

**Education** **Boston University – Boston, MA** 2019 – Present

M.A./Ph.D. in Psychological and Brain Sciences

**University of Washington – Seattle, WA** 2016 - 2019

M.S. in Applied Mathematics

**University of Puget Sound – Tacoma, WA** 2011 - 2015

B.S. in Biochemistry and Mathematics

Minor in Neuroscience

## Selected Awards

NIH NINDS F31 NRSA Awardee (8<sup>th</sup> percentile)

Computational Properties of Prefrontal Cortex (CPPC) Conference Travel Award

ETC Excellence in Mentorship Award

Puget Sound Research Travel Grant

**Post-Undergrad. Research Experiences** **Boston University – Boston, MA** Sep. 2019 – Present

Ph.D. Student in the Dept. of Psychological and Brain Sciences

Advisor: Chandramouli Chandrasekaran Ph.D.

- Trained rhesus macaques (*Macaca mulatta*) on perceptual decision-making tasks.
- Conducted hundreds of *in vivo* extracellular electrophysiological recordings of dorsolateral prefrontal cortex with laminar and Neuropixels probes.
- Developed non-linear dimensionality reduction and multi-modal graph methods for identifying cell types via electrophysiology.
- Modeled a context-dependent decision-making task with low-rank RNNs.

**The Allen Institute for Brain Science – Seattle, WA** Oct. 2015 to Mar. 2019

Research Associate I/II in the Department of Neural Coding

Advisor: Jérôme Lecoq Ph.D.

- Conducted experiments and analysis characterizing the visual cortex of the mouse using 2-photon functional calcium imaging and infrared imaging.

**The University of Washington – Seattle, WA** May 2015 to Sep. 2015

Research Technologist I in the Department of Psychology

Advisor: Joseph Sisneros Ph.D.

- Conducted field-work and behavioral assays assessing the changes in auditory processing of the midshipman fish during mating.

## Selected Papers

**Lee, E.K.**, Wang, T., Chandrasekaran, C. Population dynamics during mnemonic working memory are structured by a single inhibitory cell type. *In preparation.*

**Lee, E.K.**, Wang, T., Carr, N., Boucher, P., Wang, M., Chandrasekaran, C. The computational geometry of flexible decision making in prefrontal cortex. *In preparation.*

**Lee, E.K.**, Umaguig, M., Wang, T., Carr, N., Chandrasekaran, C. Prefrontal neural dynamics underlying abstract perceptual decisions. *In preparation.*

Medalla, M., Boucher, P., ..., **Lee, E.K.**, et al. Multimodal characterization of pan-inhibitory enhancers for assessing inhibitory neuron function in macaque monkeys. *In preparation.*

Wang, T., **Lee, E.K.**, Carr, N., Chandrasekaran, C. Distinct neural dynamics in prefrontal and premotor cortex underlie flexible perceptual decisions. *bioRxiv* (2026).

Carr, N., Zhu, S., Xia, R., **Lee, E.K.**, Chen, X. Perliss, A., Moore, T., Chandrasekaran, C. High-resolution laminar recordings reveal structure-function relationships in monkey V1. *PNAS* (2026).

**Lee, E.K.**, Gül, A., Heller, G., Lakunina, A., Yu, H., Shelton, A., Olsen, S. Steinmetz, N.A., Hurwitz, C., Jaramillo, S., Przytycki, P., Chandrasekaran, C. A multi-modal approach for visualization and identification of electrophysiological cell types. *Nature Communications* (2026).

Yu, H., Lyu, H., Xu, E.Y., Windolf, C., **Lee, E.K.**, et al. In vivo cell-type and brain region classification via multimodal contrastive learning. *ICLR with Spotlight* (2025).

**Lee, E.K.**, Carr, N., Perliss, A., and Chandrasekaran C. WaveMAP for identifying putative cell types from extracellular electrophysiology. *STAR Protocols* (2023).

Ramadan M., **Lee E.K.**, et al. A standardized behavioral event equally impacts the activity of cortical visual areas and layers. *eNeuro* (2022).

**Lee E.K.**, Balasubramanian H., Tsolias, A., Anakwe, S., Medalla, M., Luebke, J., Chandrasekaran, C., et al. Delineation of cell type diversity by nonlinear dimensionality reduction of waveforms. *eLife* (2021).

de Vries S.\*, Lecoq J.\*, Buice M.A.\* et al. (44<sup>th</sup> of 72 authors, alphabetical). A large-scale standardized physiological survey reveals functional organization of the mouse visual cortex. *Nat. Neuro* (2019).

Waters J., **Lee E.K.**, et al. Biological variation in the sizes, shapes and locations of visual cortical areas in the mouse. *PLOS One* (2019).

[See Google Scholar profile for Kenji Lee for other works](#)

<b>Selected Talks</b>	<b>Impacting our communities at every training stage (panelist)</b>	March 2026
	COSYNE Mentorship Panel. Lisbon, PT. (invited)	
	<b>“Bridging cell types and spike trains” Workshop Co-organizer (with Josh Siegle)</b>	March 2026
	COSYNE Conference and Workshop. Lisbon, PT. (contrib.)	
	<b>Manifolds for identification of cell types and neural computation geometry</b>	May 2024
Center for Molecular and Behavioral Neuroscience, Rutgers University. Newark, NJ. (invited)		
	<b>Multi-modal composition of physiological signals to delineate neuronal cell types</b>	June 2023
CCN Junior Theoretical Neuroscientist Workshop, Flatiron Institute. New York, NY. (contrib.)		
	<b>Multi-modal composition of physiological signals to delineate neuronal cell types</b>	Jan 2023
NSF AI Planning Institute, Carnegie Mellon University. Pittsburgh, PA. (contrib.)		

<b>Selected Posters</b>	<b>Lee, E.K.*</b> , Wang, T.*, Carr, N., Moosmann, V. Boucher, P., and Chandrasekaran, C. <u>The computational geometry of flexible decision-making.</u> <i>COSYNE Poster Session</i> (2024)
	<b>Lee, E.K.</b> , Carr, N.*, Wang, T.*, Medalla, M., Luebke, J., and Chandrasekaran, C. <u>Dorsolateral prefrontal cortex is a key cortical locus for perceptual decisions.</u> <i>COSYNE Poster Session</i> (2023)
	Wang T.* and <b>Lee E.K.*</b> et al. <u>Distinct neural population dynamics in prefrontal and premotor cortex during decision-making.</u> <i>Gordon Research Conference/Symposium</i> (2022).
	<b>Lee E.K.*</b> and Wang T.* et al. <u>Stimulus encoding, working memory, and action selection in dorsolateral prefrontal cortex during perceptual decision making.</u> <i>Gordon Research Conference/Symposium</i> (2022).

<b>Outreach &amp; Mentorship</b>	Boston University Graduate Mentors – Boston, MA	Fall 2019 – Present
	Puget Sound Alumni Mentor – Tacoma, WA	Fall 2019 – Fall 2020
	Take a Logger to Work Day Host – Tacoma, WA	Fall 2015 – Fall 2019
	Cientifico Latino GSMI/GSEC Mentor – National Program	Fall 2023 – Fall 2025
	Wash. State Opportunity Scholarship Mentor – Seattle, WA	Fall 2016 – Fall 2019
	BU/Harvard/MIT Neuroscience Joint Social Lead Coordinator	Fall 2022 – Present
	Grad. Student Union Rep. (SEIU Local 509) – Boston University	Fall 2022 – Spring 2023
Curriculum Committee Member – University of Puget Sound	Fall 2014 - Spring 2015	