for Neuroscience Abstracts*, 27.
- Golob E.J., Miranda G.G., & Starr A. (2000). Neurophysiological examination of cortical disconnection in Alzheimer's disease. *Society for Neuroscience Abstracts*, 26: 1545.
- Golob E.J., Wong A.C., & Taube J.S. (1998). On the behavioral relevance of head direction cells. *Society for Neuroscience Abstracts*, 24: 1913.
- Bassett J.P., Golob E.J., Muller R.U., & Taube J.S. (1998). Anticipatory time intervals of head direction cells increase during passive movement. *Society for Neuroscience Abstracts*, 24: 1912.
- Golob E.J., & Taube J.S. (1997). Response of head direction cells to a novel landmark cue. *Society for Neuroscience Abstracts*, 23: 504.
- Blair H.T, Sharp P.E., Goodridge J.P., Stackman R.W., Golob E.J., & Taube J.S.

- (1997). Experimental evidence for a path integrator in the rat head-direction circuit. *Proceedings of the Computational Neurosciences Conference CNS 97*.
- Golob E.J., & Taube J.S. (1996). Head direction cells are less responsive to idiothetic cues in rats with hippocampal lesions. *Society for Neuroscience Abstracts*, 22: 1873.
- Golob E.J., & Taube J.S. (1995). Head direction cells recorded from rats with hippocampal lesions. *Society for Neuroscience Abstracts*, 21: 945.
- Golob E.J., & Taube J.S. (1994). Head direction cells recorded from the postsubiculum in animals with lesions of the lateral dorsal thalamic nucleus. *Society for Neuroscience Abstracts*, 20: 805.
- Schmidt H.S., Golob E.J., & Torello M.W. (1992). Alpha intrusion in sleep and its relationship to excessive waking alpha and depression. *Sleep Research*, 21:258.
- Schmidt H.S., Golob E.J., & Torello M.W. (1992). Enuresis associated with idiopathic central nervous system hypersomnolence: Treatment with protriptyline. *Sleep Research*, 21:308.

### **Invited Lectures**

- “Mild Cognitive impairment and dementia: a multidisciplinary approach”. Invited symposium presented at “Brain and behavior: Advances in Neuroimaging” conference. Tulane University. 12-07
- “Cortical processing of speech and sound location information in humans”. Center for Cognitive Science. University of Louisiana, Lafayette. 10-07
- “ERP correlates of attention and working memory”. Invited symposium presented at International Organization of Psychophysiology meeting. Istanbul, Turkey. 08-06.
- “Memory, aging, and early Alzheimer’s disease: A cognitive neuroscience perspective”. Program in Neuroscience seminar. Program in Neuroscience. Tulane University. 10-04.
- “Event-related potentials and mild cognitive impairment”. Invited symposium presented at EEG and Clinical Neuroscience Society Conference. Irvine, CA. 09-04.
- “Working Memory and Age-Related Changes in Brain Function”. Department of Psychology. University of South Florida. 01-04.
- “Working Memory and Age-Related Changes in Brain Function”. Department of Psychology. Texas A&M University. 01-04.

- “Working Memory and Age-Related Changes in Brain Function”. Department of Psychology. Tulane University. 12-03.
- “Neurophysiological analysis of processing speed reductions in aging and mild cognitive impairment”. Invited symposium presented at EEG and Clinical Neuroscience Society Conference. Houston, TX. 09-03.
- “Working Memory and Age-Related Changes in Brain Function. Department of Psychology and Kennedy Center. Vanderbilt University. 12-02.
- “Event-related potentials and mild cognitive impairment”. Alzheimer’s Disease Research Centers of California Annual Conference. Lake Arrowhead, CA. 10-02.
- “Event-related potentials and mild cognitive impairment”. Invited symposium presented at International Organization of Psychophysiology meeting. Montreal, Canada. 07-02.
- “Cortical Interactions, Working Memory, and Age-related Changes in Brain Function” School of Psychology, Georgia Institute of Technology. 01-02.
- “Electrophysiological dynamics of working memory retrieval”. Perception Group, Department of Cognitive Sciences, University of California, Irvine. 05-01.
- “Electrophysiological changes in mild cognitive impairment and dementia”. Co-presented with Arnold Starr at Grand Rounds, Department of Neurology, University of California, Irvine. 10-00.
- “Auditory cortical activity during working memory tasks”. Presented at “Things Auditory” Group, Department of Neurobiology and Behavior, University of California, Irvine. 05-00.
- “Strategies for early diagnosis of Alzheimer’s disease using cognitive evoked potentials”. Co-presented with Arnold Starr at Texas Tech University. 11-99

**Referee:**

- Grants: National Science Foundation, Neurological Foundation of New Zealand, Israel Science Foundation, Wellcome Trust
- Journals: Neurobiology of Aging, Clinical Neurophysiology, Journal of the American Medical Association (JAMA), Biological Psychology, Neuroimage, Behavioural Brain Research, Neurology, Psychophysiology, Neuroscience Letters, Audiology and Neurotology, Neuropsychology, Journal of Neurology, Neurosurgery & Psychiatry