Erin L. Rich, MD, PhD

tel. (212) 824-9304
erin.rich@mssm.edu

Hess CMS Building
Room 10-115
1470 Madison Ave
New York, NY 10029

Professional

2017 – present Assistant Professor (Tenure-track), Department of Neuroscience and Friedman Brain Institute, Icahn School of Medicine at Mount Sinai
Date of appointment: April 1, 2017

2015 – 2017 Assistant Project Scientist, Helen Wills Neuroscience Institute, University of California, Berkeley

2014 – 2017 Affiliate Researcher, Department of Neurological Surgery, University of California, San Francisco

2010 – 2015 Post-doctoral Fellow, University of California, Berkeley
Mentor: Joni Wallis, PhD
2014 – 2017 Co-mentor: Edward Chang, MD, UC San Francisco

Education

MD 2010, Mount Sinai School of Medicine, New York, NY
Medical Scientist Training Program (MSTP), 2002 – 2010

PhD 2008, Mount Sinai School of Medicine, New York, NY
Department of Neuroscience

BS 2002, Tufts University, Medford, MA
Majors in Biology and Classical Studies

Awards

2018 Schneider-Lesser Foundation Junior Faculty Fellowship
2010 Basic Science Best Achievement Award for Paper Published in 2009
2006 Mount Sinai Graduate School Teaching Award
2002 Audrey Butvay Gruss Science Award
2002 Benjamin Brown Scholarship
2001 Poskitt Scholarship for Biology Undergraduate

Research Support

2018 – 2022 Pew Scholars Program in Biomedical Sciences, *The neural basis of expectation and bias in large-scale orbitofrontal networks*

2015 – 2020 K08 Mentored Clinical Scientist Research Development Award, NIH/NIDA, *Multi-Scale Orbitofrontal Networks Underlying Reward Processing*

2012 – 2015 Hilda and Preston Davis Foundation Postdoctoral Fellowship in Eating Disorders Research, *The Role of Limbic and Prefrontal Cortex in Coding Food and Non-food Values*

2005 – 2008 Kirschstein NRSA Predoctoral Fellowship NIH/NIMH, *Prefrontal Cortex Contributions to Behavior Organization*

1999, 2000 Howard Hughes Undergraduate Research Grant

Teaching

2017 – present Icahn School of Medicine at Mount Sinai, Graduate School
Selected Topics in Neuroscience, Course co-director

2014 Adjunct Instructor, California State University East Bay
Course: Psychopharmacology, Department of Psychology

2007 – 2008 Adjunct Instructor, Stern College for Women of Yeshiva University
Course: Introduction to Statistics

2005 – 2007 Lab Instructor/TA, Mount Sinai Graduate School

Course: Biostatistical Concepts and Methods
2003 – 2010 CPR Instructor/ 2004-2006 Course Coordinator
Course: AHA Basic Care Life Support, Mount Sinai School of Medicine

Memberships and Committees

Society for Neuroscience
2005 – 2007 Mount Sinai MSTP Admissions Committee
2006 – 2008 Mount Sinai Graduate School Steering Committee

Ad Hoc Work, Professional Service and Outreach

Society for Neuroscience 2016 Minisymposium Co-chair, *Neural Mechanisms of Economic Choice*
Development team, STEMM Role Models (*github.com/KirstieJane/STEMMRoleModels*)
Ad-hoc reviewer for *Nature Neuroscience, Current Biology, Nature Communications, Journal of Neuroscience, PNAS, eLife, Current Opinion in Behavioral Sciences, Cerebral Cortex, European Journal of Neuroscience, Brain and Neuroscience Advances, Psychiatry Research*

Bibliography

Publications in progress

Rich, E.L., Chang, E.F. Task specific value encoding in the human orbitofrontal cortex. *In preparation*

Publications

Rich, E.L., Stoll, F.M., Rudebeck, P.H. Linking dynamic patterns of neural activity in orbitofrontal cortex with decision making. *Curr Opin Neurobiol.* 2017 Nov 20;49:24-32. doi: 10.1016/j.conb.2017.11.002.

Santacruz, S.R., **Rich, E.L.**, Wallis, J.D., Carmena, J.M. Caudate microstimulation increases value of specific choices. *Curr Biol.* 2017 Nov 6;27(21):3375-3383.e3.

Rich, E.L., Wallis, J.D. Spatiotemporal dynamics of information encoding revealed in orbitofrontal high-gamma. *Nat Commun.* 2017 Oct 26;8(1):1139. doi: 10.1038/s41467-017-01253-5.

Rich, E.L., Wallis, J.D. Decoding Subjective Decisions from Orbitofrontal Cortex. *Nat Neurosci*. 2016 Jul;19(7):973-80.

Rich, E.L., Wallis, J.D. What stays the same in orbitofrontal cortex. *Nat Neurosci.* 2016 May 26;19(6):768-70.
Commentary for Xie and Padoa-Schioppa, 2016.

Rich, E.L., Wallis, J.D. Medial-lateral organization of the orbitofrontal cortex. *J Cogn Neurosci*. 2014 Jul; 26(7):1347-62.

Rich E.L., Wallis, J.D. Prefrontal-Amygdala Interactions Underlying Value Coding. *Neuron*. 2013 Dec; 80(6):1344-1346.

Commentary for Rudebeck and Murray, 2013.

Perez-Rodriguez, M.M., Hazlett, E.A., **Rich, E.L.**, Ripoll, L.H., Weiner, D.M., Spence, N., Goodman, M., Koenigsberg, H.W., Siever, L.J., New, A.S. Striatal activity in borderline personality disorder with comorbid intermittent explosive disorder: sex differences. *J Psychiatr Res*. 2012 Jun;46(6):797-804.

Wallis, J.D., **Rich, E.L.** Challenges of Interpreting Frontal Neurons during Value-Based Decision-Making. *Front Neurosci*. 2011;5:124.

Rich, E.L., Shapiro, M.L. Rat prefrontal cortical neurons selectively code strategy switches. *J Neurosci*. 2009 Jun:29(22):7208-19.

Bozdagi O, **Rich E**, Tronel S, Sadahiro M, Patterson K, Shapiro ML, Alberini CM, Huntley GW, Salton SR. The neurotrophin-inducible gene Vgf regulates hippocampal function and behavior through a brain-derived neurotrophic factor-dependent mechanism. *J Neurosci*. 2008 Sept;28(39):9857-69.

Romero, L.M., **Rich, E.L.** Photoperiodically-induced changes in hypothalamic-pituitary-adrenal axis sensitivity in captive house sparrows (*Passer domesticus*). *Comp Biochem Physiol A Mol Integr Physiol*. 2007 Jun; 147(2):562-8.

Rich, E.L., Shapiro, M.L. Prelimbic/Infralimbic inactivation impairs memory for multiple task switches, but not flexible selection of familiar tasks. *J Neurosci*. 2007 Apr; 27(17):4747-4755.

Rich, E.L., Romero, L.M. Exposure to chronic stress downregulates corticosterone responses to acute stressors. *Am J Physiol Regul Integr Comp Physiol*. 2005 Jun; 288(6):R1628-36.

Rich, E.L., Romero, L.M. Daily and photoperiod variations of basal and stress-induced corticosterone concentrations in house sparrows (*Passer domesticus*). *J Comp Physiol [B]*. 2001 Oct; 11(7):543-7.

Talks and Presentations

Rich, E.L., Chang, E.F. Task specific value encoding in the human orbitofrontal cortex. Society for Neuroscience 2017. Washington, DC.

Rich, E.L. Dynamic Neural Signatures of Subjectivity in Choice. Columbia University Workshop on Information Processing and Behavioral Variability 2017. New York, NY.

Rich, E.L., Wallis, J.D. Dynamic encoding of choice in the orbitofrontal cortex. Cognitive Neuroscience Society (CNS) 2017. San Francisco, CA.

Rich, E.L., Wallis, J.D. Dynamic encoding of choice in the orbitofrontal cortex. Computational and Systems Neuroscience (COSYNE) Workshops, 2017. Snowbird, UT.

Rich, E.L., Wallis, J.D. Dynamic encoding of choice in the orbitofrontal cortex. Society for Neuroscience 2016. San Diego, CA.

Rich, E.L., Wallis, J.D. Competing neural representations of choice alternatives in orbitofrontal cortex during value-based decisions. Society for Neuroscience 2015. Chicago, IL.

Rich, E.L., Wallis, J.D. Evidence for directionality in orbitofrontal local field potentials. Society for Neuroscience 2014. Washington, DC.

Rich, E.L., Wallis, J.D. Spatiotemporal dynamics of value coding in the orbitofrontal cortex. Computational Properties of Prefrontal Cortex Conference 2014. Whistler, Canada.

Rich, E.L., Wallis, J.D. Functional organization of the orbitofrontal cortex. San Francisco VA Medical Center Substance Abuse Seminar 2013. San Francisco, CA.

Rich, E.L., Shapiro, M.L. Prefrontal cortical activity in place and response task switching. Neurobiology of Learning and Memory Winter Conference 2008. Park City, UT.

Rich, E.L., Shapiro, M.L. Prefrontal cortical contributions to behavior organization. Mount Sinai Annual Graduate School Retreat 2008. New York, NY.

Rich, E.L., Shapiro, M.L. Prelimbic/infralimbic inactivation impairs memory for multiple task switches. Mount Sinai Meet the Authors Lecture Series 2007. New York, NY.

Abstracts

Rich, E.L., Wallis, J.D. Decoding subjective decisions from the orbitofrontal cortex. AREADNE Conference on Encoding and Decoding of Neural Ensembles 2016.

Rich, E.L., Wallis, J.D., Dawes, H., Chang, E.F. Encoding of stimulus value estimates in high-frequency epicortical signals in human OFC. Quadriennal Meeting on OFC Function 2015

Chang, E.F., Case, J, Wallis, J.D., **Rich, E.L.** Learned representations of sensory stimulus value in large-scale brain networks. Society for Neuroscience 2015.

Rich, E.L., Wallis, J.D. Evidence for directionality in orbitofrontal local field potentials. Computational and Systems Neuroscience (COSYNE) 2015.

Rich, E.L., Wallis, J.D. Representation of primary and secondary rewards in orbitofrontal cortex. Society for Neuroscience 2013.

Rich, E.L., Wallis, J.D. Prefrontal cortex differentially encodes stimuli and actions associated with rewards or punishment. Society for Neuroscience 2012.

Rich, E.L., Wallis, J.D. Differential effects of positive and negative reinforcement on behavior. Society for Neuroscience 2011.

Rich, E.L., Shapiro, M.L. Strategy switching correlates in rat prelimbic/infralimbic neurons. Society for Neuroscience 2007.

Rich, E.L., Shapiro, M.L. Rat prelimbic/infralimbic areas contribute to multiple strategy switches. Society for Neuroscience 2006.

Rich, E.L., Romero, L.M. Corticosterone response to variable doses of dexamethasone, CRF and ACTH in the European Starling (*Sturnus vulgaris*). Society for Integrative and Comparative Biology 2002.

Romero, L.M., **Rich, E.L.**, Tran, K.D., Nephew, B.C. Regulation of corticosterone release in captive house sparrows. Society for Integrative and Comparative Biology 2002.

Rich, E.L., Romero, L.M. Daily and seasonal variation in basal and stress-induced levels of corticosterone in house sparrows. N.E.U.R.O.N. 2000.