

The MARCS Institute for Brain, Behaviour and Development

# MARCS Spotlight

Welcome to the MARCS Institute for Brain, Behaviour and Development Spotlight.

This quarter we have so much to celebrate. For the third year in a row, <u>Western Sydney University has been named #1 in the world</u> for our social, economic, and environmental impact in the 2024 Times Higher Education (THE) University Impact Rankings. An incredible achievement, as are the many achievements of the Institute's students and staff researchers and experts in our professional teams, from graduations to research collaborations and discoveries.



A <u>History of the Institutes</u> at Western Sydney University has recently been compiled. I encourage you to explore our progress through the years and since establishment as an Institute in 2011.

We are also looking forward to the inaugural Anne Cutler Public Lecture from our current Anne Cutler Visiting Fellow A/Prof Charles Chang in this lecture: Producing and Perceiving the Sounds of Language with a Multilingual Repertoire. The afternoon's talk at Westmead is part of Western Sydney University's Research Week and is open to the public. Please RSVP and join us for this lecture in Anne's name, concluding with refreshments.

Coming up later in the year will be the official launch of <a href="DeepSouth">DeepSouth</a> - the world's first neuromorphic supercomputer at the scale of the human brain built by the International Centre for Neuromorphic Systems. Stay tuned for more details.

Do stay in touch!

### **Professor Kate Stevens**

Director, MARCS Institute for Brain, Behaviour and Development Provost, Westmead Campus

## **Celebrating Student Successes**



Last month we proudly celebrated the graduations of three PhD Candidates: <u>Dr Anjilkurri Rhonda Radley</u>, <u>Dr Nicholas Ralph</u> and <u>Dr Tina Whyte-Ball</u>. Congratulations on your achievements and thanks to your hard-working supervisors who supported you on your journey.

Congratulations also to <u>Olivia Maurice</u> for being awarded a 2024-2025 Student Caucus Research Grant from the <u>Society for Applied Research in Memory and Cognition</u>, and to <u>Almudena Ramirez Haro</u> who was featured in the recent <u>Australasian Cognitive Neuroscience Society</u> newsletter.

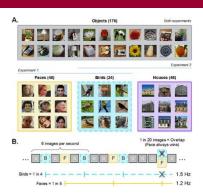
Across our social media channels throughout April, several of our excellent PhD Candidates and their impactful research, such as <u>Sami El Arja's</u> work on machine learning and computer vision at ICNS, were showcased in the lead up to another successful <u>HDR Forum</u>.

### **Research Grant Successes**

Prof Gaetano Gargiulo and team, along with collaborators from the University of Sydney and Medical Monitoring Solutions have been awarded \$200,000 from the NSW Smart Sensing Network (NSSN), to develop a new sensor-based monitoring system for the early detection and improved management of heart failure.



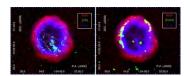
## Research In Focus



A new paper in Cerebral Cortex by <u>Dr Genevieve Quek</u> combined electroencephalography (EEG) with a novel visual periodicity paradigm to demonstrate not only <u>the special status that faces</u> <u>hold within the human visual system</u>, but also that this novel paradigm is a powerful and efficient tool for understanding how the brain processes different visual categories of images.

Dr Weicong Li, A/Prof Celia Harris, A/Prof Mark Antoniou and colleagues, partnered with the Centre for Work Health and Safety in a study recently published in the Journal of Medical Internet Research to investigate health and well-being challenges faced by an ageing workforce in Construction and Nursing Industries through computational linguistic analysis of over 1.5M tweets, over a 54-month period pre- and post-COVID-19 onset in March 2020.





<u>Dr Nicholas Ralph</u> and <u>Dr Nicholas Tothill</u> along with a group of local and international collaborators published in the Monthly Notices of the Royal Astronomical Society, new data and analysis of <u>a small magellanic cloud supernova remnant</u>.

Honour's student <u>Lily Montaque</u> together with <u>A/Prof Joyce Siette</u> and <u>Prof Sue Hespos</u> have explored <u>parental attitudes</u> <u>to brain health programs for preschool children</u>. They found such programs are needed in home and preschool environments, should be hands-on and screen free, and should avoid time and financial constraints. More research into parental attitudes is to come.



# DeepSouth



<u>DeepSouth</u> is the world's first neuromorphic supercomputer at the scale of the human brain built by the International Centre for Neuromorphic Systems. There has been a lot of media interest with a <u>BBC Science Focus article</u> published and a documentary featuring <u>Prof Andre van Schaik</u> and <u>Prof Paul Hurley</u> to come.

In case you missed it - <u>here is the moment of initial powerup.</u> We will be holding an official launch event later in the year, and hope you can join us.

## Soft Launch of the Artscience Lab

Thanks to all those who attended our soft launch event for the MARCS Artscience Lab back in March, which featured an update from EDEN-Parramatta project facilitator, Dr Julie-Anne Long, and a performance by Ryuichi Fujimura & Cloé Fournier.

The Artscience Lab is an intimate theatre space with integrated technology designed to facilitate collaborative projects on the nexus of science and the arts. Follow the Artscience Lab on <u>Instagram</u>.



# Research Engagement



MARCS Institute's BabyLab team have been out in action at the Heritage Day Festival organised by the NSW Department of Planning, Housing and Infrastructure. The BabyLab is partnering with Playgroup NSW to hold playgroups at the Westmead Innovation Quarter. It's a wonderful way to connect with local familes and share our research. Follow @marcsbabylab on Instagram/Facebook for event updates!

<u>Dr Hannah Sarvasy</u> spoke during the Sydney Language Festival at the State Library of NSW on "Finisterre languages of Papua New Guinea" and <u>Dr Ruth Brookman</u> discussed "Wellbeing strategies to maintain cognitive and mental health" with residents and staff at Woolooware Shores retirement community.



Western Sydney University's <u>Research Week</u> is taking place 15 - 19 July with a theme The Next Decade of Discovery: Better Futures, Now. Researchers are involved in various events, including:

- A/Prof Charles Chang will be giving the Inaugural Anne Cutler Public Lecture: Producing and Perceiving the Sounds of Language with a Multilingual Repertoire
- Dr Sophie Smit will be competing in the Research Impact Competition
- <u>A/Prof Joyce Siette</u> and <u>A/Prof Gabrielle Weidemann</u> are organising a workshop with two critical aspects of Enabling Independence <u>Ageing in Place</u>, <u>and Disability and Workplaces</u>

## In the Media

<u>Dr Tijl Grootswagers</u>, <u>Dr Genevieve Quek</u> and <u>A/Prof Manuel Varlet</u> have a new Conversation Article out today: <u>Think you've decided what to buy? Actually, your brain is still deciding - even as you put it in your basket</u>, where they explain what hand movements can tell us about decision-making, and what this means for consumers and marketers.



## **MARCS Alumni News**



Congratulations to <a href="Dr Juqiang Chen">Dr Juqiang Chen</a>, who completed his PhD with us from 2017-2021 entitled "Cognitive Factors in Perception and Imitation of Thai Tones by Mandarin versus Vietnamese Speakers" under the supervision of Prof Catherine (Cathi) Best and A/Prof Mark Antoniou. After completing a Postdoctoral Fellowship at Shanghai Jiao Tong University in China, he has recently been offered a tenure-track Assistant Professor position there. Last year Dr Chen was with us for a 2-week research visit.

# What's coming up?



#### Inaugural Anne Cutler Public Lecture (15th July 4pm - 6pm)

Join us at Westmead Innovation Quarter for an afternoon lecture from Anne Cutler Visiting Fellow A/Prof Charles Chang, as well as the unveiling of several exciting initiatives to honour Anne's legacy. Refreshments will be served. Register here.



#### Research Impact Competition (16th July 2:30pm - 5:30pm)

This competition is a great way to hear about research happening around Western Sydney University for a non-academic audience. All welcome! Level 9, WSU Parramatta, 1PSQ Register here.



#### Enabling Independence Workshop (17th July 9:30am - 3pm)

This interactive workshop will explore enabling independence through "Ageing in Place" in the morning session and "Disability and Workplaces" in the afternoon. Hear from panel experts from research, industry, government, and the community and join the discussion for solutions. Level 9, WSU Parramatta, 1PSQ Register here.



#### Mount Druitt Family Science Day STEAM (18th July 10am - 2pm)

Join our BabyLab and ICNS research teams at this family science festival organised by Blacktown City Council and <u>MECA</u>. Experience live demonstrations, chat to researchers, and get fun gifts <u>More information here</u>.



### Sydney Science Festival Family Day (17th August 10am - 3pm)

Researchers from across ICNS, BabyLab and the Cognitive Neuroscience Group will be involved in this family day hosted by Powerhouse Museum Parramatta in Parramatta Square. You can register to "Meet a Scientist" and ask questions about AI & Space technology or see our live demonstrations at the Western Sydney University booth. Register Here.

https://www.westernsydney.edu.au/marcs