

## R. BECKET EBITZ, PHD

Department of Neuroscience  
University of Minnesota, Minneapolis, MN

rebitz@gmail.com  
<http://rebitz.github.io>  
(814) 574-7801

### EDUCATION:

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- 2013      **Ph.D. in Neurobiology**  
Mentor: Dr. Michael Platt  
Duke University, Neurobiology Department, Durham, NC  
Certificate in Cognitive Neuroscience, Center for Cognitive Neuroscience  
Dissertation: *Determinants of distraction in the rhesus macaque.*
- 2005      **B.A. (cum laude)**  
Simon's Rock (Early) College, Great Barrington, MA  
Concentrations: Biology, Psychology, Research Methods

### POSITIONS:

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- 2017-present    **Senior Research Associate**, Mentor: Dr. Ben Hayden  
University of Rochester, Brain and Cognitive Sciences, Rochester, NY  
University of Minnesota, Department of Neuroscience, Minneapolis, MN
- 2015-2017      **CV Starr Fellow**, Mentors: Drs. Tim Buschman, Jon Cohen  
Princeton University, Princeton Neuroscience Institute, Princeton, NJ
- 2013-2017      **Postdoctoral Fellow**, Mentor: Dr. Tirin Moore  
Stanford University & HHMI, Neurobiology Department, Stanford, CA
- 2007-2013      **Graduate Student**, Mentor: Dr. Michael Platt  
Duke University, Neurobiology Department, Durham, NC
- 2005-2007      **Research Assistant**, Mentor: Dr. Leslie Ungerleider  
National Institutes of Health, Bethesda, MD

### AWARDS AND FELLOWSHIPS:

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- 2014, 2016      Travel Awards, Gordon Conference, Neurobiology of Cognition
- 2013-14      Stanford Vision Training Program Fellowship (T32)
- 2010-11      Preparing Future Faculty Fellowship, Duke University
- 2009-10      Ruth K. Broad Foundation Fellowship, Duke University
- 2007-11      James B. Duke Fellowship, Duke University
- 2005-07      Intramural Research Training Award, NIMH
- 2003-05      Robert M. Hutchins Scholarship, Simon's Rock College

2001-03      Acceleration to Excellence Scholarship, Simon's Rock College  
 1999      8<sup>th</sup> place in the USA, Discovery Young Scientists Challenge

## GRANTS AND RESEARCH SUPPORT:

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2015-2017      CV Starr Foundation Fellowship  
                     \$20,000/year direct costs, \$65,000/year salary support  
                     *Project title:* Top-down and bottom-up attentional priorities in a  
                                  distributed oculomotor decision-making network.  
                     *Project role:* PI; *Mentors:* Tim Buschman, Jon Cohen

2014-2017      NIMH National Research Service Award (F32 MH102049)  
                     \$5,000/year direct costs plus salary support at NIH levels  
                     *Project title:* Selective attention and reward value in the prefrontal control  
                                  of choice.  
                     *Project role:* PI; *Mentors:* Tirin Moore, Tim Buschman

## RESEARCH PAPERS:

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**Ebitz, R. B.**, Sleezer, B.J., Jedema, H.P., Bradberry, C.W., Hayden, B. Y. (bioRxiv).  
 “Exploratory noise governs both flexibility and spontaneous errors and is regulated by  
 cocaine”

**Ebitz, R. B.**, Albarran, E., & Moore, T. (2018). “Exploration disrupts choice predictive  
 signals and alters population dynamics in prefrontal cortex.” *Neuron* 97 (2), 450-461.

**Ebitz, R. B.**, Moore, T. (2017). “FEF microstimulation modulates the pupil light reflex.”  
*Journal of Neuroscience* 37 (19), 5008-18.

**Ebitz, R. B.**, Platt, M. L. (2015). “Neuronal activity in primate dorsal anterior cingulate  
 cortex signals task conflict and predicts adjustments in pupil-linked arousal.” *Neuron* 85(3),  
 628-40.

**Ebitz, R. B.**, Pearson, J., Platt, M. L. (2014). “Pupil size and social vigilance in rhesus  
 macaques.” *Frontiers in Neuroscience* 8(100).

Pearson, J., Watson, K. K., Klein, J., **Ebitz, R. B.**, & Platt, M. L. (2013). Individual  
 differences in social information gathering revealed through Bayesian hierarchical models.  
*Frontiers in Neuroscience* 7(165).

**Ebitz, R. B.**, Watson, K. K., & Platt, M. L. (2013). “Oxytocin reduces social vigilance in  
 rhesus macaques.” *Proceedings of the National Academy of Sciences*, 110(28), 11630-5.

Chang, S. W., Barter, J. W., **Ebitz, R. B.**, Watson, K. K., & Platt, M.L. (2012). “Inhaled oxytocin amplifies both vicarious reinforcement and self reinforcement in rhesus macaques (*Macaca mulatta*).” *Proceedings of the National Academy of Sciences*, 109(3), 959-964.

## REVIEWS AND COMMENTARIES:

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**Ebitz, R. B.**, Hayden, B. (2016). “Dorsal anterior cingulate: A Rorschach test for cognitive neuroscience.” *Nature Neuroscience*, 19, 1278–1279.

**Ebitz, R. B.**, Platt, M. L. (2013). “An evolutionary perspective on the behavioral consequences of exogenous oxytocin delivery.” *Frontiers in Behavioral Neuroscience* 2(225).

## SELECTED TALKS:

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“Exploratory regimes in brain and behavior.” (January 2018). Montreal Neurological Institute, McGill University.

“Exploration for learning in brain and behavior.” (January 2017). Charles River Analytics, Cambridge, MA.

“Exploration in brain and behavior.” (October 2016). Computational Neuroscience Initiative, University of Pennsylvania.

“Altered balance between top-down and bottom-up saccade control across exploration and exploitation.” (July 2016). Gordon Seminar on the Neurobiology of Cognition.

“Frontal eye field dynamics differ between explore and exploit states.” (March 2016). Workshop on Executive Flexibility, COSYNE workshops.

“Exploration flattens prefrontal target selectivity, enhances learning in network states and behavior.” (February 2016). COSYNE main meeting, Salt Lake City, Utah.

“Exploration, distraction, and saccadic selection in rhesus macaques.” (November 2014). Department of Neuroscience, Columbia University.

“Exploration, distraction, and saccadic selection in rhesus macaques.” (November 2014). Department of Brain and Cognitive Sciences, University of Rochester.

“dACC neurons signal salient, task-irrelevant stimuli and predict behavioral adjustment.” (October 2012). Society for Neuroscience, New Orleans, LA.

“Determinants of distraction in the rhesus macaque.” (July 2012). Neurobiology Department, Northwestern University.

“Social attentive control: How neural filtering and neuromodulatory regulation help you ignore salient faces.” (May 2012). Decision Making Across the Disciplines Conference, Duke Center for Interdisciplinary Decision Sciences.

#### **MEETING ABSTRACTS/POSTERS:**

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**Ebitz, R.B.**, Cohen, J.D., & Buschman, T. (November 2017). “Control mechanisms for flexibility in a changing world.” Society for Neuroscience, Washington, DC.

**Ebitz, R.B.**, Buschman, T., & Moore, T. (June 2017). “Exploration via transient disruptions in prefrontal control.” Reinforcement Learning and Decision-Making, Ann Arbor, MI.

**Ebitz, R.B.**, Moore, T., & Buschman, T. (February 2017). “Bottom-up salience drives choice during exploration.” COSYNE, Salt Lake City, UT.

**Ebitz, R.B.**, Moore, T., & Buschman, T. (November 2016). “Altered balance between top-down and bottom-up control across exploration and exploitation.” Society for Neuroscience, San Diego, CA.

**Ebitz, R.B.**, & Moore, T. (July 2016). “Altered balance between top-down and bottom-up saccade control across exploration and exploitation.” Gordon Research Conference on the Neurobiology of Cognition, Newry, ME.

**Ebitz, R.B.**, & Moore, T. (June 2016). “Altered balance between top-down and bottom-up saccade control across exploration and exploitation.” Future of Visual Attention workshop, Center for Visual Science, University of Rochester.

**Ebitz, R. B.**, & Moore, T. (November 2015). “Modulation of the pupil light reflex by frontal eye field microstimulation.” Society for Neuroscience, Chicago, IL.

**Ebitz, R. B.**, Albarran, E., Soltani, A. & Moore, T. (November 2014). “Target selectivity in the frontal eye field (FEF) is blunted during exploratory choice.” Society for Neuroscience, Washington, DC.

**Ebitz, R. B.**, Albarran, E., Soltani, A. & Moore, T. (July 2014). “Uncertainty and exploration in the frontal eye field.” Gordon Research Conference on the Neurobiology of Cognition, Newry, ME.

**Ebitz, R. B.**, Albarran, E., Soltani, A. & Moore, T. (February 2014). “Attention and uncertainty during reward contingency learning.” COSYNE, Salt Lake City, UT.

**Ebitz, R. B.**, & Platt, M. L. (November 2013). “Pupil constriction betrays the locus of attention.” Society for Neuroscience, San Diego, CA.

**Ebitz, R. B.**, & Platt, M. L. (February 2012). “Neuronal activity in anterior cingulate cortex predicts susceptibility to distraction.” COSYNE, Salt Lake City, UT.

**Ebitz, R. B., & Platt, M. L.** (November 2011). “Oxytocin blunts social distraction.” Society for Neuroscience, Washington, DC.

#### COMMENTARIES & PRESS COVERAGE:

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Binda, P. & Gamlin, P. D. (2017). “Renewed attention on the Pupil Light Reflex.” Commentary on “FEF microstimulation modulates the pupil light reflex.” *Trends in Neuroscience* Spotlight article.

Shenhav, A. & Botvinick, M. (2015). “Uncovering a Missing Link in Anterior Cingulate Research.” Commentary on “Neuronal activity in primate dorsal anterior cingulate cortex signals task conflict and predicts adjustments in pupil-linked arousal.” *Neuron* 85(3), pp. 455-7.

“The Science of Love: What Are You Looking At?” Write-up of “Oxytocin reduces social vigilance in rhesus macaques.” in October 10, 2013 *Cell: Select* column. *Cell*, 155, p. 263.

#### OTHER PROFESSIONAL ACTIVITIES:

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Invited Reviewer: *Journal of Neuroscience*, *Nature Neuroscience*, *eLife*, *Scientific Reports*, *Hormones and Behavior*, *PLOS One*, *Frontiers in Neuroscience*, COSYNE meeting

Professional Membership, *Society for Neuroscience*, 2005-present

Workshop organizer, “Executive Flexibility”, March 2016  
COSYNE workshops, Snowbird, UT

Co-organizer, *Maths, Monkeys & Machines* interdisciplinary seminar series, 2014-2015  
Stanford University, Stanford, CA

Discussant, *Gordon Research Seminar on Neurobiology of Cognition*, June 2014  
Gordon Research Conferences, Newry, ME

Attendee, *Bay Area Ophthalmology Course*, July 2013  
Bay Area Ophthalmology Consortium, Stanford Medicine, Stanford, CA

Workshop leader and volunteer, *Brain Awareness Week*, 2010-2013  
Durham, NC & Raleigh, NC

Organizer, *Social Neuroscience Journal Club*, 2011-2012  
Duke University, Durham, NC

Consortium member, *Neuroscience Graduate Student Consortium*, 2011  
Duke University, Durham, NC

Invited participant, *Neuroscience, Juries, Decision-Making short course*, 2011  
Duke University Law School, Durham, NC

## **TEACHING/MENTORING:**

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### ***Research assistants mentored:***

Cindy Tu (2017-present, currently a research assistant at University of Minnesota)  
Lu Yang (2014-2015, masters student at Stanford University)  
Eddy Albarran (2013-2014, now a PhD student at Stanford University)

### ***Instructor/Section Leader:***

Neuroscience Junior Tutorial (2 sessions), Princeton University, 2016  
Launch into Pharmacology (2 sessions, summer intensive), Duke University, 2011  
Biological Bases of Behavior (2 sections), Duke University, 2010

### ***Guest Instructor:***

Principles of Cognitive Neuroscience (graduate course), Duke University, 2012  
Introduction to Biology, Guilford College, Greensboro, NC, 2010  
Sensory Systems, Guilford College, Greensboro, NC, 2010

### ***Teaching Assistant:***

Brain and Behavior, Duke University Medical School, 2009

### ***Coursework taken with a substantial focus on teaching:***

Foundations in College Teaching (Duke, Fall 2009, GS 302)  
Colloquium on the Academic Profession (Duke, Fall 2010, GS 300)  
Seminar in Teaching College Biology (Duke, Fall 2010, BIO 390)