IAN BALLARD
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EDUCATION

Stanford University, Stanford, CA
Stanford Graduate Neurosciences Training Program, 2012-2017 (expected)
PhD Mentor: Samuel McClure
Dissertation Committee: Anthony Wagner, Russ Poldrack, Bill Newsome, Noah Goodman

Duke University, Durham, NC
Graduated with Distinction, B.S., Summa Cum Laude, May 2011
Major: Individualized Curriculum: Theoretical Neuroscience
Major Advisors: Dr. Henry Greenside and Dr. Alison Adcock

FIRST AUTHOR PUBLICATIONS

- **Ballard, I.C.**, Hennigan, K., McClure, S.M. (2017) Mere Exposure: Preference for Novel Drinks Reflected in Human Ventral Tegmental Area. Journal of Cognitive Neuroscience. In Press.
- Murty, V.P*., **Ballard, I.C*.**, Adcock, R.A. (2016). Hippocampus and Prefrontal Cortex Predict Distinct Timescales of Activation in the Human Ventral Tegmental Area. Cerebral Cortex,
- **Ballard, I.C.***, Murty, V.P.*, Carter R.M., MacInnes J.J., Huettel S.A., Adcock R.A. (2011). Dorsolateral prefrontal cortex drives mesolimbic dopaminergic regions to initiate motivated behavior. Journal of Neuroscience, 31(28):10340-6.

PUBLICATIONS

- Murty V.P., **Ballard, I.C**., Macduffie, K., Krebs, R.M., Adcock, R.A. (2014) Hippocampal Networks Habituate as Novelty Accumulates. Learning and Memory, 20 (4), 229-235.
- Samanez-Larkin, G.R., Mata, R., Radu, P.T., **Ballard, I.C**., Carstensen, L.L., McClure, S.M. (2011). Age differences in striatal delay sensitivity during intertemporal choice in healthy adults. Frontiers in Neuroscience, 5, 126.

MANUSCRIPTS

- **Ballard, I.C**., Kim, B., Liatsis, A., Cohen, J.D., McClure, S.M. More is meaningful: The magnitude effect in intertemporal choice reveals a heuristic for engaging self-control. In Revision.
- **Ballard, I.C.**, Miller, E., Piantadosi, S.T., Goodman, N., McClure, S.M. Beyond Reward Prediction Errors: Human Striatum Represents Rule Values During Categorization Learning. Under Review.

* Denotes equal contribution.

PRESENTATIONS

- **Ian Ballard.** Human Stratum Represents Bayesian Surprise, Not Reward Prediction Error, in Categorization Learning. Poster Spotlight. Society for Neuroeconomics Annual Meeting, August 2016.
- **Ian Ballard**. Human Reinforcement Learning over Latent Sensory Features. Nanosymposium Talk, Society for Neuroscience Annual Meeting, October 2015.

POSTERS

- **Ian Ballard**, Sam McClure. Society for Neuroscience Annual Meeting, November 2016. URL: http://jabstracts.org/iancballard/beyond-reward-prediction-errors-human-striatum-represents-rule-values-during-categorization-learning/
- **Ian Ballard**, Sam McClure. Human Reinforcement Learning over Latent Sensory Features. Bay Area Memory Meeting, August 2015.
- **Ian Ballard**, Sam McClure. Human Reinforcement Learning over Latent Sensory Features. Reinforcement Learning and Decision Making Biannual Conference, June 2015.
- **Ian Ballard**, Bokyung Kim, Sam McClure. A TMS Study of lateral prefrontal cortex function in intertemporal choice. Washington, D.C. Society for Neuroscience Annual Meeting, November 2014.
- **Ian Ballard**. Mesolimbic Activity Tracks Preference Change in the Mere Exposure Effect. Lausanne, Switzerland Neuroeconomics Society Conference. September, 2013.
- **Ian Ballard**. Mesolimbic Activity Tracks Preference Change in the Mere Exposure Effect. San Francisco, Ca. Bay Area Memory Meeting. August, 2013.
- **Ian Ballard**, Vishnu Murty, R. Alison Adcock. Hippocampal Novelty Responses Show Distinct Relationships with Event-Related and Baseline VTA Variability. New Orleans, Louisiana. Society for Neuroscience Annual Meeting. October, 2012.
- **Ian Ballard**, Vishnu Murty, Ruth M. Krebs, Kate MacDuffie, R. Alison Adcock. Novelty Habituation in the Human Hippocampus. Senior Thesis. April 2011.
- **Ian Ballard**, Anthony Liatsis, Sebastien Houde, Samuel McClure. A General Model of Temporal Discounting Based on Two Value Systems. San Diego, California. Society for Neuroscience Annual Meeting. November 2010.
- **Ian Ballard**, Vishnu Murty, Jeff MacInnes, R. McKell Carter, Scott Huettel, R. Alison Adcock. Network Dynamics of the Mesolimbic Dopamine System During Human Reward Anticipation: A DCM Study. Montreal, Canada. Cognitive Neuroscience Society Annual Meeting. April 2010.

HONORS AND AWARDS

- Travel Award for Persistent Maladaptive Behaviors: Why We Make Bad Choices (2016)
- Reinforcement Learning and Decision Making Travel Fellowship (2015)
- Stanford Center For Mind, Brain and Computation Graduate Training Fellowship (2013)
- National Science Foundation Graduate Research Fellowship Program (NSF GRFP) (2012)
- Kavli Travel Award, Neuroeconomics Annual Conference (2013)
- Phi Beta Kappa
- Duke University Scholars full tuition and expenses scholarship (2007-2011)

TRAINING

- Kavli Summer Institute in Cognitive Neuroscience (2016)
- Neuroeconomics Society Summer School (2015)

TEACHING

- Learning and Memory, Teaching Assistant (2016)
- The Nervous System, Teaching Assistant (Winter 2014, 2015, 2016)
- Developmental Psychology, Teaching Assistant (Spring 2014)

GRADUATE COURSEWORK

- Computer Science: Probabilistic Graphical Models, Machine Learning, Artificial Intelligence, High-Level Vision
- Psychology: Computational models of cognition: the probabilistic approach, Current debates in learning and memory
- Neuroscience: The nervous system, Current issues in aging, Neurobiology of disease

AD-HOC REVIEWER

- Current Biology
- Brain Imaging and Behavior