

Sung Wook Chung

E: sungwookmonash@gmail.com • M: +61 474 126 352

[linkedin.com/in/sung-wook-chung](https://www.linkedin.com/in/sung-wook-chung) • Permanent Resident of Australia

A passionate data science enthusiast who loves making sense of information and turning data into knowledge. Working to bridge the gap between supply and demand of teachers in Australia and better understand teacher workforce characteristics to inform policy makers. Also, a scientific researcher who holds a PhD spanning disciplines of neuroscience, non-invasive brain stimulation, data science, and mental health from Monash University, Australia. Established the groundwork for the use of a rapid stimulation protocol in the prefrontal cortex for the potential treatment of the major depressive disorder and cognitive impairment. Developed the optimal method of application using complex data-analysis and robust statistical analysis methods.

Core skills: Data / Statistical Analysis • Scientific / Report Writing • Communication • Neurophysiology

EDUCATION

Feb 2014 – Jan 2018

Doctor of Philosophy, PhD | Full-Time

Monash University, Monash Alfred Psychiatry research centre

PhD Title: *Developing optimal methods for theta burst prefrontal brain stimulation*
Investigating what theta burst stimulation (TBS) does in the prefrontal cortex and identifying optimal parameters of TBS in its ability to alter brain activity in humans. A novel method was developed to obtain the most robust neurophysiological and behavioural outcome.

- Coordinating clinical trials in healthy individuals
- Conducting experiments independently and as part of a collaborative team
- Programming of MATLAB scripts and analysis of TMS-EEG / EEG data
- Effectively communicated research ideas and concepts to a variety of audiences

Jul 2005 – Jul 2006

Bachelor of Science (Honours – Immunology)

Monash University, Australia

- Title of Honours Thesis: *The effect of HIV infection on matrix metalloproteinase (MMP) expression on monocytes and macrophage subsets*

Feb 2004 – Jul 2005

Bachelor of Science

University of New South Wales, Australia

- Specialisation: Medical Microbiology and Immunology, Physiology

Jun 2000 – Jul 2003

Diploma (Biotechnology)

Singapore Polytechnic, Singapore

PROFESSIONAL EXPERIENCE

Feb 2019 – Present

Data Analyst | Full-Time

Australian Institute for Teaching and School Leadership (AITSL)

- Analysis of Australia Teacher Workforce Data
- SAS/SQL and R programming
- Report writing and visualisation
- Stakeholder management

Jan 2018 – Dec 2018

Post-doctoral Researcher | Full-Time

Monash University, Monash Alfred Psychiatry research centre

- Recruitment and screening of research participants
- Performing non-invasive brain stimulation (tACS) and collecting EEG data
- Programming of MATLAB scripts and data analysis
- Supervising students (1 HDR, 2 Honours)

Feb 2014 – Jan 2018

PhD Scholar | Full-Time

- As above (Education)

Jul 2015 – Apr 2016

Research Assistant | Part-Time

Monash University, Monash Alfred Psychiatry research centre

- Recruitment and screening of research participants
- Performing non-invasive brain stimulation (tDCS/rTMS) and collecting EEG data
- Analysis of neurophysiological data (TMS-EEG) using MATLAB
- Writing scientific papers for publication

Nov 2012 – Feb 2014 /
Apr 2009 – Dec 2010

Assistant Global Sales and Marketing Manager / Web Designer | Full-Time

Grand Vertex Trading (www.gvt.co.kr), South Korea

- Sales and marketing
- Web design, editing and management

Jan 2011 – Oct 2012

Military Service

Intelligence Unit, South Korea

ACHIEVEMENTS

2014 – 2018

Co-author on 14 neuroscience publications (8 first-author)

Presented at 5 local and 2 international conferences

7 awards across local and international conferences

2018

Journal Cover

Human Brain Mapping

- 2/14 Neuroimaging ranking

2017

Outstanding Poster Award

2nd International Brain Stimulation Conference, Spain

- One of 3 out of ~500 (US\$500)

2016

Monash Graduate Scholarships (AU\$26,288 per annum)

Faculty Graduate Research International Scholarships (AU\$39,900 per annum)

PORTFOLIO

Google Scholar
GitHub

<https://scholar.google.com.au/citations?user=OuGd8TAAAAAJ&hl=en>

<https://github.com/tonoplast>

VOLUNTEER ACTIVITIES

TMS course assistant

MAPrc, Melbourne
2014 – 2018

Student Representative

Alfred Precinct Student Information Session
2014 – 2016

De Castella Fund Run

Xavier College, Melbourne
2014 – 2016

REFEREES

Professor Paul Fitzgerald

Director of ECIMH, Epworth Healthcare
Tel: +61 3 9805 4287
E: paul.fitzgerald@monash.edu

A/Prof Kate Hoy

Head, Cognitive Therapeutic Research Program
Tel: +61 3 9076 5034
E: kate.hoy@monash.edu

Dr Rebecca Segrave

Clinical Neuropsychologist
Tel: +61 3 9905 0110
E: rebecca.segrave@monash.edu

MEMERSHIPS

- Australasian Brain Stimulation Society
- Australian Brain Alliance
- Association of Neurophysiological Technologists of Australia (ANTA)
- Australasian Cognitive Neuroscience Society (ACNS)

Details

AWARDS & ACHIEVEMENTS

- Nominations for the Mollie Holman Doctoral Medal (Thesis Excellence), Monash University, Feb 2019
- Cover of Human Brain Mapping in Feb 2018 issue (Publication #10)
- Travel Award for Australasian Cognitive Neuroscience Society Conference (value: AUD \$250), 2017
- Outstanding Poster Award at 2nd International Brain Stimulation Conference (1 of 3 out of ~ 500; value: US \$ 500), 2017
- Monash travel cover to attend 2nd International Brain Stimulation Conference (value: approx. AUD \$1,800), 2017
- 2nd Prize Poster Presentation at SOBR symposium (value: AUD \$250), 2016
- Monash travel grant (value: AUD \$2,115), 2016
- Top ranked student abstracts for 2nd Australasian Brain Stimulation meeting (value: AUD \$250), 2016
- Faculty Graduate Research International Scholarship (FGRIS) (value: AUD \$39,900 per annum), 2016
- Monash Graduate Scholarship (MGS) (value: AUD \$26,288 per annum), 2016
- Monash travel cover to attend 1st International Brain Stimulation Conference (value: approx. AUD \$1,000), 2015
- Faculty of Pharmacy Fee Waiver (value: approx. AUD \$108,989), 2007

PUBLICATION(S)

1. Hill AT, McModie S, Fung W, Hoy KE, **Chung SW**, Bertram KL. Impact of prefrontal intermittent theta-burst stimulation on working memory and executive function in Parkinson's disease: A double-blind sham-controlled pilot study. *Brain Research*, 1726: 146506; 2019
2. Bailey NW, Freedman G, Raj K, Sullivan CM, Rogasch NC, **Chung SW**, Hoy KE, Chambers R, Hassed C, Van Dam NT, Koenig T, Fitzgerald PB. Mindfulness meditators show altered distributions of early and late neural activity markers of attention in a response inhibition task. *PLoS One*. 14(8): 20203096; 2019
3. Chen L, **Chung SW**, Hoy KE, Fitzgerald PB. Is theta burst stimulation ready as a clinical treatment for depression? Expert review of neurotherapeutics 19(11): 1089-1102; 2019
4. Che X, Cash RFH, **Chung SW**, Bailey NW, Fitzgerald PB, Fitzgibbon BM. The dorsomedial prefrontal cortex as a flexible hub mediating behavioral as well as local and distributed neural effects of social support context on pain: A Theta Burst Stimulation and TMS-EEG study. *Neuroimage*, 201: 116053; 2019
5. **Chung SW**, Thomson CJ, Lee S, Worsley RN, Rogasch NC, Kulkarni J, Thomson RH, Fitzgerald PB, Segrave RA. The influence of endogenous estrogen on high-frequency prefrontal transcranial magnetic stimulation. *Brain Stimulation*, 12(5): 1271-79; 2019
6. **Chung SW**, Sullivan CM, Rogasch NC, Hoy KE, Bailey NW, Cash RFH, Fitzgerald PB. The effects of individualised intermittent theta burst stimulation in the prefrontal cortex: A TMS-EEG study. *Human Brain Mapping*, 40 (2): 608-27, 2018
7. Che X, Cash RFH, **Chung SW**, Fitzgerald PB, Fitzgibbon BM. Investigating the influence of social support on experimental pain and related physiological arousal: A systematic review and meta-analysis. *Neuroscience & Biobehavioural Reviews*, 92: 437-52; 2018
8. Lee S, **Chung SW**, Rogasch NC, Thomson CJ, Worsley RN, Kulkarni J, Thomson RH, Fitzgerald PB, Segrave RA. The influence of endogenous estrogen on transcranial direct current stimulation: A preliminary study. *European Journal of Neuroscience*, 48(4): 2001-12; 2018
9. **Chung SW**, Rogasch NC, Hoy KE, Fitzgerald PB. The effect of single and repeated prefrontal intermittent theta burst stimulation on cortical reactivity and working memory. *Brain Stimulation*, 11(3): 566-74; 2018
10. **Chung SW**, Rogasch NC, Hoy KE, Sullivan CM, Cash RFH, Fitzgerald PB. Impact of different intensities of intermittent theta burst stimulation on the cortical properties during TMS-EEG and working memory performance. *Human Brain Mapping*, 39(2): 783-802; 2018 (**Cover of HBM Feb 2018 Issue**)
11. **Chung SW**, Lewis BP, Rogasch NC, Saeki T, Thomson RH, Hoy KE, Bailey NW, Fitzgerald PB. Demonstration of short-term plasticity in the dorsolateral prefrontal cortex with theta burst stimulation: A TMS-EEG study. *Clinical Neurophysiology*, 128(7): 1117-26; 2017
12. **Chung SW**, Hill AT, Rogasch NC, Hoy KE, Fitzgerald PB. Use of theta-burst stimulation in changing excitability of motor cortex: A systematic review and meta-analysis. *Neuroscience & Biobehavioural Reviews*, 63(4):43-64; 2016
13. **Chung SW**, Rogasch NC, Hoy KE, Fitzgerald PB. Measuring brain stimulation induced changes in cortical properties using TMS-EEG. *Brain Stimulation*, 8(6): 1010-20; 2015
14. **Chung SW**, Hoy KE, Fitzgerald PB. Theta-burst stimulation: a new form of TMS treatment for depression? *Depression and Anxiety*, 32(3):182-92; 2015

POSTER / ORAL PRESENTATION(S)

1. **Chung, SW**, Sullivan CM, Rogasch NC, Hoy KE, Cash RFH, Fitzgerald PB. The effects of individualised intermittent theta burst stimulation in the prefrontal cortex: a TMS-EEG study. 7th Australasian Cognitive Neuroscience Society Conference, Adelaide, Australia. Oral presentation (Dec, 2017)
2. **Chung, SW**, Rogasch NC, Hoy KE, Fitzgerald PB. More is not always better: Impact of different intensities of intermittent theta burst stimulation in prefrontal cortex using TMS-EEG. 2nd International Brain Stimulation Conference, Barcelona, Spain. Poster presentation (Mar, 2017)

3. **Chung, SW**, Lewis BP, Rogasch NC, Saeki T, Thomson R, Bailey NW, Hoy KE, Fitzgerald PB. Demonstration of short-term plasticity in the dorsolateral prefrontal cortex with theta burst stimulation: A TMS-EEG study. SOBR Symposium, Melbourne, Australia. Poster presentation (Nov, 2016)
4. **Chung, SW**, Rogasch NC, Hoy KE, Fitzgerald PB. More is not always better: Impact of different intensities of intermittent theta burst stimulation in prefrontal cortex using TMS-EEG. Central Clinical School Annual Postgraduate Research Symposium, Melbourne, Australia. Poster presentation (Oct, 2016)
5. **Chung, SW**, Lewis BP, Rogasch NC, Saeki T, Thomson R, Bailey NW, Hoy KE, Fitzgerald PB. Demonstration of short-term plasticity in the dorsolateral prefrontal cortex with theta burst stimulation: A TMS-EEG study. 6th International Conference of Transcranial Brain Stimulation, Göttingen, Germany. Poster Presentation (Sep, 2016)
6. **Chung, SW**, Rogasch NC, Hoy KE, Fitzgerald PB. Intensity-dependent effect of intermittent theta burst stimulation in prefrontal cortex: A TMS-EEG Study. 2nd Australasian Brain Stimulation Meeting, Melbourne, Australia. Oral Presentation (Jul, 2016)
7. **Chung SW**, Hill AT, Rogasch NC, Hoy KE, Fitzgerald PB. Use of theta-burst stimulation in changing excitability of motor cortex: a systematic review and meta-analysis. SOBR Symposium, Melbourne, Australia. Poster presentation (Nov, 2015)

CONFERENCES ATTENDED

1. 7th Australasian Cognitive Neuroscience Society Conference, Adelaide, Australia (Dec, 2017)
2. 2nd International Brain Stimulation Conference, Barcelona, Spain (Mar, 2017)
3. 6th International Conference on Transcranial Brain Stimulation, Göttingen, Germany (Sep, 2016)
4. 2nd Australasian Brain Stimulation Meeting, Melbourne, Australia (Jul, 2016)
5. 1st International Brain Stimulation Conference, Singapore Expo Convention and Exhibition Centre, Singapore (Mar, 2015)