

Kyu Hyun Lee

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EDUCATION

Caltech

Ph.D., Biochemistry and Molecular Biophysics option

Advisor: Markus Meister

Sep 2013 - Jun 2020

Pomona College

B.A., Chemistry (minor: Mathematics)

Magna cum laude

Sep 2007 - May 2011

RESEARCH EXPERIENCE

Postdoctoral scholar, UCSF

Advisor: Loren Frank

Research interests: Development and validation of novel flexible neural probes; coordination across hippocampal-cortical circuits during non-local representations

Sep 2020 - Current

Postdoctoral scholar, Caltech

Advisor: Markus Meister

Jul 2020 - Aug 2020

Graduate student, Caltech

Advisor: Markus Meister

Sep 2014 - Jun 2020

PUBLICATIONS

* denotes equal contribution.

1. **Lee, K.***, Denovellis, E.*, Ly, R., Magland, J., Soules, J., Comrie, A.E., Gramling, D.P., Guidera, J.A., Nevers, R., Adenekan, P., Brozdowski, C., Bray, S., Monroe, E., Bak, J., Coulter, M., Sun, X., Tritt, A., Rbel, O., Nguyen, T., Yatsenko, D., Chu, J., Kemere, C., Garcia, S., Buccino, A., and Frank, L.M. (2024) Spyglass: a data analysis framework for reproducible and shareable neuroscience research. *bioRxiv*. DOI: 10.1101/2024.01.25.577295.
2. Guidera, J.A., Gramling, D.P., Comrie, A.E., Joshi, A., Denovellis, E.L., **Lee, K.**, Zhou, J., Thompson, P., Hernandez, J., Yorita, A., Haque, R., Kirst, C., and Frank, L.M. (2024) Regional specialization manifests in the reliability of neural population codes. *bioRxiv*. DOI: 10.1101/2024.01.25.576941.
3. Hermiz, J., Joseph, E., **Lee, K.**, Baldacci, I.A., Chung, J.E., Frank, L.M., Bouchard, K.E., and Denes, P. (2021) The impact of reducing signal acquisition specifications on neuronal spike sorting. *2021 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*. 5914-5918. DOI: 10.1109/EMBC46164.2021.9630669.
4. **Lee, K.***, Ni, Y.*, Colonell, J., Karsh, B., Putzeys, J., Pachitariu, M., Harris, T.D. and Meister, M. (2021) Electrode pooling can boost the yield of extracellular recordings with switchable silicon probes. *Nature Communications*. 12: 5245.
5. **Lee, K.**, Tran, A., Turan, Z., and Meister, M. (2020) The sifting of visual information in the superior colliculus. *eLife*. 9: e50678.
6. **Lee, K.**, Humbarger, S., Bahnvadia, R., Sazinsky, M., and Crane, E.J. (2014). Characterization of the mechanism of the NADH-dependent polysulfide reductase (Npsr) from *Shewanella loihica* PV-4: formation of a productive NADH-enzyme complex and its role in the general mechanism of NADH and FAD-dependent enzymes. *Biochim. Biophys. Acta*. 1844(9): 1708-17.

- Warner, M., Lukose, V., **Lee, K.**, Lopez, K., Sazinsky, M., Crane, E.J. (2011). Characterization of an NADH-dependent persulfide reductase from *Shewanella loihica* PV-4: Implications for the mechanism of sulfur respiration via FAD-dependent enzymes. *Biochemistry*. 50(2): 194-206.

FELLOWSHIPS AND GRANTS

Helen Hay Whitney Fellowship (2022-2025)

Tianqio and Chrissy Chen Institute Graduate Innovator Grant (2018)

Caltech-Amgen Graduate Fellowship (2014-2015)

Howard Hughes Medical Institute Undergraduate Summer Research Grant (Summer 2010)

HONORS AND AWARDS

Phi Beta Kappa (2011)

The Robert Rowan III Memorial Award in Chemistry (2011): given to the junior or senior student who, in the judgment of the Chemistry Department, shows the greatest promise of making significant contributions to the field of chemistry.

WORKSHOPS

NWB Developer Days, Janelia Research Campus. 2023. BRAIN Initiative meeting (invited speaker).

2023. NeuroData ReHack, Allen Institute for Brain Science. 2022.

Spike Sorting Hackathon, Center for Computational Biology, Flatiron Institute. 2022.

Mountainsort User Workshop, Center for Computational Biology, Flatiron Institute. May 17, 2018.

Spike Sorting Workshop, Janelia Research Campus. Mar 22, 2018.

Junior Scientist Workshop on Neural Circuits and Behavior, Janelia Research Campus. Oct 1-6, 2017.