

Curriculum Vitae

DAVID R. VAGO

Harvard Medical School
Brigham & Women's Hospital
Department of Psychiatry
75 Francis Street
Boston, MA 02115

Home Phone: (801) 647-5906
Office Phone: (617) 732-9113
Fax: (617) 732-9151
Email: dvago@partners.org

EDUCATION

- B.A. University of Rochester 1997 Brain & Cognitive Sciences
M.S. University of Utah 2002 Psychology (Cognition & Neural Science)
 ○ *Thesis: Nicotinic acetylcholine and contextual learning and memory*
Ph.D. University of Utah 2005 Psychology (Cognition & Neural Science)
 ○ *Dissertation: Functional characterization of the direct cortical input to the CA1 subregion of the hippocampus: Electrophysiological and behavioral modulation of the temporoammonic pathway by a non-selective dopamine agonist*

POSITIONS

- Post-doctoral Research Fellow 2008 – present
 ○ Harvard University Medical School– Functional Neuroimaging Laboratory, Brigham & Women's Hospital, Department of Psychiatry, Boston, MA
Senior Research Coordinator 2007 - present
 ○ Mind and Life Institute, Boulder, CO
Post-doctoral Associate of Psychology in Psychiatry 2007 – 2008
 ○ Weill Cornell Medical College – Functional Neuroimaging Laboratory, Department of Psychiatry, New York, NY
Post-doctoral Research Associate 2005 - 2007
 ○ University of Utah – Utah Center for Exploring Mind-Body Interactions (UCEMBI), Department of Anesthesiology, Pain Research Center, Salt Lake City, UT

AWARDS

- 2005 – 2007 Mind & life Summer Research Institute Fellowship
2004 University of Utah, Department of Psychology—Kevin Hawley Memorial Award
2003 University of Utah, Department of Psychology—Commendation for Excellence in Teaching
2003 University of Utah—Psi Chi Honor Society Award for Excellence in Teaching
2002 – 2004 University of Utah—Graduate Research Student Travel Award
2001 University of Utah, Department of Psychology—Commendation for Excellence in Research 1999 –
2005 University of Utah, Department of Psychology—Research Assistantship

TEACHING EXPERIENCE

- 2005 – 2007 Adjunct faculty – Physiological Psychology (Psyc 406), Westminster College
2005 – 2007 Adjunct faculty – Physiological Psychology Lab (Psyc 407), Westminster College
2005 Adjunct faculty – Brain and Behavior (Psy 3711), University of Utah
2001 – 2004 Graduate Instructor – Brain and Behavior (Psy 3711), University of Utah
2001 – 2004 Graduate Instructor – Research Modes of Learning (Psych 3900), University of Utah
2001 Graduate Instructor – Teaching Experience (Psych 4910), University of Utah
2001 Teaching Fellow – Cognition (Psych 3120), University of Utah
2000 Teaching Fellow – Brain and Behavior (Psych 3711), University of Utah
1999 Teaching Fellow – Mind and Nature (Psych 3130), University of Utah

PUBLICATIONS***In Preparation***

Vago, D.R., Nakamura, Y. (submitted November, 2009) Mindfulness Meditation Training for Fibromyalgia: Preliminary Evidence for Modification of Attentional Bias.

Vago, D.R., Nakamura, Y. (in preparation) Fibromyalgia, an imaging study: The effect of mindfulness meditation training on brain networks involved in anticipation of pain.

Vago, D.R., Nakamura, Y. (in preparation) Effects of mindfulness meditation on symptoms of fibromyalgia.

Vago, D. R., Tuescher, O., Protopopescu, X., Pan, H., Cloitre, M., Butler, T., Root, J., Engelien, A., Gorman, J., LeDoux, J., Silbersweig, D., Stern, E. (in preparation) Neurobiological alterations of instructed fear learning in the posttraumatic stress disorder.

Peer-reviewed Journals

Vago, D.R., Kesner, R.P. (2008) Disruption of the direct perforant path input to the CA1 subregion of the dorsal hippocampus interferes with spatial working memory and novelty detection. *Behavioural Brain Research*, 189, 273-83.

Vago, D.R., Bevan, A., Kesner, R.P. (2007) The role of the direct perforant path input to the dorsal CA1 subregion in memory retention and retrieval. *Hippocampus*, 17, 977-987.

Vago, D.R., Kesner, R.P. (2007) Cholinergic modulation of Pavlovian fear conditioning in rats: Differential effects of intrahippocampal infusion of mecamylamine and methyllycaconitine. *Neurobiology of Learning and Memory*, 87, 441-9.

Wallenstein, G.V., **Vago, D.R.**, Walberer, A.M. (2002) Time-dependent involvement of PKA/PKC in contextual memory consolidation. *Behavioural Brain Research*, 133, 159-164.

Wallenstein, G.V. and **Vago, D.R.** (2001) Intrahippocampal Scopolamine Impairs Both Acquisition and Consolidation of Contextual Fear Conditioning. *Neurobiology of Learning and Memory*, 75, 245-252.

Book Chapters

Wallenstein, G.V., **Vago, D.R.**, Walberer, A.M. (2001) Hippocampus. In *Encyclopedia of Neurological Sciences*, Academic Press.

ABSTRACTS AND CONFERENCE PRESENTATIONS

Vago DR, Fleming-Jackson, D., Nakamura Y. (April, 2010). Effects of mindfulness meditation on perceived symptoms of fibromyalgia: A qualitative approach to understanding clinical changes. *Investigating and Integrating Mindfulness in Medicine, Health Care, and Society*, Center for Mindfulness, 8th Annual International Scientific Conference for Clinicians, Researchers and Educators, Worcester, MA.

Vago DR, Nakamura Y. (2010). Mindfulness Meditation Training for Fibromyalgia: A Preliminary Study Investigating Attention-related Bias on a Dot-Probe Task. American Psychosomatic Society. *Stress & Health*. Abstract 1453.

Vago, D.R., Nakamura, (April, 2008). Mindfulness Training for Fibromyalgia: Changes in General Symptoms, Perception of Pain, and Associated Brain Correlates. *Integrating Mindfulness-Based Interventions into Medicine, Health Care, and Society for Clinicians, Researchers, and Educators*, Center for Mindfulness, Worcester, MA.

Nakamura Y., **Vago, D.R.**, Volinn, E. (July, 2007). Altered States of Consciousness. Toward a Science of Consciousness, Budapest. Toward of Science of Consciousness Abstracts.

Vago, D.R., Nakamura, Y., Volinn, E. (June, 2006). The effects of mindfulness meditation training on cognitive and emotional biases associated with the perception of pain in fibromyalgia. Mind & Life Summer Research Institute.

- Vago, D.R.**, Kesner, R. P. (2005). An electrophysiological and behavioral characterization of the temporoammonic pathway: Disruption produces deficits in retrieval and spatial mismatch. Society for Neuroscience Abstracts, 647.5.
- Vago, D.R.**, Kesner, R. P. (2004). The role of the direct perforant path in retrieval and detection of spatial change. Society for Neuroscience Abstracts, 434.3.
- Vago, D.R.**, Calder, A., Kesner, R. P. (2003). Functional characterization of the direct perforant path into the hippocampus. Society for Neuroscience Abstracts, 835.2.
- Vago, D.R.**, Hone, A., Barrett, C., Kesner, R. P., Wallenstein, G. V. (2002). Intrahippocampal blockade of $\alpha 7$, $\alpha 3\beta 2$, $\alpha 2\beta 4$, and $\alpha 4\beta 4$ nicotinic acetylcholine receptors disrupts early consolidation and acquisition of contextual fear. Society for Neuroscience Abstracts, 185.2.
- Vago, D.R.**, Wallenstein G.V., Walberer, A.M., Kinikini, K. (2001). PKA/PKC inhibition produces a time-dependent retrograde deficit of contextual fear conditioning. Society for Neuroscience Abstracts, slide presentation.
- Siddiqui, A.H., **Vago, D.**, Lynd-Balta, E., Joseph, S.A. (1995). Immunocytochemical localization of selective glutamate receptor subunits in kainic acid treated rats. Society for Neuroscience Abstracts, 650.7.

INVITED TALKS

- “The Neurobiology of Self”, Mind & Life Summer Research Institute, Garrison, NY. June 2010.
- “The Emerging Field of Contemplative Neuroscience”, Mind & Life Summer Research Institute, Garrison, NY. June 2010.
- “Effects of Contemplative Practice on Developmental Neuroplasticity”, Department of Psychology, Portland State University. March, 2010
- “The Effects of Meditation & Contemplative Practice on Pain”, National Public Radio, Charlotte affiliate WFAE, December, 2009. <http://charlotteblogs.wordpress.com/2009/11/23/tuesday-november-24-2009-meditation-and-health/>
- “The Neurobiology of Self”, Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School. December, 2009
- “The Emerging Field of Contemplative Neuroscience”, Department of Psychiatry, Brigham & Women’s Hospital, Harvard Medical School. September, 2009
- “The Contemplative Neurosciences”, Mind & Life Summer Research Institute, Garrison, NY. June 2009
- Blogging for Mind and Life XVIII: Attention, Memory & The Mind: A Synergy of Psychological, Neuroscientific, & Contemplative Perspectives with His Holiness the 14th Dalai Lama, Dharamsala, India. April 2009. <http://www.mindandlife.org/blog/dharamsala/>
- “Happiness and the Brain”. The Agenda with Steve Paikin, TV Ontario. January, 2009. http://www.tv.org/cfm/tvoorg/theagenda/index.cfm?page_id=7&bpn=779412&ts=2009-01-13%20%01:05:0
- “Mindfulness and Fibromyalgia”. Mind & Life Summer Research Institute, Garrison, NY. June, 2007
- “Neurobiological effects of meditation”. Presbyterian Church, Salt Lake City, UT. May, 2007
- “Memory”. Dept. of Psychology, Southern Oregon University. Ashland, OR. February, 2007
- “Neuroanatomy – Function and Dysfunction”. Dept. of Psychology, Westminster College, Salt Lake City, UT. October, 2006
- “Drugs and Drug Addiction”. Mount Olympus High School, Salt Lake City, UT. September, 2002

OTHER PROFESSIONAL TRAINING

- March, 2009 Functional Magnetic Resonance Imaging visiting fellowship: A five-day intensive introduction and 2-day SPM data analysis workshop, Martinos Center for biomedical imaging, Massachusetts General Hospital, Boston, MA
 - 7-day workshop providing training in design, analysis, & interpretation of functional magnetic resonance imaging data using Unix scripting and SPM
- October, 2007 Functional Magnetic Resonance Imaging: A Hands-On Course in Data Analysis, Medical College of Wisconsin, Milwaukee, WI

- 4-day workshop providing training in design, analysis, and interpretation of functional magnetic resonance imaging data using Mac OSX, Unix scripting, & AFNI
- May, 2007 Advanced Neurotechnology (ANT) training workshop, UCSD, San Diego, CA
 - EEG/MEG data acquisition & analysis (time frequency analysis & source localization).
- April, 2006 Advanced Neurotechnology (ANT) training workshop, University of Utah, Salt Lake City, UT
 - EEG and MEG data acquisition & analysis

SERVICE

- 2010 Reviewer: Biological Psychology, 5th ed., Rosenzweig, Breedlove, & Watson, Sinauer
- 2008 Reviewer: Comprehensive Psychiatry, Elsevier
- 2007 Reviewer: Biological Psychology, 4th ed., Rosenzweig, Breedlove, & Watson, Sinauer
- 2004 High School Mentoring program, University of Utah
- 2004 Reviewer: Cognition: The thinking animal, 2nd ed., Willingham
- 2004 Reviewer: Biological Psychology CD-Rom & instructor's manual, 3rd ed., Rosenzweig, Breedlove, & Leiman, Sinauer
- 2003 Reviewer: Biological Psychology, 3rd ed., Rosenzweig, Breedlove, & Leiman, Sinauer
- 2003 Reviewer: Cognitive Psychology: Mind and Brain, Smith & Kosslyn, Prentice Hall
- 2002 Reviewer: Cognition, 1st ed., Willingham, Prentice Hall
- 2002 – 2003 Cognition & Neural Sciences Area Student Representative, University of Utah
- 2003 – 2004 Academic Misconduct and Appeals Committee, University of Utah, College of Social and Behavioral Science

PROFESSIONAL AFFILIATIONS

- 2001 – present Society for Neuroscience
- 2007 – present Cognitive Neuroscience Society
- 2008 – present New York Academy of Sciences
- 2009 – present National Postdoctoral Association

ONGOING RESEARCH SUPPORT

1R01 MH074808-01A2 Stern (PI) 04/01/2007 – 03/12/2012 NIMH
 fMRI of Premenstrual Dysphoric Disorder. *The aim of this study has been to examine and characterize the systems-level neuropathophysiology of PMDD, taking into account menstrual cycle phase and menstrual cycle mood response variability of female subjects, in the context of a specific neurobiological model of fronto-limbic- striatal function.*
 Role: Investigator

Ahles, Silbersweig (PI) 07/01/2008 – 06/30/2010

Starr Foundation

Translational studies of neural mechanisms of chemotherapy induced cognitive changes

The goal of this project is to test regionally and mechanistically specific hypotheses concerning chemotherapy induced cognitive changes, as well as to identify potential biomarkers and strategies for therapeutics.

Role: Co-Investigator

MLI-FJVRF-08-001

Vago (PI) 1/01/06-12/01/10

Mind and Life Institute/Francisco J. Varela Grant Award for Contemplative Science Research

The Effects of Mindfulness Meditative Training on Impairments in Affect Regulation Associated with the

Experience and Anticipation of Pain in Fibromyalgia Patients. *The goal of this project has been to investigate whether mindfulness meditative techniques are able to significantly decrease perceptual and cognitive biases and the dysregulation of affective states (i.e., anxiety, catastrophizing) associated with the experience and anticipation of pain in Fibromyalgia patients. (\$10,000)*

Role: Principle Investigator

Univ. Utah Magnetic Source Imaging Award

Vago (PI) 11/01/06-12/01/10

Neural Basis of Cognitive and Emotional Processing in Fibromyalgia. *The goal of this project has been to investigate the effects of mindfulness training on attention and emotion regulation processes using a fear-potentiated startle paradigm with Magnetoencephalography (MEG). (\$25,000)*

Role: Principle Investigator

R21 5-R21AT002209-02

Nakamura (PI)

08/01/05-07/31/10

NCCAM

Establish an exploratory mind-body research program (Utah Center for Exploring Mind-Body Interactions, UCEMBI) within the Pain Research Center at the University of Utah. This program facilitated transdisciplinary and translational approaches to investigating mind-body interactions and their relationship to health.

The major goal of this project has been to evaluate the cognitive and affective processes associated with mindfulness meditation training in Fibromyalgia patients. (\$900,000)

Role: Investigator

COMPLETED RESEARCH SUPPORT

5R25 MH060478-09

Silbersweig (PI) 09/23/1999-08/31/2009

NIMH

Developing Researchers in Neuropsychiatric Imaging. The purpose of this grant has been to develop and implement educational approaches that attract trainees from many academic backgrounds to, and that provide rigorous training in, the multidisciplinary field of functional neuroimaging research, particularly for the clinically relevant study of human neuropsychiatric disorders and neurocognitive development.

Role: Investigator

5P50 MH058911-09

Ledoux (PI) 09/30/1999-08/30/2009

NIMH

Center for Neural Systems of Fear & Anxiety. The aim of the studies of normal humans has been to use behavioral methods and fMRI to extend our understanding of fear mechanisms in the human brain and to develop new probes for testing patients with fear disorders. The aim of the studies of patients with fear disorders has been to determine whether the patterns of functional brain activation during fear in healthy humans are altered in patients with fear disorders, and whether these alterations are consistent with the effects of stress on fear circuits, as determined in the animal work.

Role: Investigator

5R01 MH065314-04

Kesner (PI) 12/01/2002-11/30/2007

NIMH

Behavioral Analysis of Hippocampal Function. (\$748,750)

Role: Graduate Student

REFERENCES**David A. Silbersweig, M.D.**

Department of Psychiatry, Brigham & Women's Hospital, Harvard Medical School, Boston, MA

Phone, (617) 732-6704; Fax, (617) 738-1275

Email: dsilbersweig@partners.org**Richard Davidson, PhD.**

Laboratory for Affective Neuroscience, Brodgen Hall Office: 538, University of Wisconsin, Madison, WI

Phone: (608) 262-8972

Email: rjdavids@wisc.edu**Yoshio Nakamura, PhD.**

Department of Anesthesiology, Pain Research Center, University of Utah, 615 Arapeen Drive, Salt Lake City, UT

Phone: (801) 585-0419; Fax, (801) 585-7694

Email: yn5@utah.edu