

Curriculum Vitae – April 2010

Adam Gazzaley, M.D., Ph.D.

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Education: 1982-1986 Bronx High School of Science, NYC
1986-1990 BS - Biochemistry, Binghamton University, NY
1990-1998 MD, PhD - Neuroscience
Mount Sinai School of Medicine, NYC
(Dr. John H. Morrison)

Postgraduate Training: 1997 *Postdoctoral Fellow*
Mount Sinai School of Medicine, NYC
(Dr. John H. Morrison)
1998 - 1999 *Intern in Medicine*
Hospital of the University of Pennsylvania
1999 - 2002 *Resident in Neurology*
Hospital of the University of Pennsylvania
2002 - 2004 *Postdoctoral Fellow- Cognitive Neuroscience*
University of California, Berkeley
(Dr. Mark D'Esposito & Dr. Robert Knight)
2002 - 2005 *Cognitive Neurology Fellow*
University of California, San Francisco

Faculty Appointments: 2002 - 2007 *Attending Neurologist*
Northern California VA Medical Center
UCSF Medical Center
2005 - present *Assistant Professor of Neurology*
Memory and Aging Center
University of California, San Francisco
Assistant Professor of Physiology
Keck Center of Integrative Neuroscience
University of California, San Francisco
Faculty: Program in Biological Sciences - UCSF
Neuroscience Graduate Program
Biomedical Sciences Graduate Program
Faculty: California Institute for Quantitative Biosciences
(QB3- UCSF)
Assistant Adjunct Professor of Neuroscience
Helen Wills Neuroscience Institute
University of California, Berkeley
Director of the Neuroscience Imaging Center
University of California, San Francisco
2009 - present *Assistant Professor of Psychiatry, UCSF*

Medical Licensure	2002 – Present	California (A79274)
Specialty Certification	2004	American Board of Psychiatry & Neurology
Awards:	1997	Krieg Cortical Kudos- Cortical Scholar Award
	1998	Mount Sinai - Basic Science Achievement Award
	1998	Morris Bender Award in Clinical Neurology
	2004	NIH Career Development Award
	2005	Laird Cermak Award
	2005	Pfizer/AFAR Innovations in Aging Award
	2006	Ellison Foundation New Scholar Award in Aging
	2009	UCSF Outstanding Mentorship Award
Editorial Positions:	2002 - 2004	SAGE KE- <i>Science</i> online - Contributing Editor Asst
Advisory Boards:	2000 - present	Ram Capital, NYC
	2004 - present	Foundation Ventures, NYC
	2008 - present	Neuroscouting LLC, CA
	2008 - present	AFAR's National Scientific Advisory Council
	2008 - present	Lifelong living, learning and Longevity (L4), CA
	2009 – present	Neurofocus
Consultant:	2010	Pfizer
Journal Reviewer:	Proceedings of the National Academy of Science	Cortex
	Neuron	Neurobiology of Aging
	Journal of Neuroscience	Neuroscience
	Journal of Cognitive Neuroscience	Psychology and Aging
	Cognitive, Affective and Behavioral Neuroscience	Brain
	Annals of Neurology	Cerebral Cortex
	Experimental Brain Research	Brain Research
	European Journal of Neuroscience	Neuroimage
	Neuropsychologia	Biological Psychiatry
	Aging, Neuropsychology and Cognition	Current Biology
	Human Brain Mapping	Hippocampus
	Psychological Bulletin	Cognitive Science
	Journal of Experimental Psychology	Neurocase
Grant Reviewer:	National Science Foundation	UK Alzheimer's Society
	Department of Defense	Canadian Foundation for Innovation
	NIA Layton Alzheimer Disease Center	Louisiana Board of Regents
	American Federation of Aging Research	UC Presidential Fellowship
Professional Societies:	American Academy of Neurology	
	Cognitive Neuroscience Society	
	Organization for Human Brain Mapping	
	Society for Behavioral and Cognitive Neurology	
	Society for Neuroscience	
	New York Academy of Science	
	Memory Disorders Research Society (by invitation)	

Teaching & Mentoring:

Past

City College, New York City

Neuroanatomy Lab (graduate students)

Mount Sinai School of Medicine, New York City

Gross Anatomy

Neuroanatomy (medical students)

Neuroanatomy (graduate students)

University of California, Berkeley

PSY 290 Clinical Neuroscience Seminar (graduate students)

IB245L Human Neuroanatomy Lab (undergraduate students)

Present

University of California, Berkeley

PSY214 Functional MRI Methodology (graduate)

University of California, San Francisco

Lecturer:

Brain, Mind and Behavior (medical students)

NS245 Behavioral Neuroscience (graduate students)

Advances in Medical Sciences (medical students)

NS 201B Core Neuroscience (graduate students)

BIOEN 245 Electromagnetic Neuroimaging (graduate students)

Course Director and Lecturer:

NS 246 Cognitive Neuroscience (graduate students)

- *New course at UCSF*

Students:

Past Rotating UCSF Graduate Students:

Alexander Herman (MSTP student)

Carolyn Johnson (NS graduate student)

Naomi Kort (NS graduate student)

Omar Alhashimi (Bioengineering student)

Past Undergraduate Students:

UC Berkeley: Darya Pino (UCB), Kevin McEvoy (UCB), Tyler Seibert (UCB), Aaron Rutman (UCB),
Jasdeep Sabharwal (UCB)

Past Rotating Medical Students

UCSF Medical students: Brian Toy, Arul Thangavel

Linköping University, Sweden: Sofia Mårdén, Jonas Karlsson, Per Rydström, Mattias Östberg

Université Claude Bernard, Lyon France: Rachel Litke

Past UCSF Graduate Students:

Jacqueline Boccanfuso (Masters student in collaboration with International Max Planck Research School for
Neural and Behavioral Sciences in Tuebingen, Germany)

Current UCSF Graduate Students:

James Chadick (Neuroscience program)

Clinical Residents:

Jonathan Kalkstein, MD, PhD (UCSF Psychiatry Resident)
 Luigi Maccotta, MD, PhD (UCSF Neurology)

Clinical Fellows:

Suzee Lee, MD (UCSF Neurology, Memory and Aging Center)
 Carmela Tartaglia, MD (UCSF Neurology, Memory and Aging Center)

Postdoctoral Fellows:

Theodore Zanto, PhD (Complex Systems and Brain Sciences- Florida Atlantic University)
 Jonathan Kalkstein, MD, PhD (UCSF Psychiatry Resident)
 Jacob Bollinger, PhD (Neuroscience, UCSF)
 Peter Wais, PhD (Experimental Psychology, UCSD)
 Joaquin Anguera, PhD (Kinesiology, University of Michigan)
 Judy Pa, PhD (UC Irvine)
 Jyoti Mishra Ramanathan (UC San Diego)
 Tracy Warbrick (Heinrich-Heine University, Duesseldorf, Germany)
 Nathan Cashdollar (UCL Institute for Cognitive Neuroscience, London, UK)

• **Alumni:**

Wes Clapp, PhD (Founder; NeuroScouting LLC)

University and Public Service:

Founding Director of Neuroscience Imaging Center (NIC) – UCSF Core facility
 Founding Organizer of Bay Area Neuroscience Gathering – January 2006-09
 - Unites local neuroscience community - over 300 attendees
 Organized West Coast Siemens fMRI workshop
 Secretary-Treasurer of San Francisco Bay Area Society for Neuroscience Chapter
 Faculty Search Committees: Sarlo-Ekman Endowed Chair in the Study of Human Emotion
 Two clinical/translational researchers in the Department of Psychiatry
 Research Psychiatrist at the SF VA Medical Center
 Planning Committee for L4: Lifelong Living, Learning & Longevity project at Sonoma Mountain Village
 An active lifestyle community for healthy older adults)
 Mission Bay Planning Committee Faculty Co-Chairman
 Society for Neuroscience’s Capitol Hill Day 2009: Discussed funding with Congress
 Neurology Department Strategic Finance Committee

Scholarships/Grants:***Past***

1990 - 1992	Rudin L&R Medical Scientist Training Program (MSTP) Scholarship
1992 - 1994	Achaelis Medical Scientist Training Program (MSTP) Scholarship
1995 - 1996	Dana Foundation Predoctoral Scholarship
1996 - 1997	Dana Foundation Postdoctoral Scholarship
2002 - 2004	American Federation for Aging Research (AFAR) Postdoctoral Grant
2002 - 2004	NIH National Research Service Award (NRSA) Postdoctoral Grant
2002 - 2008	NIH LRP Award
2004 - 2009	NIH K08 - Career Development Award (PI: Gazzaley)
2005 - 2009	Pfizer/AFAR Innovations in Aging Research Grant (PI: Gazzaley)

Current

- 2006 - 2010 Ellison Medical Foundation - New Scholar Award in Aging (PI: Gazzaley)
"Alterations in Neural Networks Underlying Cognitive Aging"
- 2006 - 2010 Eisai & Pfizer (PI: Gazzaley)
Cholinergic Influence on Top-Down Visual Processing in Individuals With Mild Cognitive Impairment
- 2007 - 2010 Posit Science (PI: Gazzaley)
"Cognitive Training of Top-down Modulation in Normal Aging"
- 2008 - 2013 NIH R01 (PI: Gazzaley)
"Neural Mechanisms Underlying Cognitive Aging"
- 2009 - 2011 NIH R01; Administrative Supplement (PI: Gazzaley)
- 2009 - 2014 NIH R01 (PI: Boxer)
"Eye Movement Control in Normal Elderly and MCI"
- 2009 - 2011 Robert Wood Johnson Foundation (PI: Gazzaley)
"Assessing the efficacy of a video game to enhance cognitive health in older adults"

Grants as mentor:

- 2007 UCSF School of Medicine Dean's Summer Research
- Brian Toy (MD student)
- 2007 - 2009 University of California Office of the President's Postdoctoral Fellowship
- Wesley Clapp (Postdoc)
- 2007 - 2008 Sandler Research Fellowship
- Tim Verstynen (Postdoc)
- 2007 - 2008 Larry L. Hillblom Center for the Biology of Aging Research Fellowship
- James Chadick (graduate student)
- 2008 UCSF School of Medicine Dean's Summer Research
- Arul Thangavel (medical student)
- 2008 - 2010 VA Research Fellowship
- Jon Kalkstein (Postdoc)
- 2009 - 2011 NIH ROI Minority Supplement
- Joaquin Anguera (Postdoc)
- 2009 - 2012 NIH Postdoctoral NRSA Fellowship
- Ted Zanto (Postdoc)
- 2009 - 2014 NIH K08 - Career Development Award
- Judy Pa (Junior faculty)

Lectures by Invitation:**International**

- 2005 University of Toronto, Dept of Psychology, Ebbinghaus Empire Lecturer, Canada
- 2006 Neurobiology of Aging Brain Symposium, Tasmania, Australia
- 2008 Human Brain Mapping Workshop, Melbourne, Australia
- 2009 Hippocampal Research Conference, Verona, Italy
Congress on Anti-Aging Medicine and Biomedical Technologies, Portugal
- 2010 SharpBrains Virtual Summit: Technology for Cognitive Health and Performance
SPIE/HVEI International Conference, CA, USA
Frontal Lobe Conference, Toronto, Canada
Neurocognitive Networks 2010, Florida, USA
The Dallas Aging and Cognition Conference, Texas, USA
Symposium Chair/Presenter, Human Brain Mapping Meeting, Barcelona, Spain (upcoming)
Games of Health Conference, Boston USA (upcoming)

National

- 2006 New York Academy of Sciences – Imaging and the Aging Brain, New York, NY
Working Memory Session Chair. Society for Neuroscience, Atlanta, GA
- 2007 NIH Cognitive Aging Summit, Washington DC
West Coast Siemens fMRI Workshop, UCSF, CA
- 2008 American Federation of Aging Research Annual Meeting, Santa Barbara, CA
- 2009 AcademiX 2009 (Apple): Technological Innovation and Education, Salt Lake City, UT
Association for Psychological Science – Invited Address, San Francisco, CA
Medical Education Conference (Apple), Cupertino, CA
- 2010 The Dallas Aging and Cognition Conference, Dallas, TX
Neurocognitive Networks, Boca Raton, FLA

Regional

- 1997 Hippocampus Club, Rockefeller University, NY
American Association of Anatomists, Cajal Club, New Orleans, LA
- 2003 Primary Care Practitioners, San Francisco, CA
- 2004 Northern California Consortium, UCSF, CA
Neuropsychology Conference, VA Medical Center, Martinez, CA
Regional neurologists, Woodstock, NY
Regional internal medicine physicians, Woodstock, NY
Memory and Aging Center Grand Rounds, UCSF, CA
Neurology Grand Rounds, NYU, NY
Translational Neuroscience Interdepartmental Seminar, Mount Sinai, NY
Cognition & Perception Seminar, NYU Psychology & Center for Neural Science, NY
Frontiers in Neurology and Neuroscience, UCSF, CA
Center for Cognitive Neuroscience Seminar, Duke University, NC
- 2005 UCSF Dept. of Physiology, CA
San Francisco Psychiatric Society, CA
Posit Science Corporation, San Francisco, CA
Langley Porter Psychiatric Institute, UCSF, CA
Pfizer Regional District Meeting, Berkeley, CA
Magnetic Resonance Unit, San Francisco VA Medical Center, CA
Memory Disorders Research Society, Cermak Award Presentation, AZ
University of Miami VA Medical Center, Geriatrics Grand Rounds, FL
Psychology Dept., Stanford University, CA
- 2006 Presentations to community physicians on the aging brain (20 presentations)
UCSF VA Medical Center, Geriatrics Dept., San Francisco, CA
California Pacific Medical Center, Psychiatry Dept Grand Rounds, San Francisco, CA
Gladstone Institute of Neurological Disease, San Francisco, CA
Earnest Gallo Clinic and Research Center, Emeryville, CA
Interdisciplinary Forum on Cognitive Neuroscience and Neuroimaging, UCSF, CA
Geriatrics Interest Group, San Francisco, CA
From Molecules to Medicine, San Francisco, CA
Smith-Kettlewell Eye Research Institute, CA
- 2007 Cognitive Neuroscience Forum, University of California, Berkeley, CA
Grand Rounds, Peninsula Medical Center, Burlingame, CA
Brain and Cognition Seminar Series, University of Illinois, Champaign-Urbana, IL
Mount Sinai MSTP Student Career Seminar, NY
UCSF Memory and Aging Center Seminar, CA
Functional Imaging Symposium, presented by Gallo center and IND, CA
- 2008 McKnight Seminar Series, University of Arizona, AZ
Brain Mapping Seminar Series, UCLA, CA
Medical Advances that Will Shape our Future, San Francisco, CA
Mount Sinai Neurology Grand Rounds, NYC, NY

- UCSF Memory and Aging Center Grand Rounds, CA
- Aging Research Seminar Series, Stanford University, Veteran's Hospital, CA
- Cognitive Neuroscience Forum, University of California, Berkeley, CA
- 2009 Presentations to community physicians on the aging brain (8 presentations)
- Cognitive Neuroscience Seminar Series, Veteran's Hospital, Martinez CA
- Formal Seminar Series, Buck Institute for Age Research, Marin, CA
- Institute of Gerontology Colloquium Series, Wayne State, Detroit MI
- Theravance, Inc., San Francisco, CA
- Distinguished Speaker Colloquium, San Francisco State University, CA
- Center for Brain Health, UT Dallas, TX
- Cognitive Neuroscience Forum, University of California, Berkeley, CA
- 2010 Department of Psychology, UC Santa Barbara, CA
- QB3-CCA Symposium, UCSF, CA
- Department of Psychology, Yale University, CA
- Aging Meeting, Harvard University, CA (upcoming)

Community/Public Presentations

- 2005 15 Presentations to community physicians on the aging brain
- 2006 20 Presentations to community physicians on the aging brain
- Ask-a-Scientist Seminar, Bazaar Café, San Francisco, CA
- 2007 13 Presentations to community physicians on the aging brain
- 2008 8 Presentations to community physicians on the aging brain
- Center for Learning in Retirement, San Francisco, CA
- Brain Talk, Apple Store, San Francisco, CA
- Brain Talk, Apple Store, Soho, NYC
- UCSF Foundation, San Francisco, CA
- Memory & the Aging Brain, Science Café, Atlas Café, San Francisco, CA
- City College's Older Adults Department, The Sequoias, San Francisco, CA
- 2009 8 Presentations to community physicians on the aging brain
- Rossmore Retirement Community (400 attendees), Walnut Creek, CA
- Brain Health Symposium at the Commonwealth Club, San Francisco CA
- AARP Presentation, Vegas @ 50, LV, CA
- Science Salon Series Talk, Vibrant Brains, San Francisco, CA
- Lifelong, Living and Learning,
- Wellness Lecture Series, UCSF Foundation, San Francisco, CA
- City College's Older Adults Department, The Sequoias, San Francisco, CA
- Marin County Commission on Aging, Marin, CA
- 2010 The San Francisco Writer's Grotto, SF, CA
- Health & Wellness for older adults, Jewish Community Center, SF CA
- Villa Marin Retirement Community, Marin, CA
- Science Salon Series Talk, Vibrant Brains, Foster City Jewish Community Center, CA
- San Francisco Public Library, SF, CA

Published Profiles:

The Cortical Scholar Prize: Dr. Adam Gazzaley" Cerebral Cortex 7(5): 472 (1997)
 Focusing on the Big Picture. Chen, I. Science's SAGE KE (10 September 2003).
 Apple Science Video Profile. <http://www.apple.com/science/#gazzaley>

Media Coverage:

- 2005 ABC News, BBC News (online), webMD, Forbes Magazine (online)
- 2006 Wall Street Journal, ABC News
- 2007 Wired Magazine

- 2008 TIME, Wall Street Journal, NBC Nightly News, PBS Science Special, Scientific American Mind, CBC Radio, The Guardian UK, Telegraph UK, Popular Photography, Apple video, NPR
- 2009 Discover Magazine, The Today Show, BBC World Service News, San Francisco Magazine, User Experience Magazine
- 2010 New York Times, CNN/KSRO radio, Contra Costa Times, KALW radio

Bibliography:

1. **Gazzaley, A.**, Siegel, S.J., Kordower, J.H., Mufson, E.J. and Morrison, J.H. Circuit-specific alterations of N-methyl-D-aspartate receptor subunit 1 in the dentate gyrus of aged monkeys. Proceedings of the National Academy of Science USA 93(7): 3121-5. (1996)
2. **Gazzaley, A.**, Weiland, N.G., McEwen, B.S. and Morrison, J.H. Differential regulation of NMDAR1 mRNA and protein by estradiol in the rat hippocampus. Journal of Neuroscience 16(21): 6830-8. (1996)
3. Morrison, J.H. and **Gazzaley, A.** Age-related alterations of the N-methyl-D-aspartate receptor in the dentate gyrus. Molecular Psychiatry 1(5): 356-8. (1996)
4. Morrison, J.H., Siegel, S.J., **Gazzaley, A.**, Huntley, G.W. Glutamate receptors: Emerging links between subunit proteins and specific excitatory circuits in primate hippocampus and neocortex. Neuroscientist 2:272-283. (1996)
5. **Gazzaley, A.**, Benson, D.L., Huntley, G.W. and Morrison, J.H. Differential subcellular regulation of NMDAR1 protein and mRNA in dendrites of dentate gyrus granule cells after perforant path transection. Journal of Neuroscience 17(6): 2006-17. (1997)
6. **Gazzaley, A.**, Thakker, M.M., Hof, P.R. and Morrison, J.H. Preserved number of entorhinal cortex layer II neurons in aged macaque monkeys. Neurobiology of Aging 18(5): 549-53. (1997)
7. Adams, M.M., **Gazzaley, A.** and Morrison, J.H. Attenuated lesion-induced N-methyl-D-aspartate receptor (NMDAR) plasticity in the dentate gyrus of aged rats following perforant path lesions. Experimental Neurology 172(1): 244-9. (2001)
8. **Gazzaley, A.**, Kay, S. and Benson, D.L. Dendritic spine plasticity in hippocampus. Neuroscience 111(4): 853-62. (2002)
9. D'Esposito, M., Deouell, L. and **Gazzaley, A.** Alterations in the BOLD fMRI signal with ageing and disease: A challenge for neuroimaging. Nature Reviews Neuroscience 4: 863-872. (2003)
10. **Gazzaley, A.** and D'Esposito, M. The contribution of functional brain imaging to our understanding of cognitive aging. Science's SAGE KE (29 January 2003), <http://sageke.sciencemag.org/cgi/content/full/sageke;2003/4/pe2>
11. **Gazzaley, A.** and D'Esposito, M. BOLD Functional MRI and Cognitive Aging. In: R. Cabeza, D. Park, L. Nyberg. (Eds.) Cognitive Neuroscience of Aging. Oxford University Press, New York. (2004)
12. Rissman, J., **Gazzaley, A.** and D'Esposito, M. Measuring functional connectivity during distinct stages of a cognitive task. Neuroimage 23(2), 752-763. (2004)
13. **Gazzaley, A.**, Rissman, J., D'Esposito, M. Functional Connectivity during working memory maintenance. Cognitive, Affective and Behavioral Neuroscience 4(4), 580-599. (2004)
14. **Gazzaley, A.**, Cooney, J.W., McEvoy, K., Knight, R. D'Esposito, M. Top-down enhancement and suppression of the magnitude and speed of neural activity. Journal of Cognitive Neuroscience. 17(3), 507-517. (2005)
15. **Gazzaley, A.**, Cooney, J.W., Rissman, J., D'Esposito, M. Top-down suppression deficit underlies working memory impairment in normal aging. Nature Neuroscience 8(10), 1298-1300. (2005)
16. D'Esposito, M. and **Gazzaley, A.** Neurorehabilitation of executive function. In: Selzer, M., Clarke, S., Cohen, L., Duncan and Gage, R. (Eds) Textbook of Neural Repair and Rehabilitation. Cambridge University Press (2005)
17. **Gazzaley, A.** and D'Esposito, M. Considerations for the application of BOLD fMRI to neurologically impaired populations. In: Hillary, F.G., DeLuca, J (Eds) Functional Neuroimaging in Clinical Populations. Guilford Press (2005)

18. **Gazzaley, A.** and D'Esposito, M. Neural Networks: An empirical neuroscience approach toward understanding cognition. Cortex 1037-1040 (2006)
19. **Gazzaley, A.** and Small, S. Functional MRI and Alzheimer's Disease. In: D'Esposito, M., (Ed) Functional MRI: Applications in Clinical Neurology and Psychiatry. Taylor and Francis Medical Publishing (2006)
20. D'Esposito, M., Cooney, J.W., Postle, B.R., **Gazzaley, A.**, Gibbs, S.E. The role of the prefrontal cortex on component processes of working memory: Evidence from lesion and fMRI data. Journal of the International Neuropsychological Society. 12(2), 248-260 (2006)
21. Huh, T., Kramer, J., **Gazzaley, A.**, Delis, D. Response bias and aging on a recognition memory task. Journal of the International Neuropsychological Society. 12(1), 1-7 (2006)
22. Handwerker, D.A., **Gazzaley, A.**, Inglis, B., D'Esposito, M Reducing Vascular Variability of fMRI Data across Aging Populations Using a Breathholding Task. Human Brain Mapping. 28(9): 846-59 (2006)
23. **Gazzaley, A.** and D'Esposito, M. Top-down Modulation in Visual Working Memory. In: Osaka, N, Logie, R and D'Esposito, M. (Eds) Working Memory: Behavioral and Neural Correlates. Oxford University Press (2007)
24. **Gazzaley, A.** and D'Esposito, M. Unifying prefrontal cortex function: Executive control, neural networks and top-down modulation. In: Miller, B., Cummings, J. (Eds) The Human Frontal Lobes. Guildford Publications (2007)
25. Krawczyk, D.C., **Gazzaley, A.**, D'Esposito, M. Reward modulation of visual association cortex during an incentive working memory task Brain Research 1141:168-177 (2007)
26. **Gazzaley, A.** and D'Esposito, M. Top-down Modulation and Normal Aging. Annals of the New York Academy of Science. 1097, 67-83 (2007).
27. **Gazzaley, A.**, Sheridan, M.A., Cooney, J and D'Esposito, M. Age-related deficits in component processes of working memory. Neuropsychology. 21(5): 532-9. (2007)
28. **Gazzaley, A.**, Rissman, J Cooney, J.W., Rutman, A., Seibert, T, Clapp, W, D'Esposito, M. Functional interactions between prefrontal and visual association cortex contribute to top-down modulation of visual processing. Cerebral Cortex. 17:i125-i135 (2007)
29. Rissman, J, **Gazzaley, A.** D'Esposito, M. Dynamic adjustments in frontal, hippocampal, and inferior temporal interactions with increasing visual working memory load. Cerebral Cortex. 18(7):1618-29. (2007)
30. **Gazzaley, A.**, Clapp, W., Kelley, J., McEvoy, K., Knight, R., D'Esposito, M. Age-related top-down suppression deficit in the early stages of cortical visual memory processing. Proceedings of the National Academy of Science USA 105(35): 13122-13126. (2008)
31. D'Esposito, M. Jagust, W., **Gazzaley, A.** Methodological and conceptual issues in the study of the aging brain. In, D'Esposito, M. Jagust, W (Eds) Imaging the Aging Brain. Oxford University Press (2009)
32. Zanto, T. & **Gazzaley, A.** Neural suppression of irrelevant information underlies optimal working memory performance. Journal of Neuroscience 29 (10): 3059-3066 (2009)
33. Rissman, J., **Gazzaley, A.**, D'Esposito, M. The effect of non-visual working memory load on top-down modulation of visual processing. Neuropsychologia 47 (7): 1637-1646 (2009)
34. Pa, J., Boxer, A.L., Freeman, B.S., **Gazzaley, A.**, Kramer, J., Miller, B.L., Chao, L.L., Weiner, M.D., Neuhaus, J., Johnson, J.K., Clinical and neuroimaging characteristics of dysexecutive mild cognitive impairment. Annals of Neurology. 65: 414-423 (2009)
35. Morsella, E., & Lanska, M., Berger, C. C., & **Gazzaley, A.** Indirect cognitive control through top-down activation of perceptual symbols. European Journal of Social Psychology. (2009).
36. Rutman, A.M., Clapp, W.C., Chadick, J.Z., **Gazzaley, A.** Early top-down control of visual processing predicts working memory performance. Journal of Cognitive Neuroscience (2009)
37. Clapp, W., Rubens, M.T., **Gazzaley, A.** Mechanisms of working memory disruption by external interference. Cerebral Cortex 20(4): 859-72 (2010)

38. Morsella, E., Wilson, L.E., Berger, C.C., Honhongva, M., **Gazzaley, A.**, Bargh, J.A. Subjective Aspects of Cognitive Control at Different Stages of Processing: Conscious conflict and double-blindness. Attention, Perception, & Psychophysics (2009)
39. Berry, A.S., Zanto, T.P., Rutman, A.M., Clapp, W.C., **Gazzaley, A.** Practice-related improvement in working memory is modulated by changes in processing external interference. Journal of Neurophysiology 102(3): 1779-1789 (2009)
40. Zanto, T., Toy, B. **Gazzaley, A.** Delays in neural processing during working memory encoding in normal aging. Neuropsychologia 48(1): 13-25 (2010)
41. Zanto, T., Hennigan, K., Ostberg, M., Clapp, W., **Gazzaley, A.** Predictive knowledge of stimulus relevance does not influence top-down suppression of irrelevant information in older adults. Cortex 46 (4): 564-574 (2010)
42. Clapp, W. & **Gazzaley, A.** Distinct mechanisms for the impact of distraction and interruption on working memory in aging. Neurobiology of Aging (2010)
43. **Gazzaley, A.** Top-down modulation: The crossroads of perception, attention and memory. Proc. SPIE, Vol. 7527, 75270A (2010)
44. Wais, P., Rubens, M., Boccanfuso, J. & **Gazzaley, A.** Neural Mechanisms Underlying the Impact of Visual Distraction on Long-Term Memory Retrieval (Submitted)
45. Morsella, E., Rigby, T., & **Gazzaley, A.** A working-memory version of the flanker task yields traditional perceptual- and response-interference effects. (Submitted)
46. Duverne, S., **Gazzaley, A.**, D'Esposito, M. Distinct contribution of control signals on the modulation of visual association cortex during working memory encoding (Submitted)
47. Berry, A., Zanto, P. Clapp, W., Hardy, J., Delahunt, P., Mahncke, H., **Gazzaley, A.** The Influence of Perceptual Training on Working Memory in Older Adults (Submitted)
48. Zanto, T. Rubens, M. & Gazzaley, A. The inferior frontal junction and top-down modulation of visual feature processing (Submitted)
49. Bollinger, J. Rubens, M. & Gazzaley, A. Expectation-driven changes in cortical functional connectivity in the service of subsequent memory (Submitted)

Abstracts:

1. **Gazzaley, A.**, Siegel, S.J., Kordower, J.H., Mufson, E.J., Sladek, J.R. and Morrison, J.H. Alterations in glutamate receptor distribution in the dentate gyrus of macaque monkeys. Society for Neuroscience Abstracts 20:48. (1994)
2. **Gazzaley, A.**, Siegel, S.J., Kordower, J.H., Mufson, E.J., Sladek, J.R. and Morrison, J.H. Circuit-specific alterations of NMDA receptors in the hippocampus of aged monkeys. Society for Neuroscience Abstracts 21:764. (1995)
3. **Gazzaley, A.**, Benson, D.L., Huntley, G.W., and Morrison, J.H. Lamina-specific regulation of NMDAR1 immunoreactivity in dentate gyrus following entorhinal cortex lesions. Society for Neuroscience Abstracts 22:1761. (1996)
4. **Gazzaley A.**, Weiland, N.G., Janssen, W.G.M., McEwen, B.S. and Morrison, J.H. Perforant path lesion-induced NMDAR1 plasticity in the dentate gyrus is not regulated by estrogen. Society for Neuroscience Abstracts 23: (1997)
5. **Gazzaley, A.**, Cooney, J., Rissman, J., D'Esposito, M. Top-down modulation of stimulus-specific visual association cortex. Society for Neuroscience Abstracts, 343.1 (2003)
6. Rissman, J., **Gazzaley, A.**, D'Esposito, M. Functional connectivity during working memory maintenance Society for Neuroscience Abstracts, 287.15 (2003)
7. Cooney, J., **Gazzaley, A.**, Pino, D., Sheridan M.A., Ranganath, C., D'Esposito, M. Age-related changes in the fronto-parietal network and occipital cortex during working memory delay. Society for Neuroscience Abstracts, 933.1 (2003)
8. Handwerker, D.A., **Gazzaley, A.**, Ollinger, J.M., D'Esposito, M. Bold responses to hypercapnia and neural activity in aging and stroke. Society for Neuroscience Abstracts, 107.15 (2003)

9. Sheridan, M.A., **Gazzaley, A.**, Cooney, J., Postle, B. and D'Esposito, M. Selective age-related deficits in working memory associated with prefrontal cortex function. Cognitive Neuroscience Society Meeting (2003)
10. **Gazzaley, A.**, McEvoy, K., Cooney, J., Knight, R., D'Esposito, M. Top-Down Modulation of Visual Association Cortex: Converging Evidence from fMRI and ERP. Cognitive Neuroscience Society Meeting (2004)
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32. Clapp, W., Kelley, J., McEvoy, K., D'Esposito, M. **Gazzaley, A.**, Age-related inability to suppress irrelevant information: A spectral study of gamma bursting during a working memory task. Cognitive Neuroscience Society Meeting (2007)
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34. Rutman, A., Clapp, W., Chadick, J.Z., **Gazzaley, A.**, Early object-based top-down modulation in an attention task using overlapped faces and scenes. Society for Neuroscience Abstracts (2007)
35. Zanto, T. & **Gazzaley, A.** Top-down modulation of low-level visual processing: Bridging attention and working memory. Society for Neuroscience Abstracts (2007)
36. Berry, A., Rutman, A., Clapp, Z., Zanto, T., **Gazzaley, A.** The impact of attending to distractors: A study of low-level visual working memory. Cognitive Neuroscience Society Meeting (2008)
37. Chadick, JZ, Rutman, A.J., **Gazzaley, A.** Influence of prefrontal-visual associative cortical networks in a selective-attention, working memory paradigm. Cognitive Neuroscience Society Meeting (2008)
38. Clapp, W.C., Litke, R., Murthy, N., **Gazzaley, A.** Inability to effectively suppress anticipated irrelevant information in healthy older adults. Cognitive Neuroscience Society Meeting (2008)
39. Zanto, T., Toy, B., **Gazzaley, A.** Age related changes in top-down modulation of low-level visual processing. Cognitive Neuroscience Society Meeting (2008)
40. Wright, S.B, Baym, C.L., Repin, N., **Gazzaley, A.**, Bunge, S.A. Development of top-down attentional modulation: An fMRI investigation. Cognitive Neuroscience Society Meeting (2008)
41. Clapp, W.C., Rubens, M.T., Karlsson, J., Zanto, T., **Gazzaley, A.** Variations in task difficulty dissociate activity in prefrontal cortex and medial temporal lobe during working memory encoding. Human Brain Mapping (2008)
42. Zanto, T.P., Hennigan, K., Clapp, W.C., **Gazzaley, A.**, The role of stimulus anticipation in an age-related top-down suppression deficit. Society for Neuroscience Meeting (2008)
43. Chadick, JZ, **Gazzaley A.** The dynamics of frontal top-down control networks and their role in cognitive aging. Society for Neuroscience (2008)
44. Bollinger J.J., **Gazzaley, A.** Pre-stimulus alpha power reflects anticipation of both stimulus category for complex objects and task goals. Society for Neuroscience Meeting (2008)
45. Clapp WC, Rubens M, **Gazzaley, A.** Individual differences in attentional allocation to relevant and irrelevant distraction predicts working memory performance. Society for Neuroscience Meeting (2008)
46. Kalkstein, J., **Gazzaley, A.** A combined EEG and fMRI study of motion and face mental imagery. Society for Neuroscience Meeting (2008)
47. Wais, P. E, **Gazzaley, A.** The role of top-down modulation in long-term memory. Cognitive Neuroscience Society Meeting (2009)
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50. Wais, P. E., Rubens, M. T., Boccanfuso, J., **Gazzaley, A.** The Neural Correlates of Visual Distraction During Episodic Memory Retrieval. Society for Neuroscience Meeting (2009)
51. Plange, K, S. N. Bruke, S.N., Nematollahi, S., Huerta, D., **Gazzaley A.**, Barnes, C. A. The effects of distraction and interruption forms of interference on delayed-nonmatching to sample task performance Society for Neuroscience Meeting (2009)
52. Anguera, J.A., Yang,B, Barbhaiya N. **Gazzaley, A.** The relationship between motor and sensory inhibition: an EEG study. Society for Neuroscience Meeting (2009)

53. Zanto, T. Rubens, M. T., Thangavel, A., & **Gazzaley, A.** Top-down modulation for visual features: Evidence from functional and causal connectivity. Society for Neuroscience Meeting (2009)
54. Pa, J., Bollinger, J., Johnson, J.K., **Gazzaley, A.** Functional MRI BOLD Modulation in Attention and Memory Systems in MCI. International Conference on Alzheimer's Disease (2010).
55. Zanto, T.P., Chadick, J.Z., **Gazzaley, A.** Spatio-temporal dynamics in working memory for motion direction: An fMRI guided EEG/TMS study. Human Brain Mapping Meeting (2010).
56. Anguera, J.A., Lyman, K., **Gazzaley, A.** Neural correlates of response inhibition after-effects. Human Brain Mapping (2010)
57. Lyman, K., Anguera, J.A., **Gazzaley, A.**, Terman, D. A mathematical model of human inhibitory control. Computational Neuroscience Meeting (2010)

Gazzaley Lab Research Program:

Research in our laboratory focuses on understanding of the neural mechanisms of top-down modulation (specifically, interactions between attention, perception and memory), alterations that occur in normal aging and early dementia, and how we may intervene therapeutically when deficits exist. To accomplish this, we couple novel cognitive paradigms designed in the lab with human neurophysiologic techniques, such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG) and transcranial magnetic stimulation (TMS).