

## Internship call: Studying bat brain wiring to shed light on human spoken language evolution

### Where/When/Who?

Remote or in-person internship position for passionate master students of neuroscience/psychology/linguistics/biology in the time period of September 2022 and May 2023 at the Max Planck Institute for Psycholinguistics, Nijmegen, the Netherlands; Neurogenetics of Vocal Communication Group and Neurobiology of Language Department



### What?

Some bats have the special ability of being able to learn to produce new sounds, just like human babies do when they learn their native language. Many other animals do not have this ability. What makes the brains of humans and these bats so special? In this project, you will get to perform analyses on previously-acquired structural (diffusion tensor imaging) and/or functional (resting state functional magnetic resonance imaging) connectivity data of pale spear-nosed bat brains under the supervision of PhD student Nienke Hoeksema. Additionally, you will get to perform polarized light imaging on these same brains to validate the neuroimaging data. The goal of the project is to look for similarities and differences in wiring compared to other animals and humans to learn more about how spoken language is wired into our brains and evolved over time.



### On-site supervisor

Nienke Hoeksema

### Principal Investigator

Sonja Vernes; Peter Hagoort

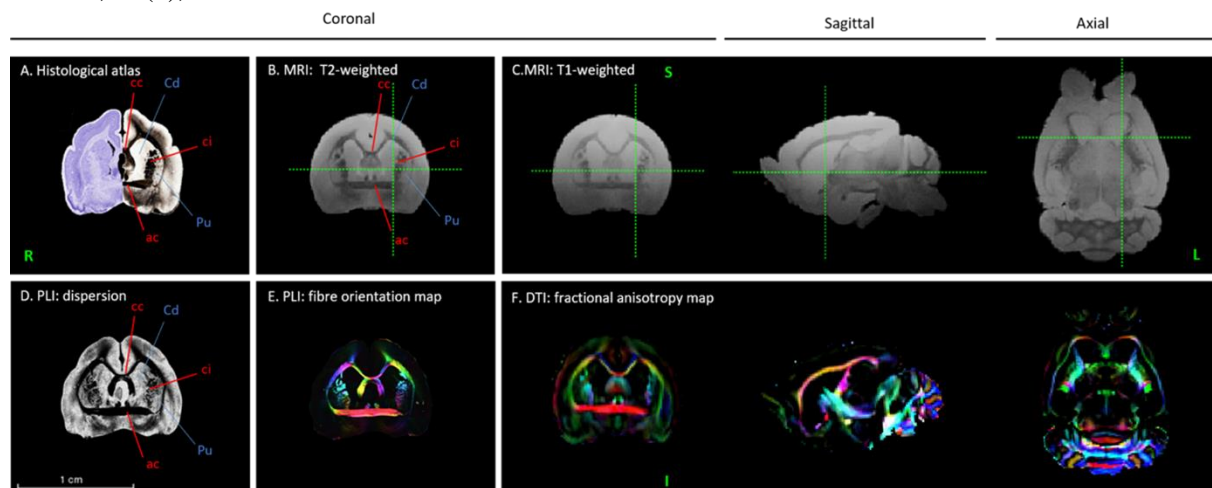
### More information

For more information, e-mail Nienke Hoeksema: [nienke.hoeksema@mpi.nl](mailto:nienke.hoeksema@mpi.nl). If you are interested in the internship position, please send a CV and motivation letter to the above email address before August 31, 2022.

### Relevant literature

Hoeksema, N., Verga, L., Mengede, J., van Roessel, C., Villanueva, S., Salazar-Casals, A., Rubio-Garcia, A., Ćurčić-Blake, B., Vernes, S. C., & Ravnigani, A. (2021). Neuroanatomy of the grey seal brain: Bringing pinnipeds into the neurobiological study of vocal learning. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 376(1836), 20200252.

Vernes, S. C. (2017). What bats have to say about speech and language. *Psychonomic Bulletin and Review*, 24(1), 111–117.



Neuroimaging data of the pale spear-nosed bat brain