

Lauren L. Long, Ph.D.

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✉ Lauren.Long@jax.org

Education

University of Connecticut, Storrs CT; Department of Psychological Sciences

- Ph.D.** *A Theoretical and Experimentally-Driven take on Theta Time-Scale Dynamics Across the Areal Axis of the Hippocampus: Theta Prediction, Prospective Speed-Theta Relationships and its Relationship to Sensorimotor Integration* July 2016
Advisor: Dr. James J. Chrobak
- M.A.** *Theta Dynamics: Speed, Acceleration and Contribution to Cognition* December 2012
Advisor: Dr. James J. Chrobak
- B.A.** *Summa Cum Laude; Major: Psychology; Minor: Neuroscience* May 2010
GPA: 3.97/4.0

Work and Research Experience

Bioinformatics Analyst II June 2017 - Present

The Jackson Laboratory for Genomic Medicine; Microbial Genomic Services

Supervisor: Dr. Mark D. Adams

- Analysis of broad range of microbiome data (16S, metagenome, metatranscriptome)
- Experimental design consulting
- Data processing and quality analysis
- Interpretation of results, data integration
- Evaluation of analytical tools and technology
- Delivering training to the research community
- Presenting at conferences
- Writing up results for peer-reviewed publication

Consulting Healthcare Analyst (Spring Intern)

January 2017 –

Milliman Hartford Health Practice

June 2017

- Priced Part-D (pharmaceutical/prescription) insurance plans for top, fortune 500 companies
- Worked closely across multiple teams to organize and prioritize tasks to be completed with quick turnaround
- Analyzed data using high-level Excel language, including VBA

Postdoctoral Research Fellow

August 2016 –

Brown University, Institute for Brain Science

November 2016

Advisor: Dr. Wael Asaad

- Trained NHP on high-level, cognitive saccade tasks employing cutting-edge behavioral and electrophysiological techniques

Graduate Research Assistant

August 2010 –

University of Connecticut, Storrs CT; Department of Psychological Sciences

July 2016

Advisor: Dr. James J. Chrobak

- Performed chronic electrode implantation in hippocampus and associated structures in trained rodents
- Collected (using Neuralynx) and analyzed (using MatLab) multi-site electrophysiological data
- Fabricated electrodes, perfusions, Nissl staining, photomicrographs/electrode mapping

Undergraduate Research Assistant

January 2008 –
January 2010

University of Connecticut, Storrs CT; Department of Psychological Sciences

Advisor: Dr. James Chrobak

- Trained and ran rodents in an eight-arm radial water/dry maze
- Trained and coordinated undergraduates to collect behavioral data
- Analyzed behavioral data using SPSS and electrophysiological data using Matlab
- Performed histological procedures and electrode fabrication

Undergraduate Research Assistant

August 2008 –
January 2009

University of Connecticut, Storrs CT; Department of Psychological Sciences

Advisor: Dr. Inge-Marie Eigsti

- Collected eye-tracking data from children with ASD
- Traveled to the houses of patients to deliver batteries of psychological tests to children with ASD

Undergraduate Paid Research Assistant/Laboratory Manager

January 2008 –
January 2010

University of Connecticut, Storrs CT; Department of Psychological Sciences

Advisor: Dr. James Magnuson

- Promoted to lab manager and coordinated the working schedules of undergraduates
- Collected eye-tracking data from UConn undergraduate students
- Worked independently to collect simultaneous EEG and eye-tracking data in UConn undergraduate students while they performed behavioral tasks
- Used Eprime to launch behavioral tasks

Teaching and Mentoring Experience

Course Assistant

The Jackson Laboratory for Genomic Medicine, Farmington CT

November 2017

Introduction to Microbial Community Analysis

- Developed course materials and exercises
- Assisted in hands on demonstration of exercises for 16S and metagenome analysis
- Provided hands on assistance for R and unix code

November 2018

Graduate Teaching Assistant

University of Connecticut, Storrs CT; Department of Psychological Sciences

August 2015 –
December 2015

Introductory and Honors Psychology Laboratory

Physiological Psychology Laboratory

- Developed and revamped syllabi to include assignments and in-class exercises/labs
- Taught basic statistics and graphing using excel

August 2014 –
May 2015

August 2013 –

- Taught basic experimental methodology using in-class experiments December 2013
- Incorporated a variety of multimedia resources, increasing the engagement and ability for students to learn in a stimulating environment August 2010 – May 2012
- Engaged students in writing and in-class presentation projects in order to enhance communication skills
- Engaged students in group projects designed to facilitate learning
- Worked as a team member along with two other graduate students to develop lectures, quizzes, exams and labs (which included brain and eyeball dissections)
- Developed and administered practical portions of the lab
- Taught lectures on sensation and perception along with the neuroanatomy and neurobiology of the hippocampal formation and associated limbic system structures

Mentor on Honors Theses

University of Connecticut, Storrs CT; Department of Psychological Sciences

May 2015 – July 2016

Thesis: *Acute and chronic effects of ketamine administration on hippocampal and prefrontal oscillations in young rodents during sleep and wakefulness*

August 2012 –

Thesis: *Theta oscillatory patterns in the hippocampus down the long septotemporal axis*

May 2013

- Engaged the mentees in the neurobiology of learning and memory by reading and discussing scientific articles
- Engaged in the writing of Honors theses and University Scholar proposals
- Taught mentees basic signal processing of electrophysiological data and basic statistics using MatLab
- Trained mentees how to collect awake and behaving electrophysiological data
- Trained mentees on surgical, aseptic and post-operative techniques as well as perfusions and histological processing
- Engaged the mentees in the peer-review scientific writing process

Tutor & Mentor

University of Connecticut, Storrs CT; Department of Psychological Sciences

August 2013 – Spring 2015

Counseling Program for Intercollegiate Athletes (CPIA)

- Learning facilitator and tutor for introductory and upper level undergraduate and graduate psychology, research methodology and statistics courses

Mentor Connection Program

University of Connecticut, Storrs CT; Department of Psychological Sciences

August 2010 – 2014

- Summer program for teaching high school students about conducting neuroscience research in a laboratory setting

Publications

Svenson KL, **Long LL**, Ciciotte SL, Adams MD (*submitted*) The gut microbiome in a new mouse model resistant to diet-induced obesity.

Long LL, Dao Q-L, Purvis L, Dokmanovich T, Stevenson IH, Escabí MA, Chrobak JJ (*in review*) Hippocampal theta across its areal axis: predicting, preparing or manipulating future speed?

Michahels TI, **Long LL**, Stevenson IH, Chrobak JJ, Chen C-M A (2018) Effects of chronic ketamine on hippocampal cross-frequency coupling: implications for schizophrenia pathophysiology. *European Journal of Neuroscience*. doi: 10.1111/ejn.13822.

Long LL, Podurgiel SJ, Haque A, Errante, EL, Chrobak JJ, Salamone JD (2016) Subthalamic and cortical local field potentials associated with pilocarpine-induced oral tremor. *Front. Behav. Neurosci.* doi: 10.3389/fnbeh.2016.00123.

Long LL, Bunce JG, Chrobak JJ (2015) Theta variation and spatiotemporal scaling along the septotemporal axis of the hippocampus. *Front. Syst. Neurosci.* doi: 10.3389/fnsys.2015.00037.

Salamone JD, Podurgiel SJ, **Long LL**, Nunes EJ, Correa M. (2015). Dopamine/Adenosine Interactions Related to Tremor in Animal Models of Parkinsonism. In *The Adenosinergic System* (pp. 149-162). Springer International Publishing.

Long LL, Hinman JR, Chen C-M, Stevenson IH, Read HL, Escabí MA, Chrobak JJ (2014) Novel acoustic stimuli can alter locomotor speed to hippocampal theta relationship. *Hippocampus*. doi: 10.1002/hipo.22308.

- **A modified version of Fig. 2 was selected to be the cover image**

Long LL, Hinman JR, Chen C-M, Escabí MA, Chrobak JJ (2014) Theta dynamics in rat: speed and acceleration across the septotemporal axis. *PLoS one*. 19;9(5):e97987. doi: 10.1371/journal.pone.0097987. eCollection 2014.

Penley SC, Hinman JR, **Long LL**, Markus EJ, Escabí MA, Chrobak JJ (2013) Novel space alters theta and gamma synchrony across the longitudinal axis of the hippocampus. *Front. Syst. Neurosci.* doi: 10.3389/fnsys.2013.00020.

Hinman JR, Penley SC, **Long LL**, Escabí MA, Chrobak JJ (2011) Septotemporal variation in dynamics of theta: speed and habituation. *J Neurophysiol.* 105: 2675-86.

Conference Proceedings

Long LL, Svenson KL, Adams MD (2018) Differential response of the gut microbiome to high-fat diet in an obesity-resistant mouse mutant. *Computational Science Retreat*

Long LL, Svenson KL, Adams MD (2018) Differential response of the gut microbiome to high-fat diet in an obesity-resistant mouse mutant. *American Society for Microbiology*.

Long LL, Stevenson IH, Escabí MA, Chrobak JJ (2016) Hippocampal theta across its areal axis: predicting, preparing or manipulating future locomotor speed? *Soc. Neurosci. Abstr.*

Michahels TI, **Long LL**, Stevenson IH, Chrobak JJ, Chen C-M (2016) The acute and chronic effects of ketamine on cross-frequency couplings and alterations in locomotive speed in the rat hippocampus: Implications for translational models of schizophrenia. *Soc. Neurosci. Abstr.*

Long LL & Chrobak JJ (2015) Laminar, sub-regional, areal and behavioral contributions to variability in the hippocampal speed-theta relationship. *Soc. Neurosci. Abstr.*

Michaels TI, **Long LL**, Chrobak JJ, Chen, C-M (2015) Ketamine induces acute and chronic alterations of neural oscillatory amplitude and cross-frequency coupling in the rat hippocampus: a translational model of schizophrenia. *Soc. Neurosci. Abstr.*

Long LL, Norris AA, Read HL, Escabí MA, Chrobak JJ (2014) Novel acoustic stimuli can alter locomotor speed-theta relationship across the septotemporal axis of the hippocampus. *Soc. Neurosci. Abstr.*

Long LL, Norris AA, Read HL, Escabí MA, Chrobak JJ (2013) Theta dynamics: the effect of novel acoustic input on the hippocampus. *Soc. Neurosci. Abstr.*

Chrobak JJ, Chen C-M, **Long LL**, Corriveau JA (2013) Yesterday, four hours, thirty and five minutes ago: competition between spatial memories in the rat and the effects of acute and chronic ketamine. *Soc. Neurosci. Abstr.*

Long LL, Hinman JR, Chen C-M, Escabí MA, Chrobak JJ (2012) The effect of locomotor speed, velocity, and acceleration on theta rhythm dynamics. *Soc. Neurosci. Abstr.*

Hinman JR, **Long LL**, Escabí MA, Chrobak JJ (2012) Theta dynamics: the relationship between theta frequency and locomotor speed in familiar and novel environments. *Soc. Neurosci. Abstr.*

Chrobak JJ, **Long LL**, Escabí MA, Hinman JR (2012) Theta dynamics: septotemporal differences in response to habituation, spatial novelty and the absence of expected reward. *Soc. Neurosci. Abstr.*

Long LL, Hinman JR, Penley SC, Escabí MA, Chrobak JJ (2011) Septotemporal variations in hippocampal theta and other oscillations during REM sleep. *Soc. Neurosci. Abstr.*

Hinman JR, Penley SC, **Long LL**, Escabí MA, Chrobak JJ (2010) Septotemporal variation in the effects of speed on the theta rhythm. *Soc. Neurosci. Abstr.*

Long LL, Hinman JR, Penley SC, Escabí MA, Chrobak JJ (2010) Theta/gamma cross frequency coupling across the septotemporal axis of the hippocampus and the effects of ketamine. *Soc. Neurosci. Abstr.*

Long LL, Rodriguez E, Markman A (2010) The effects of the NMDA antagonist ketamine on memory performance in a novel dry-maze paradigm. *Frontiers in Undergraduate Research.*

Invited Talks & Awards

University of Connecticut, Storrs CT; Department of Psychological Sciences

Neuroscience at Storrs Graduate Student Data Blitz

November 2014

- Selected to participate in a 3 minute presentation of current research to a 300 person audience

Neuroscience Fellowship Talk

May 2014

<i>Behavioral Neuroscience Seminar</i>	August 2010 – May 2012
<i>Doctoral Dissertation Fellowship</i>	August 2015
<i>Neuroscience Fellowship</i>	August 2012 – January 2014
<i>Summer Undergraduate Research Fund</i>	May 2009
<ul style="list-style-type: none">• Prestigious grant that supports University of Connecticut full-time undergraduate students in summer research projects	
<i>National Electrical Contractor Association Scholarship</i>	August 2008
<i>Babbidge Scholar</i>	2007 – 2009
<ul style="list-style-type: none">• Earned a 4.0 semester grade point average for each semester	
<i>New England Scholar</i>	August 2006 – May 2010
<ul style="list-style-type: none">• Earned a minimum of a 3.7 semester grade point average for each semester	

Memberships

<i>American Society of Microbiology</i>	January 2018 - Present
<i>Society for Neuroscience</i>	August 2010 – 2016
<i>Phi Beta Kappa National Honor Society</i>	August 2010 – 2016
<i>National Society for Collegiate Scholars</i>	August 2010 – 2016

References

Dr. Mark D. Adams

Professor and Director of Microbial Genomic Services
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Dr. James J. Chrobak

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Associate Professor

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