

## Jacob Bollinger, Ph.D.

### Curriculum Vitae – November 2011

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**Current Position:** Postdoctoral Fellow, Gazzaley Lab  
University of California, San Francisco  
Departments of Neurology, Physiology, and Neuroscience

#### Education

1999-2006	University of California, San Francisco	Ph.D., Neuroscience	Michael Merzenich
1995-1999	University of California, San Diego	B.S., Biochemistry	<i>Magna Cum Laude</i>

#### Postgraduate Positions

2007-Present	University of California, San Francisco	Postdoctoral Fellow	Adam Gazzaley
2007	University of California, San Francisco	Postdoctoral Fellow	Michael Merzenich

#### Other Positions

2002	Langley Porter Psychiatric Institute	Assistant Therapist	Lois Friedlander
1998-1999	University of California, San Diego	Research Assistant	Stephen Heinemann
1998-1999	University of California, San Diego	Research Assistant	Bryce Vissel
1997-1998	University of California, San Diego	Research Assistant	Sascha du Lac
1996	University of California, San Diego	Research Assistant	Mauricio Montal

#### Honors and Awards

1999	Scholar-Athlete of the year, UCSD
1998-1999	Team Captain, UCSD Men's Varsity Soccer
1995-1999	Golden Key National Honor Society
1995-1999	Dean's Honor Roll, UCSD

#### Areas of Expertise

Cluster computing, neural networks, neural plasticity, cognitive neuroscience, integrative neuroscience, pattern classification, genetics, biochemistry, molecular biology, magnetic resonance imaging, electroencephalography, biometrics, cognitive training, neuropsychological testing, attention, learning, working memory, long-term memory, cognitive aging, Mild Cognitive Impairment, Alzheimer's Disease, brain-computer interface.

### **Software Expertise**

Sun Grid Engine (qb3 cluster), Matlab, python, R, php, Perl, Ruby, Shell, C/C++, MySQL, NoSQL, SPM, Freesurfer, FSL, Field Trip, EEGLAB, BESA, E-LORETTA, Osyrx, MRICron, Mac OS X, Windows, Linux, Unix, Analyzer, Presentation, E-prime, Excel, Word, CS4, Keynote.

### **Analytical Expertise**

General signal processing, coherence, adaptive linear spatial filtering ('beamforming') and complex-valued sources, spectral decomposition, beta series correlation, eigenvectors, coregistration, segmentation, normalization, artifact rejection, interpolation, general linear models, independent and principal components analyses, dynamic causal modeling, ANOVA, MANOVA, fixed and random effects, cluster analysis, Bayesian networks, random-field theory.

### **Invited Presentations**

2011 Adaptive linear spatial filtering and complex sources, NeuroSky  
2011 Topics in Neuroscience, University of San Francisco  
2011 Aging and Cognition Conference, University of Texas at Dallas  
2011 Bay Area Aging Meeting, University of California, Berkeley  
2011 Multi-group Meeting, Knight, D'Esposito, Gazzaley Labs, UC Berkeley  
2010, 2011 Neuroscience Imaging Center fMRI meeting  
2010 Bay Area Memory Meeting, Stanford University  
2008, 2009 Careers in Science Panel, University of San Francisco  
2005 Lab Meeting, Lawrence Tecott, University of California, San Francisco  
2004 PIBS Journal Club, University of California, San Francisco  
2005 Lab Meeting, Lauren Frank, University of California, San Francisco  
2000, 2003 Neuroscience Journal Club, University of California, San Francisco

### **Mentoring**

2011 Jacopo Battaglini, MD, Università di Palermo  
2011 Peter Cheiwai Pan, Undergraduate Student, University of California, Davis  
2011 Laurie Russell, Undergraduate Student, Northwestern University  
2011 Jason Singh, Undergraduate Student, University of California, Davis  
2010-2011 Tessa Kaiser, Undergraduate Student, Vanderbilt University  
2010 Louis-Marie Petit, Medical Student, University of Lyon East, France  
2009 Natasha Choudri, Undergraduate Student, Cal Poly Pomona University  
2009 Sharon Jiang, Undergraduate Student, University of California, Berkeley  
2009 Angelika Bocklage, Medical Student, University of Mannheim, Germany  
2008-2010 Edrick Masangkay, M.D., Our Lady of Fatima University, Philippines  
2008 Jennifer Gaudio, Undergraduate Student, University of Massachusetts  
2008 Sofia Mårdén, Medical Student, University of Stockholm, Sweden

### **Teaching**

2003	University of California, San Francisco	Neuroscience 101
2002	University of California, San Francisco	Neuroscience 101
1999	University of California, San Diego	Metabolic Biochemistry
1998	University of California, San Diego	Systems Neuroscience

## Scientific Peer Reviewer

2007-2011	Journal of Neuroscience Neuropsychologia Cerebral Cortex Neuroimage Journal of Cognitive Neuroscience	NIH Neurobiology of Aging European Journal of Neuroscience Experimental Brain Research Brain Research
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## Research Awards and Grants

### Current

3/2008-2/2013                      NIH R01AG030395 (Gazzaley)  
Neural Mechanisms Underlying Cognitive Aging  
Role: Postdoctoral Fellow

### Past

7/2010-6/2011                      NIH LRP Award (Clinical Research; supplemental)  
7/2008-6/2010                      NIH LRP Award (Clinical Research)  
9/1999-8/2007                      NIH NS-10414 (Merzenich)  
   NIH P01 NS-34835 (Merzenich)  
   NIH P50 MH077970 (Merzenich)  
   NIH T32 GMO7449 (Merzenich)  
Role: Graduate Student/Postdoctoral Fellow

## Selected Research Abstracts and Publications

1.        **Bollinger J**, Rubens MT, Masangkay E, Kalkstein J, Gazzaley A. (2011) An expectation-based memory deficit in aging. *Neuropsychologia* 49:1466-1475
2.        **Bollinger J**, Rubens MT, Zanto TP, Gazzaley A. (2010) Expectation-driven changes in cortical functional connectivity influence working memory and long-term memory performance. *Journal of Neuroscience* 30:14399-14410
3.        **Bollinger J**, Masangkay E, Zanto TP, Gazzaley A. (2011) A selective age-related deficit in the impact of working memory load on suppression. *Neurobiology of Aging* (in review)
4.        **Bollinger J**, Hough M, Gazzaley A. (2011) Voluntary control of alpha phase and power networks improves memory. (in preparation)
5.        Zanto TP, Rubens MT, **Bollinger J**, Gazzaley A. (2010) Top down modulation of visual feature processing: The role of the inferior frontal junction. *Neuroimage* 53: 736-745
6.        Kalkstein J, Checksfield K, **Bollinger J**, Gazzaley A. (2011) Diminished top-down control underlies a visual imagery deficit in normal aging. *Journal of Neuroscience* (in press)
7.        Zanto TP, Pan P, Liu H, **Bollinger J**, Nobre AC, Gazzaley A. (2011) Age-related changes in orienting attention in time. *Journal of Neuroscience* 31:12461-12470
8.        Sekirnjak C, Vissel B, **Bollinger J**, Faulstich M, du Lac S. (2003) Purkinje cell synapses target physiologically unique brainstem neurons. *Journal of Neuroscience* 23:6392-6398

9. **Bollinger J**, Gazzaley A. (2011) Deficient alpha networks underlie expectation-based memory impairments in cognitive aging. (in preparation)
10. **Bollinger J**, Kalkstein J, Gazzaley A. (2011) The role of alpha oscillations in imagery. (in preparation)
11. **Bollinger J**, Gazzaley A. (2011) An expectation-based memory impairment in cognitive aging: the role of alpha oscillations. *Aging and Cognition Conference, University of Texas, Dallas*
12. **Bollinger J**, Rubens MT, Masangkay E, Gazzaley A. (2010) A deficit in expectation-driven functional connectivity underlies memory impairments in normal aging. *Society for Neuroscience, San Diego, CA.*
13. **Bollinger J**, Gazzaley A. (2011) An expectation-based memory deficit in cognitive aging. *Bay Area Aging Meeting, University of California, Berkeley*
14. Pa J, **Bollinger J**, Johnson, JK, Gazzaley A. (2010) Functional MRI BOLD Modulation in Attention and Memory Systems in MCI. *International Conference on Alzheimer's Disease, Honolulu, HI.*
15. **Bollinger J**, Rubens MT, Masangkay E, Gazzaley A. (2010) Deficits in expectation-driven functional connectivity underlie memory impairments in normal aging. *Bay Area Memory Meeting, Stanford University.*
16. **Bollinger J**, Gazzaley A. (2009) Age differences in N170 amplitude modulation by selective attention and working memory load. *Society for Neuroscience, Chicago, IL.*
17. **Bollinger J**, Gazzaley A. (2008) Pre-stimulus alpha power reflects anticipation of both stimulus category for complex objects and task goals. *Society For Neuroscience, Washington, DC.*
18. **Bollinger J**, Gazzaley A. (2008) Pre-stimulus alpha synchronization reflects anticipation of stimulus category for complex objects. *Bay Area Memory Meeting, University of California, San Francisco*
19. **Bollinger J**, Merzenich M. (2006) Adult auditory cortical plasticity enabled by locus coeruleus stimulation. *Doctoral Thesis, University of California, San Francisco*