
Ryan Loh
Champaign, IL
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Education

PhD - Psychology

University of Illinois at Urbana-Champaign, IL (Conferred August 2017)

Dissertation Title: The Role of the Kappa Opioid Receptor in Forebrain Dependent Associative Learning

B.A. Psychology

California State University, Fullerton, CA 2011

GPA: 4-year Cumulative: 3.25, Upper Division Coursework: 4.00

Honors and Awards

Graduate Student Teaching Certificate, University of Illinois at Urbana-Champaign

Awarded April 2017

List of Teachers Ranked as Excellent (E) or Outstanding (O)

Psychology 311, University of Illinois at Urbana-Champaign

Fall 2016 (E), Spring 2016 (E), Fall 2015 (E), Fall 2014 (O), Spring 2014 (O)

Psychology Divisional Fellowship Recipient, University of Illinois at Urbana-Champaign

2014 – 2015, 2012 – 2013

Dean's Honor List, California State University, Fullerton

Spring 2011, Fall 2010, Spring 2010, Fall 2009

Research Experience

- **June 2017 – Present: University of Illinois, Urbana-Champaign**
My current research under Principal Investigator Yuri Vlasov is investigating the way in which complex information is encoded and stored in the rodent cortex. Primary goals are to better understand the way that complex information is represented in the brain, and to develop, implement, and test technologies that can identify these patterns. Using a tactile virtual reality system, behavioral analysis, intrinsic signal imaging, acute and chronic electrophysiology, calcium imaging, and high-speed whisker video tracking, we seek to develop a near-natural behavioral scene to better understand complex cortical processes in real time.
- **Fall 2012 – May 2017: University of Illinois, Urbana-Champaign**
My graduate research under Principal Investigator Roberto Galvez investigated the link between the opioid kappa receptor system and learning in a rodent model. We identified likely up- and downstream mechanisms of opioid kappa that influence forebrain dependent learning in the mouse barrel cortex. My personal position as a grad student had me actively involved in design and implementation of several research projects, as well as an active role teaching and mentoring undergraduate students. Within this lab I have developed proficiency in various molecular biological methods such as immunohistochemistry, immunofluorescence, microscopy, western blot, intracranial surgeries, and various behavioral methods.
- **Fall 2009 – Fall 2012: California State University, Fullerton**
Current research is focused on a memory blocking/interference/biasing paradigm. We are investigating potential benefits to alternative Post-Traumatic Stress Disorder (PTSD) therapy. As an undergraduate researcher I experienced in running human subjects for memory trials, creating and submitting IRB forms, and data coding/analysis.
- **Spring 2010 – Fall 2012: California State University, Fullerton**
Current research is investigating Parkinson's disease using several rodent behavioral models. We are also using immunocytochemistry techniques to visualize changes in neural activity resulting from different pharmacological treatments. Personal experience includes running multi-dose drug trials, giving injections to animal subjects, formulating proper drug doses from raw materials, and perfusion

Research/Computer Skills

- **Research Techniques:** Eyeblink Conditioning, Fear Conditioning, Water Maze, Radial Arm Maze, Light/Dark Box, Open Field Behavior, Western Blot, Immunohistochemistry, light/confocal microscopy, intracranial surgery, Acute/Chronic electrophysiology, Tactile Virtual Reality, Intrinsic Signal Imaging
- **Computer Skills:** MS Office, Statistical Analysis Software (SAS), MatLab, Python, and LabView (limited)

Employment/Teaching Experience

- **June 2017 – Present: Postdoctoral Researcher, Vlasov Group**
- **Psychology 311 – Techniques in Behavioral Neuroscience**
Fall 2016, Spring 2016, Fall 2015, Fall 2014, Spring 2014, Fall 2013
- **Fall 2012 – May 2017: Graduate Research Assistant**
- **October 2008 – July 2012: JPMorgan Chase Bank, N.A.**
- **August 2010 – December 2010: Undergraduate Course Assistant (Psychological Testing)**
- **June 2010 – July 2010: Undergraduate Course Assistant (Computer Applications in Psychology)**

Professional Affiliations

Society for Neuroscience member (April 2012 – Present)

Peer Reviewed Publications

Loh Ryan, Collins Sean, Galvez Roberto (2017). Neocortical prodynorphin expression is transiently increased with learning: implications for time- and learning-dependent neocortical kappa opioid receptor activation. *Behav Brain Res*, DOI: 10.1016/j.bbr.2017.08.015

Loh Ryan, Chau Lily, Aijaz Ali, Wu Kevin, Galvez Roberto. (2017). Antagonizing the different stages of Kappa opioid receptor activation selectively and independently attenuates acquisition and consolidation of associative memories. *Behav Brain Res*
<http://dx.doi.org/10.1016/j.bbr.2017.01.032>

Loh, R. M., & Galvez, R. (2015). Kappa-opioid antagonism impairs forebrain-dependent associative learning: A trace eyeblink conditioning study. *Behav Neurosci*, 129(6), 692-700.
doi: 10.1037/bne0000101

Loh, R. M., & Galvez, R. (2014). Opioid antagonism impairs acquisition of forebrain-dependent trace-associative learning: an eyeblink conditioning analysis. *Pharmacol Biochem Behav*, 118, 46-50. doi: 10.1016/j.pbb.2014.01.005

Poster Presentations

Loh, R., Shah, S., Galvez, R. Effect of local kappa opioid modulation on forebrain dependent trace associative learning: an eyeblink conditioning analysis. *SfN 2015, Chicago, IL*

Loh, R., Galvez, R. Neocortical kappa inhibition attenuates forebrain-dependent associative learning; *Pavlovian Society 2015, Portland, OR*

Loh, R., Shah, S., Galvez, R. Effect of kappa opioid modulation on forebrain dependent trace associative learning: an eyeblink conditioning analysis. *SfN 2014 Washington D.C.*

Loh R., Galvez, R. Opioid modulation of acquisition of forebrain-dependent associative learning;
SfN 2013 San Diego, CA

Yimenu, B. T., **Loh, R.**, Dao, S., & Gerkens, D. R. Blocking and recovering memory for
emotional and neutral pictures; WPA 2011, Los Angeles, CA