

## BARTLETT D. MOORE IV

Helen Wills Neuroscience Institute and School of Optometry  
University of California, Berkeley  
360 Minor Hall  
Berkeley, CA 94720-2020  
e-mail: bart@neurovision.berkeley.edu

<b>Interests and Objectives</b>	<p>I am interested in the structure and function of the visual system. My research has investigated visual information processing from retina to primary visual cortex. I have experience utilizing various anatomical, physiological, behavioral, and computational techniques. My goal is to establish a laboratory that would enable me to continue contributing to the psychological and neuroscience communities through research and teaching.</p>
<b>Education</b>	<p>2010 - current <span style="float: right;"><b>University of California, Berkeley</b></span> Postdoctoral Scholar <span style="float: right;">Berkeley, California, USA</span> Advisor: <b>Dr. Ralph Freeman, Ph.D.</b></p> <ul style="list-style-type: none"> <li>My work involves investigation of the functional organization of the central visual pathways of the brain. I am currently involved in several projects dealing with the neurophysiology of cells in the retina, visual thalamus and primary visual cortex.</li> </ul> <p>2002 - 2009 <span style="float: right;"><b>University of California, Davis</b></span> Ph.D: Neuroscience (2009) <span style="float: right;">Davis, California, USA</span> Advisor: <b>Dr. W. Martin Usrey, Ph.D.</b></p> <ul style="list-style-type: none"> <li>My studies focused on the visual neurosciences with specialization in information processing in the early visual pathways. I conducted <i>in vivo</i> recordings in the central visual pathway of ferret, cat and primate.</li> </ul> <p>1997 - 2001 <span style="float: right;"><b>Hampshire College</b></span> BA: Cognitive Science (May 2001) <span style="float: right;">Amherst, Massachusetts, USA</span> Thesis Advisor: <b>Dr. Neil Stillings, Ph.D.</b></p> <ul style="list-style-type: none"> <li>My studies concentrated on the Cognitive Sciences with a special focus on visual cognition. My senior thesis involved spatial frequency analysis of the face-specific N170 evoked response potential (ERP) in an electroencephalography (EEG) lab I helped establish.</li> </ul>
<b>Additional Training</b>	<p>2008 – <i>Event Related Potential (ERP) Bootcamp</i>. Course Director: Dr. Steve Luck. University of California, Davis.</p> <p>2007 – <i>International Spring School on Computational Neurobiology</i>, Course Directors: Drs. Andreas Dress, Mu-Ming Poo, Helge Ritter. March 19-28, CAS-MPG Partner Institute for Computational Biology, Shanghai, China.</p> <p>2006 – Trainee, NIH Vision Science Training Grant. Principal Investigator: Dr. John S. Werner, School of Medicine, Department of Ophthalmology &amp; Vision Science, University of California, Davis.</p> <p>2006 – Fellow, <i>McDonnell Summer Institute in Cognitive Neuroscience</i>. Course Directors: Drs. Michael Gazzaniga, Andrew Schwartz and Jason Mattingley June 27-July 7, Dartmouth College, New Hampshire.</p> <p>2004 – Fellow, <i>European Summer School on Visual Neuroscience: from spikes to awareness</i>. Course Directors: Drs. Jochen Braun, Frank Bremmer and Karl Gegenfurtner. September 3-15, Schloss Rauischholzhausen, Germany.</p> <p>2003 – Santa Fe Institute Mathematics and Biology Summer Workshop—<i>From Neuron to Network: biophysically based functional models</i>. Course Directors: Drs. Lee Segel, Hanna Parnas. July 27-August 8, Santa Fe Institute, Santa Fe, New Mexico.</p> <p>2003 – Cold Spring Harbor Advanced Course—<i>Structure, Function and Development of the Visual System</i>. Course Directors: Drs. W. Marty Usrey, Kimberly McAllister. June 4-June 17, Cold Spring Harbor Laboratory, New York.</p>

<p><b>Teaching Experience</b></p>	<p>2009 – Systemic Physiology (NPB 101). Assistant to Drs. W. Martin Usrey and William DeBello, Department of Neurobiology, Physiology and Behavior, University of California, Davis. *</p> <p>2008 – Systemic Physiology (NPB 101). Assistant to Drs. W. Martin Usrey and William DeBello, Department of Neurobiology, Physiology and Behavior, University of California, Davis. *</p> <p>2006 – Systemic Physiology (NPB 101). Assistant to Drs. W. Martin Usrey and William DeBello, Department of Neurobiology, Physiology and Behavior, University of California, Davis. *</p> <p>2005 – Neurobiology (NPB 100). Assistant to Dr. Mitchell Sutter, Department of Neurobiology, Physiology and Behavior, University of California, Davis. *</p> <p>2003 – Neurobiology (NPB 100). Assistant to Dr. Mitchell Sutter, Department of Neurobiology, Physiology and Behavior, University of California, Davis. *</p> <p>1999 –Minds, Brains and Intelligent Behavior: an introduction to cognitive science. Assistant to Dr. Joseph Cruz, School of Cognitive Science, Hampshire College, Amherst, Massachusetts. *</p> <p style="text-align: right;"><i>* References from former students can be made available upon request</i></p>
<p><b>Employment Overview</b></p>	<p>2001 &amp; 2002                      Los Alamos National Laboratory                      Los Alamos, New Mexico, USA  Technical Area 3, Group P-21, Biophysics  Supervisor: <b>Dr. Garret Kenyon, Ph.D.</b></p> <p><b>Research Assistant</b>, activities included:</p> <ul style="list-style-type: none"> <li>• Analysis of a computational model of inner retinal dynamics</li> <li>• Data analysis using custom written Matlab software</li> <li>• Outspoken participation in the weekly P-21 (Biophysics) Journal Club</li> </ul> <p>2001-2002                      University of Texas Medical School                      Houston, Texas, USA  Department of Neurobiology and Anatomy  Supervisor: <b>Dr. David Marshak, Ph.D.</b></p> <p><b>Research Assistant</b>, activities included:</p> <ul style="list-style-type: none"> <li>• Development and testing of a computational model of retinal ganglion cell oscillatory activity</li> <li>• Anatomical reconstruction of human retinal circuitry from serial electron micrographs</li> <li>• Outspoken participation in the weekly UT Medical School Vision Science Journal Club</li> <li>• Presentation of my findings to the Association for Research in Vision and Ophthalmology (ARVO)</li> </ul> <p>Summer 2000                      University of Louisville                      Louisville, Kentucky, USA  Department of Psychological and Brain Sciences  Developmental Neuropsychology Lab  Supervisor: <b>Dr. Dennis Molfese, Ph.D.</b></p> <p><b>Research Assistant</b>, activities included:</p> <ul style="list-style-type: none"> <li>• ERP collection from special human populations with dense array EEG  (special populations included children and adults with Williams Syndrome and normal neonatal infants)</li> <li>• Preliminary data analysis, including offline waveform averaging and initial statistical analysis.</li> <li>• Additional computer oriented duties (Literature searches, desktop publishing, etc.)</li> <li>• Various self-initiated laboratory tours in the Department of Psychological and Brain Sciences</li> </ul>

<p><b>Articles</b></p>	<p><b>Moore IV, BD</b>, Usrey, WM, Freeman, RD. (2012) <i>Visual processing dynamics in simultaneously recorded retinal and LGN neurons</i>. (in preparation).</p> <p><b>Moore IV, BD</b>, Freeman, RD. (2012) <i>Development of orientation tuning in simple cells of primary visual cortex</i>. <b>Journal of Neurophysiology</b>, (under review).</p> <p><b>Moore IV, BD</b>, Kiley, CW, Sun, C, Usrey, WM. (2011) <i>Rapid plasticity of visual responses in the adult lateral geniculate nucleus</i>. <b>Neuron</b>, 71(5):812-9.</p> <p>Duong, T, <b>Moore IV, BD</b>, Freeman, RD. (2011) <i>Adaptation changes stereoscopic depth selectivity in visual cortex</i>. <b>Journal of Neuroscience</b>, 31(34):198-207.</p> <p>Alitto, HJ, <b>Moore IV, BD</b>, Rathbun, DL, Usrey, WM. (2011) <i>A comparison of visual responses in the lateral geniculate nucleus of alert and anaesthetized macaque monkeys</i>. <b>Journal of Physiology</b>, 589:87-99.</p> <p><b>Moore IV, BD</b> (2006) <i>Speed Selectivity in V1: A Complex Affair</i>. <b>Journal of Neuroscience</b>, 26(29):7543-4.</p> <p><b>Moore IV, BD</b>, Alitto, HJ, Usrey, WM. (2005) <i>Orientation tuning, but not direction selectivity, is invariant to temporal frequency in primary visual cortex</i>. <b>Journal of Neurophysiology</b>, 94(2):1336-45.</p> <p>Kenyon, GT, <b>Moore IV, BD</b>, Jeffs, J, Stephens, G, Travis, BJ, Theiler, J, Marshak, D. (2003). <i>A Model of High Frequency Oscillations in Retinal Ganglion Cells</i>. <b>Visual Neuroscience</b>, 20(5):465-80.</p> <p>Kenyon, GT, <b>Moore IV, BD</b>, Jeffs, J, Theiler, J, Travis, BJ, Marshak, D. (2003). <i>Firing Correlations Improve Detection of Moving Bars</i>. <b>Neural Networks</b>, 2:1274-1279.</p> <p><b>Moore IV, BD</b>. (2001) <i>Behavioral and Electrophysiological Correlates of Face Processing: An ERP study</i>. Division III Thesis, Hampshire College, Amherst, MA. Advisors Drs. Neil Stillings and Joanna Morris.</p>
<p><b>Talks and Posters</b></p>	<p><b>Moore IV, BD</b>, Rathbun, DL, Usrey, WM, Freeman, RD. (2011). <i>Visual processing dynamics in simultaneously recorded retinal and LGN neurons</i>. <b>Society for Neuroscience Annual Meeting</b>, Washington, DC November 2011; Program No 576.12.</p> <p><b>Moore IV, BD</b>, Freeman, RD. (2010). <i>Development of orientation selectivity in the visual cortex</i>. <b>Society for Neuroscience Annual Meeting</b>, San Diego, CA, November 2010; Program No 484.12.</p> <p><b>Moore IV, BD</b>, Usrey, WM. (2008). <i>Unraveling the contributions of On and Off channels to direction selectivity in primary visual cortex</i>. <b>Society for Neuroscience Annual Meeting</b>, Washington, DC, November 2008; Program No 769.10.</p> <p><b>Moore IV, BD</b>, Rathbun, DL, Usrey, WM. (2008). <i>Response properties of cortical neurons in the absence of On-center input</i>. <b>Computational and Systems Neuroscience Meeting (COSYNE)</b>, Salt Lake City, UT, March 2008.</p> <p><b>Moore IV, BD</b>, Usrey, WM. (2007). <i>Quantitative analysis of visual plasticity in the adult LGN</i>. <b>Computational and Systems Neuroscience Meeting (COSYNE)</b>, Salt Lake City, UT, March 2007.</p> <p><b>Moore IV, BD</b>, Usrey, WM. (2006). <i>Rapid plasticity of visual responses in the lateral geniculate nucleus and consequences for cortical processing</i>. <b>Society for Neuroscience Annual Meeting</b>, Atlanta, Georgia, October 2006; Program No. 545.7.</p> <p><b>Moore IV, BD</b>, Alitto, HJ, Usrey, WM. (2004). <i>Orientation tuning, but not direction selectivity, is invariant to temporal frequency in primary visual cortex</i>. <b>Society for Neuroscience Annual Meeting</b>, New Orleans, Louisiana, November 2004; Program No. 410.12.</p> <p><b>Moore IV, BD</b>, Alitto, HJ, Usrey, WM. (2004) <i>The influence of stimulus temporal frequency on orientation and direction selectivity in V1 neurons</i>. <b>Vision Sciences Society (VSS) Annual Meeting</b>. Sarasota, Florida. <i>Journal of Vision</i>, 4(8), 274a.</p> <p><b>Moore IV, BD</b>, Jeffs, J, Theiler, J, Travis, BJ, , Kenyon, GT, and Marshak, D. (2003). <i>Firing Correlations Improve Detection of Moving Bars</i>. <b>International Joint Conference on Neural Networks (IJCNN)</b>, Portland, Oregon.</p> <p><b>Moore IV, BD</b>, Jeffs, J, Travis, BJ, Kenyon, G, and Marshak, D. (2002). <i>The Intensity of Moving Bars is Encoded More Efficiently by Firing Correlation than by Firing Rate</i>. <b>Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting</b>, Fort Lauderdale, Florida, Investigative Ophthalmology &amp; Vision Science, 43(4), 4767/B736.</p>

<p><b>Select References</b></p>	<p><b>Dr. Joseph H. Cruz</b>, Associate Professor of Philosophy, Chair, Program in Cognitive Science, Williams College, Williamstown, MA. <a href="mailto:jcruz@williams.edu">jcruz@williams.edu</a> (413) 597-2484</p> <p><b>Dr. Ralph Freeman</b>, Professor, School of Optometry, University of California, Berkeley, Berkeley, CA. <a href="mailto:freeman@neurovision.berkeley.edu">freeman@neurovision.berkeley.edu</a> (510) 642-6341</p> <p><b>Dr. Dennis Molfese</b>, Professor of Psychology, Dean, Department of Psychological and Brain Sciences, University of Louisville. <a href="mailto:dmolfese@louisville.edu">dmolfese@louisville.edu</a> (502) 852-6775</p> <p><b>Dr. David Marshak</b>, Professor of Anatomy, Department of Neurobiology and Anatomy, University of Texas Medical School, Houston. <a href="mailto:david.w.marshak@uth.tmc.edu">david.w.marshak@uth.tmc.edu</a> (713) 500-5597</p> <p><b>Dr. Neil Stillings</b>, Professor of Psychology, Dean, School of Cognitive Science, Hampshire College, Amherst, MA. <a href="mailto:nstillings@hampshire.edu">nstillings@hampshire.edu</a> (413) 559-5139</p> <p><b>Dr. W. Martin Usrey</b>, Assistant Professor, Section of Neurobiology, Physiology, and Behavior, University of California, Davis. <a href="mailto:wmusrey@ucdavis.edu">wmusrey@ucdavis.edu</a> (530) 754-5468</p>
<p><b>Professional Affiliations</b></p>	<p><b>Society for Neuroscience</b> (2002 - present)</p> <p><b>American Association for the Advancement of Science</b> (2010 - present)</p> <p><b>Vision Science Society</b> (2002-2003)</p> <p><b>Association for Research in Vision and Ophthalmology</b> (2001 - 2002)</p>
<p><b>Professional Service</b></p>	<p>Invited Peer Reviewer – <i>The Journal of Neuroscience</i></p> <p>Invited Peer Reviewer – <i>Journal of Neurophysiology</i></p> <p>Ad hoc Reviewer – <i>The Journal of Physiology</i></p>