

## ANZMAG NEWS: JULY 2022

By Prof. Oliver A.H. Jones (RMIT University - [oliver.jones@rmit.edu.au](mailto:oliver.jones@rmit.edu.au))

Hi all, Welcome to the July 2022 edition of ANZMAG News. Yes, it is July already.

### ANZMAGers IN THE NEWS

Well done to ANZMAG medallist Prof Glenn King of UQ). Whose work on potentially life-saving treatment containing venom from one of the world's deadliest spiders is one step closer to human trials, thanks to a \$23 million investment in a Brisbane startup. Great work Glenn. Read more at <https://www.uq.edu.au/news/article/2022/07/deadly-spider-venom-treatment-heart-attacks-reaches-next-milestone>

-----

### CONFERENCES/TALKS

Global NMR Discussion Meetings will be hosting a three-day online conference on Twitter with prizes available to all students and postdocs using NMR. See <https://www.globalnmr.org/nmrtc22> for details.

The SMASH 2022 - Small molecule NMR conference is on from 28 to 31 August 2022  
See <https://www.smashnmr.org/>

The 13<sup>th</sup> ANZMAG Conference is being held in Marysville from 4-8<sup>th</sup> December 2022. See [www.anzmagconference.org.au](http://www.anzmagconference.org.au) for more.

-----

### GRANTS AND AWARDS

Applications for the next Superstars of STEM cohort are open and will close on the 14th August. See <https://scienceandtechnologyaustralia.org.au/what-we-do/superstars-of-stem/applicant-info/> This is a great opportunity for mentoring and opportunities in media engagement and communication.

The Australian Financial Review Higher Education Awards are open. These awards are designed to highlight the tremendous contribution that the Higher Education sector makes to Australian prosperity and quality of life. You can see more at <https://live.afr.com/higheredawards/>

-----

### NEW BOOK ON SPIN DYNAMICS

I came across this book - Lectures on Spin Dynamics: The Theoretical Minimum by Giuseppe Pileio. It consists of a series of lectures introducing what the author believes to be the theoretical minimum for the understanding of nuclear spin dynamics, the branch of physics underpinning magnetic resonance techniques such as NMR and MRI. It is targeted to undergraduate and postgraduate students who are approaching magnetic resonance studies and want to reach the theoretical minimum required to understand the wider topic and its main applications. You can find out more at <https://pubs.rsc.org/en/content/ebook/978-1-83916-668-6>

-----

## PAPER OF THE MONTH

I am sure many ANZMAGers have been looking at the progress of the DeepMind's AlphaFold tool. Recently it was reported that AlphaFold had determined the structures of around 200 million proteins, from almost every known organism on Earth (<https://www.nature.com/articles/d41586-022-02083-2>). But how does it compare to NMR? Well in July's paper of the month, entitled "The accuracy of protein structures in solution determined by AlphaFold and NMR" Nicholas Fowler and Mike Williamson find out. The results are mixed. They found that, using 904 human proteins surveyed with both Alpha-Fold and NMR structures, Alpha-Fold predictions were usually more accurate than NMR structures but NMR can be better than Alpha-Fold where there are local dynamics. You can read more on the paper at <https://www.sciencedirect.com/science/article/pii/S0969212622001320> and you can check out the AlphaFold Protein Structure Database at <https://alphafold.ebi.ac.uk>

-----

## JOBS

Monash University has a senior lecturer in chemistry going See - <https://careers.pageuppeople.com/mob/513/cw/en/job/636173/senior-lecturer-in-chemistry>

The Riddet Institute at Massey University, New Zealand are looking for a professorial Chair in Cellular Agriculture. See <https://www.nature.com/naturecareers/job/riddet-agresearch-chair-in-cellular-agriculture-massey-university-760710>

The Queensland Brain Institute at UQ is looking for group leaders <https://www.nature.com/naturecareers/job/group-leader-queensland-brain-institute-the-university-of-queensland-uq-760658>

UQ also has a postdoc job in MRI going at the Centre for Advanced Imaging to perform MRI sequence programming and develop super-resolution deep-learning methods. See [https://uq.wd3.myworkdayjobs.com/uqcareers/job/St-Lucia-Campus/Postdoctoral-Research-Fellow---Centre-for-Advanced-Imaging\\_R-14646-1](https://uq.wd3.myworkdayjobs.com/uqcareers/job/St-Lucia-Campus/Postdoctoral-Research-Fellow---Centre-for-Advanced-Imaging_R-14646-1)

James Cook University is looking for a lecturer in Bioinformatics - <https://www.nature.com/naturecareers/job/lecturer-bioinformatics-james-cook-university-jcu-761505>

-----

## STORIES FROM THE WEB

- [https://www.news-medical.net/life-sciences/Spin-Labels-in-Electron-Spin-Resonance-\(ESR\)-Spectroscopy.aspx](https://www.news-medical.net/life-sciences/Spin-Labels-in-Electron-Spin-Resonance-(ESR)-Spectroscopy.aspx)  
This story shows the contribution of EPR of spin-labeled molecules as a method to assess the structure and conformation of proteins and nucleic acids.
- <https://www.itnonline.com/content/vizai-partners-hyperfine-enable-new-mr-imaging-and-workflow-paradigm>  
A story on the world's first MR imaging system capable of providing neuroimaging at the point of care, bringing imaging to the bedside.
- <https://www.news-medical.net/whitepaper/20220707/Identification-of-illegal-opioids-using-NMR.aspx>  
Interesting work on the identification of illegal opioids using NMR.