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<http://auaps.org.au>

AuPS McIntyre Prize winner 2011.

Dr Kate Murphy

What is your research background ?

During my undergraduate studies in Sports Coaching and Administration at Deakin University, I was fortunate to be lectured to by some well-known names in muscle and exercise physiology, including Prof. Mark Hargreaves and Prof. Rod Snow. I really enjoyed these lectures and they made me decide to pursue a career in Physiology. I was lucky enough to be given the opportunity to undertake my Honours and PhD in exercise physiology in Prof. Mike McKenna's laboratory at Victoria University and I followed this with a postdoctoral position in Prof. Torben Clausen's laboratory at the University of Aarhus in Denmark. I returned to Australia in 2007 and was thrilled to begin a postdoctoral position with Prof. Gordon Lynch at The University of Melbourne. This required a complete change in research focus and although the first year getting up to speed on clinical myology was tough, I love our research and have never looked back!



What's the best thing about your lab at the moment?

Definitely the people. We have 20 people in our group, making it one of the bigger labs going round. There is great cohesion within our group, and tremendous support from all members. There are also some wonderful personalities, which makes some of the hard days in the lab a little easier.

Has the direction of your research changed in the last year (ie since winning the McIntyre award)?

My research direction really changed in 2008 when I began to focus on cancer cachexia, the severe muscle wasting and weakness associated with cancer. It has taken several years to establish the animal models and analyses necessary to maximise the translation of our results, but we have now achieved this and I can't thank Gordon enough for giving me the support to set up and drive our cancer cachexia program.

What is the research direction you would like to take in the next 3-5 years?

I love the research we are currently doing, and I am especially passionate about our cancer cachexia work. In the next couple of years, I would like to return to work in humans, which I did a lot of during my Honours and PhD, and combine our preclinical animal experiments with human studies.

What do you do to relax?

I don't get much time to relax as most of my time away from work is spent doing something related to triathlons (training, racing, eating, seeing health professionals for my frequent injuries etc). If I do get a moment to spare, nothing beats playing with my niece and nephew or watching the mighty Blues play footy.

Nominations for the 2012 McIntyre Prize will be opening soon, and will close in October. Please keep an eye on the AuPS website for more details.

Poster Competition



Sydney 2012 Joint AuPS/PSNZ/ASB Meeting

Australian Physiological Society/ Physiological Society of New Zealand and Australian Society for Biophysics

Dec. 2nd – 5th, 2012

The local organizing committee for the combined societies meeting is offering prizes for posters that best encapsulate the Physiological and/or Biophysical Sciences and the strengths of our Societies. Two poster formats are available (A0 dimensions: 841 x 1189mm – portrait; and a vertical banner poster format: 600 x 1200mm). Entries should be provided as JPEG files (file size up to 8 Mb; 300 dpi resolution) to the LOC secretary, Christine Riordan (c.riordan@unsw.edu.au), by July 31st. Short-listed posters will be on display at the conference and the winning poster will be announced during the conference dinner cruise on Sydney Harbour. Prizes will be awarded for all meritorious work used for presentations.

Mid-year update from AuPS

Report from the National Secretary

With my second year in Office well underway, the activities of the Society remain vibrant. One of my major responsibilities is involvement in the organisation of our annual Scientific Meeting. Primarily this means liaising between Council and our local organisers. I wish to acknowledge the effort and time of our local organisers in putting together our meetings each year.

A flyer for this year's Scientific Meeting is included in this Newsletter, so more details can be found there. The meeting will be held on campus at the University of New South Wales. Various parts of this meeting will present slightly different formats compared to our meetings in the past. For lunches, delegates will be able to make the most of purchasing food at the various cafes located in the central courtyard below the lecture theatres and poster display areas. As usual, the opening night Welcome Reception will follow the AuPS Invited Lecture, which this year will be delivered by Prof Joe Lynch. The social highlight of the meeting, however, may well be a wonderful Sydney Harbour Dinner Cruise which is incorporated into registration for the meeting. We will take the opportunity to present a number of our annual prizes during the dinner. These include presentation of the AK McIntyre Award, the Post-Doctoral and PhD publication prizes and Honourary membership. For details on our various Awards and the updated criteria, see the AuPS website.

With Sydney2012 in sight, plans for the 2013 meeting are also well underway. The dates to lock into your diaries are 8-11 December 2013. That meeting will be held at the Waterfront Campus of Deakin University, in Geelong. The call for symposia will be made in August, with submissions closing around the end of October.

The second half of the year always tends to be a bit busier from a secretarial point of view and this year is no exception. There will be a number of vacancies that will occur at this year's AGM, one of which is the newly created position of National Secretary-elect. I'd be more than happy to speak with anyone who thinks it might be a good opportunity to become more heavily involved in the Society, with a year of priming for the position. The position certainly means a bit of work, but there are many benefits as well. These of course include a great insight into the operational aspects of AuPS and also an opportunity to be part of making some decisions about how things are managed. There are also opportunities to liaise with members of other Societies, both international and Australian. Nominations will also be called for in September/October for the position of Treasurer as well as three Councillors.

Finally, there have been a few changes suggested about the way the Society is run and we need to make some changes to the Constitution to reflect these. I will therefore be emailing you the suggested Constitutional changes that have been accepted by Council at our meeting in May. Following your perusal and opportunity for discussion, I will seek a vote to accept the changes or not. Thanks to Dave Davey, we are able to conduct such votes electronically.

I look forward to seeing as many of you as possible at Sydney 2012.

Robyn Murphy

National Secretary

Profile of our new AuPS student representative – Divya Mehra

What is your research background?

On completing Bachelor of Pharmacy from University of Mumbai, India I was working full time as Clinical Data Analyst for Cognizant Technology Solutions Life Sciences Department on a Phase III Clinical trial using anti-cancer medication alongside being enrolled for 6 months volunteering as a research assistant at Bharti Vidyapeeth's College of Pharmacy. My involvement in the lab at that time made me realise that I want to pursue research as a career and gave me the understanding about pharmacognosy of plants in treating diabetes. In addition, I was trained in animal handling, data collection, analysis and critical thinking which got me interested in the nuances of physiology research.



What is your current research interest?

Currently I am absorbed in quantifying effects and understanding mechanism(s) of action of class I anti arrhythmic drugs to prevent the calcium store overload induced during arrhythmias in the heart. Although these sodium channel blockers are clinically available we do not understand how they inhibit calcium channel i.e. ryanodine receptors (RyR2) in our heart. This is important to know because abnormal spontaneous calcium release from the RyR2 results in triggered arrhythmia leading to sudden death in Catecholaminergic polymorphic ventricular tachycardia (CPVT), the main focus of the research.

What do you do to relax?

I love writing poems about nature, love and society in my free time. Along with this I play badminton and enjoy bollywood dancing. I take time off to hike or travel and explore local people, culture and food with friends.

What is the research direction you would like to take in the next 3-5 years?

My current research has revealed that sodium channel blockers inhibit the calcium channel i.e. RyR2 differently in the heart. This difference in type of inhibition shows that we need low affinity molecules to prevent the abnormal calcium release causing arrhythmia in heart. Thus it may lead to a paradigm shift in drug developing processes by directing strategies away from discovering high affinity compounds. I would like to carry out lab based research in discovering and understanding mechanisms of such fast binding molecules and also involvement in its industrial implications. This will help resolve questions around therapeutic use of drugs in heart failure and ischemia reperfusion injury along with CPVT.

What are you most looking forward to as the new student representative?

I am most looking forward to enjoying the position as the new student representative and increasing student integration in AuPS. I want to do my best to build a platform for all physiology research higher degree students from across universities to share their experiences and issues as early career research candidates. This is possible during conference student mixers and workshops conducted for such interactions. Furthermore, being an international research higher degree student I am aware of various opportunities available to research students across the globe. Therefore, I am interested in promoting the scientific content at conferences as a means to improve scientific training for fellow research students in order to make us more competent in the international market.



Sydney 2012 Joint AuPS/PSNZ/ASB Meeting

**2012 Sydney - Australian Physiological Society/ Physiological Society of New Zealand
and Australian Society for Biophysics - 2-5 December.
University of New South Wales, UNSW Kensington Campus, Sydney**

AuPS invited lecturer:

Prof Joe Lynch: Queensland Brain Institute; School of Biomedical Sciences, Univ. Qld.

Invited plenary speakers:

Prof Håkan Westerblad - Scandinavian Exchange Lecturer, Karolinska Inst. Sweden.

Prof Lutz Birnbaumer - National Institute of Environmental Health Sciences, USA.

Symposia with international speakers

- New insights into cardiac Ca²⁺ handling and excitability
- Physiology education
- Advances in methods for intestinal motility
- Molecular insight via advanced fluorescence microscopy
- Cystic fibrosis: Today and tomorrow
- Bridging the gap between molecular reductionism and physiology- the usefulness of 'omics'
- Spectral imaging in physiology – a highlight of techniques
- Integrative physiology of the heart
- Perinatal asphyxia: adaptation and consequences
- A vignette of TRP ion channel physiology
- Calcium signalling in microdomains essential to normal cell function
- Science at the high performance computing frontier
- Muscular adaptations to exercise: mechanisms at play
- Brain dysfunction and translational neurophysiology
- Autonomic physiology - nutrient sensing in the GI tract
- Skeletal muscle in health and disease
- Developments in auditory and vestibular physiology
- Ion Channels: from Structure to Function and drug targets
- ***Conference Dinner on Sydney Harbour***
- ***Student dinner networking***
- ***Free communications & Poster Sessions with awards***
- ***UNSW campus accommodation options***

Breaking news about this exciting meeting is available at: <http://aups.org.au/Meetings/201212/>

Local organizing committee contact: c.riordan@unsw.edu.au

Abstract/registration commences: 27 August 2012

Deadline/end of early-bird registration: 21 September 2012

Student Profile – Michaela Kreissl (Sydney University - INMR)

What is your research background – how did you get interested in Physiology?

I completed my undergraduate studies of Biomedicine and Biotechnology at the University of Veterinary Medicine Vienna, Austria. After doing a one year research project at the Institute for Neuroscience and Muscle research (INMR) in Sydney I found my passion in muscle research, more specifically the field of muscle pathophysiology in congenital myopathies. Thus in 2011 I returned to Sydney to do a PhD at the INMR. What I particularly enjoy about my work here is the close collaboration between medical staff and research staff, aiming to provide patients with a genetic diagnosis and to understand the underlying mechanism of muscle dysfunction.



I was always intrigued by the delicate complexity of physiology, but I got particularly interested in physiology through my work at the INMR which involves understanding how muscle disease disrupts physiological processes.

What is your current research interests?

I currently work on identifying the cause of muscle weakness in patients with congenital muscle disease caused by mutations in tropomyosin. Although this protein is one of the best studied molecules it is quite challenging to understand how specific mutations in tropomyosin cause muscle weakness. In my PhD I aim to assess mutant tropomyosin function using a multitude of approaches ranging from protein expression studies and calcium handling in tissue culture models to assessing cross bridge cycling kinetics and calcium sensitivity in permeabilised single muscle fibres from patients.

What do you do to relax?

I spend most of my free time rock climbing in Sydney and in the Blue Mountains. I love sports as a way to unwind after a hard day in the lab. Also, at times when the stack of papers on my desk becomes too overwhelming I enjoy reading the occasional fiction book or going to the movies for some mind numbing entertainment.

What is the research direction you would like to take in the next 3-5 years?

Discovering the pathophysiological basis of muscle dysfunction in congenital myopathies will hopefully allow us to develop treatment strategies for these diseases in the future. However, at present we don't know why muscle weakness arises and so it is difficult to know which treatment approach will work best. Therefore, one of my main aims in the future is to develop efficient strategies to predict and test the effect of various mutations in important muscle genes like tropomyosin as well as to develop models that can be used for mutation specific testing of candidate drugs.

Michaela was awarded The Wiley Blackwell oral presentation award at the 2011 Joint AuPS/ASCEPT/HBPRCA Meeting in Perth.

The American Physiological Society (APS):

Membership, meetings and opportunities to contribute to an international society

By Assoc. Prof. Tony Verberne, University of Melbourne, Department of Medicine, Austin Health, Heidelberg 3084.

I attended the annual meeting of the APS in April in San Diego. This meeting is held in conjunction with other societies representing the disciplines of anatomy, biochemistry and molecular biology, immunology, nutrition, investigative pathology and pharmacology under the umbrella of the Federation of American Societies for Experimental Biology (FASEB). I have been a member of the APS since 2000 and have attended every meeting since then. The annual FASEB meeting provides opportunities for cross-fertilisation of ideas with other physiologists and scientists from other disciplines represented at the meeting. Members of the APS are invited to nominate primary and secondary affiliations with sub-sections of the APS comprising cardiovascular, cell and molecular, CNS, comparative and evolutionary, endocrinology and metabolism, environmental and exercise, gastrointestinal, neural and autonomic, renal, teaching, and water and electrolyte physiology.

Members are encouraged to nominate for positions on APS committees which assist with publications, awards, programming, membership and other important functions of the society. The annual meeting includes award lectureships, symposia, featured topic sessions, exhibitions, oral and poster presentations as well as affiliated section social gatherings. Small special interest APS conferences are also held at other times throughout the year.

Membership includes free online access to the entire collection of APS journals, including their legacy content dating back to 1898. APS publications include: *American Journal of Physiology* (Cell Physiology; Endocrinology and Metabolism; Gastrointestinal and Liver Physiology; Heart and Circulatory Physiology; Lung Cellular and Molecular Physiology; Regulatory, Integrative and Comparative Physiology and Renal Physiology), *Journal of Applied Physiology*, *Journal of Neurophysiology*, *Physiological Genomics*, *Physiology* (formerly *News in Physiological Sciences*), *Physiological Reviews*, *Advances in Physiology Education* and *The Physiologist*.

To apply for membership visit: <http://www.the-aps.org/mm/Membership/Apply>.

Michael Roberts Award

SPONSORED BY WILEY-BLACKWELL

The Michael Roberts Excellence in Physiology Education Award is an annual award bestowed by the Australian Physiological Society in memory of Professor Michael Roberts. The award is intended to recognise AuPS members who have demonstrated a sustained performance of excellence in the delivery of physiology education at the tertiary level, and make a contribution to the teaching activities of AuPS.

The recipient of this Award in 2012 will receive a **medal and a cash award** (presented at the Sydney meeting in December) and will be invited to deliver a keynote lecture during the Educational Symposium at the 2012 AuPS Sydney Meeting. Past winners are Phil Poronnik and Yvonne Hodgson.

There is a current call for applications for the award. The deadline for applications is 30 September 2012. Applications are to be sent to the National Secretary, Robyn Murphy secretary@auaps.org.au.

Eligibility and selection criteria can be found here: <http://auaps.org.au/Prizes/Roberts.html>

A request for scientific equipment donations:

The following request was made to AuPS; if any members would like to assist please see the details below:

I am a doctoral student in Italy; currently preparing to defend my thesis in two months and return to my home country, Nigeria; where I have a faculty position in a Physiology department.

I would like to know if there is a scheme by the AuPS to assist third world scientists via direct equipment donation or facilitating it through AuPS members.

If there is such a scheme, would you kindly let me know how to go about this please?

If there isn't such a scheme, is it possible we (my home Physiology department) make a formal application to AuPS to help reach out to members who have research equipment they are willing to give away as a form of science charity? It is quite likely that there are AuPS members who have old or not-in-perfect-shape equipment that they would like to see gone from their laboratories.

We are a small group of deprived yet aspiring scientists; we would appreciate almost any useful equipment in the life sciences even if we may have to pay for little repairs. And of course we would be responsible for shipping.

Thank you.

Dott. Ayodele Oyadeyi [<mailto:ayodele.oyadeyi@uninsubria.it>]

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Mobile- +39 3332024867

Website <http://www.dbsm.uninsubria.it/fisio/>



Society for Free Radical Research International

16TH BIENNIAL MEETING • Imperial College London • 6-9 September 2012 • United Kingdom

Discuss the impact of the latest research, concepts and applications of free radicals and antioxidants.

For more information on the conference remember to visit the conference website www.sfrimeeting.org

17th International Congress of the World Muscle Society

9-13 October 2012 • Perth, Western Australia

For more information

www.wms2012.com

First Australian Conference on Physiological and Physical Employment Standards.

In November of 2012, the Centre for Human and Applied Physiology (University of Wollongong), in collaboration with the Defence Science and Technology Organisation, will be running the First Australian Conference on Physiological and Physical Employment Standards. This conference will be held at the Australian War Memorial, Canberra (November 27th-29th, 2012).

The focus of this conference is upon the development, implementation and justification of physiological and physical employment standards within physically demanding occupations. Scientists from around the world will present their research relating to the development of these standards, and discuss problems and solutions concerning the relationship between these standards and the optimisation of a capable workforce whilst minimising workplace injuries. The nature of this meeting, the range of keynote speakers and their presentation topics, all fall within the realms of human and applied physiology, ergonomics, occupational health and safety, and occupational and environmental medicine. For this reason, we believe that some members of the Australian Physiological Society may be very interested in attending, or even presenting a paper at this meeting.

You may visit the conference web site via the following link:

<http://www.uow.edu.au/health/AusPES2012/index.html>

Translational Nephrology: from Mechanisms to Therapeutics

24-26 August, 2012

Novotel Lakeside, Queenstown



Photo: Jan Kettink

To have your name added to a mailing list for information, suggestions and questions, contact Jenny Bedford (Jennifer.bedford@otago.ac.nz) or Rob Walker (rob.walker@otago.ac.nz).

See also www.otago.ac.nz/kidney



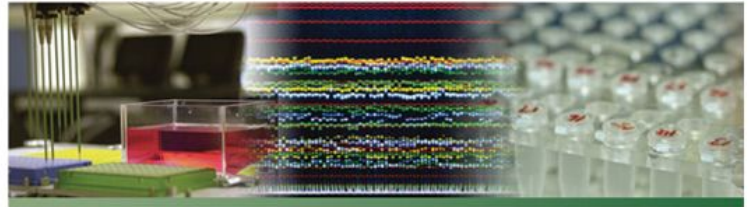
ANZCCART Conference 2012

"Thinking Outside the Cage- a different point of view"

Rendezvous Observation City Hotel, Scarborough, WA (Tuesday 24th - Thursday 26nd July)

For more information please contact ANZCCART@adelaide.edu.au

Or visit <http://www.adelaide.edu.au/ANZCCART/>



25th - 28th November 2012, Adelaide Convention Centre

The Australian Health and Medical Research Congress is pleased to announce the following Plenaries will be speaking at the 2012 AHMR Congress in Adelaide!



Prof Colin Sibly
University of Manchester



Prof Elaine Dzierzak
Erasmus MC Stem Cell
Institute



Dr Craig Logsdon
MD Anderson Cancer
Institute

We are also pleased to announce that **Cardiac Society of Australia and New Zealand** will be joining the AHMR Congress and will be hosting a one day program.

Looking forward to welcoming you to Adelaide in November!

AH&MR Congress Organising Committee

www.ahmrcongress.org.au

Find us on [Facebook](#)



DIIS RTE Brussels Alert: EU Research Priorities & Opportunities 2013

The purpose of this alert is to inform a wide range of Australian stakeholders about EU Research Priorities for the 2013 work programme of the EU's Seventh Framework Programme for Research (FP7) as well as opportunities for cooperation in specific thematic areas of interest to you.

EU Research Priorities: Orientation Papers

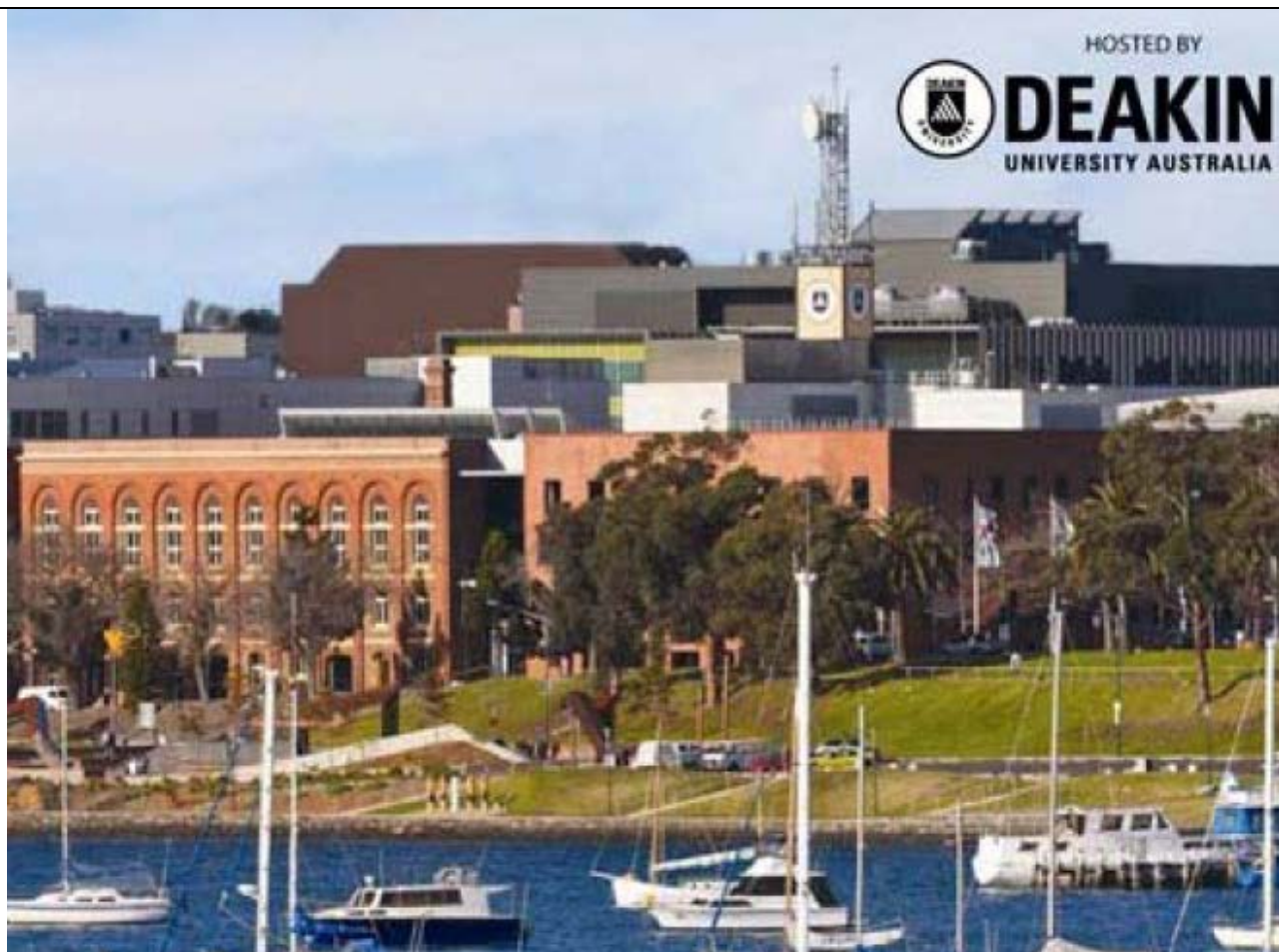
The European Commission has recently published a number of 'Orientation Papers' setting out the expected research themes for the 2013 work programmes of the European Union's Seventh Framework Programme for Research and Development (FP7). These can be found under "Orientation Papers 2013" on: http://ec.europa.eu/research/participants/portal/page/fp7_documentation/

AuPS Supporters



2013 Australian Physiological Society Meeting 8-11 December 2013.

Deakin University Waterfront Campus, Geelong, Victoria.



This issue of AuPS News was compiled by Glenn Wadley with assistance by Simon Potocnik and with many thanks to the generous contributors.

The next issue of AuPS News will be distributed to members in September 2012.
All contributions for AuPS News should be sent to: newsletter@aps.org.au before the end of August.