

# Lauren Ostrowski

Medical Scientist Training Program  
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## Education

**2020–present** M.D./Ph.D., Department of Neuroscience

*University of California, San Diego, USA*

Supervisors: Dr. Timothy Gentner and Dr. Vikash Gilja

**2014–2018** B.Sc., Neuroscience with Honors

*Brown University, USA*

Honors distinction for thesis work in developmental epilepsy

## Research Positions

**2022–present** Graduate Student, Gentner and Translational Neuroengineering Labs

*University of California, San Diego, USA*

- Studying neural population dynamics underlying articulatory movements and biomechanical control in vocal communication signals in the birdsong model system using single-unit recordings from Neuropixels probes, custom software, and custom 3D-printed hardware
- Research residency at the Neural Interfacing Lab (PI: Christian Herff), Maastricht University, The Netherlands (March–July 2025, funded by Merkin Graduate Fellowship) investigating hierarchical neural mechanisms of bilingual speech production during language-switching in Dutch-English speakers using stereoelectroencephalography (sEEG)
- Studying the temporal dynamics of linguistic and paralinguistic feature processing during emotional speech perception across native and non-native languages using magnetoencephalography (MEG) and time-resolved neural decoding

**2021** Rotation Student, Halgren Lab

*University of California, San Diego, USA*

- Explored neural activity in the human brain during speech perception using intraoperative data from high-density micro-ECoG electrodes placed over the superior temporal gyrus
- Using custom MATLAB-based analysis, found that phoneme-specific high-frequency oscillations phase-locked and co-occurred when phonemes were bound in consonant-vowel pairs

**2020** Rotation Student, Computational Neural DNA Dynamics Lab

*University of California, San Diego, USA*

- Studied the frequency of atypical allele counts in healthy brain tissue using cytosine DNA methylation and chromatin profiles of post-mortem human frontal cortex tissue
- Developed and validated a pipeline in Python to detect partial aneuploidy at the single cell level

**2019–2020** Data Analyst, Angelman Research Team at Biogen

*Cambridge, MA, USA*

- Analysis of EEG data in Angelman Syndrome and design of a robust, non-invasive EEG biomarker for Phase 1 clinical trial
- EEG findings eliminated the need for serial lumbar punctures in deployment of clinical trial

**2018–2019** Research Assistant, BrainGate Consortium

*Brown University and VA Medical Center, Providence, RI, USA*

- Software design for neural signal EEG processing with multi-institutional distribution

- Analysis of EEG activity in patients with recent stroke for future implementation in brain-computer interface

**2016–2018** Research Assistant, Chu Lab

*Massachusetts General Hospital, Boston, MA, USA*

- Combined non-invasive physiological imaging techniques and behavioral data to identify biomarkers associated with seizure activity and neuropsychological impairments in developmental epilepsy
- Found correlation between white matter microstructure in language regions and comorbid language impairments
- Modeled whole-brain structural connectivity and analyzed network responses to electrical stimulation

**2015** Research Assistant, The Feinstein Institute for Medical Research

*New Hyde Park, NY, USA*

- Analyzed efficacy and design of long-term health program to combat obesity and type 2 diabetes

## Grants and Awards

**2024** Sanford Institute for Empathy and Compassion Research Fellowship

**2024** UCSD Diversity in Neuroscience Enrichment Grant

**2023** Merkin Graduate Fellowship

*Supported research residency at Maastricht University, The Netherlands*

**2023** ACM SIGHPC Computational & Data Science Fellowship

**2018** Sigma Xi Scientific Research Honor Society

**2018** Bachelor of Science in Neuroscience with Honors Designation

**2017** Presidential LINK Award, Brown University

**2014** U.S. Presidential Scholar semi-finalist

**2014** New Hampshire Red Sox Service Scholarship

**2014** Milford Rotary Scholarship

**2014** Joshua Sayvon Scholarship

## Publications

### Preprints

- [1] Weger P, Ottenhoff MC, Verwoert M, Gimple SV, **Ostrowski LM**, ..., Christian Herff. Insular error network enables self-correcting intracranial brain-computer interface. *bioRxiv* 2025.11.17.688824.
- [2] Tostado-Marcos P, Arneodo EM, **Ostrowski LM**, Brown DE II, Perez XA, ..., Gentner TQ, Gilja V. Neural population dynamics in songbird RA and HVC during learned motor-vocal behavior. *arXiv*2407.06244.

### Peer-reviewed articles

- [3] Hardstone R, **Ostrowski LM**, Dusang AN, López-Larraz E, Jesser J, ..., Lin DJ. Extension of voxel-based lesion mapping to multidimensional neurophysiological data. *Scientific Reports* 2025;15:41488.
- [4] **Ostrowski LM**, Chinappen DM, Stoyell SM, Song DY, Ross EE, ..., Chu CJ. Children with Rolandic epilepsy have micro- and macrostructural abnormalities in white matter constituting networks necessary for language function. *Epilepsy Behav* 2023;144:109254.
- [5] Chinappen DM, **Ostrowski LM**, Spencer ER, Kwon H, Kramer MA, ..., Chu CJ. Decreased thalamocortical connectivity in resolved Rolandic epilepsy. *Clinical Neurophysiol* 2023;153:21-27.

- [6] Spencer ER, Shi W, Komorowski RW, Gilbert JP, **Ostrowski LM**, ..., Chu CJ. Longitudinal EEG model detects antisense oligonucleotide treatment effect and increased UBE3A in Angelman syndrome. *Brain Commun* 2022;4(3):fcac106.
- [7] **Ostrowski LM**, Spencer ER, Bird LM, Thibert R, Komorowski RW, Kramer MA, Chu CJ. Delta power robustly predicts cognitive function in Angelman syndrome. *Ann Clin Transl Neurol* 2021;8(7):1433-1445.
- [8] Crocker B, **Ostrowski LM**, Williams ZM, Dougherty DD, Eskandar EN, ..., Cash SS, Paulk AC. Local and distant responses to single pulse electrical stimulation reflect different forms of connectivity. *Neuroimage* 2021;237:118094.
- [9] Kramer MA, Stoyell SM, Chinappen D, **Ostrowski LM**, Spencer ER, ..., Chu CJ. Focal sleep spindle deficits reveal focal thalamocortical dysfunction and predict cognitive deficits in sleep activated developmental epilepsy. *J Neurosci* 2021;41(8):1816-1829.
- [10] Stoyell SM, Baxter BS, McLaren J, Kwon H, Chinappen DM, **Ostrowski LM**, ..., Chu CJ. Diazepam induced sleep spindle increase correlates with cognitive recovery in a child with epileptic encephalopathy. *BMC Neurol* 2021;21(1):355.
- [11] Thorn EL, **Ostrowski LM**, Chinappen DM, Jing J, Westover MB, ..., Chu CJ. Persistent abnormalities in Rolandic thalamocortical white matter circuits in childhood epilepsy with centrotemporal spikes. *Epilepsia* 2020;61(11):2500-2508.
- [12] **Ostrowski LM**, Song DY, Thorn EL, Ross EE, Stoyell SM, ..., Chu CJ. Dysmature superficial white matter microstructure in developmental focal epilepsy. *Brain Commun* 2019;1(1):fcz002.
- [13] **Ostrowski LM**, Speiser PW, Accacha S, Altshuler L, Fennoy I, ..., Rosenbaum M. Demographics and anthropometrics impact benefits of health intervention: Data from the Reduce Obesity and Diabetes project. *Obes Sci Pract* 2019;5(1):46-58.
- [14] Kramer MA, **Ostrowski LM**, Song DY, Thorn EL, Stoyell SM, ..., Chu CJ. Scalp recorded spike ripples predict seizure risk in childhood epilepsy better than spikes. *Brain* 2019;142(5):1296-1309.
- [15] Song DY, Stoyell SM, Ross EE, **Ostrowski LM**, Thorn EL, ..., Chu CJ. Beta oscillations in the sensorimotor cortex correlate with disease and remission in benign epilepsy with centrotemporal spikes. *Brain Behav* 2019;9(3):e01237.

## Teaching

- 2023, 2025** Teaching Assistant, Brain Machine Interface Workshop & Hackathon, *UCSD*
- 2023–2025** Discussion Leader, Neurosciences Graduate Program Journal Club, *UCSD*
- 2022** Guest Lecturer, *UCSD School of Medicine*  
Lecture: "Health Care for People Experiencing Homelessness in San Diego"
- 2016** Teaching Assistant for General Chemistry, *Brown University*

## Supervision

- 2022– present** Undergraduate Research Mentoring
- 2020–present** UCSD Pre-Med Mentoring Program

## Service

- 2022–present** NGP Diversity Committee, MSTP Diversity Committee, SfN Diversity Committee
- 2022–present** NGP Student Wellness Committee
- 2021–present** Chapter President, Association of Women Surgeons, UCSD Student Chapter
- 2020–present** Executive Committee: LGBTQ+ Pharmacy & Medicine  
*Organized Rainbow Pin Ceremony, SoCal LGBTQ+ Conference, Trans Week of Visibility*
- 2020–present** Executive Committee: Border Health Project

*Organized supply drives for migrant farmworkers*

- 2021–2022**      Public Health Advisory Council, Climate Action Campaign  
*Social Media Manager, patient health advocate at SD County Board of Supervisors meetings*
- 2021–2022**      Leadership & Clinical Volunteer: Homeless Health Initiative & Safe Haven Clinic
- 2021–2022**      Operation Harm Reduction  
*Volunteer distributing Narcan, clean needles, and first aid supplies*
- 2020–2021**      Clinic Manager: UCSF Women's Free Clinic  
*Managed clinic operations and planned contraceptive counseling services*
- 2020–2021**      Anti-Racism Coalition at UCSF  
*Policy & Admissions Subcommittees: combating ICE in healthcare, microaggression reporting*
- 2017–2019**      Clinical Volunteer: Clínica Esperanza / Hope Clinic, Providence RI
- 2017–2018**      President: Women in Science and Engineering at Brown
- 2017–2018**      Mentor: The Adolescent Leadership Council, Providence RI  
*Adolescent chronic illness support group*
- 2015–2018**      Peer Advisor: The Meiklejohn Peer Advising Program, Brown University

## **Presentations**

- [1] Society for Neuroscience 2025, Chicago, IL, USA. (November 15-18, 2025). Poster: "Latent premotor neural dynamics reveal species-specific vocal strategies in songbirds." J. Gorman, **L. Ostrowski**, et al.
- [2] Society for Neuroscience 2025, Chicago, IL, USA. (November 15-18, 2025). Poster: "Cortical temporal dynamics of speech perception: Dissociating linguistic and paralinguistic elements." J. Xing, **L. Ostrowski**, et al.
- [3] Society for Neuroscience 2025, Chicago, IL, USA. (November 15-18, 2025). Poster: "Species differences in real-time sensorimotor error processing during vocalization." L. Stanwicks, **L. Ostrowski**, et al.
- [4] Society for the Neurobiology of Language 2025, Washington DC, USA. (September 12, 2025). "Cortical temporal dynamics of tracking linguistic and paralinguistic elements." Poster: B. Lang, J. Xing, **L. Ostrowski**, et al.
- [5] American Society of Neuroradiology 2023, Los Angeles, CA, USA. (March 15, 2023). Poster: "Linking post-stroke neurophysiology to neuroanatomy: Novel method to extend voxel-lesion mapping to multi-dimensional EEG data." R. Hardstone, **L. Ostrowski**, et al.
- [7] American Society of Neuroradiology 2022, Boston, MA, USA. (April 1, 2022). Poster: "Persistent asymmetry of aperiodic resting-state neural activity in cortical and subcortical strokes." R. Hardstone, **L. Ostrowski**, et al.
- [8] Society for Neuroscience 2018, San Diego, CA, USA. (November 3-7, 2018). Poster: "Focal abnormalities in white matter microstructure correspond to neuropsychological comorbidities in BECTS." **L. Ostrowski**, et al.
- [9] American Epilepsy Society 2017, Washington DC, USA. (December 1-5, 2017). Poster: "Dysmature white matter microstructure in developmental epilepsy." **L. Ostrowski**, et al.
- [10] Endocrine Society 2016, Boston, MA, USA. (April 1-4, 2016); The Obesity Society, Washington, DC, USA. (October 29 - November 2, 2017). Poster: "Demographics and anthropometrics impact benefits of health intervention: Data from the ROAD Project." **L. Ostrowski**, et al.