
BIOGRAPHICAL SKETCH

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| NAME Christopher I. Moore | POSITION TITLE Associate Professor |
| eRA COMMONS USER NAME cimoore4 | Investigator, Brown Institute for Brain Sciences |

| EDUCATION/TRAINING | | | |
|---|---------------------------|-----------|---------------------------|
| INSTITUTION AND LOCATION | DEGREE (if applicable) | YEAR(s) | FIELD OF STUDY |
| Oberlin College | B.A. | 1986-1990 | Neuroscience & Philosophy |
| Massachusetts Institute of Technology (MIT) | Ph.D. | 1992-1998 | Brain & Cognitive Science |
| Martinos Center/ Harvard Medical School | Postdoctoral Fellow | 1998-2002 | Systems Neuroscience |
| UC San Francisco (UCSF) Keck Center | Visiting Scientist | 2001-2002 | Systems Neuroscience |
| MIT McGovern Institute for Brain Research | Ass't./Assoc. Prof. | 2003-2011 | Systems Neuroscience |
| Brown University, Institute for Brain Science | Associate Professor | 2011- | Systems Neuroscience |

Fellowships/Honors/Appointments

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| 1990 | <u>High Honors in Neuroscience, Oberlin College</u> |
| 1995 | <u>Angus N. MacDonald Excellence in Teaching Award, MIT</u> |
| 1997 | <u>Fellow, McDonnell-Pew Institute for Cognitive Neuroscience, Dartmouth College</u> |
| 1998 | <u>Fellow, Kira Institute on Science and Values, Amherst College</u> |
| 1999-2002 | <u>Postdoctoral Fellowships, Individual NIH NRSA and McDonnell-Pew Foundation</u> |
| 2000 | <u>Participant, NIH workshop on Opportunities in Cognitive Neuroscience</u> |
| 2005- | <u>Ad Hoc grant reviewer, Sensory-Motor Integration Committee, National Institutes of Health</u> |
| 2005 | <u>School of Science Prize for Excellence in Undergraduate Teaching, MIT</u> |
| 2005-2008 | <u>Mitsui Career Development Chair</u> |
| 2008 | <u>COSYNE Program Committee</u> |
| 2008 | <u>Group leader, NIH Panel on Neuroprosthetics</u> |

Joint Appointments

Woods Hole Marine Biological Laboratory (Faculty, Neural Systems & Behavior Course, 2 wks/year)

Reviewer

Grants NSF, NIH, US-Israel Bi-national Science Foundation

Journals Cerebral Cortex, COSYNE Abstracts, Frontiers, Human Brain Mapping, Journal of Neuroscience, Journal of Neurophysiology, Nature, Nature Neuroscience, Neuroimage, Neuron, PNAS

Invited Seminars, 2009-Present and Committed

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| 2009 | Stanford University, <u>Seminar</u> |
| 2009 | University of Southern California, <u>Seminar</u> |
| 2009 | University of California San Francisco, <u>Seminar</u> |

2009 University of California, Berkeley, Seminar
2009 Vanderbilt University, Seminar
2010 University of Pennsylvania, Seminar
2010 Carnegie-Mellon University, Seminar
2010 Janelia Farms (HHMI), *Workshop on Vibrissa-Based Sensation*, Seminar
2010 Santa Fe Institute, *Workshop on Active Sensing*, Seminar
2011 Society for Neuroscience, *Symposium on Sparse Sensory Coding*, Seminar
2011 Karolinska Institute (Stockholm), *Symposium on Brain Circuits*, Seminar
2012 Statistical Analysis of Neural Data conference (Pittsburgh), Keynote Lecture
2012 BioMag Conference (Paris), Keynote Address

Former Students (training level in my laboratory followed by current position)

Mark Andermann (doctoral student) Assistant Professor, Harvard Medical School
Rosa Cao (doctoral) Postdoctoral Associate, Harvard University
Mitul Desai (doctoral) Postdoctoral Associate, MIT
Ulf Knoblich (doctoral) Postdoctoral Associate, Yale University

Jessica Cardin (postdoctoral) Assistant Professor, Yale University
Marie Carlen (postdoctoral) Assistant Professor, The Karolinska Institute (Sweden)
Itamar Kahn (postdoctoral) Assistant Professor, The Technion (Israel)
Junjie Liu (postdoctoral) Research Scientist, NIH
David Logan (postdoctoral) Computational Biologist, The Broad Institute (Harvard/MIT)
Aimee Nelson (postdoctoral) Assistant Professor, Canadian Research Chair, McMaster University
Jason Ritt (postdoctoral) Assistant Professor, Boston University

Selected Peer-Reviewed Publications (out of 41)

Halassa, M. Siegle, J., Ritt, J., Ting, J., Feng, G. & **Moore C. I.** (2011) Selective Optical Drive of Thalamic Reticular Nucleus Generates Thalamic Bursts and Neocortical Spindles. ***Nature Neuroscience*** 14:1118-1120.

Carlén, M., Meletis, K., Siegle, J., Cardin, J., Futai, K., Vierling-Claassen, D., Rühlmann, C., Jones, S., Deisseroth, K., Sheng, M., **Moore C. I.*** & Tsai LH. (2011) A critical role for NMDA receptors in parvalbumin interneurons for gamma rhythm induction and behavior. ***Molecular Psychiatry***. Epub ahead of print. *Co-corresponding author.

Cardin, J., Carlén, M., Meletis, K., Knoblich, U., Zhang, F., Deisseroth, K., Tsai, L.-H. & **Moore, C. I.** (2010) Targeted Optogenetic Stimulation and Recording of Neurons *in vivo* Using Cell Type-Specific Expression of Channelrhodopsin-2. ***Nature Protocols*** 5:247-254.

Moore, C. I., Carlen, M., Knoblich, U. & Cardin, J. (2010) Neocortical Interneurons: From Diversity, Strength. ***Cell*** 142:189-193.

Jones, S., Kerr, C., Wan, Q., Pritchett, D., Hämäläinen, M. & **Moore, C. I.** (2010) Cued Spatial Attention Drives Functionally Relevant Modulation of the Mu Rhythm in Primary Somatosensory Cortex. ***J Nsci*** 30:13760-65.

Knoblich, U., Siegle, J., Pritchett, D. & **Moore, C. I.** (2010) What do we gain from gamma? Local dynamic gain modulation drives enhanced efficacy and efficiency of signal transmission. *Front Hum Nsci* 4: article # 185.

Vierling-Claassen, D., Cardin, J., **Moore, C. I.** & Jones, S. (2010) Computational Modeling of Distinct Neocortical Oscillations Driven by Cell-type Selective Optogenetic Drive: Separable Resonant Circuits Controlled by Low-Threshold Spiking and Fast-spiking Interneurons. *Front Hum Nsci* 4: article #198.

Desai, M., Kahn, I., Knoblich, U., Bernstein, J., Atallah, H., Yang, A., Kopell, N., Buckner, R., Graybiel, A., **Moore, C. I.*** & Boyden, E. (2010) Mapping brain networks in awake mice using combined optical neural control and fMRI. *J Neurophys* 105:1393-405. *co-corresponding author.

Vijayan, S., Hale, G., **Moore C. I.**, Brown E. & Wilson M. (2010) Activity in Barrel Cortex During Active Behavior and Sleep. *J Neurophys* 103:2074-2084.

Cardin, J., Carlén, M., Meletis, K., Knoblich, U., Zhang, F., Deisseroth, K., Tsai, L.-H. & **Moore, C. I.** (2009) Activation of Fast Spiking Interneurons Induces Gamma Oscillations and Shapes Sensory Transmission. *Nature* 459:663-7. Selected 9/2010 as a Reuters *ScienceWatch* featured paper, indicating "one of the most-cited papers in this discipline published in the last 2 years."

Jones, S., Pritchett, D., Sikora, M., Stufflebeam, S., Hämäläinen, M. & **Moore, C. I.** (2009) Quantitative Analysis and Biophysically Realistic Neural Modeling of the MEG Mu Rhythm: Rhythmogenesis and Modulation of Sensory Evoked Responses. *J Neurophys* 102:3554-72.

Konkle, T., Wang, Q., Hayward, V. & **Moore, C. I.** (2009) Motion After-Effects Transfer Between Touch and Vision. *Current Biol* 19:745-50.

Moore, C. I. & Cao, R. (2008) The Hemo-Neural Hypothesis: On the Role of Blood Flow in Information Processing. Invited Review, *J Neurophys* 99:2035-2047.

Ritt, J., Andermann, M. & **Moore, C.I.** (2008) Embodied Information Processing: Vibrissa Mechanics and Texture Features Shape Micromotions in Actively Sensing Rats. *Neuron* 57(4): 599-613

Carter, O., Konkle, T., Hayward, V., Wang, Q. & **Moore, C. I.** (2008) Tactile Rivalry Demonstrated with An Ambiguous Apparent Motion Quartet. *Current Biol* 18(14):1050-4.

Jones, S., Pritchett, D., Stufflebeam, S., Hamalainen, M. & **Moore, C. I.** (2007) Neural Correlates of Tactile Detection: A Combined MEG and Biophysically Based Computational Modeling Study. Featured Article *J Neurosci* 27:10751-64.

Andermann, M. & **Moore, C. I.** (2006) A Sub-Columnar Direction Map in Rat Barrel Cortex. *Nature Neuroscience* 9:543-551.

Haslinger, R., Ulbert, I., **Moore, C. I.**, Brown, E. & Devor, A. (2006) Analysis of LFP Phase Predicts Sensory Response of Barrel Cortex. *J Neurophys* 96:1658-63.

Andermann, M., Ritt, J., Neimark, M. & **Moore, C. I.** (2004) Neural Correlates of Vibrissa Resonance: Band-Pass and Somatotopic Representation of High-Frequency Stimuli. *Neuron* 42:451-463.

Moore, C. I. (2004) Frequency-Dependent Processing in the Vibrissa Sensory System. *J Neurophys* 91:2390-2399.

Neimark, M., Andermann, M., Hopfield, J. & **Moore, C. I.** (2003) Vibrissa Resonance as a Transduction Mechanism for Tactile Encoding. *J Neurosci* 23:6499-6509.

Garabedian C., Jones S., Merzenich M., Dale A. & **Moore, C. I.** (2003) Band-pass response properties of rat SI neurons. *J Neurophys* 90:1379-91.

Moore, C. I., Nelson, S. B. & Sur, M. (1999) Dynamics of neuronal integration in rat somatosensory cortex *TINS* 22: 513-520.

Moore, C. I. & Nelson, S. (1998) Spatio-temporal Subthreshold Receptive Fields in the Vibrissa Representation of Rat Primary Somatosensory Cortex. *J Neurophys* 80: 2882-2892.