Jill Kries, PhD

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Research position

- 01/10/2023-present: **Postdoctoral researcher, Stanford University**, USA
  Advisor: Prof. Laura Gwilliams

Education

- 01/09/2018-31/05/2023: **PhD in Cognitive Neuroscience, KU Leuven**, Belgium
  Title: Unravelling speech processing mechanisms in aphasia via EEG-based neural tracking and behavioral measures
  Supervisor: Prof. Maaike Vandermosten; Co-supervisors: Prof. Tom Francart, Prof. Robin Lemmens
  PhD award date: 20/06/2023

- 01/09/2016-30/08/2017: **MSc in Neuropsychology, Maastricht University**, The Netherlands
  Supervisors: Prof. Milene Bonte, Prof. Joao Correia
  Trimester abroad for clinical internship at RWTH Aachen University Hospital, Germany

- 01/09/2013-30/08/2016: **BSc in Psychology, Universite Libre de Bruxelles**, Belgium
  Semester abroad at University of Lausanne, Switzerland

Publications

Papers - Published

1. **Kries, J.**, Vandermosten, M.$^{\diamond}$, Gwilliams, L.$^{\diamond}$ (2026). The spatio-temporal dynamics of phoneme encoding in aging and aphasia. *Journal of Neuroscience, 46(4)e1001252025*, 1-11. doi: https://doi.org/10.1523/JNEUROSCI.1001-25.2025.
2. **Kries, J.**, De Clercq, P., Gillis, M., Vanthornhout, J., Lemmens, R., Francart, T., Vandermosten, M. (2024). Exploring neural tracking of acoustic and linguistic speech representations in individuals with post-stroke aphasia. *Human Brain Mapping, 45(8)*, 1-19. doi: https://doi.org/10.1002/hbm.26676.
3. **Kries, J.**, De Clercq, P., Lemmens, R., Francart, T., Vandermosten, M. (2023). Acoustic and phonemic processing are impaired in individuals with aphasia. *Scientific Reports, 13(11208)*, 1-15. doi: https://doi.org/10.1038/s41598-023-37624-w.
4. **Kries, J.*** and Gillis, M.*, Vandermosten, M.$^{\diamond}$, and Francart, T.$^{\diamond}$ (2023). Neural tracking of linguistic speech representations decreases with advancing age. *NeuroImage, 267(119841)*, 1-16. doi: https://doi.org/10.1016/j.neuroimage.2022.119841.
5. Ergin, I., **Kries, J.**, Gupta, S., Papworth Burrel, M., and Gwilliams, L. (2026). Measuring Naturalistic Speech Comprehension in Real Time. *Behavior Research Methods, 58(93)*. doi: https://doi.org/10.3758/s13428-026-02941-1
6. Roll, N., **Kries, J.**, Gwilliams, L., and Shain, C. (2026). Artificial Aphasias in Lesioned Language Models. *NeurIPS*. https://doi.org/10.48550/arXiv.2605.16222
7. Roll, N., **Kries, J.**, Jin, F., Wang, C., Finley, A.M., Sumner, M., Shain, C., and Gwilliams, L. (2026). The Text Aphasia Battery (TAB): A Clinically-Grounded Benchmark for Aphasia-Like Deficits in Language Models. *Proceedings of the 10th Workshop on Computational Linguistics and Clinical Psychology (CLPsych 2026)*. doi: 10.18653/v1/2026.clpsych-1.27

8. De Clercq, P., **Kries, J.**, Mehraram, R., Vanthornhout, J., Francart, T., Vandermosten, M. (2025). Neural tracking of natural speech: an effective marker for post-stroke aphasia. *Brain Communications, 22(2)*, fcaf095.
   doi: https://doi.org/10.1093/braincomms/fcaf095
9. Mehraram, R., **Kries, J.**, De Clercq, P., Francart, T., Vandermosten, M. (2025). EEG reveals brain network alterations in chronic aphasia during natural speech listening. *Scientific Reports 15(2441)*. doi: https://doi.org/10.1038/s41598-025-86192-8
10. De Clercq, P.*, Puffay, C.*, **Kries, J.**, Van Hamme, H., Vandermosten, M., Francart, T., and Vanthornhout, J. (2024). Detecting Post-Stroke Aphasia Via Brain Responses to Speech in a Deep Learning Framework. *IEEE Engineering in Medicine and Biology Society*. doi: https://arxiv.org/pdf/2401.10291
11. Mehraram, R., De Clercq, P., **Kries, J.**, Vandermosten, M., Francart, T. (2024). Functional connectivity of stimulus-evoked brain responses to natural speech in post-stroke aphasia. *Journal of Neural Engineering, 21(6)*. doi: 10.1088/1741-2552/ad8ef9

Papers - Preprints/Under review/In preparation

1. **Kries, J.**, Ervin, B., Buroker, J., Hickok, G., Arya, R., & Gwilliams, L. (*In preparation*). Spatio-temporal dynamics of acoustic, phonetic, and lexical speech encoding in the developing brain.
2. Gillis, M., **Kries, J.**, Wouters, J., Gwilliams, L.$^{\diamond}$, and Vandermosten, M.$^{\diamond}$ (*Under review*). Neural Phoneme Processing in Children with and without Dyslexia. biorxiv. https://doi.org/10.1101/2025.10.13.682108
3. De Clercq, P., **Kries, J.**, Vanthornhout, J., Gerrits, R., Francart, T., and Vandermosten, M. (*Under review*). Neural substrates and behavioral relevance of speech envelope tracking: evidence from post-stroke aphasia. biorxiv. doi: https://www.biorxiv.org/content/early/2024/03/28/2024.03.26.586859
4. Correia, J.M., **Kries, J.**, Hausfeld, L., Gracco, V., and Bonte, M. (*biorxiv*). EEG reveals online monitoring mechanisms of speech production. doi: https://doi.org/10.1101/2025.03.01.640939
5. Aphasia "INTUNE" dataset open-source publication: EEG data during natural speech listening and neuropsychological assessment in post-stroke aphasia. (*In preparation.*)

Honors and Awards

1. 2026: Trainee Professional Development Award from the Society for Neuroscience (SfN)
2. 2025: Outstanding PhD thesis award from the National Research Fund Luxembourg (https://www.fnr.lu/fnr-awards-2025-discover-the-winners/)
3. 2024: Travel award for the Society for the Neurobiology of Language meeting
4. 2023: Travel award for the Academy of Aphasia meeting
5. 2019-2023: Full PhD funding by the National Research Fund Luxembourg, AFR individual grant reference: 13513810

Conferences

Conference presentations

1. *Spatio-temporal dynamics of acoustic, phonetic and lexical speech encoding in the developing brain*. Presentation at the symposium of the Bay Area Language processing Interest (BAyLI) group, San Francisco, USA, 16/10/2026.
2. *The spatio-temporal dynamics of speech feature encoding and decoding in aging and aphasia.* Presentation at the workshop "Exploring Temporal Response Functions (TRFs) in Real-World Speech Processing", Delmenhorst, Germany, 9/12/2024-10/12/2024.
3. *How lexical predictability affects neural dynamics of phoneme representations in neurotypicals and individuals with aphasia.* Presentation at the Psychologie und Gehirn (PuG) conference, Hamburg, Germany, Symposium "Exploring the Layers of Language Prediction: From Phonemes to Paragraphs", 30/5/2024-1/6/2024.
4. *Exploring neural tracking of acoustic and linguistic speech features in individuals with post-stroke aphasia*. Presentation at the annual meeting of the Academy of Aphasia, Reading, UK, 21/10/2023-23/10/2023.

5. *EEG-based neural tracking of linguistic speech representations in people with post-stroke aphasia.* Poster "slam" presentation at the annual meeting of the Society for the Neurobiology of Language, Philadelphia, USA, 6/10/2022-8/10/2022.
6. *Neural tracking of speech processing in persons with aphasia.* Presentation at the Belgian scientific stroke workshop, Leuven, Belgium, 20/09/2019.

Symposium

1. **Kries, J.** (2024). *Leveraging intracranial recordings for detailed insights into language processing: Bridging gaps and advancing understanding.* Symposium at the annual meeting of the Society for the Neurobiology of Language, Brisbane, AUS, 24/10/2024-26/10/2024. https://2024.neurolang.org/symposia/?id=7. Invited speakers: Matthew Leonard (University of California San Francisco), Gregory Cogan (Duke University), Stephanie Riès (San Diego State University), Anna Mai (Max Planck Institute for Psycholinguistics).

Poster presentations (selection)

1. **Kries, J.***, Anand, R.*, Bhaya-Grossman, I., Peony, O., Lucas, M., Yamada, L., Fogarty, A., Nuyujukian, P., Deisseroth, K., Gwilliams, L.◇, and Baumer, F.◇ (2026). Neural encoding of speech in children with epilepsy: an intracranial study. Poster at the symposium of the Maternal and Child Health Research Institute at Stanford University, Stanford, USA, 22/10/2026.
2. **Kries, J.**, Ervin, B., Buroker, J., Hickok, G., Arya, R., and Gwilliams, L. (2026). Hierarchical speech encoding in the developing brain: spatio-temporal insights from intracranial EEG. Poster at the Society for the Neurobiology of Language meeting, Geneva, CH, 30/09/2026.
3. **Kries, J.**, Ervin, B., Buroker, J., Hickok, G., Arya, R., and Gwilliams, L. (2025). The developmental trajectory and neuroanatomical correlates of speech comprehension. Poster at the Cognitive Computational Neuroscience conference, Amsterdam, NL, 12/08/2025. https://2025.ccneuro.org/poster/?id=QxKtBpFSKM
4. Roll, N., **Kries, J.**, Gwilliams, L., and Shain, C. (2025). Lesioned language models mimic human aphasias. Poster at California Meeting on Psycholinguistics (CAMP8), Davis, CA, USA, 14/11/2025. https://ucdavis.box.com/s/nrar1y6polqjwzj6pg1dsshonsvasb2z
5. Wang, C., Bhaya-Grossman, I., **Kries, J.**, and Chang, E. (2025). Language impairment profile of a polyglot following neurosurgical resection: a case report. Poster at the Academy of Aphasia meeting, San Diego, CA, USA 26/10/2025. https://academyofaphasia2025.vfairs.com/
6. **Kries, J.**, De Clercq, P., Vandermosten, M., Gwilliams, L. (2024). The spatio-temporal dynamics of phonetic encoding in aging and aphasia. Poster at the annual meeting of the Society for the Neurobiology of Language, Brisbane, AUS, 24/10/2024-26/10/2024.
7. Ergin, I., **Kries, J.,** Gupta, S., Gwilliams, L. (2024). Introducing a real-time measure of comprehension during natural speech listening. Poster at the annual meeting of the Society for the Neurobiology of Language, Brisbane, AUS, 24/10/2024-26/10/2024.
8. **Kries, J.**, De Clercq, P., Vandermosten, M., Gwilliams, L. (2024). The spatio-temporal dynamics of speech feature encoding in aging and aphasia. Poster at the Cognitive Computational Neuroscience conference, Boston, MA, USA, 08/08/2024.
9. **Kries, J.**, De Clercq, P., Vandermosten, M., Gwilliams, L. (2024). Leveraging temporally-resolved neural data and machine learning to study speech processing impairments in aphasia. Poster at the Stanford Data Science conference, Stanford, CA, USA, 07/05/2024.
10. **Kries, J.**, De Clercq, P., Mehraram, R., Lemmens, R., Francart, T., Vandermosten, M. (2023). Cluster-based delineations of aphasia profiles using EEG measures of acoustic and linguistic speech encoding. Poster at the annual meeting of the Society for the Neurobiology of Language, Marseille, FR, 24/10/2023-26/10/2023.
11. Finley, A.M., **Kries, J.**, Litovsky, C., Ostrand, R. (2023). Hold that thought: Linguistic features of spontaneous discourse production predict working memory in people with aphasia. Poster at the annual meeting of the Academy of Aphasia, Reading, UK, 21/10/2023-23/10/2023.
12. **Kries, J.**, De Clercq, P., Lemmens, R., Francart, T., Vandermosten, M. (2023). How cognitive impairment in individuals with aphasia affects test measures throughout the course of an experimental protocol. Poster at FENS Regional Meeting, Albufeira, Portugal, 03/05/2023-05/05/2023.

13. **Kries, J.**, De Clercq, P., Gillis, M., Mehraram, R., Lemmens, R., Francart, T., Vandermosten, M. (2022). EEG-based neural tracking of linguistic speech representations in people with post-stroke aphasia. Poster at the Annual meeting of the Society for the Neurobiology of Language, Philadelphia, USA, 06/10/2022-08/10/2022.
14. **Kries, J.**, Gillis, M., Francart, T., Vandermosten, M. (2021). Predictive speech processing evolves across the adult lifespan. Poster/presentation at the Annual meeting of the Society for the Neurobiology of Language, virtual, 05/10/2021-08/10/2021.
15. **Kries, J.**, Lemmens, R., Francart, T., Vandermosten, M. (2021). How listening to a story can reveal temporal speech processing difficulties in people with post-stroke aphasia. Poster at the European Stroke Organization Conference, virtual, 01/09/2021-03/09/2021.
16. **Kries, J.**, Francart, T., Vandermosten, M. (2020). Assessing auditory and phonemic processing in persons with aphasia. Poster at the Academy of Aphasia, virtual conference, 18/10/2020-20/10/2020.

Invited talks

1. Experimental ORL lab, KU Leuven, Belgium, June 2026
2. Cychosz Speech and Cognitive Development Lab, Department of Linguistics, Stanford University, USA, April 2026
3. Friday seminar (FriSem) of the Department of Psychology, Stanford University, USA, May 2025
4. Knight Cognitive Neuroscience Research Lab, UC Berkeley, USA, January 2025
5. Stanford Center for Computer Research in Music and Acoustics (CCRMA), Stanford University, USA, January 2025
6. Experimental ORL lab, KU Leuven, Belgium, December 2024
7. Cognitive Neuroscience lab, University of Luxembourg, Luxembourg, June 2024
8. EEG topics seminar, Stanford University, USA, May 2024
9. Lab of Prof. Joao M. Correia, University of Algarve, Portugal, May 2023

Open science & public engagement

Open Science

1. On OSF: Processed data and code for the paper "The spatio-temporal dynamics of phoneme encoding in aging and aphasia" (*2026, JNeurosci*) doi: https://osf.io/whc6y/overview
2. On OSF: Processed data of the project "A neurodiagnostic measure for aphasia: Capturing speech processing mechanisms via neural tracking"; includes behavioral and encoding model data. doi: 10.17605/OSF.IO/6T2JA https://osf.io/6t2ja/

Science Outreach

1. 2026: Article in Stanford Data Science News about the paper "Measuring Naturalistic Speech Comprehension in Real Time" (*2026, Behav Res*): Understanding Speech - Moment by Moment. link
2. 2026: Article by Stella Mayerhoff, Wu Tsai Neurosciences Institute about the paper "The spatio-temporal dynamics of phoneme encoding in aging and aphasia" (*2026, JNeurosci*): Why the brain misunderstands speech after stroke. link
3. 2025: Video about my research, commissioned and sponsored by the National Research Fund (FNR) Luxembourg: link
4. 2022: Lecture to the public during the 'Brain Awareness Week' event *Brain research at KU Leuven/UZ Leuven*, titled "How language is processed in the brain: from reading development to brain lesion". Kries, J., Blockmans, L. Leuven, Belgium, 16/3/2022.
5. 2021: Video about my PhD research titled "How listening to a story can help us diagnose aphasia", sponsored by KU Leuven, made by SciMingo. Kries, J. (2021). link
6. 2020: Article in Spotlight on Young Researchers, titled "Understanding how language manifests in the brain". Iverson, E., Kries, J., Schevenels, K., Vanden Bempt, F., Blockmans, L. (2020). link
7. 2019: Gamified activities around "The brilliant brain between your ears" at the 'Belgian Science Day'.

Community events

Event organizer

1. Symposium in April 2024: Bay Area Language Processing Interest Group - A half day symposium to bring together language researchers from various institutions located in the Bay Area, consisting of a line-up of 6 speakers from Stanford, UCSF, UC Berkeley and UC Davis, as well as a keynote lecture (https://linktr.ee/baylanguageprocessing)
2. Aphasia day 2023 at KU Leuven: Community event for study participants consisting of an art exhibition by a person with aphasia; workshops about mental health and communication training with partners; reception and sing-along live music
3. Aphasia day 2022 at KU Leuven: Community event for study participants consisting of presentation of study results, reception and sing-along live music

Media Appearances

1. 2026: Guest speaker on the podcast ”Beyond words with Garrett Oyama”, with the episode titled ”Neural Encoding of Speech: Insights from Aphasia with Dr. Jill Kries”. link
2. 2026: Article in *The Scientist* about the paper ”The spatio-temporal dynamics of phoneme encoding in aging and aphasia” (*2026, JNeurosci*): Storytelling Reveals How Strokes Impact Speech. link
3. 2026: Article in *LaSexta* about the paper ”The spatio-temporal dynamics of phoneme encoding in aging and aphasia” (*2026, JNeurosci*): ¿Cómo afecta un ictus a la comprensión del habla? Nuevas claves desde el cerebro. link
4. 2025: Article about my work and career on *RTL Luxembourg*: link
5. 2025: Article and photos from the FNR award ceremony in the Luxembourgish media: article link and photos link

Teaching

Guest lecturer:

1. ”Neurosciences Cognitive Core” taught by Prof. Justin Gardner, Stanford (Spring quarter 2026)
2. ”Introduction to Cognitive Neuroscience” taught by Prof. Justin Gardner, Stanford (Winter quarter 2026)
3. ”Data Science for Neuroscience” taught by Prof. Laura Gwilliams, Stanford (Fall quarter 2025)
4. ”Language Neuroscience Seminar” taught by Prof. Laura Gwilliams, Stanford (Fall quarter 2024)
5. ”Implementing the Brain Imaging Data Structure (BIDS)” Workshop, organized by the Experimental ORL lab, KU Leuven (September 2021)
6. ”Clinical reasoning” taught by Prof. Maaike Vandermosten, KU Leuven (2020)

Graduate student mentoring/supervision:

- Irmak Ergin, PhD Psychology and Data Science, Stanford University (2023-present)
- Nathan Roll, PhD Linguistics, Stanford University (2024-present)
- Ines Robberechts, MSc Speech-Language Pathology, KU Leuven (2020-2022)
- Laura Van Den Bergh, MSc Speech-Language Pathology, KU Leuven (2020-2022)
- Anke Heremans, MSc Speech-Language Pathology, KU Leuven (2019-2021)
- Frauke De Vis, MSc Speech-Language Pathology, KU Leuven (2019-2021)
- Pauline Bakkers, MSc Speech-Language Pathology, KU Leuven (2018-2020)
- Fenne Vander Rasieren, MSc Speech-Language Pathology, KU Leuven (2018-2020)
- Naomi Pollet, MSc Medicine, KU Leuven (2020)
- Nicolas De Cleene, MSc Medicine, KU Leuven (2019)

Undergraduate student mentoring/supervision:

- Riya Anand, Bioengineering/Pre-med, Stanford University (2024-present)
- David Fox, Biomedical Computation, Stanford University (2024-present)
- Maria Papworth Burrel, Psychology, Stanford University (2024-2025)

Service

- 2024: Co-founder of the Bay Area Language Processing Interest group (BAyLI); Website: https://sites.google.com/view/bayli/home
- 2023-present: Peer-review for Cortex, Scientific Reports, Communications Biology, Plos One, Imaging Neuroscience, European Journal of Neuroscience, Frontiers in Human Neuroscience, Auditory Perception and Cognition, Swiss National Science Foundation
- 2024-present: Member of the Stanford Psychology Department Diversity Committee
- 2020-2023: Trainee representative at the board of the Department of Neuroscience, KU Leuven

Training and Qualifications

Programming languages

Python, MATLAB, R

Languages

1. English - fluent
2. Luxembourgish - native
3. German - fluent
4. French - fluent
5. Dutch - fluent
6. Spanish - beginner

Extra-curricular

- 2017-2018: Educational advisor for children at Centre Noomdo, NGO *Le soleil dans la main*, Burkina Faso
- 2013-2018: Substitute teacher in primary schools in Luxembourg (occasionally)
- 2016-2018: Camp organizer for children aged 6 to 16, 3 camps, Service National de la Jeunesse Luxembourg, Groupe Animateur
- 2009-2019: Camp counsellor for children aged 4 to 12, 18 camps, Service National de la Jeunesse Luxembourg, Groupe Animateur