

## C. Daniel Meliza, Ph.D.

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### RESEARCH INTERESTS

I am interested in social communication and the underlying neuronal mechanisms of pattern learning and recognition. I study how vocalizations are used by social songbirds, how social experience affects auditory perception, and how circuits in the auditory forebrain represent the features of socially important signals.

### CURRENT POSITION

2006– NIH NRSA Postdoctoral Fellow, University of Chicago.

### EDUCATION

2005 PhD in Molecular and Cell Biology, University of California, Berkeley

Dissertation: *Spike timing dependent plasticity of receptive fields in primary visual cortex*.  
Committee: Yang Dan (advisor), Mu-Ming Poo, Ehud Isacoff, Frédéric Theunissen

1999 BA in Biochemistry, Lewis & Clark College, *summa cum laude*

### TEACHING EXPERIENCE

2009 Guest lecturer, “Hormones and behavior”, *Neuroethology*, University of Chicago

2003 Graduate student instructor, *Introduction to Neurobiology*, UC Berkeley

2002 Graduate student instructor & guest lecturer (“Early visual pathway”), *Mammalian Neuroanatomy*, UC Berkeley

### PUBLICATIONS & TALKS

#### JOURNAL ARTICLES

2006 **C. D. Meliza** and Y. Dan. 2006. Receptive-field modification in rat visual cortex induced by paired visual stimulation and single cell spiking. *Neuron*. 49(2):183–9.

1999 J. R. Abney, **C. D. Meliza**, B. Cutler, M. Kingma, J. E. Lochner, B. A. Scalettar. 1999. Real-time imaging of the dynamics of secretory granules in growth cones. *Biophysical Journal* 77(5):2887–95.

1998 J. E. Lochner, M. Kingma, S. Kuhn, **C. D. Meliza**, B. Cutler, B. A. Scalettar. 1998. Real-time imaging of the axonal transport of granules containing a tissue plasminogen activator/green fluorescent protein hybrid. *Molecular Biology of the Cell* 9(9):2463–76.

## MANUSCRIPTS IN PREPARATION

**C. D. Meliza**, Z. Chi, D. Margoliash. Note-based representations of objects by starling secondary forebrain auditory neurons. To be submitted to *Journal of Neurophysiology*.

## SCIENTIFIC PRESENTATIONS

- 2008 C. D. Meliza, Z. Chi, D. Margoliash. 2008. Mechanisms of complex feature selectivity in the auditory forebrain. Computational and Systems Neuroscience annual meeting. [Oral Presentation]
- 2007 C. D. Meliza, Z. Chi, D. Margoliash. 2007. Auditory features of song motifs learned during a perceptual learning task are sparsely coded. Society for Neuroscience annual meeting. [Poster]
- 2007 C. D. Meliza, Z. Chi, D. Margoliash. 2007. Avian forebrain neurons code for disjoint auditory features of learned songs. International Congress of Neuroethology. [Poster]
- 2004 C. D. Meliza, N. Caporale, Y. Dan. 2004. Spike timing-dependent plasticity of visually evoked synaptic responses. Society for Neuroscience annual meeting. [Poster]
- 2002 C. D. Meliza, R. C. Froemke, Y. Dan. 2002. The role of actin dynamics in spike timing dependent plasticity in the visual cortex. Society for Neuroscience annual meeting. [Poster]
- 1999 C. D. Meliza, B. A. Scalettar, J. E. Lochner. 1999. Analysis of the sorting signals required for regulated secretory trafficking of tissue plasminogen activator using green fluorescent protein hybrids. American Society of Biochemistry and Molecular Biology annual meeting. [Poster]

## INVITED SEMINARS

- 2007 “How Songbirds Tell Themselves Apart: Pattern Recognition and Perceptual Learning.” 13 February 2007, Lewis & Clark College, Departments of Biochemistry and Molecular Biology.

GRANTS & AWARDS

- 2007–2010 NIH-NIDCD National Research Service Award F32DC008752. *Receptive field correlates of starling song recognition behavior.*
- 2000–2003 NSF Graduate Research Fellow
- 1997–1999 Barry M. Goldwater Scholarship and Excellence in Education Scholar

SOFTWARE

- 2009 **libtfrspec**, for calculating time-frequency reassignment spectrograms (C, with Python and MATLAB interfaces)
- 2007 **decide**, for operant apparatus control and auditory stimulus presentation (C++)
- 2005 **metaphys**, a data acquisition and visual stimulus presentation system for intracellular physiology (MATLAB)