Kenneth W. Latimer

The University of Chicago, Department of Neurobiology
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EDUCATION:

Ph.D., The Institute for Neuroscience — 2010-2015
The University of Texas at Austin
Advisors: Jonathan W. Pillow, Alexander C. Huk
Dissertation: *Statistical approaches for unraveling the neural code in the visual system*

B.S. in Computer Science, *magna cum laude* — 2005-2010
University of Colorado, Boulder
minor in mathematics, certificate in cognitive science

RESEARCH EXPERIENCE:

Postdoctoral Fellow — August 2018-Present
University of Chicago
Advisor: David Freedman

Postdoctoral Fellow — 2015-2018
University of Washington, Seattle
Advisor: Adrienne Fairhall

Undergraduate Research Assistant — 2009-2010
Computational Cognitive Neuroscience Lab
University of Colorado, Boulder
Advisor: Randall C. O'Reilly
Undergraduate thesis: *A neural network model for object recognition in cluttered scenes using motion and binocular disparity*

Undergraduate Research Assistant — 2006-2010
Center for LifeLong Learning and Design
University of Colorado, Boulder

HONORS & AWARDS:

Chicago Fellow (University of Chicago)	2018
Center for Perceptual Systems Training Grant recipient	2014-2015
UT Austin Graduate Studies, Professional Development Travel Award	2012
UT Austin Dean's Excellence Award	2010

TEACHING EXPERIENCE:

TA, The University of Texas at Austin

Quantitative Methods in Neuroscience (NEU 366M) Instructor: Dr. Ila Fiete	Fall 2013
Vertebrate Neurobiology (BIO 365R) Instructor: Dr. George Pollak	Fall 2012

Summer Courses:

Computational Vision Summer School	July 2019
Summer Workshop on the Dynamic Brain Guest Lecture: Fitting statistical models to neural data with maximum likelihood methods	September 2016

SERVICE:

Co-Organizer, Theoretical Neuroscience Journal Club (UW, Seattle) 2016-2017

Co-Organizer, Computational and Theoretical Neuroscience Journal Club (UT Austin) 2014-2015

Treasurer, Neuroscience Graduate Student Association (UT Austin) 2012-2013

Ad-hoc reviewer: Current Biology, Neural Computation, Neuron, Nature Communications, PLoS Computational Biology, PLoS One, Neural Information Processing Systems 2016-2018, COSYNE 2016-2018

PUBLICATIONS:

Zoltowski D, **Latimer KW**, Yates JL, Huk AC, & Pillow JW (in press). Discrete stepping and nonlinear ramping dynamics underlie spiking responses of LIP neurons during decision-making. *Neuron*.

Latimer KW, Yates JL, Meister MLR, Huk AC, & Pillow JW (2016). Response to Comment on "Single-trial dynamics of spike trains in parietal cortex reveal discrete steps during decision-making." *Science*, 351(6280):1406.

Latimer KW, Yates JL, Meister MLR, Huk AC, & Pillow JW (2015). Single-trial dynamics of spike trains in parietal cortex reveal discrete steps during decision-making. *Science*, 349(6244):184:187.

Latimer KW, Huk AC, & Pillow JW (2015). Bayesian inference for latent stepping and ramping models of spike train data. Chapter in *Advanced State Space Methods for Neural and Clinical Data*, ed. Zhe Chen, Cambridge University Press.

Latimer KW, Chichilnisky EJ, Rieke F, & Pillow JW (2014). Inferring synaptic conductances from spike trains under a biophysically inspired point process model. *Advances in Neural Information Processing Systems*, 27:954-962.

Park I, Archer E, **Latimer KW,** & Pillow JW (2013). Universal models for binary spike patterns using centered Dirichlet processes. *Advances in Neural Information Processing Systems*, 26: 2463-2471.

Scholl B, **Latimer KW**, & Priebe NJ (2012). A retinal source of spatial contrast gain control. *Journal of Neuroscience*, 32(29):9824-30.

PREPRINTS:

Latimer KW*, Barbera D, Sokoletsky M, Awwad B, Katz Y, Nelkin I†, Lampl L†, Fairhall AL†, & Priebe NJ†. **Multiple timescales account for adaptive responses across sensory cortices. *bioRxiv*.**

Latimer KW (2019). Nonlinear demixed component analysis for neural population data as a low-rank kernel regression problem. *arXiv*.

Latimer KW, Rieke F, & Pillow JW (2017). Inferring synaptic inputs from spikes with a conductance-based neural encoding model. *bioRxiv*.

Latimer KW, Huk AC, & Pillow JW (2017). No cause for pause: new analyses of ramping and stepping dynamics in LIP (Rebuttal to Response to Reply to Comment on Latimer et al. 2015). *bioRxiv.*

IN PREPARATION:

Duffy A, **Latimer KW**, Gadagkar V, Goldberg JH, & Fairhall AL. Dopamine neurons encode variation in natural song variation in birds.

Latimer KW, & Fairhall AL. Capturing adaptation to second-order statistics with generalized linear models: gain scaling and fractional differentiation.

*,† indicate equal contribution

CONFERENCE PRESENTATIONS:

Latimer KW, Michael Sokoletsky, Dylan Barbera, Priebe NJ, Lampl I, Fairhall A (2018). Multiple timescales of adaptation in mouse primary somatosensory and visual cortices. Poster, Computational and Systems Neuroscience (COSYNE) annual meeting.

Zoltowski DM**, Latimer KW**, Huk AC, & Pillow JW (2018). Extending models of latent dynamics in area LIP during perceptual decision-making. Poster, Computational and Systems Neuroscience (COSYNE) annual meeting.

Latimer KW, Priebe NJ, Katz Y, Li B, Lampl I, Fairhall A (2017). Revealing shared features of adaptation in visual and somatosensory cortex within a common framework. Poster, Max Planck Florida Institute for Neuroscience, Sunposium.

Latimer KW, Yates JL, Huk AC, & Pillow JW (2015). Deciphering the neural representation of perceptual decisions with latent variable models. Poster, Computational and Systems Neuroscience (COSYNE) annual meeting.

Latimer KW, Chichilnisky EJ, Rieke F, & Pillow JW (2014). Inferring synaptic conductances from spike trains with a point process encoding model. Poster, Computational and Systems Neuroscience (COSYNE) annual meeting.

Park I, Archer E, **Latimer KW,** & Pillow JW (2014). Scalable nonparametric models for binary spike patterns. Poster, Computational and Systems Neuroscience (COSYNE) annual meeting.

Latimer KW, Yates JL, Meister MLR, Huk AC, Pillow JW (2013). Understanding perceptual decision-making in area LIP with latent variable models. Poster, University of Texas, Conference on Learning and Memory.

Latimer KW, Yates JL, Meister, MLR, Huk AC, Pillow, JW (2012). Analyzing perceptual decision-making in area LIP with hidden Markov models. Poster, Society for Neuroscience annual meeting.

Latimer KW, Yates JL, Pillow, JW (2011). Modeling perceptual decisions in the parietal lobe with hidden Markov Models. Poster, University of Texas annual Neuroscience Symposium.

Mingus B, Kriete T, Herd S, Wyatte D, **Latimer K**, & O'Reilly R (2011). Generalization of Figure-Ground Segmentation from Monocular to Binocular Vision in an Embodied Biological Brain Model. In Schmidhuber, J., Thorisson, K.R., Looks, M. (Eds.). *Artificial General Intelligence*. 351-356.