

Alberto Cruz-Martín
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Curriculum Vitae

Education

- 2000-2006 Ph.D. in Neuroscience, University of California Los Angeles, David Geffen School of Medicine at UCLA, Department of Neurobiology and Interdepartmental Program for Neurosciences
- 1995-2000 B.S. in Biology, University of Puerto Rico, Río Piedras, Department of Biology

Positions held

- 2015- Assistant Professor, Boston University
Defining the role of specific cell types in sensory processing and behavior
- 2010-2014 Postdoctoral fellow, University of California, San Diego
Advisors: Anirvan Ghosh and Andrew Huberman
Project: Dissecting visual circuits involved in the detection of directional motion
- 2006-2010 Postdoctoral fellow, University of California, Los Angeles
Advisor: Carlos Portera-Cailliau
Project: In vivo imaging of dendritic spines during early development in a mouse model of Fragile X Syndrome
- 2000-2006 Graduate student, University of California, Los Angeles
Advisor: Felix E. Schweizer
Project: Examining the interaction of excitation and inhibition in synapses between CA3 pyramidal neurons of hippocampal organotypic cultures
- 1995-2000 Undergraduate student, University of Puerto Rico, Río Piedras
Advisor: Jose A. Lasalde-Dominicci

Fellowships and awards

- 2015 Early Career Institute in Neuroscience Award (NIH)
- 2007-2009 President's Postdoctoral Fellowship Program, University of California
- 2003-2006 NASA Harriet G. Jenkins Predoctoral Fellowship
- 2001-2003 Achievement Rewards for College Scientists Award
- 2000 Magna cum laude, University of Puerto Rico, Río Piedras

Invited talks

- 03/2014 Department of Molecular, Cell and Developmental Biology, University of California Santa Cruz

Alberto Cruz-Martín

03/2014 Departamento de Biology, Río Piedras, Universidad de Puerto Rico
03/2014 Department of Neuroscience and Psychiatry, Columbia University
03/2014 Department of Ophthalmology, Yale University
02/2014 Department of Biology, Boston University
02/2014 Department of Anatomical Sciences and Anatomy, University of Louisville
01/2014 Department of Neurobiology and Anatomy, University of Utah

Teaching

CAS BI 581 C1 (Fall 2015) - Seminar in Biology: Exploring Neural Circuits (2 credits, 11 lectures, graduate level)

CAS BI325/NE203 A1 (Fall 2015) - Principles of Neuroscience (4 credits, 19 lectures, undergraduate level)

Outreach and mentoring

2015-2016 Reviewer for Louisiana Board of Regents' Research Competitiveness Subprogram (EPSCoR-style grants program to stimulate competitive research)
2016 Speaker for *Conversations with Scientists*, part of the Yale Ciencia Academy for Career Development - NIH funded initiative to provide graduate students with opportunities for mentoring, peer support and networking; to develop skills important for career advancement; and to contribute to their communities through science outreach
2010 Mentor for UCLA's URC/CARE program
2010 Mentor for UCLA's MARC program
2009 SFN meeting mentoring program
2001-2002 Mentor for elementary and high school students as part of UCLA's Brainstorm Project

Reviewer

Current Biology, Journal of Comparative Neurology, Journal of Neuroscience, Scientific Reports, JoVE, the Journal of Visualized Experiments

Book chapters

Cruz-Martín A, Portera-Cailliau C (2014). In vivo imaging of axonal and dendritic structures in neonatal mouse cortex. In *Imaging in Developmental Biology: A Laboratory Manual*. Cold Spring Harbor Laboratory Protocols Jan 1; 2014(1): 57-64. doi: 10.1101/pdb.prot080150

Peer reviewed publications

Cruz-Martín A, El-Danaf RN, Osakada F, Sriram B, Ghosh A, Dhande O, Nguyen P, Huberman AD (2014). A dedicated circuit linking direction-selective retinal ganglion cells to primary visual cortex. *Nature* 507(7492): 358-361

Cruz-Martín A, Huberman AD (2012). Visual cognition: Rats compare shapes among the crowd. *Curr Biol.* 22(1): R18-20

Cruz-Martín A, Crespo M, Portera-Cailliau C (2012). Glutamate induces the elongation of early dendritic protrusions via mGluRs in wild type mice, but not in fragile X mice. *PLoS One* 7(2): e32446 Epub 2012 Feb 27

Cruz-Martín A, Crespo M, Portera-Cailliau C (2010). Delayed stabilization of dendritic spines in fragile X mice. *J Neurosci.* Jun; 30: 7793-7803

Chowdhury T, Jimenez JC, Bomar J, Cruz-Martín A, Cattle JP, Portera-Cailliau C (2010). Fate of Cajal-Retzius neurons in the postnatal mouse neocortex. *Front in Neuroanat.* Mar 3; 4: 10

Cruz-Martín A, Schweizer FE (2008). Imbalance between excitation and inhibition among synaptic connections of CA3 pyramidal neurons in cultured hippocampal slices. *Eur J Neurosci.* Mar; 27(6): 1353-1363

Sippy T, Cruz-Martín A, Jeromin A, Schweizer FE (2003). Acute changes in short-term plasticity at synapses with elevated levels of neuronal calcium sensor-1. *Nat Neurosci.* Oct; 6(10): 1031-1038

Cruz-Martín A, Mercado JL, Rojas LV, McNamee M, Lasalde-Dominicci JA (2001). Tryptophan substitutions at lipid-exposed positions of the gamma M3 transmembrane increase the macroscopic ionic current response of the *Torpedo californica* nicotinic acetylcholine receptor. *J Membr Biol.* Sep 1; 183(1): 61-70

Student and postdoctoral presentations

Cruz-Martín A, El-Danaf RN, Osakada F, Sriram B, Dhande O, Nguyen PL, Callaway EM, Ghosh A, Huberman AD (2013). A “labeled line” linking direction selective circuits in retina to superficial layers of primary visual cortex. Society for Neuroscience Meeting, San Diego, CA

Sriram B, Cruz-Martín A, Denardo L, Kim EJ, Patel M, Huynh P, Giering E, Reinagel P, Ghosh A (2013). Visually guided behavior in freely moving mice. Society for Neuroscience Meeting, San Diego, CA

Cruz-Martín A, El-Danaf RN, Osakada F, Nguyen P, Callaway EM, Ghosh A, Huberman, AD (2013). A dedicated circuit linking direction selective retinal outputs to visual cortex. Genes, Circuits and Behavior Meeting, Toronto, Canada

Kim EJ, Denardo L, Cruz-Martín A, Raam T, Ghosh A (2012). Behavioral analysis of mouse visual cortical circuits underlying orientation discrimination using molecular and genetic tools. Society for Neuroscience Meeting, New Orleans, LA

Cruz-Martín A, Crespo M, Portera-Cailliau C (2010). Abnormal turnover of dendritic protrusions in neonatal fragile X mice. Conférences Jacques-Monod, Roscoff (Brittany), France

Cruz-Martín A, Crespo M, Portera-Cailliau C (2009). Delayed maturation of dendritic protrusion size and turnover in fragile X mice. Meeting for the Intellectual and Developmental Disabilities Research Center (IDDRC), Los Angeles, CA

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Cruz-Martín A, Crespo M, Portera-Cailliau C (2009). Abnormal dynamics of early dendritic protrusions in fragile X mice. Wiring the Brain Meeting, Adare, Co. Limerick, Ireland

Cruz-Martín A, Schweizer FE (2005). Heterogeneity of synaptic feed-forward inhibition in dual recordings of hippocampal CA3 pyramidal cells. Society for Neuroscience, Washington, DC

Sippy T, Cruz-Martín A, Jeromin A, Schweizer FE (2003). Acute changes in short-term plasticity independent of initial release probability at synapses with elevated levels of NCS-1. Society for Neuroscience, New Orleans, LA

Cruz-Martín A, Rojas LV, Mercado JL, McNamee M, Lasalde-Dominicci JA (2000). Tryptophan substitutions in lipid-exposed positions of the M3 transmembrane domains of the torpedo californica nicotinic acetylcholine receptor alter ion channel kinetics. Biophysical Society Meeting, New Orleans, LA