

ANZMAG NEWS – JUNE/JULY 2017

By Oliver A.H. Jones (RMIT University - oliver.jones@rmit.edu.au)

Dear all,

Welcome to a joint (one time only - maybe) June-July 2017 ANZMAG e-newsletter. This month we have the usual mix of magnetic resonance and science related items for you. As it is a double edition we have slightly more than usual but I hope that you enjoy it. Normal service will be resumed next month.

GRANTS

The **Rebecca L Cooper Foundation early career research grants** are designed for early-career researchers of between 5-10 years post PhD, unless career disruptions exist. The idea is that these grants provide a stepping stone for researchers to build a career as an independent investigator. The award will provide \$50,000 for two years but need to be for projects which aim to improve understanding of a disease/condition in one of the following areas; 1. Brain sciences: Psychiatry or neurology (excluding Dementias) 2. Endocrinology (excluding Diabetes) 3. Geriatrics (excluding Dementia) 4. Lung disease (other than Cancer) 5. Rheumatology 6. Vision sciences 7. Dermatology with emphasis on Psoriasis. I know there is lots of magnetic resonance work in this area so if interested please see <http://www.cooperfoundation.org.au/index.html> for more. Applications open 1st August.

The **Capstone Editing Grant for Mid-Career Researchers** provides up to A\$10,000 of seed funding for one researcher per year to undertake an innovative research project. The expectation is that the research project will gather preliminary data and lead to the development of a research council funding application. The grant can be used to cover any costs related to the research project, such as software or small lab equipment; domestic or overseas travel to learn new techniques or collaborate with colleagues; academic editing of the grant proposal; and data analysis. See <https://www.capstoneediting.com.au/midcareer-grant> for all the relevant information. You may also want to have a look at <https://www.researchprofessional.com/0/rr/funding> for more details on grants.

ANZMAG 2017

The **11th Australia and New Zealand society for Magnetic Resonance** conference (<http://www.anzmag2017.org/>) will be held from Saturday 2nd - Wednesday 6th, December 2017 at Mantra on Salt Beach, Kingscliff, New South Wales. **Book it in your diary now.**

NEW CHEMISTRY TEACHING APP “CHIRALITY-2”

This month I wanted to draw attention to a Chemistry app called **Chirality 2** that might be handy for those learning/teaching organic chemistry. This is game based app that covers concepts including functional groups, structure classification, intermolecular forces, isomers, chiral carbon atoms and the naming of molecules. Look out for the timed modes and fun facts about the structures on some levels.

The app is available for both Apple and Google Play stores and is free to download. I should state that the app was developed by myself, Associate Professor Michelle Spencer and Dr

Maria Spichkova at RMIT along with a number of computer science students but it is 100% free to download at Google Play: (<https://play.google.com/store/apps/details?id=rmit.edu.au.oliverjones> - NB you may need to be logged out of Gmail and Chrome to see it) as well as on the Apple iTunes store (<https://itunes.apple.com/us/app/chirality-2/id1251289926?mt=8>). I hope you enjoy it if you use it

JOBS AND FELLOWSHIPS

There are multiple lectureships being advertised in Analytical Chemistry at the moment.

- James Cook University in Queensland is looking for a new analytical chemist at level B/C the advert is now up on the JCU website online at [https://myhronline.jcu.edu.au/wssk/WK8227\\$VDC1.Startup?P_VACANCY_REF_NO=16072](https://myhronline.jcu.edu.au/wssk/WK8227$VDC1.Startup?P_VACANCY_REF_NO=16072)
- Down south the University of Tasmania are hiring a Lecturer in Analytical Chemistry. Applications close Monday 4 September 2017 see <https://t.co/dhC1J0dQaT> for more details.
- Over in New Zealand there is a post available at Lecturer / Senior Lecturer in Analytical Chemistry in the School of Science at the Auckland University of Technology
- <https://academicpositions.co.uk/ad/aut-university/2017/lecturer-senior-lecturer-in-analytical-chemistry/102303>).
- The RMIT Vice-Chancellor's Research Fellowships are now open to researchers with an excellent track record who can make a significant contribution to RMIT. These are research positions and are quite prestigious. There are three levels - postdoc fellowships, junior fellowships and senior fellowships. You can see more at <https://www.rmit.edu.au/research/research-expertise/our-reputation/people/outstanding-research-fellowship-schemes> if you are keen.
- You can find more jobs online if the above don't help. Just head over to <https://www.nature.com/naturejobs/science/jobs?utf8=%E2%9C%93&q=NMR&where=&commit=Find+Jobs>

Good luck to anyone job-hunting.

EMBL-ABR STANDARDS SURVEY

As I am sure we are all aware standards matter and are fundamental across the data life cycle. In fact, in environmental, life and biomedical science there are several standards across the data cycle, from collection to annotation, preservation, publication which also play a vital role in terms of future sharing and reuse. EMBL-ABR is conducting a survey in standards. Their aim is to utilise the collected information to direct their efforts and resources for the maximum impact for the needs of the Australian research community when it comes to standards across key areas in bioinformatics including data, tools, workflows and training. The survey is at <https://www.surveymonkey.co.uk/r/EMBL-ABRStandards17> there are 14 questions and it should not take more than 5-10 minutes to complete.

SOLID STATE WORKSHOP 27 NOV - 1 DEC 2017 AT GRIFFITH UNIVERSITY, GOLD COAST CAMPUS

Professor Gottfried Otting and Associate Professor Jenny Wilson are organising an interesting NMR course at Griffith University that will take place immediately prior to the ANZMAG conference December. It is on the topics of “Basic Theory of NMR via SpinDynamica Software” and “NMR Relaxation and Macromolecular Dynamics”. Lectures will be given by Prof. Malcolm H. Levitt (University of Southampton).



Joining Prof Malcolm Levitt to co-present the introductory workshop into solid-state NMR will be Prof Arthur Palmer, the Robert Wood Johnson Jr. Professor from the Department of Biochemistry and Molecular Biophysics, Columbia University, New York.

His research interests include:

- Structure, function and dynamics of proteins and protein complexes
- NMR spectroscopy of biological macromolecules
- Molecular dynamics simulations of biological systems
- Fluorescence spectroscopy of biological systems

He completed his Ph.D. in 1989 at the University of North Carolina, and was a NSF Postdoctoral Fellow with Prof Peter Wright at The Scripps Research Institute from 1989-1992. In 1993 he moved to the Department of Biochemistry and Molecular Biophysics, Columbia University where he is now the Robert Wood Johnson Jr. Professor. Prof Palmer has >134 publications, and has received numerous honours and awards throughout his career, most recently the 2013 Nakanishi Prize of the American Chemical Society and the 2015 Gunther Laukien Prize of the Experimental NMR Conference (ENC). He is the Director of NMR Spectroscopy at the New York Structural Biology Center.

About the workshop: The course will be held at the School of Medical Science, Griffith University, Gold Coast Campus. This campus is located on Parklands Drive Southport on the Gold Coast, directly opposite from the soon to be completed 2018 Commonwealth Games site and the Gold Coast University Hospital on Parklands Drive. Flights to and from Coolangatta airport, Gold Coast will be most convenient. The University is accessible by tram from both Southport, Broadbeach and Surfers Paradise which have plenty of reasonably priced accommodation options. Parking is available on campus.

The program is all set up and can be seen at http://rsc.anu.edu.au/~go/nmr_course2017.html it should be a good meeting at the course will end just in time before the Bruker user meeting in Kingscliff. This workshop will be aimed at research students, postdoctoral researchers or anyone with a curiosity to learn more about solid state NMR techniques and their applications in a relaxed and informal setting.

More details will be sent out later in the year through the ANZMAG email. In the meantime, to register your interest please email: Jennifer.wilson@griffith.edu.au and thanks to Jenny for the update.

Magnetic Resonance Education

Many of us probably teach NMR as well as conduct research in the area in our teaching as well as research. You may or may not be aware of that there are education journals that people can and do publish descriptions of practical exercises, software and so forth in. For chemistry, one of the main ones is the Journal of Chemical Education (J. Chem. Ed.) I spotted this week that there are two articles in this journal that may be of interest.

The 1st paper is called "Building 'My First NMRviewer': A Project Incorporating Coding and Programming Tasks in the Undergraduate Chemistry Curricula". It is by Arrabal-Campos et al from the University of Almería in Spain. This paper presents a programming project named NMRviewer. Using the MATLAB graphical user interface development environment (GUIDE), students can build an NMR viewer software program via three main features: a display window, an open file dialogue, and a stack plot option. It is a very clever idea

The 2nd paper I liked looks at using coffee analysis by NMR to teach metabolomics. The author is Peter Sandusky from Wellesley College. The title of the work is "Introducing Undergraduate Students to Metabolomics Using a NMR-Based Analysis of Coffee Beans". It is at <http://pubs.acs.org/doi/abs/10.1021/acs.jchemed.6b00559> if you are interested.

Both papers certainly made me think about ways I might be able to contribute more back to education around NMR. If you have a great NMR practical what not consider writing it up for an education journal

STORIES FROM THE WEB

- <https://www.labnews.co.uk/features/special-bond-09-03-2017/>

This story discusses a paper recently published in Nature Chemistry by a team from the University of Manchester report a new method for the measurement of covalency in actinide compounds using EPR.

- <https://www.uq.edu.au/news/article/2016/11/accelerated-mri-brain-mapping-technique-improve-neurodegenerative-diagnosis>

Here is an Australian Story on anew brain imaging technique developed at the University of Queensland which aims for improved diagnosis and treatment of neurodegenerative diseases such as Alzheimer's or Parkinson's disease.

- <https://phys.org/news/2017-07-magnetic-resonance-food-quality.html#jCp>

An interesting story on the development of a low-field NMR device that takes a few seconds to perform chemical and physical analyses of fruit, grains, olive oil, milk and meat, among other products.

