

# HEIDI EMMANUEL FOO

## EDUCATION

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**University of New South Wales** 07/2018 – 12/2021  
Department of Medicine, Australia  
PhD Candidate in Psychiatry  
*Supervisors: Professor Perminder Sachdev, Associate Professor Wei Wen*  
Research Title: Genetic and environmental influences on the brain functional networks in older adults

**James Cook University** 10/2011 – 09/2014  
Department of Psychology, Australia  
Bachelor of Psychology (*Second Upper Honours*)  
*Thesis Supervisor: Dr Daniel B. Fassnacht*  
Research Focus: Investigated the effect of social engagement and volunteerism on depressive symptoms in older adults

## RESEARCH

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**Adjunct Associate Lecturer** 02/2022 - Present  
University of New South Wales, Sydney, Australia

**Postdoctoral Research Fellow** 11/2021 – Present  
Computational Brain Imaging Group, National University of Singapore, Singapore  
*Supervisor: Assistant Professor Thomas Yeo*

**Research Scholar cum Research Officer** 09/2017 – 07/2018  
Singapore Bioimaging Consortium, A\*STAR, Singapore  
*Supervisors: Dr Edward George Robins, Dr Julian Goggi, Dr Joanes Grandjean, Dr Yu Fu*  
Research Focus: Assessment of dopaminergic transmitter dysfunction using Optogenetics in a model of Parkinson's disease

**Senior Research Assistant** 03/2015 – 09/2017  
National Neuroscience Institute, Singapore  
*Supervisor: Associate Professor Nagaendran Kandiah*  
Research Focus: Investigated the underlying neurobiological processes of patients with Parkinson's disease and dementia using advanced neuroimaging techniques, neuropsychological assessments, and genetics

**Visiting Scholar**

11/2016 – 12/2016

University of California San Francisco, Memory and Aging Center, United States of America  
*Supervisors: Professor Bruce Miller and Assistant Professor Suzee Lee*  
Research Focus: Differentiated the types of dementia using seed-based resting-state functional neuroimaging techniques

**Research Intern**

10/2014 – 02/2015

Duke-NUS Graduate Medical School, Cognitive Neuroscience Laboratory, Singapore  
*Supervisor: Dr Irma Kurniawan*  
Research Focus: Investigated the effects of nap on reward patterns

**PUBLICATIONS**

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1. **Foo H**, Thalamuthu A, Jiang JY, et al. Age- and sex-related topological organisation of human brain functional networks and their relationship to cognition. *Frontier of Aging Neuroscience* 2021.
2. **Foo H**, Thalamuthu A, Jiang JY, et al. Novel genetic variants associated with brain functional networks in 18,445 adults from the UK Biobank. *Scientific Reports* 2021; 11:1-12. doi: 10.1038/s41598-021-94182-9
3. **Foo H**, Thalamuthu A, Jiang JY, et al. Associations between Alzheimer's disease polygenic risk scores and hippocampal subfield volumes in 17,161 UK Biobank participants. *Neurobiology of Aging* 2021; 98:108-115. doi: 10.1016/j.neurobiolaging.2020.11.002
4. **Foo H\***, Mandino F\*, Vrooman RM\*, et al. A triple-network organization for the mouse brain. *Molecular Psychiatry* 2021. doi: 10.1038/s41380-021-01298-5
5. Wong F, Yatawara C, Low A, **Foo H**, et al. Cerebral Small Vessel Disease Influences Hippocampal Subfield Atrophy in Mild Cognitive Impairment. *Translational Stroke Research* 2021; 12:284-292. doi: 10.1007/s12975-020-00847-4
6. Heng LC, SH, **Foo H**, Kandiah N. Confluent White Matter in progression to Alzheimer's dementia. *Alzheimer Disease & Associated Disorders* 2021; 35:8-13. doi: 10.1097/WAD.0000000000000409
7. Bielszyk N, Ando A, Badhwar AP, et al. Effective self-management for early career researchers in the natural and life sciences. *Neuron* 2020; 106:212-217. doi: 10.1016/j.neuron.2020.03.015
8. **Foo H**, Mather KA, Jiang JY, Thalamuthu A, Wen W, Sachdev PS. Genetic influence on ageing-related changes in resting-state brain functional networks in healthy adults: A systematic review. *Neuroscience & Biobehavioral Reviews* 2020; 113:98-110. doi: 10.1016/j.neubiorev.2020.03.011
9. **Foo H**, Mather KA, Thalamuthu A, Sachdev PS. The many ages of man: Diverse approaches to assessing ageing-related biological and psychological measures and their relationship to chronological age. *Current Opinions of Psychiatry* 2019.
10. Low A, **Foo H**, Yong TT, Kandiah N. Hippocampal subfield atrophy of CA1 and subicular structures predict progression to dementia in idiopathic Parkinson's disease. *Journal of Neurology, Neurosurgery, and Psychiatry* 2019; 0: 1-7. doi: :10.1136/jnnp-2018-319592.

11. **Foo H\***, Vipin A\*, Lim J, et al. Regional white matter hyperintensity is associated with widespread gray matter atrophy in mild cognitive impairment. *Journal of Alzheimer's Disease* 2018; 66: 533-549. doi: 10.3233/JAD-180280.
12. Chander RJ, **Foo H**, Yong TT, et al. Serial position effect profiles of recall in mild cognitive impairment: interplay between hippocampal volumes and white matter hyperintensities. *Aging* 2018; 10: 1-15.
13. Ong M, **Foo H**, Chander RJ, et al. Influence of diabetes mellitus on longitudinal atrophy and cognition in Parkinson's disease. *Journal of the Neurological Sciences* 2017; 377: 122-126. doi: 10.1016/j.jns.2017.04.010.
14. Ting KS, **Foo H**, Chia PS, et al. Dyslexic characteristics of Chinese-speaking semantic variant of Primary Progressive Aphasia. *Journal of Neuropsychiatry and Clinical Neuroscience* 2017. doi: 10.1176/appi.neuropsych.17040081
15. **Foo H**, Ng KP, Tan YJ, et al. Interaction between APOE-ε4 and HMGB1 is associated with widespread cortical thinning in mild cognitive impairment. *Journal of Neurology, Neurosurgery, and Psychiatry* 2017. Published Online First: 28 June 2017. doi: 10.1136/jnnp-2017-315869.
16. **Foo H**, Mak E, Chander RJ, et al. Associations of Hippocampal Subfields in the Progression of Cognitive Decline related to Parkinson's disease. *Neuroimage: Clinical* 2017; 14: 37-42. doi: 10.1016/j.nicl.2016.12.008.
17. **Foo H**, Mak E, Yong TT, et al. Subcortical atrophy progression in cognitively impaired Parkinson's disease. *European Journal of Neurology* 2016; 0: 1-8. doi: 10.1111/ene.13205.
18. **Foo H**, Kandiah N. The role of Cerebrovascular Disease in Parkinson's Disease Related Cognitive Impairment. Review Paper. *Journal of Parkinson's disease and Alzheimer's disease* 2016; 1-7.
19. **Foo H**, Mak E, Yong TT, et al. Progression of cerebral small vessel disease correlates with cortical thinning in Parkinson's disease. *Parkinsonism and Related Disorders* 2016; 31: 34-40. doi: 10.1016/parkreldis.2016.06.019.

## **CONFERENCE PRESENTATIONS**

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1. "Associations between Alzheimer's disease polygenic risk scores and hippocampal subfields in UK Biobank participants." **Foo H**, Thalamuthu A, Jiang JY, Wen W, Mather K, Sachdev P. Organization of Human Brain Mapping Conference (OHBM) June 2019; Rome, Italy (Poster)
2. "Triple network activity regulation mediated by the insular cortex in the mouse brain." Mandino F\*, Yeow LY\*, Teoh CL\*, **Foo H\***, Bi RZ, Zhang JY, Low N, Lim T, Gigg J, Malini OC, Fu Y, Grandjean JG. International Society for Magnetic Resonance in Medicine (ISMRM) May 2019; Montréal, Canada (Poster) \*Equal contributions from authors
3. "Progression of cerebral small vessel disease correlates with cortical thinning in Parkinson's disease." **Foo H**, Mak E, Yong TT, Wen MC, Chander RJ, Au WL, Tan CST, Kandiah N. Alzheimer's Association International Conference (AAIC) July 2016, Toronto, Canada (Poster)

## **HONOURS AND AWARDS**

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2018	Tan Kah Kee Postgraduate Scholarship
2017	Scientia PhD Scholarship
2013	Golden Key International Honours Society Award
2012	National Youth Achievement Award (Gold)
2009	Youth Community Leader Award, South-East Community Development Council
2006	Youth Community Involvement Ambassador

## **LEADERSHIP AND VOLUNTEERING ACTIVITIES**

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2020	Treasurer of the Organization of Human Brain Mapping Conference, Postdoc and Student Special Interest Group
2019	Treasurer-Elect of the Organization of Human Brain Mapping Conference, Postdoc and Student Special Interest Group
2018	Team Leader; Environmental conservation, Kalimantan and Bali, Indonesia
2013	Vice-President of Catholic Society, James Cook University, Singapore
2009	Youth Community Leader, South-East Community Development Council, Singapore
2008	Executive Committee Member (Head of Logistics) Student Councillor, Singapore

## **RESEARCH INTERESTS**

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Ageing; neurodegenerative diseases; neuroimaging techniques; graph theory; brain connectomes; genetics; biomarkers; optogenetics

## **SKILLS**

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**Technical Skills:** Optogenetics surgery, animal preparation, animal histology, functional imaging, brain imaging analyses, genetic analyses

**Languages:** Proficient in written and spoken English and Chinese, conversational Korean

**Other skills:** Grant writing

## REFERENCES

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**Dr Edward George Robins**

Principal Research Scientist  
Singapore BioImaging Consortium,  
A\*STAR, Singapore  
[edward\\_robins@sbic.a-star.edu.sg](mailto:edward_robins@sbic.a-star.edu.sg)

**Dr Joanes Grandjean**

Assistant Professor  
Donders Institute, Radboud University,  
Netherlands

**Professor Nagaendran Kandiah**

Clinician Scientist, Neurology  
National Neuroscience Institute,  
Singapore  
[nagaendran\\_kandiah@nni.com.sg](mailto:nagaendran_kandiah@nni.com.sg)

**Assistant Professor Helen Juan Zhou**

Principal Research Scientist  
Duke-NUS Graduate Medical School,  
Singapore  
[helen.zhou@duke-nus.edu.sg](mailto:helen.zhou@duke-nus.edu.sg)