

Ethan S. Bromberg-Martin

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Education and training

Senior Scientist in the Department of Neuroscience at Washington University School of Medicine in St. Louis
(2017 – present)

Assistant Professor in the Department of Neuroscience at Columbia University.
(2014 – 2017)

Postdoctoral fellow in the laboratory of Okihide Hikosaka at the National Eye Institute.
(2009 – 2013)

Ph.D. in Neuroscience at Brown University and the National Eye Institute
Thesis: The Role of Dopamine in Information-Seeking (Advisor: Okihide Hikosaka)
(2005 – 2009)

Bachelor of Science in Computational Biology at Brown University, magna cum laude
Thesis: Partial-Order Alignment of RNA Structures (Advisor: Franco Preparata)
(2001 – 2005)

Peer-reviewed publications

Blanchard TC, Hayden BY*, **Bromberg-Martin ES***. (**co-senior authors*)
Orbitofrontal cortex uses distinct codes for different choice attributes in decisions motivated by curiosity.
Neuron (2015) Vol. 85, no. 3, pp. 602-614.

Bromberg-Martin ES, Hikosaka O.
Lateral habenula neurons signal errors in the prediction of reward information
Nature Neuroscience (2011) Vol. 14, no. 9, pp. 1209-1216.

Bromberg-Martin ES, Matsumoto M, Hikosaka O.
Dopamine in motivational control: rewarding, aversive, and alerting
Neuron (2010) Vol. 68, no. 5, pp. 815-834.

Bromberg-Martin ES, Matsumoto M, Nakahara H, Hikosaka O.
Multiple timescales of memory in lateral habenula and dopamine neurons
Neuron (2010) Vol. 67, no. 3, pp. 499-510.

Bromberg-Martin ES, Matsumoto M, Hikosaka O.
Distinct tonic and phasic anticipatory activity in lateral habenula and dopamine neurons
Neuron (2010) Vol. 67, no. 1, pp. 144-155.

Bromberg-Martin ES, Matsumoto M, Hong S, Hikosaka O.
A pallidus-habenula-dopamine pathway signals inferred stimulus values
Journal of Neurophysiology (2010), Vol. 104, no. 2, pp. 1068-1076.

Bromberg-Martin ES, Hikosaka O, Nakamura K.

Coding of task reward value in the dorsal raphe nucleus.
Journal of Neuroscience (2010), Vol. 30, no. 18, pp. 6262-6272.

Bromberg-Martin ES, Hikosaka O.

Midbrain dopamine neurons signal preference for advance information about upcoming rewards.
Neuron (2009) Vol. 63, no. 1, pp. 119-126.

Hikosaka O, **Bromberg-Martin E**, Hong S, Matsumoto M.

New insights on the subcortical representation of reward.
Current Opinion in Neurobiology (2008) Vol. 18, pp. 203-208.

Poster presentations

Charpentier CJ, **Bromberg-Martin ES**, Sharot T.

Deciding to know: information prediction errors and value in the human brain.
(2016) Society for Neuroscience Abstract, 42: 648.21.

Bromberg-Martin ES, Merel J, Blanchard TC, Hayden BY.

Distinct neural processes for appetitive and informational rewards.
(2016) Society for Neuroscience Abstract, 42: 542.01.

Bromberg-Martin ES, Barack DL, Platt ML.

Information seeking is driven by two types of uncertainty.
(2016) Cosyne Abstracts 2016, Salt Lake City USA.

Bromberg-Martin ES, Merel J, Blanchard TC, Hayden BY.

Distinct neural processes for appetitive and informational rewards.
(2015) Cosyne Abstracts 2015, Salt Lake City USA.

Bromberg-Martin ES, Hikosaka O.

Ventral pallidum neurons signal an information-induced bias in handling reward uncertainty
(2014) Cosyne Abstracts 2014, Salt Lake City USA.

Bromberg-Martin ES, Matsumoto M, Hikosaka O.

Lateral habenula neurons encode risky rewards with distinct tonic and phasic motivational signals
(2012) Society for Neuroscience Abstract, 38: 295.07.

Bromberg-Martin ES, Hikosaka O.

What does information seeking tell us about reinforcement learning?
(2012) Cosyne Abstracts 2012, Salt Lake City USA.

Bromberg-Martin ES, Matsumoto M, Hong S, Hikosaka O.

A pallidus-habenula-dopamine pathway transmits both motivational and visuospatial signals
(2011) Society for Neuroscience Abstract, 37: 732.11.

Bromberg-Martin ES, Matsumoto M, Hikosaka O.

Distinct tonic and phasic anticipation of rewards and punishments in lateral habenula and dopamine neurons.
(2010) Frontiers in Addiction Research (NIDA mini-convention at SFN), poster 37.

Bromberg-Martin ES, Matsumoto M, Hikosaka O.

Distinct tonic and phasic anticipation of rewards and punishments in lateral habenula and dopamine neurons.
(2010) Society for Neuroscience Abstract, 36: 916.24.

Bromberg-Martin ES, Hikosaka O. Lateral habenula neuron encoding of information prediction errors. (2009)
Society for Neuroscience Abstract, 35: 683.11.

Bromberg-Martin E, Matsumoto M, Nakamura K, Nakahara H, Hikosaka O. (2009) Multiple timescales of reward memory in lateral habenula and midbrain dopamine neurons. *Frontiers in Systems Neuroscience. Conference Abstract: Computational and systems neuroscience*.

Bromberg-Martin ES, Hikosaka O. Midbrain dopamine neurons signal preference for advance information about upcoming rewards. (2008) Society for Neuroscience Abstract, 34: 691.23.

Bromberg-Martin ES, Matsumoto M, Hikosaka O. Lateral habenula neurons respond to the negative value of rewards and the positive value of elapsed time. (2007) Society for Neuroscience Abstract, 33: 530.9.

Bromberg-Martin E, Mar Jonsson A, Marai GE, McGuire M. Hybrid Billboard Clouds for Model Simplification. (2004) SIGGRAPH Poster Abstract.

Invited talks

Neural circuits for information seeking

2017-09-22 University of Western Ontario

2017-05-25 Association for Psychological Science Annual Meeting

2017-04-06 Washington University in St. Louis

2017-03-20 Harvard University

2015-01-15 University College London (Affective Brain Lab online talk series)

2014-09-26 Yale University

2014-09-25 Massachusetts Institute of Technology

2014-09-20 Champalimaud Neuroscience Programme

2014-06-02 National Institutes of Aging and Drug Abuse, NIH Bayview Campus

2014-03-25 Princeton University

2014-03-10 University of Rochester

2013-11-07 University of California San Diego

2013-06-27 National Institute of AIST, Tsukuba, Japan

2013-06-26 National Institute for Physiological Sciences, Okazaki, Japan

2013-06-25 Kansai Medical University, Moriguchi City, Japan

2013-06-18 RIKEN Brain Science Institute, Wako, Japan

2013-02-14, Department of Neuroscience, Columbia University

Motivational computations in the habenula-dopamine pathway

2016-06-06 Lateral Habenula Under the Spotlight Symposium, IFM, Paris, France.

Multiple forms of reward memory in the habenula-dopamine pathway

2013-11-10 Minisymposium talk at the Society for Neuroscience 2013, San Diego, CA

Lateral habenula signals for information seeking and other rewards

2013-06-20 Symposium at the Japan Neuroscience Society Meeting, Kyoto, Japan

Motivational and visuospatial signals in midbrain dopamine neurons

2011-08-09, Gordon Research Conference on Catecholamines

Dopamine neuron signals related to reward, alerting, and stimulus selection

2011-02-28, Cosyne Workshop "Attention, reinforcement learning, and reward"

Multiple motivational signals in lateral habenula and dopamine neurons

2011-02-15, Center for Neuroeconomics, New York University

2010-03-02, Cosyne Workshop "Decision making and learning: beyond the basics"

A neural pathway for information-seeking

2009-10-30, Cold Spring Harbor Laboratory

2009-09-09, Gatsby Computational Neuroscience Unit, University College London.

The role of dopamine in information-seeking

2010-05-24, "Infomax approaches in learning and control" workshop, UCSD

2009-03-25, Department of Neurobiology, Yale University

Other research

Summer 2002, 2003, 2004

Internship at the Laboratory of Experimental and Computational Biology,
National Cancer Institute, at NCI-Frederick in Ft. Detrick, Maryland.

Summer 2001

Internship at the Laboratory of Biochemical Genetics,
National Heart, Lung, and Blood Institute, at the NIH in Bethesda, Maryland.