RUHR-UNIVERSITÄT BOCHUM

RUB

IGSN - SYMPOSIUM

Monday, November 22nd 2021 • 15.00 (3 pm)

Paving the way to cognitive maps

HUGO SPIERS

Institute of Behavioural Neuroscience, Department of Experimental Psychology, University College London, London, UK

Using cognitive maps for spatial navigation

This talk will cover recent work in humans and rats exploring different aspects of navigation and planning. These discoveries will be discussed in relation to how the brain might use a cognitive map to guide navigation. Insights from projects using reinforcement learning agents, brain imaging, London taxi drivers and mass online testing of 3.9 million participants will be discussed.

For background reading:

Duvelle, É., Grieves, R. M., Liu, A., Jedidi-Ayoub, S., Holeniewska, J., Harris, A., ... & Spiers, H. J. (2021). Hippocampal place cells encode global location but not connectivity in a complex space. *Current Biology*, *31*(6), 1221-1233.

Patai, E. Z., & Spiers, H. J. (2021). The Versatile Wayfinder: Prefrontal Contributions to Spatial Navigation. *Trends in cognitive sciences*.

de Cothi, W., Nyberg, N., Griesbauer, E. M., Ghanamé, C., Zisch, F., Lefort, J., ... & Spiers, H. J. (2020). Predictive Maps in Rats and Humans for Spatial Navigation. *bioRxiv*.

Coutrot, A., Manley, E., Yesiltepe, D., Dalton, R. C., Wiener, J. M., Hölscher, C., ... & Spiers, H. J. (2020). Cities have a negative impact on navigation ability: evidence from 38 countries. *Biorxiv*.

Host:

NIKOLAI AXMACHER, HUI ZHANG

Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr Universität Bochum

Virtual guests are welcome!

SFB 874 DFG

International Graduate School of Neuroscience

Ruhr-Universität Bochum