Jeffrey C. Erlich

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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

Sept 2014-present

Princeton University Associate Research Scholar (Advisor: C.D. Brody)

Jan 2007-Aug 2014

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

Nevo Technologies Computer Systems Analyst

1998-1999

Fall 2005

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

- Duan, C.A., Erlich, J.C., and Brody, C.D. (2015) Requirement of prefrontal and midbrain regions for rapid executive control of behavior in the rat. *Neuron*, in press.
- Erlich, J. C., Brunton, B.W., Duan, C.A., Hanks, T.D., and Brody, C. D. (2015) Distinct effects of prefrontal and parietal cortex inactivations on an accumulation of evidence task in the rat. *eLife*, 4:e05457
- Hanks, T.D., Kopec, C.D., Brunton, B.W., Duan, C.A., Erlich, J. C., and Brody, C. D. (2015) Differential roles in decision-making for accumulation-correlated neurons in parietal and prefrontal cortex. *Nature*, doi: 10.1038/nature14066
- 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

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

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, Frontiers in Systems Neuroscience, Journal of Neurophysiology, COSYNE

Reviewing Editor: Frontiers in Neural Circuits **Society Membership:** Society for Neuroscience

Organizer: COSYNE Workshop 2013: Neural mechanisms of orienting decisions across the animal kingdom

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

Korean Neuroscience Society Meeting	Sept 2015
Deutsches Primatenzentrum, Germany	July 2015
Canonical Neural Computation, Italy	July 2015
International Conference on Prefrontal Cortex, Kunming	Dec 2014
DongFang Forum, Shanghai	Nov 2014
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