



MARCS Spotlight

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

On the back of a fantastic end to 2024, with the announcement of four Australian Research Council Discovery awards for MARCS, 2025 has already begun with a bang. We've hosted the dynamic Playful Learning superstar Professor Kathy Hirsh-Pasek from Temple University as our 2025 Anne Cutler Visiting Fellow. Many of our ICNS team have been at the Avalon Air Show in Melbourne last month, whilst our Age Lab has been busy with community engagement at Wenty Leagues Club Senior's Wellness Fair.

Members of our Speech & Language group hosted the Australian Computational and Linguistics Olympiad (OzClo) national round with high school students from across Sydney competing at Westmead. Our Artsience Lab is now equipped with a sprung dance floor ready for upcoming Artists in Residence.



We have big and exciting plans for 2025 and are looking forward to sharing with you as things unfold across the year. For now, enjoy this snapshot of some of the activities across the Institute.

Dr Rebecca Gelding

Executive Officer, MARCS Institute for Brain, Behaviour and Development

Celebrating Student Successes

Welcome to our new Higher Degree Research (HDR) Candidates for Quarter 1 2025: [Alireza Shirani](#), [Dalia Israel](#), [Florian Burger](#), [Lori-Ann Boxsell](#), [Belman Jair Rodriguez Nino](#) and [Zachary Wilcox](#) with the latter two being based at the [International Centre for Neuromorphic Systems \(ICNS\)](#).



Congratulations to our three candidates who have recently completed their Confirmation of Candidature milestones (pictured left to right): [Celine Frangieh](#) who is investigating the development of a Feeling Aid device to treat peripheral neuropathy; [Mina Aghaei](#) who is exploring person-centred assistive technology for people with dementia; and [Corina Norman](#) who is researching revitalising Dharug language through cultural practices and knowledge transmission.

Further along the candidature journey, we congratulate the PhD candidates whose theses have been submitted this quarter: [Priyanka Bharadwaj](#), [Jessica Chin](#), [Chantelle Khamchuang](#), and those who are soon to be conferred: [Samra Alispahic](#), [Nicole Traynor](#), and [Sarah Wright](#). We look forward to celebrating graduations together, later in the year.

Here's news of our HDR Candidates making an academic impact with their new journal publications:

- [Laura Dodds](#) in The Journal of Prevention of Alzheimer's Disease (IF 8.5): [Behaviour change techniques used in interventions targeting dementia risk factors amongst older adults in rural and remote areas: a systematic review and meta-analysis](#)
- [Siyao Cheng](#) in Music & Science: [Exploring the comprehensibility of ten different musical notation systems and underlying factors](#)
- [Cameron Undy](#) in Leonardo: [An algorithm for human embodiment and computational realization of familiar and novel African / clave](#)

In other great achievement news, [Sami El Arja](#) has recently been accepted to present at the prestigious IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2025, International Workshop on Event-Based Vision in June in Nashville, USA. Sami will showcase his novel imaging system, which combines a ball lens with an event-based camera on a motorized rail to shift focus. The system is inspired by cephalopods like octopuses and cuttlefish, that perceive colour despite having only one type of photoreceptor, by using the way light bends around their ball-shaped lens and unique pupil shapes, to extract colour cues. This innovative work points to new directions for visual sensing systems. We wish Sami all the best with his presentation.

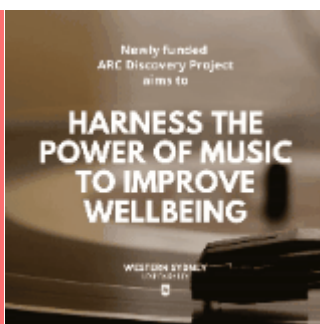




A group of candidates across MARCS and ICNS are busy organising the 4th Annual HDR Forum coming up on 27th May 2025. The day will comprise of posters, short talks and demonstrations by our fabulous HDR Candidates. [Register Here](#) to join us for this wonderful event. All Welcome!

Research Grant Successes

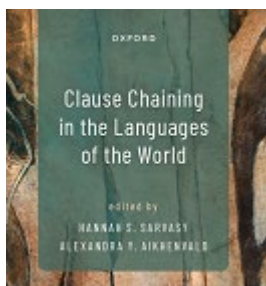
In the 2025 Australian Research Council Discovery Grant round, MARCS was proud to be awarded **over \$2.9 Million in grant funding** across four research projects in the Babylab, MusicScience, Speech & Language and Cognitive Neuroscience groups. Congratulations to all of our chief investigators: [Sue Hespos](#), [Genevieve Quek](#), [Andrew Milne](#), [Roger Dean](#), [Hannah Sarvasy](#) and [Paola Escudero](#) - we look forward to sharing the results of their vital work as it unfolds in the coming years.



Research In Focus

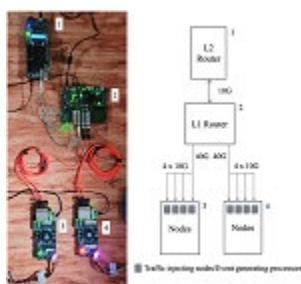
[Mark Richards](#) and colleagues have successfully co-designed and pilot tested an adapted version of the [Listen N Talk app](#) to develop [a personalised communication app for culturally and linguistically diverse residence in Aged Care in Western Sydney](#). They found three domains in which this app would be useful: medical emergencies, language learning, and transitions to aged care.





[Hannah Sarvasy](#) has edited and authored several chapters in a new book entitled: [Clause Chaining in the Languages of the World](#). With author contributions from across the globe, this volume takes a typological approach to clause chaining; a feature of hundreds of languages outside Europe, especially in the Asia-Pacific region, East Africa and across Central Asia, and the Americas, seen when describing events and putting sentences together.

[Manuel Varlet](#) and colleagues have investigated [human perception of art in the age of artificial intelligence](#). They presented two groups of people 50 pairs of artworks - one human made (left image) and one AI-generated (right image). One group indicated which artwork was AI-generated, and another group selected which they preferred. Participants were able to successfully detect the AI-generated images and, intriguingly, also had a significant preference for AI-generated artworks. These results prompt reflections on authorship, authenticity and human creativity in the era of generative AI.



[Samalika Perera](#) and colleagues from ICNS have published new work that demonstrates [lower latency and better performance of a proposed stochastic hierarchical routing scheme compared to a traditional round-robin architecture found in reconfigurable neuromorphic systems](#).

Anne Cutler Visiting Fellow - Prof Kathy Hirsh-Pasek

We kicked off 2025 with a wonderfully fruitful visit from [Professor Kathy Hirsh-Pasek](#) of Temple University, our 2025 Anne Cutler Visiting Fellow. As part of the visit, we enjoyed a Public Lecture on [Active Playful Learning: Where the Science of Learning Meets Education](#), as well as a workshop with industry partners, architects, government officials and educators on creating [Playful Learning](#)



Landscapes. We look forward to ongoing collaborations with Kathy over the coming years to continue this vital work in the Western Sydney context.

Applications for next year's [Anne Cutler Visiting Fellowship are now open](#), closing 15 June 2025. Please share this opportunity with any international eminent researchers working in Linguistics, Speech Science, Developmental Psychology, Experimental Psychology, Psycholinguistics, Computational Linguistics, or Speech / Communication Engineering, to visit us for a period of 2 - 3 months in 2026.

Community Engagement



Did you see our Age Lab at the [Senior's Wellness Fair organised by Wenty Leagues Club](#) last month?

Our [Age Lab team](#) had an incredible time engaging with the local community – listening to their experiences & sharing research insights about optimising the wellbeing of older Australians.

If you or someone you know is over 55, and interested in participating in our research, [register here](#) to find out more!

In the Media

In case you missed these engaging articles by and about our researchers in the media:

- [Eylem Altuntas](#) - The Conversation - [Babies as young as 4 months can tell how the sounds of different languages are made](#)
- [Mark Antoniou](#) - ABC News - [Learning languages with apps has many benefits, but linguists say there are some shortcomings too](#)



Participate in Research into Aged Care



The Aged Care sector has seen change in recent years, but how well have these changes been communicated? And what should the future of aged care look like? Our PhD Candidate, [Samuel Dakey](#) is exploring current perspectives on Aged Care. Take this [5 minute survey](#) and share your thoughts.

Introducing our new Deputy Director

Last month we announced that [Associate Professor Joyce Siette](#) has been appointed Deputy Director in the MARCS Institute for Brain, Behaviour and Development. Joyce's research aims to improve dementia in older, culturally diverse communities through innovative public health approaches, impacting digital health, aged care informatics, and dementia prevention. Joyce is known for her dynamic research and leadership roles, including Co-Chair of the NSW Division of the Australian Association for Gerontology since 2018 and Theme Champion for Health and Wellbeing at Western (2022-2024). She also assesses for the NHMRC and HCF Foundation, and serves on editorial boards of various national and international journals.



What's coming up?



Joint School of Science & MARCS Institute Research Meeting, 22 April 2025 11am - 12pm

Six researchers from across the School of Science and MARCS Institute will be giving speed papers on topics related to Neuroscience and Medical / Health Science at this upcoming join Research Meeting. Join us in person Level 4 Westmead Innovation Quarter, or [via zoom](#)



HDR Forum 2025, 27 May 2025 9am - 6pm

This free event will showcase our HDR Candidates research in poster presentations, talks and demonstrations. Everyone welcome. [Register here](#).



Sydney Science Festival, 9 - 17 August 2025

The [Sydney Science Festival](#) is a diverse and accessible program of science events presented by the Powerhouse museum to coincide with [National Science Week](#) (9 - 17 August 2025). More details to follow.