

Brian Wiltgen, Ph.D.

Curriculum Vitae

University of Virginia
Department of Psychology
Charlottesville, VA 22904
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RESEARCH INTERESTS

- Cellular and molecular mechanisms of memory storage
 - Synaptic plasticity and Alzheimer's disease
 - Reward learning and addiction
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POSITIONS

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|---|----------------|
| Assistant Professor University of Virginia, Department of Psychology | 2009 - present |
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EDUCATION

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|---|-------------|
| Postdoctoral Fellow, UCLA National Research Service Award (NRSA) Advisor, Dr. Alcino Silva | 2004 - 2008 |
| Ph.D., Psychology, UCLA Dissertation: <i>Hippocampal Contributions to Context Fear</i> Advisor, Dr. Michael Fanselow | 2003 |
| M.A., Psychology, UCLA Thesis: <i>Fear Evaluation and the Amygdala</i> Advisor, Dr. Michael Fanselow | 1998 |
| B.S., Psychology, University of Iowa Thesis: <i>Conditioned defensive behavior in the goldfish</i> Advisor, Dr. Isidore Gormezano | 1997 |

GRANTS

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| J-972 (PI: Wiltgen) Jeffress Memorial Trust Research Grant "In vivo experience modifies cellular plasticity mechanisms in the hippocampus" | 01/01/11-12/31/11 \$10,000 (annual direct) |
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| R03DA029165-01 (PI: Wiltgen) National Institutes of Health “Motivational control of goal-directed actions and habits” | 04/01/10-03/31/12 \$50,000 (annual direct) |
| GI10432 (PI: Wiltgen) Barron Associates, (Army-STTR) “A rugged automated training system for landmine detection-Phase I” | 8/28/11-2/26/12 \$29,221 (annual direct) |
| GF12577 (PI: Wiltgen) Alzheimers Association “The role of synaptic plasticity in the development of Alzheimer’s Disease” | 9/1/11-8/31/13 \$45,403 (annual direct) |
| GF12570 (PI: Wiltgen) Whitehall Foundation, Inc. “The contribution of calcium-permeable AMPA receptors to synaptic plasticity” | 9/1/11-8/31/14 \$68,500 (annual direct) |

TEACHING EXPERIENCE

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|---|-------------|
| University of Virginia, Instructor Neurobiology of Learning and Memory Biological Models of Cognition Mechanisms of Memory | 2009 – 2011 |
| UCLA Extension, Instructor Behavioral Neuroscience Fundamentals of Learning and Behavior | 2004 – 2005 |
| Cold Spring Harbor Laboratory, Teaching Assistant Mouse Behavioral Analysis | 2001 – 2002 |

SCHOLARSHIPS AND FELLOWSHIPS

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|---|-------------|
| NIH National Research Service Award (NRSA) | 2003 - 2006 |
| UCLA Research Mentorship Fellowship | 2000 - 2001 |
| UCLA University Fellowship Award | 1997 - 1998 |
| University of Iowa | 1996 - 1997 |

Undergraduate Honors Scholarship

AWARDS AND HONORS

Mead Honored Faculty, University of Virginia

2010

PROFESSIONAL MEMBERSHIPS

American Psychological Association
Society for Neuroscience
Molecular & Cellular Cognition Society
Pavlovian Society

PUBLICATIONS

Journal Articles

Wiltgen B.J., Wood, A.N. & Levy, B. (in press). The cellular mechanisms of memory are modified by experience. *Learning & Memory*.

Warthen D.M., **Wiltgen B.J.**, Provencio I. (2011) Light enhances learned fear. *Proceedings of the National Academy of Sciences of the United States of America* 108:13788-13793.

Taylor K.K., Lowry E., Tanaka K., Levy B., Reijmers L., Mayford M., **Wiltgen B.J.** (2011) Characterization of NMDAR-independent learning in the hippocampus. *Frontiers in Behavioral Neuroscience* 5:28.

Wiltgen, B.J., Royle, G., Gray, E., Abdipranoto, A., Thangthaeng, N., Jacobs, N., Saab, F., Tonegawa, S., Heinemann, S.F., O'Dell, T., Fanselow, M.S., & Vissel, B. (2010). A role for calcium-permeable AMPA receptors in synaptic plasticity and learning. *PLoS ONE*, 5(9).

Wiltgen, B.J., Zhou, M., Cai, K., Balaji, J., Guzman Karlson, M., Parivash, S. Lee, W. & Silva, A.J. (2010). The hippocampus plays a selective role in the retrieval of detailed context memories. *Current Biology* 20, 1336-1344.

Wiltgen, B.J., Godsil, B.P., Peng, Z., Saab, F., June, H.L., Houser, C.R., O'Dell, T., Homanics, G.E. & Fanselow, M.S. (2009). The $\alpha 1$ subunit of the GABA(A) receptor modulates fear learning and plasticity in the lateral amygdala. *Frontiers in Behavioral Neuroscience*, 3:37.

Matynia A., Anagnostaras S.G., **Wiltgen B.J.**, Lacuesta M., Fanselow M.S. & Silva A.J. (2008). A high through-put reverse genetic screen identifies two genes involved in remote memory in mice. *PLoS ONE*, 3, e2121.

Wiltgen, B.J. & Silva, A.J. (2007). Memory for context becomes less specific with time. *Learning & Memory*, 14, 313-317.

Wiltgen B.J., Law, M., Ostlund, S.B., Mayford, M. & Balleine, B.W. (2007). The influence of Pavlovian cues on instrumental performance is mediated by CaMKII activity in the striatum. *European Journal of Neuroscience*, 25, 2491-2497.

Zhou Y., Takahashi E., Li W., Halt A., **Wiltgen B.J.**, Ehninger D., Li G.D., Hell J.W., Kennedy M.B. & Silva A.J. (2007). Interactions between the NR2B receptor and CaMKII modulate synaptic plasticity and spatial learning. *Journal of Neuroscience*, 27, 13843-13853.

Wiltgen, B.J., Sanders M.J., Anagnostaras, S.A., Sage, J.R. & Fanselow, M.S. (2006). Context fear learning in the absence of the hippocampus. *Journal of Neuroscience*, 26, 5484-91.

Wiltgen B.J., Sanders M.J., Ferguson C., Homanics G.E., Fanselow M.S. (2005). Trace fear conditioning is enhanced in mice lacking the delta subunit of the GABAA receptor. *Learning & Memory*, 12:327-333.

Gale G.D., Anagnostaras S.G., Godsil B.P., Mitchell S., Nozawa T., Sage J.R., **Wiltgen B.J.**, & Fanselow M.S. (2004). Role of the basolateral amygdala in the storage of fear memories across the adult lifetime of rats. *Journal of Neuroscience*, 24(15):3810-5.

Meffert, M.K., Chang, J., **Wiltgen, B.J.**, Fanselow, M.S. & Baltimore, D. (2003). Synaptic control of transcription by translocation of NF- κ B from dendrites to nucleus. *Nature Neuroscience*, 6(10): 1072-8.

Wiltgen, B.J., Sanders, M.J., Behne, N.S. & Fanselow, M.S. (2001). Sex differences, context preexposure, and the immediate shock deficit in Pavlovian context conditioning with mice. *Behavioral Neuroscience*, 115, 26-32.

Review papers

Wiltgen B.J., Brown R.A., Talton L.E. & Silva A.J. (2004). New circuits for old memories: the role of the neocortex in consolidation. *Neuron*, 44(1):101-8.

Sanders, M.J., **Wiltgen, B.J.** & Fanselow, M.S. (2003). The place of the hippocampus in fear conditioning. *European Journal of Pharmacology*, 463, 217-23.

Book Chapters

Wiltgen, B.J. & Silva A.J. (2007). Towards a Molecular and Cellular Understanding of Remote Memory. In: Bontempi, B., Silva, A.J., Christen, Y. (Eds). *Memories: Molecules and Circuits*. Springer: New York.

Wiltgen, B.J. & Fanselow, M.S. (2003). A model of hippocampal-cortical-amygdala interactions based on context fear conditioning. In: Jeffery, K.J. (Ed). *The Neurobiology of Spatial Behaviour*. Oxford University Press: Oxford.

INVITED TALKS AND COLLOQUIA

Reactivation of memory networks in the hippocampus and neocortex 2011
Center for Neurobiology of Learning and Memory
University of California, Irvine

The cellular mechanisms of memory are modified by experience 2010
Psychology Department, Duke University

Precise context memories require the hippocampus 2010
Pavlovian Society Meeting, Baltimore, MD

NMDAR-independent plasticity mechanisms in the hippocampus 2009
University of Virginia, Biology Department Colloquium

The role of NMDARs in learning and memory 2009
University of Virginia, Neuroscience Graduate Program Colloquium

INVITED MEETINGS

NIA Summer Institute on Aging Research 2009

AD HOC REVIEWER

Cell, Neuron, Journal of Neuroscience, Learning & Memory, Behavioral Neuroscience, Journal of Cellular Physiology, Molecular Brain

LEADERSHIP AND SERVICE

National

Grant review panel, National Institute on Drug Abuse

2011

University of Virginia

Psychology Department, Colloquium Committee

2010 - 2011

Psychology Department, Undergraduate committee

2010 - 2011

Psychology Department, Chair Nomination Committee

2010

Neuroscience Graduate Program, Colloquium Committee

2009 - 2011