



## Laura Gwilliams

Assistant Professor of Psychology and, by courtesy, of Linguistics

### Bio

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#### BIO

Laura Gwilliams is jointly appointed between Stanford Psychology, Wu Tsai Neurosciences Institute and Stanford Data Science. Her work is focused on understanding the neural representations and operations that give rise to speech comprehension in the human brain. To do so, she brings together insight from neuroscience, linguistics and machine learning, and takes advantage of recording techniques that operate at distinct spatial scales (MEG, ECoG and Neuropixels).

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Psychology
- Assistant Professor (By courtesy), Linguistics
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Stanford Data Science
- Member, Wu Tsai Neurosciences Institute

#### LINKS

- Gwilliams Laboratory of Speech Neuroscience: <https://gwilliams.sites.stanford.edu/>
- Laura Gwilliams: <https://lauragwilliams.github.io/>

### Teaching

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#### COURSES

##### 2024-25

- Data Science for Neuroscience: DATASCI 194N, DATASCI 294N (Win)
- Introduction to Psychology: PSYCH 1 (Spr)
- Language Neuroscience Seminar: LINGUIST 247N, PSYCH 122, PSYCH 222 (Aut)

##### 2023-24

- Unravelling the Inner-Workings of the Brain: Data Science for Neuroscience Capstone: DATASCI 125 (Spr)

#### STANFORD ADVISEES

##### Postdoctoral Faculty Sponsor

Jill Kries, William Turner

**Doctoral Dissertation Advisor (AC)**

Irmak Ergin

## Publications

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### PUBLICATIONS

- **Dynamics of pitch perception in the auditory cortex.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*  
Abrams, E. B., Marantz, A., Krementsov, I., Gwilliams, L.  
2025
- **What we mean when we say semantic: Toward a multidisciplinary semantic glossary.** *Psychonomic bulletin & review*  
Reilly, J., Shain, C., Borghesani, V., Kuhnke, P., Vigliocco, G., Peelle, J. E., Mahon, B. Z., Buxbaum, L. J., Majid, A., Brysbaert, M., Borghi, A. M., De Deyne, S., Dove, et al  
2024
- **Speech prosody enhances the neural processing of syntax.** *Communications biology*  
Degano, G., Donhauser, P. W., Gwilliams, L., Merlo, P., Golestani, N.  
2024; 7 (1): 748
- **Negation mitigates rather than inverts the neural representations of adjectives.** *PLoS biology*  
Zuanazzi, A., Ripollés, P., Lin, W. M., Gwilliams, L., King, J. R., Poeppel, D.  
2024; 22 (5): e3002622
- **Hierarchical dynamic coding coordinates speech comprehension in the brain.** *bioRxiv : the preprint server for biology*  
Gwilliams, L., Marantz, A., Poeppel, D., King, J. R.  
2024
- **Introducing MEG-MASC a high-quality magneto-encephalography dataset for evaluating natural speech processing.** *Scientific data*  
Gwilliams, L., Flick, G., Marantz, A., Pykkänen, L., Poeppel, D., King, J. R.  
2023; 10 (1): 862
- **Top-down information shapes lexical processing when listening to continuous speech** *LANGUAGE COGNITION AND NEUROSCIENCE*  
Gwilliams, L., Marantz, A., Poeppel, D., King, J.  
2024; 39 (8): 1045-1058