Stanford

Charlotte Luff

Postdoctoral Scholar, Psychiatry

Bio

BIO

Charlotte is a postdoctoral scholar in the lab of Professor Luis de Lecea. Her research interests include the brain phenomena underpinning non-invasive neuromodulation such as focused ultrasound and electrical brain stimulation, and in the de Lecea lab she studies this with relation to sleep and addiction. Charlotte completed her PhD in the Interventional Systems Neuroscience lab of Dr Nir Grossman at Imperial College London. Her PhD research focused on uncovering the biophysical mechanism of temporal interference (TI) brain stimulation, primarily using electrophysiology and computational modelling. During her PhD, Charlotte spent a year as a visiting PhD student in Professor Ed Boyden's lab at MIT, where she was trained in automated in-vivo patch clamp. Previously, Charlotte completed a BSc in Biomedical Science at King's College London, and an MRes in Experimental Neuroscience at Imperial College London.

HONORS AND AWARDS

- Dean's Fellowship, Stanford University, School of Medicine (06/23-06/24)

PROFESSIONAL EDUCATION

- BSc, King's College London , Biomedical Science (2014)
- MRes, Imperial College London , Experimental Neuroscience (2017)
- PhD, Imperial College London , Clinical Medicine Research (Brain Sciences) (2022)

STANFORD ADVISORS

- Luis de Lecea, Postdoctoral Faculty Sponsor

Research & Scholarship

LAB AFFILIATIONS

- Luis de Lecea, de Lecea Lab (2/13/2023)

Publications

PUBLICATIONS

- **Pulse-width modulated temporal interference (PWM-TI) brain stimulation.** *Brain stimulation*
  Luff, C. E., Dzialecka, P., Acerbo, E., Williamson, A., Grossman, N.
  2024; 17 (1): 92-103
- **Can Neuromodulation Improve Sleep and Psychiatric Symptoms?** *Current psychiatry reports*
  Luff, C. E., de Lecea, L.

2024

- **Optimized ultrasound neuromodulation for non-invasive control of behavior and physiology.** *Neuron*
  Murphy, K. R., Farrell, J. S., Bendig, J., Mitra, A., Luff, C., Stelzer, I. A., Yamaguchi, H., Angelakos, C. C., Choi, M., Bian, W., Dilanni, T., Pujol, E. M., Matosevich, et al
  2024

- **The neuron mixer and its impact on human brain dynamics.** *Cell reports*
  Luff, C. E., Peach, R., Mallas, E. J., Rhodes, E., Laumann, F., Boyden, E. S., Sharp, D. J., Barahona, M., Grossman, N.
  2024; 43 (6): 114274

- **The neuron frequency mixer**
  Peach, R., Rhodes, E., Grossman, N., Luff, C.
  SPRINGER.2024: S84-S85

- **Characteristics of motor evoked potentials in patients with peripheral vascular disease.** *PloS one*
  Sarai, P., Luff, C., Rohani-Shukla, C., Strutton, P. H.
  2024; 19 (4): e0290491