Lauren Ostrowski

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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 PhD 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 interventional 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, …, Gilja V. Neural population dynamics in songbird RA and HVC during learned motor-vocal behavior. arXiv2407.06244.

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*

2024 Teaching Assistant, Minor Proposition, *UCSD*

2022 Guest Lecturer, *UCSD School of Medicine*

Lecture: "Health Care for People Experiencing Homelessness in San Diego"

2016 Teaching Assistant, General Chemistry, *Brown University*

Supervision

2022–present Undergraduate Research Mentoring

2020–present UCSD Pre-Med Mentoring Program

Service

2025–present Teacher and Curriculum Developer: Jail Outreach Program

Prepare and teach science classes at Las Colinas Detention Center in Santee, CA

2022–2025 Neurosciences Graduate Program Committees: Chair, NGP Student Wellness Committee; Member, NGP Diversity Committee

2021–2022 Chapter President: Association of Women Surgeons, UCSD Student Chapter

2021–2022 Leadership & Clinical Volunteer: Homeless Health Initiative & Safe Haven Clinic

2021–2022 Public Health Advisory Council, Climate Action Campaign
Social Media Manager, patient health advocate at SD County Board of Supervisors meetings

2021–2022 Operation Harm Reduction
Volunteer distributing Narcan, clean needles, and first aid supplies

2020–present Medical Scientist Training Program Committees: Member, MSTP Diversity Committee; Member, MSTP LGBTQ+ Health Committee

2020–2022 Executive Committee: LGBTQ+ Pharmacy & Medicine
Organized Rainbow Pin Ceremony, SoCal LGBTQ+ Conference, Trans Week of Visibility

2020–2022 Executive Committee: Border Health Project
Organized mobile health clinics, supply drives for migrant farmworkers

2020–2022 Anti-Racism Coalition at UCSD
Policy & Admissions Subcommittees: combating ICE in healthcare, microaggression reporting

2020–2021 Clinic Manager: UCSD Women's Free Clinic
Managed clinic operations and planned contraceptive counseling services

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.