

## RESEARCH INTERESTS

**Cognitive Neuroscience: spatial navigation, visual cognition, neurodegeneration, fMRI**

## EMPLOYMENT

**March 2014 - present: Postdoctoral Researcher. DZNE, Magdeburg, Germany**

Working in the 'Aging and Cognition' lab led by Professor Thomas Wolbers, using a combination of immersive virtual reality and 7T imaging, I study the mechanisms of spatial navigation with a particular focus on head direction and boundary coding.

**October 2013 - February 2014: Postdoctoral Researcher. School of Psychology, Cardiff University, UK**

Continued work from my Ph.D. investigating the effect of the Alzheimer risk gene (APOE-ε4) in modulating fMRI measures during the processing of different stimulus categories.

**June 2007 - July 2009: Research Assistant. School of Psychology, Cardiff University, UK**

Worked with Professor Kim Graham to study stimulus-specific perceptual deficits in patients diagnosed with mild cognitive impairment. This role involved working with the NHS memory clinic to perform neurological assessments, as well as running an associated fMRI study.

## QUALIFICATIONS

**2014: Ph.D. Cognitive Neuroscience, Cardiff University, UK**

Thesis: "The role of the medial temporal lobe in the discrimination of complex object and scene stimuli"

Supervisor: Professor Kim Graham

**2005: B.Sc. (Hons) Psychology, 2.1, Cardiff University, UK**

## TEACHING

**2017: Integrative Neuroscience M.Sc., Otto-von-Guericke University, Magdeburg, Germany**

Delivered lectures on short- and long-term memory in the Learning and Memory module. Led seminars on the 'Scientific Writing' module and provided feedback on written work.

**2009 – 2013: Graduate Teaching Assistant, Biological Psychology, Cardiff University, UK**

Delivered introductory lectures, lead seminars, and provided bespoke feedback on students' essays for the biological psychology module of the first-year undergraduate psychology bachelor's degree. I was responsible for deciding how best to deliver the course material and implemented small group presentations as well as debates to increase participation in seminars.

## SUPERVISION

**2018: Co-supervising Ph.D. student investigating the neural basis of head direction coding**

## MEMBERSHIPS

Hippocampal Subfield Segmentation Boundary Working Group ([www.hippocampalsubfields.com](http://www.hippocampalsubfields.com))

## GRANTS

Brain Travel Grant (£800)

Cardiff University 125 for 125 (£1250)

## PUBLICATIONS

- Shine, J. P.**, Valdés-Herrera J. P., Tempelmann, C., & Wolbers, T. (2019) Evidence for allocentric boundary and goal direction information in the human entorhinal cortex and subiculum. **Nature Communications** 10, 4004, doi:10.1038/s41467-019-11802-9
- Stangl M., Wolbers T., **Shine J.P.** (2019) Population-Level Analysis of Human Grid Cell Activation. In: Neuromethods. Humana Press
- Maass, A. & **Shine, J. P.** (2019) Navigating the future of clinical assessments. **Brain**, 142(6). DOI: 10.1093/brain/awz121
- Hodgetts, C. J.\*, **Shine, J. P.\***, Williams, H., Postans, M., Sims, R., Williams, J., Lawrence, A. D., & Graham, K. S. (2019). Increased posterior default mode network activity and structural connectivity in young adult APOE-ε4 carriers: a multi-modal imaging investigation. **Neurobiology of Aging** 73, 82-91. DOI: 10.1016/j.neurobiolaging.2018.08.026  
\*Joint first authors
- Riemer, M., **Shine, J. P.**, & Wolbers, T (2018). On the (a)symmetry between the perception of time and space in large-scale environments. **Hippocampus** DOI: 10.1002/hipo.22954
- Stangl, M.\*, **Shine, J. P.\***, & Wolbers, T (2017). The GridCAT: A toolbox for automated analysis of human grid cell codes in fMRI. **Frontiers in Neuroinformatics** 11 (47). DOI: 10.3389/fninf.2017.00047  
\*Joint first authors
- Hodgetts, C. J., **Shine, J. P.**, Postans, M., Lawrence, A. D., Downing, P. E., & Graham, K. S. (2016). Evidencing a place for the hippocampus within the core scene processing network. **Human Brain Mapping** 37 (11), 3779-3794. DOI: 10.1002/hbm.23275
- Shine, J. P.**, Valdés-Herrera J. P., Hegarty, M, Wolbers, T. (2016). The Human Retrosplenial Cortex and Thalamus Code Head Direction in a Global Reference Frame. **Journal of Neuroscience** 36 (24), 6371-6381. DOI: 10.1523/JNEUROSCI.1268-15.2016
- Shine, J. P.\***, Hodgetts, C. J.\*, Lawrence, & Graham, K. S. (2015). APOE-ε4 selectively modulates posteromedial cortex activity during scene perception and short-term memory in young healthy adults. **Nature Scientific Reports** 5, Article number: 16322. DOI: 10.1038/srep16322 \*Joint first authors
- Hodgetts, C. J., Postans, M., **Shine, J. P.**, Jones, D. K., Lawrence, A. D., & Graham, K. S. (2015). Dissociable roles of the inferior longitudinal fasciculus and fornix in face and place perception. **eLife** 4:e07902. DOI: 10.7554/eLife.07902

## PRESENTED WORK

- Shine, J. P.** (2018). Investigating the mechanisms of spatial navigation in humans using fMRI. *Invited talk at the Cardiff University Brain Research Imaging Centre Seminar Series. Cardiff, UK*
- Shine, J. P.**, Valdés-Herrera J. P., Tempelmann, C., & Wolbers, T. (2018). Multivariate decoding of allocentric boundary direction in the human entorhinal cortex and subiculum. *Lightning talk presented at the 2018 International Conference on Learning and Memory. Huntington Beach, USA*
- Shine, J. P.**, Valdés-Herrera J. P., Tempelmann, C., & Wolbers, T. (2017). Multivariate decoding of allocentric boundary direction in the human entorhinal cortex and subiculum. *Poster presented at the Society for Neuroscience Annual Meeting, Washington DC, USA*
- Shine, J. P.**, Valdés-Herrera J. P., Hegarty, M, & Wolbers, T. (2016). The Human Retrosplenial Cortex and Thalamus Code Head Direction in a Global Reference Frame. *Poster presented at the Interdisciplinary Navigation meeting, Bad Gastein, Austria*
- Shine, J. P.**, Valdés-Herrera J. P., Hegarty, M, & Wolbers, T. (2015). The Human Retrosplenial Cortex and Thalamus Code Head Direction in a Global Reference Frame. *Poster presented at the Society for Neuroscience Annual Meeting, Chicago, USA*
- Shine, J. P.**, Hodgetts, C. J., Lawrence, A. D., & Graham, K. S. (2013). Posterior cingulate shows greater activation during scene processing in young adult carriers of the APOE ε4 allele. *Poster presented at the Cognitive Neuroscience Society Meeting, San Francisco, USA*
- Shine, J. P.**, Hodgetts, C. J., Lawrence, A. D., & Graham, K. S. (2013). Posterior cingulate shows greater activation during scene processing in young adult carriers of the APOE ε4 allele. *Poster presented at SET for Britain, House of Commons, Westminster, London, UK*
- Shine, J. P.** (2011). The role of the perirhinal cortex and posterior parahippocampal gyrus in the processing of object feature ambiguity and context. *Invited talk, Wales Institute of Cognitive Neuroscience, Bangor, UK*
- Shine, J. P.**, Lee, A. C., & Graham, K. S. (2010). Match-mismatch processes in a perceptual discrimination task. *Poster presented at the Cognitive Neuroscience Society meeting, Montreal, Canada*