Inspiring research

NEWS FROM THE RSO
NEW - RESEARCH DATA AND SYSTEMS DROP-IN SESSIONS

The Research Data and Systems Team will hold monthly drop-in sessions for interested academic and research staff. The aim of the sessions will be to provide one-on-one assistance to staff who want either a refresh on the research data systems used at Flinders or to learn some new skills to assist them in respect of research data entry or the use of metrics to evaluate research activity.

Research Data and Systems staff will be available from 12 PM to 1 PM on the last Tuesday of each month in the Research Services Office. The first session will be held on Tuesday 24 May 2016. Participants are encouraged to register at ienrol if they are interested in attending.

RESEARCH NEWS AND SUCCESSES
FLINDERS’ RESEARCHER AT PLENARY LECTURE CELEBRATING RESEARCH

Emeritus Professor Robert Rush, Department of Human Physiology, has recently returned after giving the Plenary Lecture at the Nerve Growth Factor (NGF) 2016 conference, held 17-20 April in Monterey, California. This 30th anniversary conference celebrated the remarkable discoveries made over the past 30 years in the field of Nerve Growth Factors and Related Molecules.

Rush’s Plenary Lecture traced the history of the NGF field since its discovery in 1951 by the Nobel Laureate Rita Levi-Montalcini, to the most recent discoveries including those from the Motor Neurone Disease and Neurotrophic Research Laboratory at Flinders, established in 1979. At the time of the first NGF meeting in 1986, only a handful of growth factors had been identified but 30 years later hundreds of growth factors are now known, affecting every system in the body but especially the brain and nervous system. Tens of thousands of publications describe a wide array of actions of these growth factors in the regulation of nerve survival and communication that allows the brain to function on both a moment-to-moment basis as well as long-term such as in memories.

"More than 40,000 research publications over the past 30 years have now provided the essential basic knowledge to allow a better understanding of the critical and essential roles these factors play in brain function, assisting the development and testing of potential new drugs for brain diseases that currently cannot be treated. These include devastating degenerative diseases such as Parkinson’s, Alzheimer’s and Motor Neuron Disease as well as neuropsychiatric conditions such as Depression and Post Traumatic Stress Disorder,” said Rush.

He sees with his colleagues a real optimism emerging that these debilitating conditions will finally benefit from the improved understanding of brain function that has been achieved as a result of this global research endeavour.

April 2016

NEWS FROM THE RSO
New - Research Data and Systems Drop-In sessions ..........................1

RESEARCH NEWS AND SUCCESSES .............................................1
Flinders’ researcher at plenary lecture celebrating research .................1
Space Archaeologist talks at the Global Art Forum in Dubai ............2
Looking to the Future for Safety for Disability Support Workers .......2
Virus Therapy to attack superbugs ..2
Ageing between the Cultures .........3
Kangaroos chew over evolutionary theory ......................................3

NEW OPPORTUNITIES .................................................................4
Calling for Supervisors and Research Projects ...............................4
Top 5 under 40 ...............................................................4
2016 Unsung Heroes of Science ...........................................5

SEMINARS, WORKSHOPS AND CONFERENCES .............................5
US Nursing Academic talks on Grant Writing ...............................5
Australia and Indonesia - Flinders Investigator Lecture .................5
Using Creative Tools in Your Research ........................................6
Turbocharge Your Writing ......................................................6

Editorial team:
Miss Nikki Johnson, Research Data Officer
nikki.johnson@flinders.edu.au
8201 2052

Mr Ben Jacobs, Research Data and Reporting
ben.jacobs@flinders.edu.au
8201 3866

Dr Gayle Morris, Director Research Services
gayle.morris@flinders.edu.au
8201 3393
SPACE ARCH A E OLOGI S T T AL KS AT THE G LOBAL ART F OR U RM IN DUBAI

Flinders space archaeologist Dr Alice Gorman, School of Humanities and Creative Arts, was invited to speak at the Global Art Forum in March 2016. The Forum, in its 10th year, was held as part of the Art Dubai fair on the theme The Future Was. Gorman presented alongside such luminaries of the art world as Glenn Lowry, the Director of New York’s Museum of Modern Art, and Hans Ulrich Obrist, Director of International Projects at the Serpentine Gallery in London.

The Forum, held over 5 days, features invited speakers from diverse positions, such as artists, curators, strategists, thinkers and writers to present and debate on the theme.

Gorman spoke about the future of space junk. She imagined a world where the Kessler Syndrome – a cascade of space junk collisions creating an impenetrable shell around the Earth – cuts humans off from access to space. The Solar System is abandoned; satellites fall silent, and the lunar landing undergo slow decay until they are turned to dust. On the other hand, she argued, space junk could be transformative, providing resources for orbital industries that will lead to mega-scale engineering projects in space. Further information on the Forum is available here - http://artdubai.ae/global-art-forum-10

Article submitted by Dr Alice Gorman, School of Humanities and Creative Arts

LOOKING TO THE FUTURE FOR SAFETY FOR DISABILITY SUPPORT WORKERS

Safe Work SA have awarded $116,984 to Dr Jerry Ford, Disability and Community Inclusion Unit, and Dr Neil Kirby, University of Adelaide, for three projects to investigate the psychosocial-related aspects of work safety of Disability Support Workers (DSWs). Safe Work SA has identified that DSWs have the highest injury rate within the South Australian Public Sector. Manual handling is the cause of the highest injury rates, however of growing concern is the increase in mental health incidents related to clients’ challenging behaviours.

The first project showed DSWs experienced poorer health, wellbeing, and safety outcomes than norm groups, with multiple causal factors contributing to poorer outcomes. Subsequently, in the second project recommendations were translated into practice using pilot trials, with intervention effectiveness evaluated.

At completion of the second project, intervention maturity varied from organisation-wide implementation to conceptual development. Post-intervention evaluations showed favourable health, wellbeing, and safety trends compared to pre-intervention status. Importantly, DSWs were significantly less concerned about psychosocial safety hazards at post-intervention.

The focus of the third project is to identify a conceptual model for understanding the key factors associated with the successful implementation and ongoing sustainability of work safety interventions in human service organisations. A further aim is to develop a transferable methodology for implementing and sustaining changes to address work safety concerns that can be applied across a range of industry sectors.

VIRUS THERAPY TO ATTACK SUPERBUGS

Flinders scientists are looking to bacteriophages – highly specific viruses – as the best way to attack antibiotic-resistant bacterial superbug infections. The already proven phage-based therapies could help treat numerous infectious diseases, including staphylococcus aureus (SA) or golden staph, and typhoid fever.

The South Australian scientists have been working with international company AmpliPhi Biosciences to research phage-based treatments and began human trials at The Queen Elizabeth Hospital earlier this year. Dr Peter Speck, School of Biological Sciences, said the need to find an alternative to antibiotics was of vital importance, forcing scientists to revisit solutions to infectious diseases that pre-dated antibiotics.

“There is now a problem with antibiotics becoming less and less effective in treating bacteria and infections,” Dr Speck said. “In view of the looming crisis of antimicrobial resistant bacteria, all possibilities for the use of phage therapy must be contemplated.”

Superbugs are strains of bacteria that have developed immunity to antibiotics and account for about 700,000 deaths a year worldwide. World health authorities are forecasting that antibiotic resistance will cause more deaths per year than cancer by 2050, with one estimate at 10 million by 2050 compared to eight million for cancer.

Dr Speck said bacteriophages or phages were viruses that attacked bacterial cells and disrupted bacterial metabolism. He said that phage-therapy could be applied intravenously and attack bacterial infections such as golden staph.

“We have been working on this for some years and I think it is the most advanced clinical trial of bacteriophage in the world today.”
Inspiring research

Dr Speck said, “At the moment we are trialling phage-therapy on sinus infections, but if you look back in the literature you see that in the 1940s they were very effectively used. Bacteriophage is highly species specific so a phage directed against golden staph would only kill golden staph.”

Dr Speck said he hoped to expand the research and look at other infectious diseases and he hoped the trial results would demand more attention from governments.

The research was based on Dr Speck’s article Safety and efficacy of phage therapy via the intravenous route that has been published in the Oxford Journals Federation of European Microbiological Society Microbiology Letters.

The over-prescription and inappropriate administration of antibiotics is causing a rapid expansion in the numbers of resistant bacteria, with the seriousness of the problem evident in reports of a 30-day death rate of up to 30% in patients following blood-borne infections with golden staph, which increasingly is resistant to virtually all antibiotics.

The use of phages is widely considered possible for topical or localised use in wounds, burns, diabetic foot infections, or bowel and sinus bacterial infections.

Article sourced from the Office of Communication and Engagement

NEW BOOK - AGEING BETWEEN CULTURES

Flinders Italian senior lecturer and researcher, Dr Daniela Rose, has recently published the edited book Ageing between cultures: The experiences and challenges of Italian migrants in South Australia with Troubador Publishing. This interdisciplinary volume, supported by a Faculty of Education, Humanities and Law Faculty Grant, addresses the multiple dimensions of the ageing experience of the Italian migrant community in South Australia, which is the largest ethnic ageing group in Australia.

Drawing on the expertise of historians, migration scholars, social scientists and a medical practitioner, this volume offers an overview of the origin of the Italian settlement in South Australia. It addresses the ageing experience of Italian migrants by revisiting the concepts of health and wellbeing, intergenerational family care-giving practices and the role of language and culture in the ageing process. At a time when the world’s population is ageing at a rapid rate, this comprehensive study on an elderly migrant minority, their families and communities, is a valuable contribution to the literature of migration and ageing and serves as a framework for the development of aged care models for other migrant communities.

Contributors to the volume include Karen Agutter, Professor Desmond O’Connor (School of Humanities and Creative Arts), Professor Diana Glenn (School of Humanities and Creative Arts), Daniela Cosmini-Rose, Irene Belperio, Daniela Costa, Francesca Bouvet, Dr Kenneth Goodall (School of Education), Dr Lareen Newman (School of Health Sciences), Professor Paul Ward (School of Public Health) and Tony Paganoni.

The volume is now available in the library or to order via http://www.troubador.co.uk/book_info.asp?bookid=3442

KANGAROOS CHEW OVER EVOLUTIONARY THEORY

What if snakes could grow legs, or chickens develop teeth, or humans re-evolve tails like our primate ancestors? According to new research led by Flinders, reversible evolution is possible under certain conditions – even after many millions of years.

A new paper, published in the journal Evolution, casts new light on the long-held idea that once a structure or organ is lost during the course of evolution, it cannot be recovered in descendant species. The Australian and UK team of scientists show that some of the largest kangaroos ever to evolve resurrected crests on their teeth that were present in their distant ancestors more than 20 million years earlier.

Changes in climate, habitat and diet are the reason. As forests retreated towards the coastline over millions of years, kangaroos were forced to eat more grass, with their teeth needing to cut rather than chomp away at their food, the researchers say.

As forests retreated, grasses and other abrasive plants became more abundant and kangaroos shifted their diets to exploit them, says Flinders School of Biological Sciences PhD candidate Aidan Couzens who used a simple mathematical rule to show that re-evolving these features may not be so difficult as previously thought.

“We show that small changes to a ‘rule’ that determines how teeth form in the embryo have allowed some kangaroos to partly turn back the clock on evolution,” Couzens said. “Using these rules, we can start to predict the pathways evolution can take. We found that contrary to Dollo’s law in biology, features lost in evolution can re-evolve when evolution ‘tinkers’ with the way features are assembled in the embryo.”
Biologists have often discounted the potential for evolution to shift into reverse, dismissing such occurrences as convergent evolution, “where similar features evolve independently in organisms that are not closely related,” explains co-author Associate Professor Gavin Prideaux.

The re-emergence of these molar traits was driven by changes in climate, habitat and diet. Kangaroos and wallabies have been studied as barometers of historical climatic change in Australia, Associate Professor Prideaux says. “They have been around for at least 30 million years, and we are discovering more about how early forms were adapted to the abundant soft-leaved forest plants and how later macropods adapted to more arid conditions,” he says.

The latest research findings resulted from collaboration between scientists at Flinders University and the Max Planck Institute for Evolutionary Anthropology in Germany, University of Kent in England, Monash University and Museum Victoria. “The role of inhibitory dynamics in the loss and re-emergence of macropodoid tooth traits,” by Aidan Couzens, Dr Alistair Evans, Dr Matthew Skinner and Associate Professor Gavin Prideaux, is available online at Evolution here.

The Doctor of Medicine (MD) Program is calling for research projects and / or supervisors of projects broadly related to medicine from all faculties for their Advanced Studies stream. Advanced Studies is a research and scholarship stream integrated into the MD Program and spans all years of the MD program but has research components built into years 2 and 3.

Research supervisors will:
- provide guidance to the student on the appropriate level of literature critique, data collection and analysis to adopt for the research project;
- maintain regular face-to-face contact with the student throughout the project;
- monitor student progress and together with the student provide 2 progress reports per year;
- receive $1000 stipend per 4.5 units (a total of $2000 over two years) to assist with project/student associated costs; and
- expect the student to present findings in a peer-reviewed setting and encourage the student to publish the research outcome.

Applications are now open for submissions on specific research project information. Project details can be submitted via the online pro forma.

Those wishing to be included as a potential research supervisor, please send an e-mail with your details including your name, e-mail and area(s) of research interest to mld.advancedstudies@flinders.edu.au.

For further information, please contact Professor Neil Piller via phone: 8204 4711 or e-mail: neil.piller@flinders.edu.au.

A national search for early-career researchers under the age of 40 who have a flair and passion for communication of their vital work is now open. Applications are sought from outstanding early-career researchers, who are working in science, technology, engineering, mathematics and medical research for the Top 5 under 40.

For further details and to apply online, see www.unsw.edu.au/top5under40. Applications close Sunday 8 May 2016.

The Australian Government’s Global Connections Fund and the Australian Academy of Technology and Engineering (ATSE) are pleased to launch a call for Priming Grants – a new vehicle for driving collaboration between Australian researchers and overseas small to medium enterprises (SMEs) and Australian SMEs with overseas researchers with linkages encouraged across 17 priority economies.

Priming Grants provide support for collaborations that focus on making a significant contribution to addressing national industry and research and science priorities:
- Advanced Manufacturing
- Food and Agribusiness
- Medical Technology and Pharmaceuticals
- Mining Equipment, Technology and Services
- Oil Gas and Energy Resources.

How Priming Grants can help
- Funded support of AUD$7,000 for establishing initial contacts between researchers and SMEs that have identified a possible collaborative relationship, to: support initial meetings and discussions between the two parties (e.g. travel and
Inspiring research

meetings focused on forming a relationship), and/or formalise partnerships (e.g. legal fees) and/or assist with applying for major R&D funds in Australia and globally.

• Advice on early stage collaborative links between researchers and SMEs for knowledge exchange and research and development (R&D) product development.

Priming Grants do not support Researcher-Researcher or SME-SME collaborations. Only one application per researcher or SME partnership is permitted.

How to get involved?
In order to apply for a Priming Grant you must first submit an Expression of Interest (EOI) which OPENS ONLINE FROM 15 APRIL TO 27 MAY 2016.

The EOI process allows for ATSE to assess your eligibility to proceed to the next step and make an application. You cannot apply for a Priming Grant unless you have first made an EOI, had it approved, and been issued with an EOI number. Having an EOI approved does not guarantee that you will get a Priming Grant.

For more information please visit the website http://www.globalconnectionsfund.org.au

2016 UNSUNG HERO AWARDS OF SOUTH AUSTRALIAN SCIENCE

These awards aim to recognise those who have not yet received significant recognition for their contribution to science or science communication. There are 2 awards: the Unsung Hero of South Australian Science and the Unsung Hero of South Australian Science Communication.

Details of criteria plus nomination form are available here - http://www.scienceweek.net.au/unsung-heroes-of-south-australian-science/.

Applications close on 17 June. Please contact Rona via email ronadel@dodo.com.au if you need further information.

National Science Week is from 13 to 21 August 2016 - www.scienceweek.net.au

SEMINARS, CONFERENCES AND WORKSHOPS

The Research Services Office has a calendar of upcoming seminars and workshops applicable for Academic staff and Research Higher Degree students on the Upcoming Workshops and Presentations page.

US NURSING ACADEMIC TALKS ON GRANT WRITING

Emeritus Professor Martha Hill, former Dean of the Johns Hopkins University School of Nursing, will present a half-day workshop at Flinders, The street smarts of grant writing. Professor Hill served as Dean of the Johns Hopkins University School of Nursing from 2001 until early 2014. As an educator, she is known for her mentorship of students and junior faculty members; as a researcher, for her investigations in preventing and treating hypertension and its complications, particularly among young, urban African-American men.

The presentation will include:
• The ‘practice politics’ of grant writing and funding
• What does a ‘fundable team’ and project look like?
• What makes a project a ‘priority’ for funding?
• What funding should you ask for (and NOT ask for)
• Seeing your proposal through a reviewer’s eyes.
• How does methodology influence funding? Does it?
• How important is ‘track record’ and how best to present this
• Funders’ expectations, which will be co-presented with Professor Robyn Clark.

Where: Room S306, Sturt South Building
When: Monday, 9 May 2016
Time: 10:00 AM to 12:00 PM
RSVP: by 2 May 2016 to renee.cannon@flinders.edu.au

Please note that there are only 30 places available.

ARC ERA 2015 PRESENTATION

The Australian Research Council (ARC) will be visiting Flinders to present an information session on Excellence in Research Australia (ERA) with particular emphasis on ERA 2015. There will also be an opportunity to ask questions of the ARC ERA team.

Leanne Harvey, Executive General Manager and Adam Rollston, Assistant Director, Project Manager - Research Excellence, will be the attendees from the ARC ERA team.

All interested staff are encouraged to attend this 50 minute session

Where: Humanities North Theatre 2
When: Tuesday 17 May 2016
Time: 2:10 PM to 3:00 PM

AUSTRALIA AND INDONESIA - INVESTIGATORS LECTURE

The future of the crucial, and sometimes bumpy, relationship between Australia and its populous northern neighbour will be the topic of
Inspiring research

the next in the Investigators Lecture series on May 18. The lecture, to be delivered by Professor Martin Griffiths, Dean of the School of History and International Relations, is titled Rough Seas Ahead: Australia-Indonesian relations in a changing world.

Registrations for the lecture can be made online - http://events.flinders.edu.au/show/event/flinders-investigators-may-2016. All other lectures for the year which take place on the third Wednesday of the month at Victoria Square can be found on the Flinders Investigators homepage.

Where: Flinders Victoria Square
When: Wednesday, 18 May 2016
Time: 5:30 PM to 6:45 PM

USING CREATIVE TOOLS IN YOUR RESEARCH

This workshop will explain how you can use a range of creative thinking tools in your research. It will cover brainstorming, idea mapping, six thinking hats, lateral thinking and more. These tools will allow you to look at problems differently, seek creative solutions and have fun.

What you will learn:
• The range of creative thinking tools that are available
• How to use several of these tools
• How they can assist you in your research

Who should attend?
Anybody who wants to explore how to use creative tools in their research. This workshop will be relevant to Research Staff and RHD candidates at early to mid-stage of their candidature.

Where: The Studio, Ground Level, Professional Services Building (behind Grind & Press Cafe)
When: Thursday, 19 May 2016
Time: 9:30 AM to 12:30 PM
RSVP: via jenrol

This workshop is offered under the Highly Effective Researcher Program.

TURBOCHARGE YOUR WRITING

Would you like to know the secret to high output, low stress scholarly writing? In academia it is often assumed that writing comes naturally. However, an overwhelming body of research shows that there are very clear and practical strategies that can greatly increase your writing productivity.

This workshop explores the secrets to high output, low-stress scholarly writing.

Who should attend?
People who can honestly answer ‘Yes’ to the question ‘Have you ever done the dishes to avoid your academic writing?’
This workshop will be relevant to Research Staff and RHD candidates at all stages of their candidature.

What you will learn?
• How we deliberately use distractions to slow down writing
• The principles of quick starting
• How to deal with destructive internal beliefs
• How to set a writing plan and stick to it
• How to set achievable goals by writing in a silo
• How to greatly increase the number of actual words you produce
• How to clarify your thinking and improve the quality of your work

Where: The Studio, Ground Level, Professional Services Building (behind Grind & Press Cafe)
When: Thursday, 26 May 2016
Time: 9:30 AM to 12:30 PM
RSVP: via jenrol

This workshop is offered under the Highly Effective Researcher Program.

Share your research successes and/or information regarding upcoming research related events in your area. Contact Nikki Johnson for article submissions or further information.