

**Chin Hong Tan, Ph.D.**  
Division of Psychology  
Nanyang Technological University  
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## ACADEMIC POSITIONS

- 2018 - Present    **Assistant Professor**  
Division of Psychology  
School of Social Sciences  
Nanyang Technological University, Singapore
- 2016 - 2018      **Postdoctoral Scholar**  
Neuroradiology Section  
Department of Radiology and Biomedical Imaging  
University of California, San Francisco
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## EDUCATION

- 2016              **Ph.D. in Psychology** – *Cognitive Neuroscience Division*  
University of Illinois at Urbana-Champaign
- 2011              **B.Soc.Sci (Hons) in Psychology** – *First Class Honours*  
National University of Singapore
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## RESEARCH INTERESTS

Imaging genetics of Alzheimer's disease; Cerebrovascular disease; Cognitive aging

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## PUBLICATIONS

1. Broce IJ<sup>†</sup>, **Tan CH<sup>†</sup>**, Fan CC, Witoelar A, Wen N, Jansen I, Hess, CP, Dillon WP, Glastonbury CM, Glymour M, Yokoyama JS, Elahi FM, Miller BL, Mormino EC, Sperling RA, Bennett DA, McEvoy LK, Brewer JB, Feldman HA, Posthuma D, Human BT, Schellenberg GS, Yaffe K, Andreassen OA, Dale AM, Sugrue LP, Karch CM, Desikan RS. Dissecting the genetic relationship between cardiovascular risk factors and Alzheimer's disease. *Acta Neuropathologica. Accepted.* [<sup>†</sup>joint-first] [IF: 15.872]
2. **Tan CH<sup>\*†</sup>**, Bonham LW<sup>†</sup>, Fan CC, Mormino EC, Sugrue LP, Broce IJ, Hess CP, Yokoyama JS, Rabinovici GD, Miller BL, Yaffe K, Schellenberg GS, Kauppi K, Holland D, McEvoy LK, Kukull WA, Tosun D, Weiner MW, Sperling RA, Bennett DA, Hyman BT, Andreassen OA, Dale AM, Desikan RS\*. Polygenic Hazard Score, Amyloid Deposition and Alzheimer's Neurodegeneration. *Brain. Accepted* [<sup>\*</sup>corresponding authors] [<sup>†</sup>joint-first][IF: 10.840]
3. Barkovich MJ<sup>†</sup>, **Tan CH<sup>†</sup>**, Nillo RM, Li Y, Xu D, Glastonbury CM, Glenn OA, Dillon WP, Hess CP, Mueller S, Kline C, Dale AM, Jernigan TL, Sugrue LP, Barkovich AJ, Desikan, RS. Abnormal morphometry of subcortical regions in neurofibromatosis type 1. *Radiology. In press* [<sup>†</sup>joint-first] [IF: 7.469]
4. **Tan CH<sup>\*</sup>**, Desikan RS\*. Interpreting Alzheimer's disease polygenic scores. *Ann Neurol.* 2018;83(3):443-445. [<sup>\*</sup>corresponding authors] [IF: 10.244]

5. **Tan CH\***, Fan CC, Mormino EC, Sugrue LP, Broce IJ, Hess CP, Dillon WP, Bonham LW, Yokoyama JS, Karch CM, Brewer JB, Rabinovici GD, Miller BL, Schellenberg GD, Kauppi K, Feldman HA, Holland D, McEvoy LK, Hyman BT, Andreassen OA, Dale AM, Desikan RS\*. Polygenic hazard score: an enrichment marker for Alzheimer's associated amyloid and tau deposition. *Acta Neuropathol.* 2018; 135(1):85-93 [\*corresponding authors] [IF: 15.872]
6. Li Y, Barkovich MJ, Karch CM, Nillo RM, Fan CC, Broce IJ, **Tan CH**, Hess CP, Dillon WP, Glenn O, Glastonbury CM, Olney NT, Yokoyama JS, Bonham LW, Miller BL, Kao AW, Schmansky NJ, Fischl B, Andreassen OA, Jernigan TL, Dale AM, Sugrue LP, Barkovich AJ, Desikan RS, Sugrue LP. Regionally specific TSC1 and TSC2 gene expression and tuberous sclerosis complex. *Sci Rep.* 2018; 8:13373 [IF: 4.122]
7. Broce IJ, Karch CM, Wen N, Fan CC, Wang Y, **Tan CH**, Kouri N, Ross OA, Hoglinger GU, Muller U, Hardy J, Mojmeni P, Hess CP, Dillon WP, Miller ZA, Bonham LW, Rabinovici GD, Rosen HJ, Schellenberg GD, Franke A, Karlsen TH, Veldink JH, Ferrari R, Yokoyama JS, Miller BL, Andreassen OA, Dale AM, Desikan RS, Sugrue LP. Immune-mediated genetic enrichment in frontotemporal dementia: An analysis of genome-wide association studies. *PLoS Med.* 2018; 15(1): e1002487 [IF: 11.675]
8. Bonham L, Karch CM, Fan CC, **Tan CH**, Geier, EG, Wang Y, Wen N, Broce IJ, Li Y, Barkovich MJ, Ferrari R, Hardy J, Momeni P, Hoeglenger G, Muller U, Hess CP, Sugrue LP, Dillon WP, Schellenberg GD, Miller BL, Andreassen OA, Dale AM, Barkovich AJ, Yokoyama JS, Desikan RS. CXCR4 involvement in neurodegenerative diseases. *Transl Psychiatry* 2018;8(73) [IF: 4.691]
9. Kauppi K, Fan CC, McEvoy LK, Holland D, **Tan CH**, Chen CH, Andreassen OA, Desikan RS, Dale AM. Combining polygenic hazard score with volumetric MRI and cognitive measures improves prediction of progression from mild cognitive impairment to Alzheimer's disease. *Front Neurosci* 2018;12:260. [IF: 3.877]
10. **Tan CH\***, Hyman BT, Tan JJX, Hess CP, Dillon WP, Schellenberg GD, Besser LM, Kukull WA, Kauppi K, McEvoy LK, Andreassen OA, Dale AM, Fan CC, Desikan RS\*. Polygenic hazard scores in preclinical Alzheimer disease. *Ann Neurol.* 2017; 82(3):484-488. [\*corresponding authors] [IF: 10.244]
11. **Tan CH**, Low KA, Kong T, Fletcher MA, Zimmerman B, Maclin EL, Chiarelli AM, Gratton G, Fabiani M. Mapping cerebral pulse pressure and arterial compliance over the adult lifespan with optical imaging. *PLoS One.* 2017; 12(2):e0171305. [IF: 2.766]
12. Chiarelli AM, Fletcher MA, **Tan CH**, Low KA, Maclin EL, Zimmerman B, Kong T, Gorsuch A, Gratton G, Fabiani M. Individual differences in regional cortical volumes across the life span are associated with regional optical measures of arterial elasticity. *Neuroimage.* 2017; 162:199-213. [IF: 5.426]
13. **Tan CH**, Low KA, Schneider-Garces N, Zimmerman B, Fletcher MA, Maclin EL, Chiarelli AM, Gratton G, Fabiani M. Optical measures of changes in cerebral vascular tone during voluntary breath holding and a Sternberg memory task. *Biol Psychol.* 2016; 118:184-194. [IF: 3.070]
14. Fletcher MA, Low KA, Boyd R, Zimmerman B, Gordon BA, **Tan CH**, Schneider-Garces N, Sutton BP, Gratton G, Fabiani M. Comparing Aging and Fitness Effects on Brain Anatomy. *Front Hum Neurosci.* 2016; 10:286. [IF: 3.209]
15. Fabiani M, Low KA, **Tan CH**, Zimmerman B, Fletcher MA, Schneider-Garces N, Maclin EL, Chiarelli AM, Sutton BP, Gratton G. Taking the pulse of aging: mapping pulse pressure and elasticity in cerebral arteries with optical methods. *Psychophysiology.* 2014; 51(11):1072-88. [IF: 2.986]
16. Zimmerman B, Sutton BP, Low KA, Fletcher MA, **Tan CH**, Schneider-Garces N, Li Y, Ouyang C, Maclin EL, Gratton G, Fabiani M. Cardiorespiratory fitness mediates the effects of aging on cerebral blood flow. *Front Aging Neurosci.* 2014; 6:59. [IF: 4.000]

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## AWARDS & HONORS

2018	New Vision Investigator, Finalist (Charleston Conference in Alzheimer's disease)
2016	Departmental Summer Fellowship (UIUC)
2015	List of Teachers Ranked as Excellent (UIUC)
2013	CIAP Conference travel award
2012	NIH-funded Training Course in fMRI (UMich)
2011, 2012, 2014	Departmental travel award (UIUC)
2011	University Fellowship (UIUC)
2009, 2010	Ngee Ann Kongsi Scholarship
2009	Alumni Student Exchange Award (NUS)
2008	Donated Scholarship (NUS)
2007, 2008, 2010	Dean's List (NUS)

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## TALKS

2018	National University of Singapore, Department of Psychology Brownbag
2018	Duke-NUS Medical School, Center for Cognitive Neuroscience
2018	Nanyang Technological University, Division of Psychology Seminar
2018	16th Annual Mild Cognitive Impairment Symposium. Miami, FL. ( <i>invited</i> )
2017	Fall Alzheimer's Disease Centers Directors' Meeting. San Diego, CA. ( <i>invited</i> )
2017	University of California, San Diego, Department of Neurosciences and Radiology
2016	Duke-NUS Medical School, Center for Cognitive Neuroscience
2016	Nanyang Technological University, Division of Psychology Seminar
2016	National University of Singapore, Department of Psychology Brownbag
2016	University of Illinois, Cognitive Neuroscience Division Brownbag
2012	University of Illinois, Cognitive Neuroscience Division Brownbag

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## POSTERS & ORAL PRESENTATIONS

1. **Tan CH**, Sugrue LP, Desikan RS (2018) Associations of Polygenic Hazard Scores with Regional Amyloid Deposition and Neurodegeneration. *Annual Radiology Research Retreat*. Santa Rosa
2. Barkovich MJ, **Tan CH**, Nillo RM, et al. (2018) Cerebral Morphology and Neurocognitive Development in Children with Neurofibromatosis Type 1. *Annual Radiology Research Retreat*. Santa Rosa
3. Barkovich MJ, **Tan CH**, Sugrue L, et al. (2018) Abnormal Cortical and Subcortical Cerebral Morphology in Neurofibromatosis Type 1: A Potential Novel Biomarker for Disease Pathophysiology and Progression. *American Society of Neuroradiology*, Vancouver
4. Barkovich MJ, Nillo RM, **Tan CH**, et al. (2018) Quantitative subcortical morphometry in mTOR/AKT/PI3K pathway disorders: A novel clinical biomarker. *International Society for Magnetic Resonance in Medicine*, Paris
5. Broce IJ, Lee S, Karch CM, Fan CC, **Tan CH**, et al. (2018) Cerebellar networks in C9orf72 gene expression: implications for neurodegenerative diseases. *Advances in Alzheimer's and Parkinson's Therapies*. Torino
6. **Tan CH**, Fan CC, Mormino EC, et al. (2017) Polygenic hazard score: an enrichment marker for Alzheimer's associated amyloid and tau deposition. *Clinical Trials on Alzheimer's Disease*, Boston (**Oral**)
7. **Tan CH**, Fan CC, Mormino EC, et al. (2017) Polygenic hazard score: an enrichment marker for Alzheimer's associated amyloid and tau deposition. *UCSF Imaging Research Symposium*, San Francisco (**Oral**)
8. Kong T, Low KA, Chiarelli AM, Fletcher MA, **Tan CH**, et al. (2017) Illuminating age-related resting state network differences using whole-head near-infrared optical imaging. *Society for Psychophysiological Research*, Vienna
9. Fletcher MA, Chiarelli AM, **Tan CH**, et al. (2017) Individual Differences in Regional Cortical Volumes are Associated with Regional Optical Measures of Arterial Elasticity in Healthy Older Adults. *Clinical and Translational Neuroscience Workshop*, Champaign

10. Zimmerman B, Low KA, **Tan CH**, et al. (2016) The effects of age and fitness on the timing of cerebrovascular reactivity: Concurrent recording of arterial spin labelling and near infrared spectroscopy. *Society for Psychophysiological Research*, Minneapolis
11. Zimmerman B, Sutton BP, Low KA, **Tan CH**, et al. (2015) The differences between mean blood flow and vascular reactivity and their relationships with age, fitness, and cognition in older adults. *Society for Psychophysiological Research*, Seattle. (student poster award)
12. Kong T, Low KA, Fletcher MA, **Tan CH**, et al. (2015) A cross-vs.-within hemisphere comparison of age-related changes in resting state functional connectivity. *Society for Psychophysiological Research*, Seattle. (student poster award)
13. Zimmerman B, Sutton BP, Low KA, **Tan CH**, et al. (2015) Change in cerebral blood flow in the visual cortex to a flashing checkerboard correlates with measures of executive function in older adults. *Cognitive Neuroscience Society*, San Francisco
14. **Tan CH**, Low KA, Schneider-Garces N, et al. (2014) Measuring vascular tone in the brain using optical imaging during a sternberg memory task. *Society for Psychophysiological Research*, Atlanta
15. **Tan CH**, Low KA, Zimmerman B, et al. (2014) Measuring vascular tone in the brain using optical imaging during voluntary breath holding. *Society for Psychophysiological Research*, Atlanta
16. Fletcher MA, Burzynska A, Low KA, Boyd R, Zimmerman B, **Tan CH**, et al. (2014) The Mediating effects of Anatomy and White Matter Hyperintensities on Cognition. *Society for Psychophysiological Research*, Atlanta
17. Baniqued P, Low KA, Fletcher M, Schneider-Garces N, **Tan CH**, et al. (2014) A Functional and Structural Network View of Task-Switching Dynamics in Ageing. *International Conference on Cognitive Neuroscience*, Brisbane
18. Tse CY, Novak MA, **Tan CH**, et al. (2014) Tracking brain plasticity with event-related optical signal (EROS). *International Conference on Cognitive Neuroscience*, Brisbane (Oral)
19. Fletcher MA, Low KA, Schneider-Garces N, Zimmerman B, **Tan CH**, et al. (2014) Using PCA to evaluate the effects of cardiorespiratory fitness on cortical thinning and cognition in healthy older adults. *Cognitive Neuroscience Society*, Boston
20. Fletcher MA, Low KA, **Tan CH**, et al. (2014) The effects of fitness on subcortical brain anatomy and cognition across the life span. *Society for Neuroscience*, Washington DC
21. Zimmerman B, Sutton BP, Low KA, **Tan CH**, et al. (2014) Cardiorespiratory fitness mediates the effect of age on mean cerebral blood flow in the gray matter of the visual cortex. *Society for Neuroscience*, Washington DC
22. Fletcher MA, Low KA, Schneider-Garces N, Zimmerman B, **Tan CH**, et al. (2014) Exercise Makes You Thicker in The Cortex. *American Medical Association*, Dallas
23. Mathewson KE, Low KA, Schneider-Garces N, Chiarelli A, **Tan CH**, et al. (2014) Retinotopic visual mapping of brain oxygenation and neuronal activity using simultaneous fast and slow near-infrared optical brain imaging in humans. *Vision Sciences Society*, St. Pete Beach.
24. Tse CY, Novak MA, **Tan CH**, et al. (2014) Tracking brain plasticity with event-related optical signal (EROS). *Association for Research in Otolaryngology*, San Diego
25. Fabiani M, Low KA, Maclin EL, **Tan CH**, et al. (2013) Taking the pulse of the brain: use of diffusive optical imaging to assess the state of the brain's vasculature. *Society for Psychophysiological Research*, Florence (Oral)
26. Zimmerman B, Sutton BP, Low KA, Schneider-Garces N, Fletcher MA, **Tan CH**, et al. (2013) Cerebral blood flow in the aging brain is mediated by cardiorespiratory fitness and is associated with cognitive performance. *Society for Psychophysiological Research*, Florence. (student poster award)
27. Fletcher MA, Boyd R, Low KA, Schneider-Garces N, Freeman A, Northrup E, Hopman R, Ventrella C, Zimmerman B, **Tan CH**, et al. (2013) Relationship between Cardiorespiratory Fitness and Hippocampal Subfields Anatomy in Healthy Older Adults. *Cognitive Neuroscience Society*, San Francisco
28. **Tan CH**, Novak MA, Tse CY, et al. (2013) Tracking brain plasticity with event-related optical signal (EROS). *Conference on Implantable Auditory Protheses*, Lake Tahoe
29. Tse CY, Gordon BA, **Tan CH**, et al. (2013) Tracking brain plasticity with event-related optical signal (EROS) in cochlear implant patients. *Organization for Human Brain Mapping*, Seattle
30. **Tan CH**, Zimmerman B, Low KA, et al. (2012). Taking the aging pulse: Regional arterial elasticity in the brain and its association with cardiorespiratory fitness, cognitive ability and brain atrophy. *Society for Psychophysiological Research*, New Orleans

31. Zimmerman B, **Tan CH**, Low KA, et al. (2012) Hemodynamic response to breath holding in the aging brain is associated with measures of arterial elasticity and cardiorespiratory fitness. *Society for Psychophysiological Research*, New Orleans
32. Schneider-Garces N, Weng T, **Tan CH**, et al. (2012). Effects of variation in working memory span and cardiovascular fitness on the pattern of bold fMRI responses in middle-aged and older adults. *Society for Psychophysiological Research*, New Orleans
33. Fletcher MA, Low KA, Schneider-Garces N, Weng T, Boyd R, Freeman A, Anwar M, Zimmerman B, **Tan CH**, et al. (2012) Relationships between cardiorespiratory fitness, brain anatomy, and cognition in healthy old adults. *Society for Psychophysiological Research*, New Orleans
34. **Tan CH**, Zimmerman B, Low KA, et al. (2012) The aging pulse: Regional arterial elasticity in the brain is associated with fitness and cognitive performance. *Cognitive Neuroscience Society*, Chicago
35. Fletcher M, Low KA, Schneider-Garces N, Weng T, Boyd R, Majewski A, Zimmerman B, **Tan CH**, et al. (2012) Effects of age and physical fitness on brain anatomy and neuropsychological test scores in healthy aging adults. *Cognitive Neuroscience Society*, Chicago

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## TEACHING

**Primary Lecturer:** PSYC 100 – Introduction to Psychology (Fall 2014, Spring 2015, Fall 2015, Spring 2016)

Fall 2015 List of Teachers Ranked as Excellent (UIUC)  
Spring 2016 Graduate Teacher Certificate (UIUC)

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## PROFESSIONAL MEMBERSHIPS

2012 – 2017 Association for Psychological Science  
2012 – 2015 Society for Psychophysiological Research  
2011 – 2012 Cognitive Neuroscience Society

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## PROFESSIONAL SERVICE

Ad hoc reviewing: Alzheimer's & Dementia  
Conference Abstract Reviewer: Alzheimer's Association International Conference (AAIC) 2018

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## SELECTED MEDIA REPORTS

This new Alzheimer's test looks beyond a single problem gene. October 2017. [Wired](#).  
New genetic test can assess Alzheimer's risk. September 2017. [PsychCentral](#).  
A more accurate predictor for Alzheimer's? September 2017. [U.S. News & World Reports](#).  
Taking pulse of aging of the brain. August 2014. [Science Daily](#).  
Scientists map the pulse pressure and elasticity of arteries in the brain. August 2014. [Medical Xpress](#).