

RADDY L. RAMOS, PhD

Assistant Professor

Department of Neuroscience & Histology

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Research Interests

Development of neocortical lamination.

Physiological/anatomical/molecular diversity of neocortical neurons.

Animal models of neocortical malformation, cognitive dysfunction, and epilepsy.

Education & Awards

2006 – 2008

Howard Hughes Postdoctoral Research & Teaching Fellow

Adjunct Assistant Professor

Department of Psychology, Queens College, City University of New York

Major Advisor: Joshua C. Brumberg, Associate Professor of Psychology

* Postdoctoral Travel Award, City University of New York

* Wallace H. Coulter Award for Academic Service, City College - City University of New York

2007 – PhD; Psychology, Neuroscience Concentration

Behavioral Neuroscience Program, Department of Psychology, University of Connecticut. Major advisor: James J. Chrobak, Associate Professor of Psychology

* Multicultural Graduate Fellowship, Whetten Graduate School, University of Connecticut

* University of Connecticut Neuroscience Fellow

1999 – Bachelor of Arts; Psychology

Department of Psychology, State University of New York at Binghamton

Advisor: Lisa M. Savage, Associate Professor of Psychology

* Helen Bohmer Daly Award for Excellence in Undergraduate Research, Binghamton University, State University of New York

Advanced Training

08/2004 Society for Neuroscience short course – Visualizing large-scale patterns of activity in the brain: Optical and electrical signals.

07/2002 Cold Spring Harbor Laboratory – Neurobiology of Ion Channels.

Invited Presentations

04/04/08 McNair Scholars Program Induction Ceremony. Binghamton University - State University of New York.

04/01/2008 *"Production, placement, and performance of neocortical neurons in the developing brain"* Hunter College – City University of New York

12/12/2007 *"Access to tools for biomedical science education and outreach"* Biomedical Engineering Seminar Series. City College - City University of New York.

11/04/2007 *"Analyzing extracellular spike trains with a software package."* Teaching Neuroscience: Innovative Laboratories. Annual Meeting of the Society for Neuroscience.

Teaching Experience

Numerous neuroscience and psychology courses taught at University of Connecticut (Storrs, CT; Graduate Teaching Assistant), Trinity College (Hartford, CT; Lecturer), and Queens College-CUNY (Flushing, NY; Adjunct Instructor).

Educational Outreach

Co-Organizer: *"Workshop in Biomedical Engineering for High School Students"*
Sponsors: Howard Hughes Medical Institute & The City College of New York - CUNY, Department of Biomedical Engineering

Techniques Used in Research

In-vitro whole-cell patch clamp (voltage and current clamp), *In-vivo* single/multi-unit & field potential recording, immunocytochemistry for light and laser-scanning confocal microscopy, anterograde and retrograde tracing, numerous behavioral assays.

Bibliography: Articles & Book Chapters

Ramos RL, Savage LM. The differential outcomes procedure can interfere or enhance operant rule learning. *Integr Physiol Behav Sci.* 38,1(2003):17-35.

Bai J, Ramos RL, Ackman JB, Thomas AM, Lee RV, LoTurco JJ. RNAi reveals Doublecortin is required for radial migration in rat neocortex. *Nat Neurosci.* 6,12(2003):1277-83.

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Oler JA, Ramos RL, Penley SC, Markus EJ. Hippocampal and amygdala involvement in discriminatory place learning. *Neuroscience.* 132,1(2005):1-12.

SUPPLEMENTARY MATERIAL FOUND AT:

<http://psychlops.psy.uconn.edu/Markus/DiscriminationTask.html>

Ramos RL, LoTurco JJ. Models with spontaneous seizures and developmental disruption of genetic etiology. in models of seizures and epilepsy. Academic Press, (2005) Editors: Pitkanen A, Schwartzkroin PA, Moshe SL.

Ramos RL, Bai J, LoTurco JJ. Heterotopia formation in rat but not mouse neocortex after RNA interference knockdown of DCX. *Cerebral Cortex*. 16;9(2006):1323-31
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Khatri V, Ramos RL. Rat whisker psychophysics. *J Neurosci*. 26;48(2006):12385-6.

Ramos RL, Khatri V. Motor cortical network oscillations driven by voltage and ligand-gated currents. *J Physiol*. 580;3(2007):701-2.

Ackman JB, Ramos RL, Sarkisian MR, LoTurco JJ. Citron Kinase is required for postnatal neurogenesis in the hippocampus. *Dev Neurosci*. 29;1-2(2007):113-23.

Ramos RL, Moiseff A. Brumberg JC. Utility and versatility of extracellular recordings from the cockroach for neurophysiological instruction and demonstration. *Journal of Undergraduate Neuroscience Education*. 5(2):A28-A34
* WINNER: 2007 JOURNAL OF UNDERGRADUATE NEUROSCIENCE EDUCATION EDITOR'S CHOICE AWARD FOR BEST LABORATORY ARTICLE

Ramos RL, Brumberg JC. Barrels XIX meeting report. *Somatosensory and Motor Research*, 24,3(2007):135-8.

Ramos RL, Smith PT, Brumberg JC. Novel *in silico* method for teaching cytoarchitecture, cellular diversity, and gene expression in the mammalian brain. *Journal of Undergraduate Neuroscience Education*. Fall 6,1(2007):A8-A13.

Bai J, Ramos RL, Ackman JB, Siddiqi F, Paramasivan M, LoTurco JJ. The role of DCX and LIS1 in migration through the lateral cortical stream of developing forebrain. *Dev Neurosci*. 30, 1-3(2008):144-156 .

Ramos RL, Tam DM, Brumberg JC. Physiology and morphology of callosal projection neurons in mouse. 153,3(2008): 654-63.

Ramos RL, Brumberg JC. Barrels by the sea: Barrels XX meeting report. *Somatosensory and Motor Research*. 25,1(2008):1-4.

Ramos RL, Smith PT, DeCola C, Corzo O, Tam DM, Brumberg JC. Cytoarchitecture and transcriptional profiles of neocortical malformations in inbred mice. *Cerebral Cortex In Press*.

Ramos RL, Smith PT, Croll SD, Brumberg JC. Demonstrating cerebral vascular networks: A comparison of methods for the teaching laboratory. *In Press at Journal of Undergraduate Neuroscience Education*.

Bunce JG, Ramos RL, Chrobak JJ. Cortical innervation of the hippocampus: Antero/retrograde tracing of the entorhinal layer III projection to CA1 in the rat. *In preparation*.

Savage LM, Ramos RL. Reward expectation alters learning and memory: The impact of the amygdala on appetitive-driven behaviors. *Invited review in preparation for Behavioural Brain Research*

Bibliography Abstracts: Annual Meeting of Computational & Systems Neuroscience

U. Knoblich, R. Cao, B. Higashikubo, J. Cardin, R. Ramos, J. Brumberg, C. Moore (2008) The Impact of Hyperemia on Neurons and Glia.

Bibliography Abstracts: Annual Meeting of the Society for Neuroscience

J.A. Oler, S. Penley, R.L. Ramos, E.J. Markus (2001) the effects of lesions to the hippocampus and amygdala on auditory context discrimination and place learning

R.L. Ramos, S. Sava, E.J. Markus (2001) Effects of bicuculline-induced gaba antagonism on consolidation of fear memory.

R.L. Ramos, J.G. Bunce, H.S. Sabolek, D.G. Amaral, J.J. Chrobak (2002) Entorhinal innervation of the rat hippocampus: anterograde tracing of the projections to the dentate, CA3 and CA1.

H.R. Sabolek, J.G. Bunce, R.L. Ramos, J.J. Chrobak (2002) Effects of intraseptal carbachol on a twelve arm radial maze.

J. Bai, R.L. Ramos, J.B. Ackman, A.M. Thomas, J.J. Loturco (2003) Doublecortin is required for radial migration in neocortex.

R.L.Ramos, J.B.Ackman, J.J.Loturco, J.J.Chrobak (2003) Physiology and morphology of nucleus reuniens neurons in-vitro: Implications for the hippocampal memory system.

J.J. LoTurco, R.L. Ramos, J.J. Chrobak (2004). Altered development of GABAergic interneurons and hyperexcitability in the hippocampus of the flathead rat.

J. Bai, R.V. Lee, R.L. Ramos, M. Paramasivam, J.J. Loturco (2004). Temporal and spatial requirements of doublecortin for neuronal migration in neocortex.

J.G. Bunce, K.M. Kerr, A.S. Mastrocola, R.L. Ramos, J.J. Chrobak (2004). Entorhinal innervation of the hippocampus: antero/retrograde tracing of the projections originating in the lateral band of the entorhinal cortex in the rat.

R.L. Ramos, J.J. LoTurco, J.J. Chrobak (2004). Spontaneous activity in the nucleus reuniens-hippocampal circuit.

A.M. Farrar, R. Vontell, R.L. Ramos, S.M. Mingote, J. D. Salamone (2005). Forebrain circuitry involved in effort-related decision making: Ventral pallidal GABA receptor stimulation alters response allocation in food-seeking behavior.

R.L. Ramos, J. Bai, J.J. LoTurco (2005). Species specific effects of DCX knock-down on neocortical lamination.

J. Bai, M. Paramasivam, F. Siddiqi, R.L. Ramos, J.J. LoTurco (2005). Differential roles of DCX, LIS1, and DAB1 in the lateral cortical stream.

F. Siddiqi, R.L. Ramos, J. Bai, A. Moiseff, J.J. LoTurco (2005). Postnatal electroporation of radial glia in the developing neocortex.

J.G. Bunce, R.L. Ramos, J.J. Chrobak (2005). Connectional analysis of the neurons composing the lateral band of the entorhinal cortex in the rat.

F. Siddiqi, J. Bai, R.L. Ramos, J. B. Ackman, J. J. LoTurco; (2006) Doublecortin overexpression induces neuronal differentiation at the expense of astrocytes.

R. Cao, R.L. Ramos, D. J. Logan, J. C. Brumberg, C. I. Moore (2006) An independent means of blood flow modulation during simultaneous intrinsic optical imaging and multi-unit electrophysiology.

R.L. Ramos, J. Bai, D. Tam, J. C. Brumberg, J. J. LoTurco (2006) Physiology and lamina-specific axonal projections of layer 2/3 callosal neurons in mouse.

D. Tam, R.L. Ramos, J. C. Brumberg (2007) Supragranular and infragranular callosal projection neurons are a homogeneous population.

C. I. Moore, R. Cao, U. Knoblich, B. Higashikubo, R. Ramos, J. C. Brumberg (2007) The hemo-neural hypothesis: a proposed role for functional hyperemia in information processing.

U. Knoblich, R. Cao, B. T. Higashikubo, R.L. Ramos, J. C. Brumberg, C. I. Moore (2007) The impact of hyperemia on neural and glial membrane potential.

R.L. Ramos, A. Moiseff, J. C. Brumberg (2007) Utility and versatility of extracellular recordings from the cockroach for neurophysiological instruction and demonstration.

R.L. Ramos, P. T. Smith, C. Decola, D. Tam, O. Corzo, J. C. Brumberg (2007) Cytoarchitecture and transcriptional profiles of neocortical malformations in inbred mice.

T. Radman, R. Ramos, M. Bikson, J. Brumberg (2007) Target for cortical electrical stimulation: the NMDA receptor.