

Deborah Levy, PhD

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EDUCATION

- Vanderbilt University**, PhD in Hearing and Speech Sciences *August 2016–August 2021*
– Dissertation: Multivariate lesion symptom mapping for predicting trajectories of recovery from aphasia
- New York University**, BA in Linguistics and Psychology (*Summa Cum Laude*) *August 2010–May 2014*
– Honors Thesis: Perception is sticky; How we see what “isn’t” there

PROFESSIONAL APPOINTMENTS

- Postdoctoral Fellow**, University of California San Francisco *October 2021–present*
– Speech Neurophysiology Lab; Principal Investigator Dr. Edward Chang
- Graduate Research Assistant**, Vanderbilt University *August 2016–August 2021*
– Language Neuroscience Lab; Principal Investigator Dr. Stephen Wilson
- Research Specialist**, University of Pennsylvania *July 2014–June 2016*
– Computational Memory Lab; Principal Investigator Dr. Michael Kahana
- Research Specialist**, New York University
- Sociolinguistics Lab; Principal Investigator Dr. John Singler *February 2014–May 2014*
– Visual Perception Lab; Principal Investigator Dr. Denis Pelli *April 2013–May 2014*
– Causal Cognition Lab; Principal Investigator Dr. Robert Rehder *October 2012–May 2014*

TEACHING APPOINTMENTS / EXPERIENCE

- Teaching assistant, University of California San Francisco (Oasis for Girls)** *Fall 2022–present*
– *Course*: ENVISION Lessons in Coding
– *Responsibilities*: Co-designed, delivered, and facilitated two-hour courses on coding skills and auditory neuroscience to high school girls (~15 students) from underrepresented backgrounds with interest in STEM, 2-4 times a year.
- Lecturer pool, University of California Berkeley Extension** *Spring 2022*
– *Course*: Oral Communication
– *Responsibilities*: Hired on an as-needed basis to facilitate online coursework and provide detailed feedback on assignments for adult post-baccalaureate learners.
- Guest lecturer, University of Minnesota** *Spring 2021–Spring 2022*
– *Course*: The Talking Brain
– *Responsibilities*: Invited to teach yearly lecture on language neuroscience tailored to majority-freshman undergraduates (~20 students) to engage them in science and help them better understand the daily life of a researcher.
- Teaching assistant, Vanderbilt University** *Spring 2019–Spring 2021*
– *Course*: Cognitive Neuroscience of Language
– *Responsibilities*: Designed and delivered one third of course lectures, graded quizzes and assignments, and provided one-on-one guidance to graduate students (6 students) from various departments.
– *Course*: Language and The Brain
– *Responsibilities*: Designed and implemented multi-week online module addressing scientific literacy, graded associated assignments for undergraduates (~20 students); funded by fellowship.

Guest lecturer, Vanderbilt University*Spring 2018–Spring 2021*

- *Course:* Psychology of Language
- *Responsibilities:* Led remote guest lecture on speech production designed to engage undergraduates (~20 students), observed and evaluated by the Vanderbilt Center for Teaching.
- *Course:* Acoustics and Speech Perception
- *Responsibilities:* Invited to give in-person guest lecture on fMRI research on categorical perception to Masters' students studying to become speech-language pathologists (~15 students).

Student facilitator, Pi Beta Phi Rehabilitation Institute*Spring 2017–Spring 2021*

- *Course:* Aphasia Group of Middle Tennessee
- *Responsibilities:* Co-founded and co-lead twice monthly Arts and Music Group for individuals with aphasia (~10 group members of various ages and language abilities), funded by Curb Center for Arts and Public Policy; additionally acted as communication partner and discussion facilitator in broader weekly group meetings (7-12 hours per week).

Teaching assistant, New York University*Spring 2013–Spring 2014*

- *Course:* Introduction to Psychology
- *Responsibilities:* Led weekly recitation and graded exams for undergraduates (~20 students) as well as larger review sessions (~60 students) 2-3 times per semester; awarded Coons-Leibowitz prize for outstanding undergraduate teaching.

PEDAGOGICAL TRAINING

Evidence-Based Teaching, University of California San Francisco*Spring 2023–present*

- The Evidence-Based Teaching course provides UCSF postdocs and graduate students with training to become effective science educators as supported by evidence-based pedagogical techniques.

Certificate in College Teaching, Vanderbilt University Center for Teaching*Fall 2019–Fall 2020*

- The Certificate in College Teaching course focuses on educating graduate students and postdocs on evidence-based teaching practices. It consists of a one semester didactic seminar and a one semester practicum including teaching observation.

Blended and Online Learning Design Fellowship, Vanderbilt University Center for Teaching*Spring 2019–Spring 2020*

- The BOLD fellowship is awarded to graduate student-faculty pairs to develop online educational materials that are in line with the science of teaching and learning. Fellows design their own materials and implement them in an existing course, then evaluate their impact on student learning.

RESEARCH EXPERIENCE

Postdoctoral Fellow, University of California San Francisco*October 2021–present*

- Advisor: Dr. Edward Chang, Department of Neurosurgery
- Studied transient language impairments in neurosurgical populations and the neural correlates of linguistic processes using electrocorticography

Graduate Student, Vanderbilt University*August 2016–August 2021*

- Advisor: Dr. Stephen Wilson, Department of Hearing and Speech Sciences
- Studied the neural bases of linguistic processing both in healthy people and people with aphasia using multivariate analysis of structural and functional MRI

MENTORING EXPERIENCE

- Marisa Benedito, undergraduate in Linguistics, UC Berkeley (2023)
- Ilina Bhaya-Grossman, PhD student in Bioengineering, Berkeley/UC San Francisco (2022-present)
- Alex Silva, MD/PhD student in Bioengineering, UC Berkeley/UC San Francisco (2022-present)
- Carolina Varona, undergraduate in Neuroscience, UC Berkeley (2022)
- Mackenzie Phillips, MA in Speech-Language Pathology, Vanderbilt University (2021)
- Maysaa Rahman, BS in Computer Science, Vanderbilt University (2021)
- Anna Kasdan, PhD student in Hearing and Speech Sciences, Vanderbilt University (2018)

GRANTS & FELLOWSHIPS

- Ruth L. Kirschstein Postdoctoral Individual National Research Service Award (2022-2025); Modeling the neural bases of aphasia in neurosurgical patients: A multivariate, connectivity-based approach
- Curb Center Public Scholars Program (2019-2021); Creating an arts and music community group to promote alternative self-expression in individuals with aphasia
- Vanderbilt University Center for Teaching Fellowship in Blended Online Learning Design (2019-2020); Promoting scientific literacy through an interactive online module
- Vanderbilt University Graduate School Honor Fellowship (2016-2021)

HONORS & AWARDS

- American Speech-Language-Hearing-Association Editor's Award (2022)
- Coons-Leibowitz Award for Outstanding Undergraduate Teaching (2014)
- Alvin H. Zagor Memorial Scholarship for Students in the Humane Studies (2013)

PUBLICATIONS

First author

- **Levy DF**, Entrup JL, Schneck SM, Onuscheck CF, Rahman M, Casilio M, Willey E, Kasdan A, Yen M, Brito A, Kam W, Davis LT, de Riesthal M, Kirshner HS, Wilson SM. Multivariate lesion symptom mapping for predicting trajectories of recovery from aphasia. *In revisions*.
- **Levy DF**, Silva AB, Scott TL, Liu J, Harper S, Zhao L, Hullet P, Kurteff G, Wilson SM, Leonard M, Chang EF. Apraxia of speech with phonological alexia and agraphia following resection of the left middle precentral gyrus: An illustrative case. *Journal of Neurosurgery: Case Lessons*, 2023; 5.
- **Levy DF**, Kasdan A, Bryan KM, Wilson SM, de Riesthal M, Herrington DP. Designing and implementing a community aphasia group: An illustrative case study of The Aphasia Group of Middle Tennessee. *Perspectives of the American Speech-Language-Hearing Association Special Interest Groups*, 2022.
- **Levy DF**, Wilson SM. Categorical encoding of vowels in primary auditory cortex. *Cereb Cortex* 2020; 30:618-27.

Contributing author

- Casilio M, Kasdan AV, Schneck SM, Entrup JL, **Levy DF**, Crouch K, Wilson SM. Situating word deafness within aphasia recovery. *Submitted*.
- Gwilliams L, Bhaya-Grossman I, Zhang Y, Scott TL, Harper S, **Levy DF**. Computational architecture of speech comprehension in the human brain. Accepted to *Annual Review of Linguistics*.
- Philips M, Schneck SM, **Levy DF**, Wilson SM. Modality-specificity of linguistic and non-linguistic demand. *In revisions*.
- Brito AC, **Levy DF**, Schneck SM, Entrup JL, Onuscheck CF, Casilio M, de Riesthal M, Davis LT, Wilson SM. Leukoaraiosis is not associated with recovery from aphasia in the first year after stroke. *In revisions*.
- Andrews JP, Cahn N, Speidel B, Chung J, **Levy DF**, Wilson SM, Berger MS, Chang EF. Dissociation of Broca's Area from Broca's Aphasia in patients undergoing neurosurgical resections. *Journal of Neurosurgery*, 2022; 138.
- Wilson SM, Entrup JL, Schneck SM, Onuscheck C, **Levy DF**, Rahman M, Willey E, Casilio M, Yen M, Brito A, Kim W, Davis LT, de Riesthal M, Kirshner H. Recovery from aphasia in the first year after stroke. *Brain*, 2023; 146:1021-1039.
- Solomon EA, Sperling MR, Sharan AD, Wanda PA, **Levy DF**, Lyalenko A, Pedisich IM, Rizzuto DS, Kahana MJ. Theta-burst stimulation entrains frequency-specific oscillatory responses. *Brain Stimul* 2021; 14:1271-84.
- Fisher JM, Dick FK, **Levy DF**, Wilson SM. Neural representation of vowel formants in tonotopic auditory cortex. *NeuroImage* 2018; 178:574–82.
- Ezzyat Y, Wanda PA, **Levy DF**, Kadel A, Aka A, Pedisich I, et al. Closed-loop stimulation of temporal cortex rescues functional networks and improves memory. *Nat Commun* 2018; 9:1–8.
- Ezzyat Y, Kragel JE, Burke JF, **Levy DF**, Lyalenko A, Wanda P, et al. Direct brain stimulation modulates encoding states and memory performance in humans. *Curr Biol* 2017; 27:1251–8.
- Ramayya AG, Pedisich I, **Levy DF**, Lyalenko A, Wanda P, Rizzuto D, et al. Proximity of substantia nigra microstimulation to putative GABAergic neurons predicts modulation of human reinforcement learning. *Front Hum Neurosci* 2017; 11:200.

PRESENTATIONS

First author

- **Levy DF**, Kasdan A, Bryan KM, Wilson SM, de Riesthal M, Herrington DP. Designing and implementing a community aphasia group: An illustrative case study of the Aphasia Group of Middle Tennessee [Presentation]. *Aphasia Access Leadership Summit*; 2023 March 23-25; Raleigh, NC.
- **Levy DF**, Leonard M, Hullett P, Andrews J, Wilson SM, Berger M, Chang EF. Resection of putative “Wernicke’s area” is neither necessary nor sufficient to cause “Wernicke’s aphasia” in a neurosurgical population [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2022 October 6-8; Philadelphia, PA.
- **Levy DF**, Entrup JL, Schneck SM, Onuscheck C, Rahman M, Wilson SM. Predicting trajectories of recovery from aphasia [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2020 October 21-23; Virtual.
- **Levy DF**, Wilson SM. A comparison of three vector space models of word meaning for mapping the semantic system [Poster]. *Annual Meeting of the Cognitive Neuroscience Society*; 2020 May 2-4; Virtual.
- **Levy DF**, Wilson SM. Neural representation of phonemic categories in tonotopic auditory cortex [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2018 Aug 16-18; Quebec, QC.
- **Levy DF**, Pelli D. Perception is sticky: How we see what “isn’t” there [Poster]. *New York University Undergraduate Research Conference*; 2014 April 25; New York, NY.

Contributing author

- Casilio M, Bryan K, Kasdan AV, Entrup JL, Schneck SM, Onuscheck C, **Levy DF**, Rahman M, de Riesthal M, Wilson SM. Neural correlates of connected speech in acute post-stroke aphasia using an auditory-perceptual approach [Poster]. Accepted to *Clinical Aphasiology Conference*; 2023 May 30-June 3; Atlantic City, NJ.
- Casilio M, Entrup JL, Schneck SM, Onuscheck CF, **Levy DF**, Rahman M, de Riesthal M, Wilson SM. Preliminary neural correlates of connected speech features in acute post-stroke aphasia using an auditory-perceptual approach [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2022 Oct 6-8; Philadelphia, PA.
- Schneck SM, Entrup JL, Onuscheck CF, **Levy DF**, Yen M, Eriksson DK, Rahman M, Davis LT, de Riesthal M, Kirshner HS, Wilson SM. Left posterior temporal cortex is the most critical brain region for recovery from aphasia [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2022 Oct 6-8; Philadelphia, PA.
- Wilson SM, Entrup JL, Schneck SM, Onuscheck CF, **Levy DF**, Rahman M, Willey E, Casilio M, Yen M, Brito A, Kam W, Davis LT, de Riesthal M, Kirshner H. Recovery from aphasia in the first year after stroke [Poster]. *Clinical Aphasiology Conference*; 2022 May 17-21; Wrightsville Beach, NC.
- Schneck SM, Entrup JL, Onuscheck CF, **Levy DF**, Yen M, Eriksson DK, Rahman M, Davis LT, de Riesthal M, Kirshner H, Wilson SM. Reorganization patterns in chronic post-stroke aphasia [Poster]. *Clinical Aphasiology Conference*; 2022 May 17-21; Wrightsville Beach, NC.
- Casilio M, Entrup JL, Kasdan A, Schneck SM, **Levy DF**, Crouch KJ, Wilson SM. A case of “pure sentence deafness” [Poster]. *Clinical Aphasiology Conference*; 2022 May 17-21; Wrightsville Beach, NC.
- Brito A, **Levy DF**, Schneck S, Entrup J, Onuscheck C, Casilio M, Davis T, Wilson SM. Leukoaraiosis is not associated with recovery from aphasia in the first year after stroke [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2021 October 5-8; Virtual.
- Kasdan A, **Levy DF**, Herrington DH, Wilson SM, Gordon RL. A music and arts program for individuals with aphasia [Poster]. *Neuromusic Conference*; 2021 June 18-21; Virtual.
- Entrup JL, Schneck SM, Onuscheck C, Rahman M, **Levy DF**, Davis LT, Kam W, Rahman M, Willey E, Burchfield A, de Riesthal M, Kirshner HS, Wilson SM. The practicalities of implementing a longitudinal study of recovery from aphasia [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2020 October 21-23; Virtual.
- Lucanie JM, Schneck SM, Eriksson DK, Yen M, **Levy DF**, Quillen IA, Kam W, Davis LT, Kirshner HS, de Riesthal M, Wilson SM. Neurofunctional correlates of overall language function in aphasia [Poster]. *Annual Conference of the Society for the Neurobiology of Language*; 2018 Aug 16-18; Quebec, QC.

CERTIFICATIONS

- Genetics and Neurobiology of Language, Cold Spring Harbor Laboratories (2022)
- Certificate in College Teaching, Vanderbilt University Center for Teaching (2020)
- Machine Learning in Data Science, Vanderbilt University Center for Quantitative Sciences, Summer Institute (2019)
- TOEFL, Oxford English Seminars (2015)

SERVICE AND OUTREACH

- Member of Chang Lab Outreach Group, University of California San Francisco (2021-present)
- Abstract reviewer, *Annual Conference of the Society for the Neurobiology of Language* (2023)
- Ad hoc reviewer, *Brain Structure and Function* (2023)

- Ad hoc reviewer, *Frontiers in Neuroscience* (2022)
- Ad hoc reviewer, *Mind, Brain, and Education* (2022)
- Charter member and secretary of Graduate Women in Science, Nashville chapter (2019-2020)
- Recruitment committee, VUMC Department of Hearing and Speech Sciences (2019-2020)
- Mock-qualifying exams committee (Anna Kasdan), Vanderbilt University Department of Neuroscience (2020)
- Mock-qualifying exams committee (Jane Burton), Vanderbilt University Department of Neuroscience (2019)