

CogSleep Centre of Research Excellence for Optimising Sleep in Brain Ageing and Neurodegeneration

Newsletter - July 2020



Welcome to the CogSleep Newsletter - A message from the CogSleep CIA Prof Sharon Naismith

It has been a productive year since the official launch of the CRE last February, and now that we have our feet on the ground, it's time to start getting more connected with each other!

This newsletter will update members on activities and events throughout the year and keep you informed on progress against our objectives.

Aside from supporting existing work and kickstarting new research across our partners, we have been busy building national and international networks, training programs, and activities with translational value. Here you will get a sense of some of those activities. Although we are unsure of the format, we are also planning a CRE event in September, where we hope to share more with each other and plan for the next four years.

We are pleased to finally have a CogSleep logo. We will email it around to all investigators - please encourage your students and associated ECRs to use it.

In the interim, please send any content for newsletters to our new email address: cogsleep.cre@sydney.edu.au, and follow CogSleep on twitter @cogsleep for all the latest updates.

I hope you enjoy this first edition of the CogSleep Newsletter.

Sharon



News from the Team

In 2019, at World Sleep Vancouver, **Profs Naismith and Grunstein** convened the first ever 'Global Consortia on Sleep, Ageing and Neurodegeneration' meeting, bringing together world leaders working in our field. In addition, **Prof Rajaratnam** is part of an international group seeking to establish circadian clinics. In 2020, the Alzheimer's Association approved 'Sleep and Circadian' as a Professional Interest ISTAART area, and Prof Naismith will be the Vice Chair of this committee, along with Geraldine Rauchs (France), Erik Musiek (USA) and Julie Carrier (Canada).

On a national level, the CogSleep work featured heavily at the Sleep Downunder conference, with **Prof Grunstein** presenting on several panels including a Breakfast Symposia session looking at the elements of producing Australia's first large scale national advertising campaign targeting sleep health, an important issue currently being lobbied to the government.

Prof Robert Adams and **Dr Camilla Hoyos** both featured as speakers in separate Symposia sessions – Prof Adams looking at understudied groups and sleep in Australia, and the need to identify these for the benefit of all of Australia. Meanwhile Dr Hoyos was invited to discuss the novel study of medicinal cannabis for sleep disorders, with a review of the latest literature.

Dr Angela D'Rozario and **Prof Bandana Saini** both featured at the ASTA plenary session looking at the many different uses for sleep EEG, where Dr D'Rozario spoke about High-density EEG signatures in obstructive sleep apnoea, exploring cognitive deficits and response to treatment. Prof Saini then spoke about sleep spindle therapeutics, looking at the effects of drugs on spindles and sleep-dependent memory.

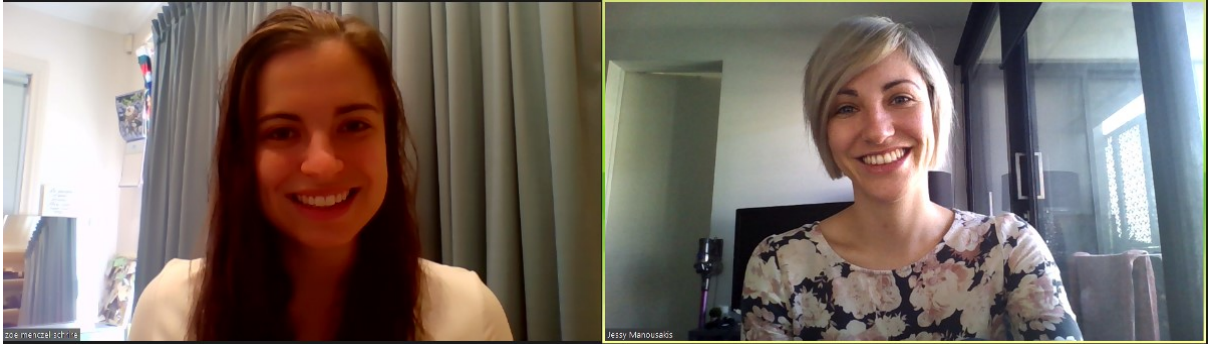
Prof Shantha Rajaratnam spoke at both a Symposia session and the Helen Bearpark plenary exploring the latest findings on Delayed Sleep-Wake Phase Disorder and Shiftwork disorder: Circadian mechanisms and treatment/management strategies.

CogSleep was also represented by HDR scholar **Shawn Kong**, who presented on his PhD about 'Nocturnal Heart Rate variability in older adults with mild cognitive impairment', to a great reception.

Professor Sharon Naismith, **Dr Camilla Hoyos** and **Dr Stephanie Rainey-Smith** presented a symposium titled 'Sleep's role in cognitive impairment and dementia: Personal experiences, neurophysiological changes, modifying risk and tailored CPAP.' There was standing room only and the presentations were well received!

In 2019, **Prof Sharon Naismith**, **A/Prof Chris Gordon** and **Dr Shantel Duffy** were invited by Dementia Training Australia to lead a new education and training package targeting optimal sleep in older people living in residential facilities. Throughout the year, extensive filming and content creation was conducted, and the package is expected to be released and disseminated later this year so look out for that!

CogSleep Academy



In support of our postgraduate trainees/students and early career researchers, we are excited to announce the launch of the CogSleep Academy, chaired by Monash ECR **Jessy Manousakis** and CogSleep HDR scholar **Zoe Schrire**. The Academy aims to support and connect those working in the field of sleep and ageing, promote activities and training opportunities, and facilitate exchanges and career development.

We will be organising a range of catch-ups and networking opportunities throughout the year. The first Academy Meet & Greet will be on **Wednesday 15th July** at 4:00pm via Zoom. Meeting information will be circulated via our Academy mailing list, so please contact cogsleep.cre@sydney.edu.au to link your students and ECRs into the Academy and follow us on Twitter @cogsleepacademy

On the subject of postgraduate students, we would like to take this opportunity to introduce our current CogSleep HDR students and their exciting work.

Shawn Kong, supervised by Prof Sharon Naismith. His project is *'The Effect of Autonomic Dysfunction on Sleep Quality and Cognition in Older Adults at Risk of Dementia'*

Madelaine Pankhurst, supervised by A/Prof Ian Johnston. Her project is *'Associations between sleep spindle and slow-wave coupling and cognitive function in a sleep apnea population'*

Zoe Schrire, supervised by Dr Camilla Hoyos. Her project is *'Sleep and Circadian disturbance Mild Cognitive Impairment- Can Melatonin target multiple modifiable risk factors for cognitive decline?'*

Jun Teh, supervised by Dr Angela D'Rozario. Her project is *'Pharmacologically targeting sleep spindles to improve cognition in ageing'*.

We look forward to seeing these projects develop!

Researcher Spotlight: Dr Jade Murray

Dr. Jade M. Murray completed a bachelor of Science and a postgraduate diploma in Psychology at Monash University, before completing a PhD programme at the Monash University Sleep and Circadian Medicine Laboratory in 2018. Dr. Murray's PhD focused on misalignment between circadian rhythms and sleep and wake, and its association with functional and mood outcomes, particularly depression, anxiety and productivity in a circadian rhythm disordered population.



An important innovation in her work has been tracking light-dark exposure data over time and using this information to build predictive models of circadian timing for development of personalised delivery systems for sleep-wake interventions to improve health and lifestyle outcomes.

Supported by a CogSleep CRE Fellowship, Dr. Murray is currently conducting a study that aims to characterise the sleep and light exposure profiles of older adults with insomnia and examine the association with cognitive function.

Through the Monash Epworth Rehabilitation Research Centre (MERRC), Dr. Murray is also working on an in-home lighting therapy intervention for patients with TBI, to alleviate daytime fatigue. To broaden her international networks and leadership opportunities, Dr. Murray is serving as the network coordinator for the International Association of Circadian Health Clinics, which comprises leading circadian disorder clinics in USA, Europe, Asia and Australia.

Grants News

In 2019, the CRE team were successful in securing a grant from the NHMRC Boosting Dementia Initiative. Researchers across our four key CRE centres are involved in this grant, which is a great way to promote collaboration! The project REducing Sleep Apnoea for the PrEvention of Dementia (REShAPED) is a feasibility RCT aimed at improving cognition by reducing hypoxemia due to sleep apnea. Our team is in close conversation with US researchers, with the intention of joining the grants up for a multinational RCT.

In 2019, **Prof Ralph Martins** also received MRFF and matched Alzheimer's Association funding for the AU-ARROW trial, which is closely aligned with US pointer. While the primary aim is to improve cognition via a multi-faceted lifestyle intervention, we will also examine sleep as a secondary outcome.

Prof Sharon Naismith was appointed in May 2019 the academic lead for the new Brain and Intelligence Science Alliance (BISA), a \$10million investment between Fudan University, China and the University of Sydney. This global interdisciplinary research platform in brain intelligence science and technology will leverage the Sleep Team's strengths in neurobiology and clinical medicine alongside Fudan's strengths in data science and artificial intelligence.

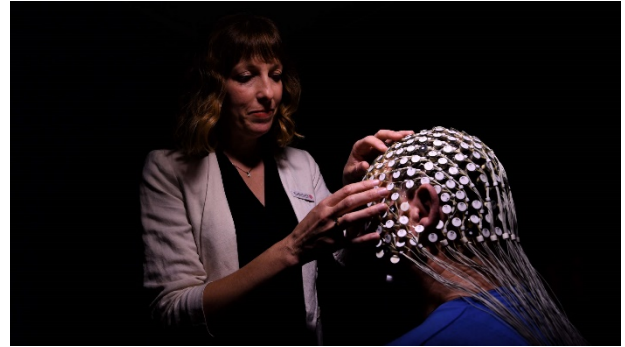
Recently we congratulated **Prof Ron Grunstein, Prof Simon Lewis, Dr Rick Wassing and Dr Stephanie Rainey-Smith**, who all received Investigator Grants for funding in 2021. Prof Grunstein's application '*Targeting Challenges in Sleep Health*' received \$2,414,215. Prof Lewis' '*Predicting, diagnosing and treating synucleinopathies*' received \$3,738,220. Dr Wassing's '*Innovative Neuroscience to Improve Treatment of Sleep Disturbances for Prevention of Depression and Anxiety*' received \$645,205, and Dr Rainey-Smith received \$632,705.00 for her application '*Suboptimal sleep and unhealthy brain ageing: Improving outcomes through treatment*'.

Congratulations to all!

In the news

Dr Camilla Hoyos and Prof Grunstein's Cannabinoid trial was highlighted by Channel 9 in March – see the story [here](#)

Dr Angela D'Rozario (pictured) appeared in the Sydney Morning Herald discussing her team's latest research into the phenomenon of 'sleeping while awake' – check out the article [here](#)



Prof Sharon Naismith represented CogSleep in the feature story 'Short sleep, shorter life': Australia's deadly insomnia epidemic' in the Good Weekend last July. Read the full article [here](#)

Funding opportunities

We are excited to announce that the 2020 CogSleep Seed Grants will open for applications on **Wednesday 8th July**, so please look out for the email on this date with application information and documents.

The annual CogSleep Scholarships, including some newly formed half-scholarships, will also open in the coming months so please look out for further information on these.

If you wish to join our mailing list to see upcoming opportunities please email

cogsleep.cre@sydney.edu.au

Upcoming Events

- **15 July 2020**, 4.00pm AEST: First meeting of the CogSleep Academy, via Zoom
- **16 & 17 September 2020**: CogSleep Symposium – Save the dates!

Publications

Here is a snapshot of just a few select publications over the last 18 months:

[Objective measurement of sleep in mild cognitive impairment: A systematic review and meta-analysis.](#)

D'Rozario, A., Chapman, J., Phillips, C., Palmer, J., Hoyos, C., Mowszowski, L., Duffy, S., Marshall, N., Benca, R., Mander, B., Grunstein, R., Naismith, S. (2020). Sleep Medicine Reviews

[Risk and predictors of dementia and parkinsonism in idiopathic REM sleep behaviour disorder: a multicentre study.](#)

Postuma, R...Lewis, S et al (2019). Brain - A Journal of Neurology

[Advances of Melatonin-Based Therapies in the Treatment of Disturbed Sleep and Mood.](#)

Alston M, Cain SW, Rajaratnam SMW.(2019). Sleep-Wake Neurobiology and Pharmacology.

[Associations between sleep and verbal memory in subjective cognitive decline: A role for semantic clustering.](#)

Manousakis JE, Nicholas C, Scovelle AJ, Naismith SL, Anderson C.(2019). Neurobiology of Learning and Memory.

[Relationships between sleep quality, depressive symptoms and MCI diagnosis: A path analysis.](#)

McKinnon AC, Beath AP, Naismith SL.(2019). Journal of Affective Disorders.

[Effect of Digital Cognitive Behavioral Therapy for Insomnia on Health, Psychological Well-being, and Sleep-Related Quality of Life: A Randomized Clinical Trial.](#)

Espie CA, Emsley R, Kyle SD, Gordon C, Drake CL, Siriwardena AN, Cape J, Ong JC, Sheaves B, Foster R, Freeman D, Costa-Font J, Marsden A, Luik AI. (2019). JAMA Psychiatry.

[Subtle gait and balance impairments occur in idiopathic rapid eye movement sleep behavior disorder.](#)

Ehgoetz Martens KA, Matar E, Hall JM, Phillips J, Szeto JYY, Gouelle A, Grunstein RR, Halliday GM, Lewis SJG. (2019). Movement Disorders.

["Sleep Well, Think Well" Group Program for Mild Cognitive Impairment: A Randomized Control Pilot Study.](#)

Naismith SL, Pye J, Terpening Z, Lewis S, Bartlett D. (2018). Behavioral Sleep Medicine.

[Melatonin for rapid eye movement sleep behavior disorder in Parkinson's disease: A randomis controlled trial.](#)

Gilat M, Coeytaux Jackson A, Marshall NS, Hammond D, Mullins AE, Hall JM, Fang BAM, Yee Wong KKH, Grunstein RR, Lewis SJG. (2019). Movement Disorders.

[The Neural Signature of Impaired Dual-Tasking in Idiopathic Rapid Eye Movement Sleep Beh: Disorder Patients.](#)

Ehgoetz Martens KA, Matar E, Shine JM, Phillips JR, Georgiades MJ, Grunstein RR, Halliday Lewis SJG. (2020). Movement Disorders.

[Nocturnal Hypoxemia Is Associated with Altered Parahippocampal Functional Brain Connectiv in Older Adults at Risk for Dementia.](#)

Naismith SL, Duffy SL, Cross N, Grunstein R, Terpening Z, Hoyos C, D'Rozario A, Lagopoulos Osorio RS, Shine JM, McKinnon AC.(2020). Journal of Alzheimer's Disease.

To see all the publications so far from CogSleep researchers click [HERE](#).

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