# Postdoctoral Position in Human Magnetoreception at Caltech's Chen Institute of Neurobiology

Caltech's Chen Institute for Neuroscience was founded in 2016 with a generous donation from philanthropists Tianqiao Chen and Chrissy Luo. The Institute is a key component of a neuroscience initiative that is geared toward deepening our understanding of how the brain works at its most basic level. Through its Shared Postdoctoral Program, the Institute is sponsoring two-year fellowships for adventurous, boundary-crossing collaborations between laboratory groups.

The Shimojo and Kirschvink groups at Caltech, in collaboration with the Meakins group at the University of Queensland (Australia), are seeking a Postdoctoral Scholar who would join an interdisciplinary team spanning perception neuroscience, geobiology, and psycholinguistics.

The project builds upon the discovery of a human cortical response to rotations of the earth-strength magnetic fields [1] We are currently exploring the functional aspects of the sensory signal, which so far has appeared to be entirely subconscious. One current aim is to test neural and behavioral responses in populations with hereditary and developmental backgrounds of interest. Specifically, human populations whose migratory history required long-distance dead-reckoning navigation, and with language systems that use geocentric rather than egocentric terms for spatial orientation, such as the Gurindji people of northern Australia [2,3]. These and other efforts are aimed at uncovering conscious aspects of human magnetoreceptivity, and seeing whether the unconscious brain response can be brought into consciousness by training and neural feedback.

We are seeking a dedicated researcher with a background in cognitive neuroscience, cultural anthropology, or with related skills and interests. Research duties will include field work, laboratory experiments, and analysis of behavioral and physiological data. Useful skills and experience include: Analysis of EEG, physiology, or other time-series data, analysis of behavioral data and participant reports; conducting research involving human participants, psychophysics, or psychological linguistics; investigating physiological and behavioral correlates of subconscious processing, or psychological and linguistic aspects of spatial cognition.

Applicants need to have completed their PhD by the time the Fellowship begins. Scholars of Indigenous background with connections to communities of interest are strongly encouraged to apply, as are women and members of underrepresented minority groups.

Materials in support of an application should include curriculum vitae, list of publications, a one-page statement of research interests, and three letters of reference. **Complete applications including letters of reference will be accepted until March 15th, or until the position is filled. Please email all materials to Prof. Shin Shimojo, sshimojo@caltech.edu. Pre-submission inquiries are welcome.**

If there are any questions during the search process, please contact us at (**sshimojo@caltech.edu**)

*We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to age, race, color, religion, sex, sexual orientation, gender identity, or national origin, disability status, protected veteran status, or any other characteristic protected by law.*

Background:


1 Wang, C. X. *et al.* Transduction of the Geomagnetic Field as Evidenced from alpha-Band Activity in the Human Brain. *eNeuro* **6**, doi:10.1523/ENEURO.0483-18.2019 (2019).

2 Meakins, F. Spaced Out: Intergenerational Changes in the Expression of Spatial Relations by Gurindji People. *Australian Journal of Linguistics* **31**, 43-77, doi:Pii 932432693 10.1080/07268602.2011.532857 (2011).

3 Meakins, F. & Algy, C. Deadly Reckoning: Changes in Gurindji Children's Knowledge of Cardinals. *Australian Journal of Linguistics* **36**, 479-501, doi:10.1080/07268602.2016.1169973 (2016).