Jeffrey C. Erlich

jerlich @ nyu.edu
http://erlichlab.org
973-594-6770

New York University - Shanghai
NYU-ECNU Institute for Brain and Cognitive Science
Geography Building, Room 171
3663 North Zhongshan Road
Shanghai, China

Education

New York University, *PhD*. *Center for Neural Science* — graduated 2006
To Fear or Not to Fear: The role of the amygdala & prefrontal cortex in the regulation of fear.
Advisor: Joseph E. LeDoux

McGill University, *BSc.* *First Class Joint Honours Computer Science and Neuroscience* — graduated 1998

Experience

New York University-Shanghai *Assistant Professor* — Starting Sept 2014

Princeton University *Associate Research Scholar (Advisor: C.D. Brody)* — Jan 2007-present

Prologue *Consultant* — Fall 2005
Performed due diligence for a neuroscience technology venture. Lead: Nimrod Goor.

Nevo Technologies *Computer Systems Analyst* — 1998-1999
Developed education registration system for Harvard University. Designed Electronic Sectioning system (http://www.registrar.fas.harvard.edu/section) including web interface, servlets, database and Java server objects. Lead: Jonathan Clay

McGill University *Research Staff, Department of Psychology* — Summer 1996
Role of hippocampus in spatial information processing.
Advisor : Dr. Matthew Shapiro.

Clarke Institute of Psychiatry *Research Staff, Human Brain Lab* — Spring 1994 and Summer 1995
Phospholipid metabolism in human brain pathology.
Advisors : Drs. Steven Kish & Brian Ross

Published Work

Hanks, T.D., Kopec, C.D., Brunton, B.W., Duan, A.D., **Erlich, J. C.**, and Brody, C. D. (2014) **Differential roles in decision-making for accumulation-correlated neurons in parietal and prefrontal cortex.** *(Nature,* accepted*)*

Erlich, J.C. and Brody, C.D. (2013) **What to do and how** *Nature* 503, 45–47

Erlich, J. C., Bush, D. E. A., and Ledoux, J. E. (2012). **The role of the lateral amygdala in the retrieval and maintenance of fear-memories formed by repeated probabilistic reinforcement.** *Front Behav Neurosci* 6, 16. (Commentary in *Frontiers in Neuroscience*, DOI: "10.3389/fnins.2013.00017")

Erlich, J. C., Bialek, M., and Brody, C. D. (2011). **A cortical substrate for memory-guided orienting in the rat.** *Neuron* 72, 330–343. (Previewed in *Neuron,* DOI: "10.1016/j.neuron.2011.10.002")

Pai, S., **Erlich, J. C**., Kopec, C., and Brody, C. D. (2011). **Minimal impairment in a rat model of duration discrimination following excitotoxic lesions of primary auditory and prefrontal cortices.** *Front Syst Neurosci* 5, 74.

Ross, B. M., Moszczynska, A., **Erlich, J.**, and Kish, S. J. (1998a). **Low activity of key phospholipid catabolic and anabolic enzymes in human substantia nigra: possible implications for Parkinson's disease.** *Neuroscience* 83, 791–798.

Ross, B. M., Moszczynska, A., **Erlich, J.**, and Kish, S. J. (1998b). **Phospholipid-metabolizing enzymes in Alzheimer's disease: increased lysophospholipid acyltransferase activity and decreased phospholipase A2 activity.** *J Neurochem* 70, 786–793.

Ross, B. M., Hudson, C., **Erlich, J.**, Warsh, J. J., and Kish, S. J. (1997). **Increased phospholipid breakdown in schizophrenia. Evidence for the involvement of a calcium-independent phospholipase A2.** *Arch Gen Psychiatry* 54, 487–494.

Working Papers

Jeffrey C. Erlich, C. Ann Duan, Adrianna Loback, Timothy D. Hank, Bingni W. Brunton, & Carlos D. Brody. **Distinct behavioral effects of prefrontal and parietal cortex inactivations on an accumulation of evidence task in the rat**. (*Neuron*, under review)

Charles D. Kopec, Bingni W. Brunton, Jeffrey C. Erlich, Karl Deisseroth & Carlos D. Brody. **Cortical and subcortical contributions to short-term memory.** (*Neuron*, in revision)

C. Ann Duan*, and Jeffrey C. Erlich*, & Carlos D. Brody. **Rapid rule-switching in rats: a ProAnti Orienting Task** *(submitted) (*co-first authors)*

Jeffrey C. Erlich, C. Ann Duan, & Carlos D. Brody. **Distinct cortical and sub-cortical contributions to pro- and anti-orienting responses.** *(in prep)*

Jeffrey C. Erlich, C. June-Seek Choi, David E.A. Bush, Carlos D. Brody, & Joseph E. LeDoux. **Distinct contributions of the lateral amygdala and medial prefrontal cortex to the regulation of fear.** *(in prep)*

Teaching Experience

Princeton University *Assistant Instructor* — Summer 2012

AI for Biophysics and Computation in Neural Networks , Organized by Profs. Berry, Gelperin, and Tank.

New York University *Teaching Assistant* — Spring 2000 and Fall 2001

TA for Cellular and Molecular Neuroscience:Lab, Taught by Profs. Aoki and Reyes.

Awards and Honours

Champalimaud Neuroscience Symposium *Travel Award* — 2011

Howard Hughes Medical Institute *Predoctoral Fellowship in the Biological Science* — 2000-2005

Society for Neuroscience *FENS Travel Award* — 2004

McGill University *Dean's Honour List* — 1996

Professional Activities

Reviewer: *Nature, Nature Neuroscience, Neuron, Journal of Neuroscience*
Society Membership: *Society for Neuroscience*
Organizer: COSYNE Workshop 2013 : Neural mechanisms of orienting decisions across the animal kingdom

Mentorship

Bing Brunton, Graduate Student, Princeton University
Max Bialek, Research Assistant, Princeton University
Chunyu Duan, Graduate Student, Princeton University
Adrianna Loback, Graduate Student, Princeton University
Ryan Ly, Graduate Student, Princeton University
Kevin Miller, Graduate Student, Princeton University
Ahmad Nazzal, Graduate Student, University of Göttingen
Lauren Wierenga, Undergraduate Research Program, Princeton University

Selected Conference Presentations

Chunyu Duan, Jeffrey C Erlich, Timothy Hanks, Bingni Brunton, Carlos D. Brody. **Inactivation of rat frontal and parietal cortex during a temporal integration of evidence task.** COSYNE, February, 2012.

Jeffrey C Erlich, Max Bialek, Carlos D Brody. **A cortical substrate for memory-guided orienting in the rat. Society for Neuroscience, Nanosymposium. October 2011.**

Jeffrey C Erlich, G. Sebastien Awwad, Carlos D. Brody. **The role of frontal and prefrontal cortices in a context-dependent PRO/ANTI orienting task.** COSYNE, February, 2008.

Jeffrey C Erlich, Carlos D. Brody, Joseph E LeDoux. **Distinct contributions of the amygdala and prefrontal cortex to the regulation of fear.** COSYNE, February, 2007.

Invited Talks

Canonical Neural Computation, Italy	July 2015
COSYNE 2014 Workshop	March 2014
NYU	Jan 2013
NYU Shanghai	Dec 2013
Institute of Neuroscience, Shanghai	Dec 2013
Gordon Research Conference: Eye Movements	July 2013
New York University. SPINES.	Feb 2013
Allen Institute for Brain Science.	July 2012
Mount Sinai Medical School.	April 2012
COSYNE Workshop.	Feb 2012
Sloan-Swartz Meeting. Hosted by Yale University.	June 2010

New York University. LeDoux 20th Anniversary Symposium. Dec 2009

Gatsby Computation Neuroscience Unit. University College London. June 2006