

CURRICULUM VITAE

Timothy D. Hanks

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Center for Neuroscience
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EDUCATION

- 2009 Ph.D., Neurobiology and Behavior
University of Washington
Seattle, WA
Advisor: Michael Shadlen, M.D., Ph.D.
- 2002 Sc.B., Neuroscience
Brown University
Providence, RI
Advisor: Michael Paradiso, Ph.D.

PROFESSIONAL POSITIONS

- 2015-present Assistant Professor
UC Davis, Department of Neurology & Center for Neuroscience
Davis, CA
- 2010-2015 Postdoctoral Associate
Princeton University, Howard Hughes Medical Institute
Princeton, NJ
Advisor: Carlos Brody, Ph.D.
- 2009-2010 Postdoctoral Associate
University of Washington, Howard Hughes Medical Institute
Seattle, WA
Advisor: Michael Shadlen, M.D., Ph.D.

HONORS / AWARDS

- NRSA postdoctoral fellowship, 2013-2015
Howard Hughes Medical Institute predoctoral fellowship, 2002-2007
High honors awarded by Brown Department of Neuroscience, 2002
Magna cum laude, Brown University, 2002
Brown University UTRA (undergraduate research) fellowship, 2001
Brown University Brain Science Program summer research fellowship, 2000

PUBLICATIONS

Hanks TD, Kopec CD, Brunton BW, Duan CA, Erlich JC, Brody CD. (2015) Distinct relationships of parietal and prefrontal cortices to evidence accumulation. *Nature*. 520(7546): 220-3.

Erlich JC, Brunton BW, Duan CA, Hanks TD, Brody CD. (2015) Distinct behavioral effects of prefrontal and parietal cortex inactivations on an accumulation of evidence task in the rat. *eLife*. Apr 14; 4.

Hanks TD, Kiani R, Shadlen MN. (2014) A neural mechanism of speed-accuracy tradeoff in macaque area LIP. *eLife*. May 27; 3.

Hanks TD, Mazurek ME, Kiani R, Hopp E, Shadlen MN. (2011) Elapsed decision time affects the weighting of prior probability in a perceptual decision task. *The Journal of Neuroscience*. 31(17): 6339-52.

Beck JM, Ma WJ, Kiani R, Hanks T, Churchland AK, Roitman J, Shadlen MN, Latham PE, Pouget A (2008) Probabilistic population codes for Bayesian decision making. *Neuron*. 60(6): 1142-52.

Kiani R, Hanks TD, Shadlen MN (2008) Bounded integration in parietal cortex underlies decisions even when viewing duration is dictated by the environment. *The Journal of Neuroscience*. 28(12): 3017–3029.

MacEvoy SP, Hanks TD, Paradiso MA (2008) Macaque V1 activity during natural vision: effects of natural scenes and saccades. *The Journal of Neurophysiology*. 99(2): 460-72.

Shadlen MN, Kiani R, Hanks TD, and Churchland AK. Neurobiology of decision making: an intentional framework, in *Better Than Conscious? Decision Making, the Human Mind, and Implications For Institutions*. C. Engel and W. Singer, Editors. 2008, MIT Press: Cambridge.

Brew HM, Gittelman JX, Silverstein RS, Hanks TD, Demas VP, Robinson LC, Robbins CA, McKee-Johnson J, Chiu SY, Messing A, Tempel BL (2007) Seizures and reduced life span in mice lacking the potassium channel subunit Kv1.2, but hypoexcitability and enlarged Kv1 currents in auditory neurons. *The Journal of Neurophysiology*. 98(3): 1501-25.

Shadlen MN, Hanks TD, Churchland AK, Kiani R, Yang T. The speed and accuracy of a simple perceptual decision: a mathematical primer, in *Bayesian Brain: Probabilistic Approaches to Neural Coding*. K. Doya, S. Ishii, R. Rao, and A. Pouget, Editors. 2006, MIT Press: Cambridge.

Kiani R, Hanks TD, Shadlen MN (2006) When is enough enough? *Nature Neuroscience*. 9(7): 861.

Hanks TD, Ditterich J, Shadlen MN (2006) Microstimulation of macaque area LIP affects decision-making in a motion discrimination task. *Nature Neuroscience*. 9(5): 682-9.

CONFERENCES

Yartsev M*, Hanks TD*, Brody CD. Causal contribution and neural dynamics of the rat anterior striatum in an accumulation of evidence decision-making task. Cosyne Abstracts, 2015.

Piet A, Erlich JC, Kopec CD, Hanks TD, Brody CD. Bistable attractor dynamics explain the effects of rat PFC inactivation during decision making. Cosyne Abstracts, 2015.

Desautels T, Hanks TD, Brody CD, Sahani M. Combining behavior and neural data to model cognitive variables. Cosyne Abstracts, 2015.

Hanks TD, Kopec CD, Brunton BW, Duan CA, Erlich JC, Brody CD. Differential roles in decision-making for rat parietal versus prefrontal cortex neurons with firing rates correlated with accumulation of evidence. Program No. 187.16. Society for Neuroscience, 2013.

Erlich JC, Scott BB, Hanks TD, Brody CD. Temporal accumulation of visual evidence in the rat. Program No. 187.13. Society for Neuroscience, 2013.

Hanks TD, Duan CA, Erlich JC, Brunton BW, Brody CD. Different response properties of rat parietal and frontal cortices during evidence accumulation. Cosyne Abstracts, 2013.

Hanks TD, Duan CA, Erlich JC, Brunton BW, Brody CD. Neural responses in rat posterior parietal cortex (PPC) during a temporal accumulation of evidence task. Program No. 699.17. Society for Neuroscience, 2012.

Erlich JC, Duan CA, Ly R, Brunton BW, Hanks TD, Brody CD. The frontal and parietal cortex play distinct roles in accumulation of evidence: Inactivations and modeling. Program No. 289.22. Society for Neuroscience, 2012.

Duan CA, Erlich JC, Hanks TD, Brunton BW, Brody CD. Inactivation of rat frontal and parietal cortex during a temporal integration of evidence task. Cosyne Abstracts, 2012.

Huang Y, Friesen AL, Hanks TD, Shadlen MN, Rao RP. How prior probability influences decision making: a unifying probabilistic model. Advances in Neural Information Processing Systems, 2012.

Hanks TD, Kiani R, Shadlen MN. A neural correlate of the tradeoff between the speed and accuracy of a decision. Program No. 803.4. Society for Neuroscience, 2009.

Hanks TD, Kiani R, Kira S, Shadlen MN. Evidence for the incorporation of psychological urgency into decision making. Program No. 507.4. Society for Neuroscience, 2007.

Shadlen MN, Mazurek ME, Hanks TD, Yang T, Kiani R, McKinley M, Churchland A, Palmer J. The brain uses elapsed time to convert spike rate to probability. Program No. 605.6. Society for Neuroscience, 2006.

Kiani R, Hanks TD, Shadlen MN. Improvement in sensitivity with viewing time is limited by an integration-to-bound mechanism in area LIP. Program No. 605.7. Society for Neuroscience, 2006.

Palmer J, McKinley MK, Yang T, Hanks TD, Mazurek M, Shadlen MN. Effect of prior probability on choice and response time in a motion discrimination task. Society for Mathematical Psychology, 2005.

Yang T, Hanks TD, Mazurek M, McKinley M, Palmer J, Shadlen MN. Incorporating prior probability into decision-making in the face of uncertain reliability of evidence. Program No. 621.4. Society for Neuroscience, 2005.

Mazurek M, Hanks TD, Yang T, Shadlen MN. Prior probability changes the rate of evidence accumulation in a motion discrimination task: behavior and LIP physiology. Program No. 621.3. Society for Neuroscience, 2005.

Yang T, Hanks TD, Mazurek M, McKinley M, Palmer J, Shadlen MN. Incorporating prior probability into decision-making in the face of uncertain reliability of evidence. Cosyne Abstract No. 288, 2005.

Hanks TD, Shadlen MN. Microstimulation of macaque area LIP affects decision-making in a motion discrimination task. Program No. 20.9. Society for Neuroscience, 2004.

MacEvoy SP, Hanks TD, Paradiso MA. Responses of macaque V1 neurons with natural scenes and saccades. Program No. 622.4. Society for Neuroscience, 2002.

INVITED TALKS

Cosyne Conference Workshop, 2015

Northwestern University, 2015

University of Pennsylvania, 2015

UC Davis, 2015

UC Irvine, 2015

Sloan-Swartz Meeting, 2013

TEACHING EXPERIENCE

2006 Teaching Assistant, Introduction to Systems and Behavioral Neurobiology

University of Washington

Instructors: David Perkel, Ph.D. and Michele Solis, Ph.D.

2001 Teaching Assistant, Introduction to Biological Sciences

Brown University

Instructor: Kenneth Miller, Ph.D.

ADVANCED COURSEWORK

2004 Computational Neuroscience: Vision (CSHL). Cold Spring Harbor, NY.

PROFESSIONAL SERVICE

- 2015- Ad hoc reviewer, eLife
- 2015- Ad hoc reviewer, Nature Neuroscience
- 2014- Invited reviewer, Computational and Systems Neuroscience (Cosyne) conference
- 2010- Ad hoc reviewer, Journal of Neuroscience
- 2009- Ad hoc reviewer, Journal of Neurophysiology
- 2003-2005 Coordinator, Neurobiology and Behavior seminar series, Univ. of Washington

PROFESSIONAL AFFILIATIONS

- 2002- Society for Neuroscience