

AuPS News – September 2019

A.K. McIntyre Award Winner 2018: Dr Tanya Cully, Baylor College of Medicine

Tanya was awarded the AuPS AK McIntyre Award at the 2018 Scientific Meeting in Sydney.

Congratulations on winning the AK McIntyre Award. Can you tell us what winning the award means to you?

Winning the AK McIntyre was amazing and such an honour. Being recognised for contributing to the high level of physiological research that Australia produces is really career affirming. As a PhD student I would watch incredible researchers win the award and it really inspired me to strive to one day to win the AK McIntyre Award myself. The Australian Physiological Society and the yearly meetings are so invaluable to all researchers at any stage of their career. The breadth of knowledge and welcoming environment really make it a powerhouse meeting in Australia. One that I have been proud to attend and to encourage others to attend.

Could you tell us about your position in the US and what research you are currently working on?

Currently I work as a postdoctoral researcher within the Molecular Physiology and Biophysics Department at Baylor College of Medicine in Houston, Texas. My work involves examining the role of reactive oxygen species (ROS) in exacerbating dystrophic muscle pathology. This work has expanded upon the foundation laid by my



PhD/early post-doc, opening up new avenues of research direction whilst still having an emphasis on Duchenne Muscular Dystrophy. My recent work focuses on how calcium channel leak in dystrophic muscle could be contributing to increased ROS production and/or how ROS may be implicated in causing pathological calcium leak. I was fortunate enough to receive a Department of Defense grant to fund research repurposing a drug already cleared by the FDA as a potential intervention in dystrophic muscle.

What is your research background? How did you begin your career in Physiology? What got you interested in the first place?

I received my bachelor's degree in Biomolecular Science from Griffith University. As an undergraduate I really enjoyed studying molecular biology and physiology. After my undergraduate studies, I initially worked with Dr Bradley Launikonis at the University of Queensland as a research assistant, but after a year I knew I wanted to pursue a PhD working on calcium handling in healthy and dystrophic skeletal muscle. I was really interested in the details behind the specialised techniques in the lab and the potential the research had for helping people with DMD. My PhD project utilised adeno-associated viruses in adult mice with calcium imaging and was an ideal combination of molecular biology and physiology for me. I then went on to work as a postdoc with Dr Launikonis developing a way to perform more quantitative calcium measurements in skeletal muscle. It was during my early postdoctoral years that I also was able to work with human muscle biopsies, leading to papers with Dr Robyn Murphy, Dr Izzy Jayasinghe and many other researchers that I have much respect and admiration for.

Which part of research makes it most enjoyable for you?

Honestly there are so many aspects of research I enjoy! I love the mental stimulation, there is always something to puzzle out. When you do make a significant finding, it is such an incredible feeling and all the frustration and hours of work become worthwhile. Meetings/conferences are fantastic too as you get to be around other people who are

passionate about their research and learn from them to improve your own work. I also enjoy talking at length about science without it feeling like a job, but something way more fun. Training and mentoring more junior researchers is also something I enjoy doing, seeing them start to develop the confidence to take charge of their project and what their data means is so gratifying.

What are the biggest challenges/surprises/hardest things about being an ECR?

I think one of the challenges of being an ECR is the feeling of not really knowing where you sit in the scheme of things. You're not a PhD student but you're not a PI either. Many departments and organisations cater to student and staff development with ECRs generally sitting in between the two and being overlooked. In the last few years though I feel this has become increasingly recognised and more initiatives have been put in place to involve the ECRs in career development and training sessions.

Where do you see your research and/or career going in the next 3-5 years?

I have been fortunate enough to secure a lectureship position at the University of Otago, NZ. In the next 3-5 years I see myself working to establish my research laboratory and starting to train my own students. My lab will focus on bridging calcium and ROS crosstalk to understand and improve muscle function.

The AK McIntyre Award

Sponsored by SDR Scientific



The Society's prestigious A.K. McIntyre award, named in honour of the Society's first President, is awarded annually to a member of the Society who is judged to have made significant contributions to Australian physiological science over their pre-doctoral and early post-doctoral years.

Application and Eligibility

To be considered for this award, nominees must:

- be financial Ordinary Members of the Society (note: provisional members are not eligible to apply).
- normally have completed their doctoral degree not more than 7 years prior to the time of their application.
- be proposed by two financial members of the Society, who should each provide a statement of not more than 500 words summarising their nominees achievements.
- provide a curriculum vitae which includes any involvement with AuPS, along with a list of published works, including conference proceedings.

In considering nominations, the judges will take into account the nominee's contributions to scientific meetings of the Society. No individual may be awarded the prize more than once.

The judging committee shall consist of the Executive Committee of Council (except that any member with a conflict of interest shall be replaced with another Councillor), together with up to two additional members of Council who shall be appointed for each specific round of nominations.

The Prize, sponsored by SDR Scientific consists of a medal and the sum of \$1000.

The prize winner will be announced at the AuPS meeting in Sydney in November and in the December Newsletter.

Closing Date: Applications close 5 pm, 7th October 2019.

Please email applications to the National Secretary, Deanne Hryciw: d.skelly@griffith.edu.au

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

Details of other AuPS prizes can be found later in this newsletter and on our website.

In memory of Savant Singh Thakur (10-12-1991 – 16-06-2019)

It is with much sadness that the Australian Physiological Society acknowledges the passing of student member, Savant Thakur, who died from complications after surgery to help treat his condition, Duchenne muscular dystrophy (DMD).

Savant was a brilliant, dedicated and high-achieving student who overcame considerable adversity to become an inspirational scientist, undertaking research to find a cure for DMD and be a help to so many others.

Savant was a Ph.D. student in the Centre for Muscle Research, Department of Physiology at The University of Melbourne, studying how upregulating heat shock proteins may benefit muscular dystrophy and other muscle wasting conditions.

He was a much-admired and respected member of the Australian Physiological Society and had presented his research at several annual scientific meetings.

In 2017, Savant was awarded the Society's Best Poster Prize for his research with a presentation on 'Heat shock protein 70 (Hsp70) overexpression drives myoblast fusion during C2C12 cell differentiation'.

Savant had completed all laboratory experiments and was in the final stages of his doctoral candidature, analysing and writing his final two thesis chapters. He had already published two lead-authored papers from his Ph.D. thesis, which is still being finalised for examination.

Savant was revered for his wonderfully enthusiastic character and strong motivation to succeed. He was also a serious cricket follower and a very passionate supporter of the AFL's Western Bulldogs. In their last home game of the AFL season, the Bulldogs players wore black arm bands to honour Savant.



Savant had an amazing impact on all he met. While he had endured many operations and procedures over the years to help treat his condition, a persistent bout of ill-health took its toll. His death has been a terrible shock and left many people devastated.

A special memorial service to honour Savant was held at The University of Melbourne on June 28, 2019.

The Australian Physiological Society extends its deepest condolences to Savant's family, friends and colleagues. May he rest in peace.

Prof Gordon Lynch
The University of Melbourne

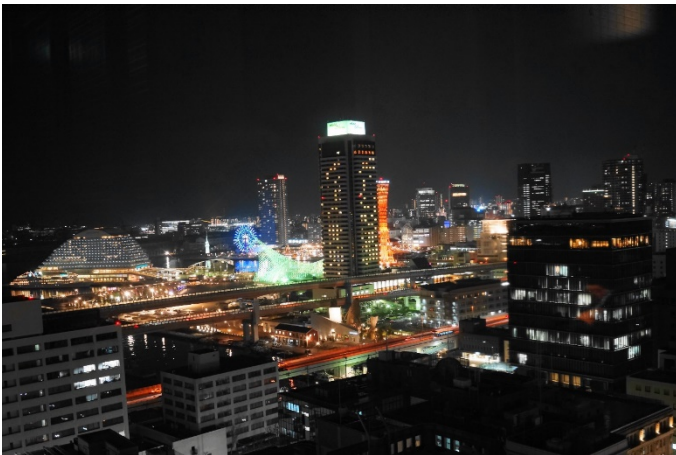
FAOPS – Federation of Asian and Oceanian Physiological Societies: A perspective through AuPS

Kobe, Japan March 28th – 31st was the venue for the [9th FAOPS Congress](#), where members from the alliance of associated physiological societies from the Indian Ocean - western Pacific Rim met to show-case research and education in our discipline. The Congress was highly successful, attracting 2,246 registrants from 39 countries. FAOPS represents a major umbrella structure for the coordination and promotion of the physiological sciences alongside the principal international body, which is IUPS – International Union of Physiological Sciences. There was a strong representation of Australian

muscle, gastrointestinal, cardiovascular, endocrine, metabolism and exercise physiology.

The neurosciences were broadly represented, with autonomic, sensory systems, neural circuits, developmental neurobiology and translational neuroscience contributing about a third of the sessions; the prominence of glial neurobiology was a highlight, as was a special symposium on advances in understanding the cerebellum. This was particularly poignant for members because of the recent passing of a founder of FAOPS, and former

IUPS President, Professor Masao Ito. Professor Ito was the ‘Father’ of the ‘little brain’ – providing core knowledge of cerebellar circuitry and function. Across his career, Prof. Ito was an inspirational advocate for international cooperation and his legacy is evident in the continued strengthening of international engagement through FAOPS and IUPS.



Night view of Kobe from the FAOPS Congress, March 2019.

physiologists at Kobe, with broad representation across the sessions. As you would expect, the FAOPS meeting had a far broader scope than we are able to accommodate within our national AuPS meetings. Plenary lectures by Linda Buck (olfactory receptor neurobiology; 2004 Nobel Prize in Physiology or Medicine) and Yoshinori Ohsumi (autophagy; Nobel Prize 2016) and David Julius (pioneer of ion channel molecular physiology and pain mechanisms) were highlights. The core themes of the conference across molecular, cellular and systems physiology, were well integrated over the four days, with good programming facilitating cross-over in sessions of



FAOPS Congress Dinner with congress president Prof. Junichi Nabekura (National Inst. Physiological Sciences, Okasaki, Japan) leading the tapping of the sake barrel.

It was great to see that Physiology Education had strong presence, and that AuPS members were able to project the innovation and excellence of Australian

teaching initiatives. The intersection of Physiology Education was further developed by outreach sessions to schools, which is a latent opportunity for advocacy in our discipline in Australia. It is well worth considering how we might host such community engagement within our annual meetings around the country. Extending from this, perhaps we could work towards a structure that complements the highly successful secondary schools Brain Bee Challenge, to promote education and recruitment into the physiological sciences?



Nobel Laureate Prof. Yoshinori Ohsumi, and Prof. David Julius (U. California San Francisco) contributing to the FAOPS childrens’ outreach (Kobe, March 2019).

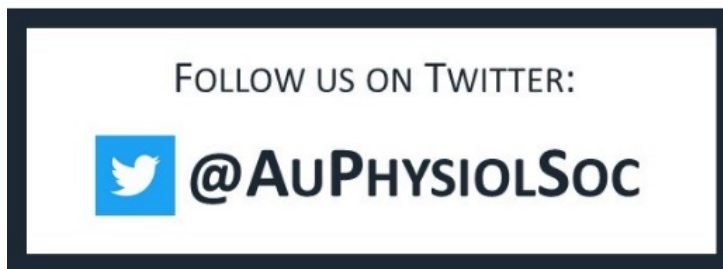
FAOPS is held every four years. The previous meeting was in Bangkok in November 2015 and the

next (10th) FAOPS Congress, will be held in Tehran, Iran in 2023 (hosted by Dr. Javad Mirnajafi-Zadeh and colleagues, Dep. Physiology, Faculty of Medical Sciences, Modares University, Tehran). Unfortunately, attendance at this meeting by Australian delegates is likely to prove challenging across a number of fronts unless the geopolitics improve. The 39th IUPS Congress will be held in Beijing 24th – 28th August, 2021 with the theme “Marvels of Life – Integration and Translation” (<http://iups2021.com/>).

The FAOPS organization is supported by fifteen member physiology societies and three associate-member societies. The FAOPS Council members are elected at the General Assembly during the Congress on a rotating basis, with individuals nominated by member Societies, but serving as independent council members. The President of FAOPS is Prof. Chae Hun Leem (Korea), Past-President is Prof. Xiao-Min Wang (China; Congress President for IUPS 2021); Secretary-General is Prof. Yoshihiro Kubo (Japan), long-standing AuPS member Prof. Philip Poronnik (U. Sydney) serves as FAOPS Treasurer. Gary Housley (UNSW) was elected onto the FAOPS Council at the Kobe meeting.

Professor Gary Housley
University of New South Wales

Are you one of our followers AuPS yet??



Help us to communicate the achievements of our members to the wider world with our AuPS Twitter account.

So what are you waiting for? Follow us and use our twitter handle to communicate the achievements of our members **@AuPhysiolSoc**

AuPS PhD Student Grant Winners 2019

Congratulations to the recent winners of the AuPS Student grants for 2019. Following a very competitive round with many high quality applications we are pleased to announce that the winners are:

Javier Botella – Victoria University

Project title: Exercise-induced mitochondrial cristae disturbances and the regulation of mitophagy in human skeletal muscle



Nirajan Shrestha – Griffith University

Project title: The role of maternal diet high in linoleic acid on hepatic lipid metabolism in adolescent offspring rats.



Each winner receives \$1000 to support the purchase of equipment, consumables or training to further their research projects. Keep an eye out for future newsletter editions to hear about the work and exciting outcomes from these projects.

Electrophysiology Facility for Cell Phenotyping and Drug Discovery

The recently established facility at Illawarra Health and Medical Research Institute (IHMRI), University of Wollongong features the state-of-the-art patch-clap robot, the Nanion SyncroPatch 284PE. The Electrophysiology Facility is available for hire - more information can be found [here](#).



Prof Brian Manning Johnstone (1929-2019)

Brian Johnstone was one of the giants of Australian physiology. He obtained his PhD from the University of Melbourne in 1961 and after a postdoc in the United States, came to The University of Western Australia in 1963 as a lecturer, where he founded The Auditory Laboratory in the Physiology department. He quickly built a team of physiologists, physicists, engineers, computer scientists, and clinicians, to tackle the big questions in inner ear biology.

His approach was characterized by remarkable innovation and he made the lab in Perth an internationally recognized centre of inner ear research. In 1974 he received the largest ARC grant then given to a single researcher and subsequently was the Chief Investigator on four successive NHMRC Program Grants. His many achievements include the analysis of ion pumping in the cochlea and the measurement of the electrical properties of the cochlea using multi-electrode techniques. He pioneered the direct measurement of basilar membrane motion in the living cochlea using the Mössbauer effect, and with Rob Patuzzi and Peter Sellick in the early 1980s, used this method to reveal the nature of sharp tuning in the cochlea and the biophysical changes underlying sensorineural deafness. The discoveries made by Brian and his collaborators underpin much of our present understanding of inner ear physiology and the causes, consequences and treatment of deafness. Brian was elected a Fellow of The Australian Academy of Sciences in 1988 and received a Centenary Medal in the same year. He retired in 1992.

Brian Johnstone was “a character”; gregarious, opinionated, frequently loud and brash. If you met him, you did not forget him in a hurry. What made him such a remarkable scientist and mentor, was his enthusiasm and his passion for science and

intellectual inquiry. When addressing a scientific question he always insisted on going back to fundamentals and in this, his profound understanding of physics and engineering

principles made him a force with which to be reckoned. He had a deeply caring side, and was genuinely interested in the careers of young scientists. Brian’s former students, postdocs and collaborators, many of whom rose to high positions in Australia and abroad, consider that he had a profound influence on their thinking and that he inspired their lifelong commitment to a scientific career. Although retired for more than 20 years, Brian continued to receive frequent visits from former students and international colleagues, and he remained interested and enthusiastic about their work to the last.



Brian was actively involved in the early days of AuPS, he was elected onto council in 1970 and chaired the local organizing committee for the 1975 annual general meeting. He leaves Aileen, his wife of 36 years, and two daughters from his previous marriage to Claire, who also survives him.

Emeritus Professor Don Robertson

The Auditory Laboratory
 School of Human Sciences
 The University of Western Australia

The Michael Roberts Excellence in Physiology Education Award

The Michael Roberts Excellence in Physiology Education Award is an award bestowed annually by the AuPS in memory of Michael Roberts, who was a lifelong passionate and dedicated advocate of physiology teaching and education.

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.

Application & Eligibility:

The award is open to current ordinary financial members of the Australian Physiological Society who are actively engaged in physiology education.

Candidates should provide a single page argued case for their nomination. In addition, candidates must provide evidence of achievement and impact which could include any of the following: letters of support

from colleagues familiar with the teaching environment, detail of sustained high level teaching evaluation, student recognition, awards, success in obtaining substantial educational research funding and publications. Applications containing a brief CV and evidence of achievement should be a **maximum** of three pages, **plus a single page argument for their nomination**. In considering nominations, the judges will take into account the nominee's contributions to scientific meetings of the Society.

Prize: The recipient of this award will be presented with a medal and a cash award, at the conference dinner in the year of the award, and will be invited to deliver a keynote lecture at the Educational Symposium in the 2020 AuPS conference.

Email applications to:

Dr Deanne Hryciw: d.skelly@griffith.edu.au

Closing date: 5pm, 7th October 2019.

The AuPS Postdoctoral and Student Publication Prizes



These are annual awards for the best original paper published by an AuPS member during their first 4 postdoctoral years and during the course of their PhD studies.

Prizes:

The Prizes, sponsored by **SDR Scientific**, consist of \$500 awards, to be used to present work at a conference. (Note: winners will be reimbursed after providing a copy of an invoice of conference expenses). Winners will be announced during the

conference dinner of the AuPS meeting and in the December AuPS newsletter.

Eligibility and selection criteria can be found on the AuPS website: <http://aups.org.au/Prizes/>

Email applications to the AuPS National Secretary
Dr Deanne Hryciw: d.skelly@griffith.edu.au

Closing date: Applications close 5pm, 7th October 2019.



2019 SCIENTIFIC MEETING

A JOINT MEETING OF

**THE AUSTRALIAN PHYSIOLOGICAL SOCIETY
&
THE AUSTRALIAN SOCIETY FOR BIOPHYSICS**

Hosted by The Australian National University
Canberra, ACT

1st - 4th DECEMBER 2019

Abstract submission open 13th August – 23rd September

aups.org.au

 @AuPhysiolSoc



Genetics and Epigenetics of Physical Activity Symposium- 18TH October 2019



Genetics and epigenetics of physical activity: Gene-environment interactions modulating health and disease

Co-chairs:

*A/Prof. Nir Eynon (Institute for Health and Sport, Victoria University) and
Prof. Anthony Hannan (Florey Institute of Neuroscience and Mental Health, University of
Melbourne)*

Location: Ian Potter Auditorium, Melbourne Brain Centre, 30 Royal Parade, University of Melbourne, Parkville

Date: 18 October 2019

Time: 8:30 am – 1:30 pm

Registration: Free (however registration is essential for catering purposes):

<https://www.eventbrite.com.au/e/genetics-and-epigenetics-of-physical-activity-symposium-tickets-59279379219>

Ebbs and Flows

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20-21 November 2019**

www.asmr.org.au/asmr-nsc/

This year's theme of *Ebbs and Flows* aims to chart the future of Australia's health, and explore how trans-disciplinary collaboration can improve the pursuit of scientific discovery.

We have built an exciting program, featuring multiple speaking opportunities for EMCRs, networking, and professional development events, *Ebbs and Flows* promises to leave you with the skills and tools you need to enhance your research career.



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This issue of AuPS News was compiled by Chris Shaw with many thanks to the generous contributors.

The next issue of AuPS News will be distributed to members in December 2019.

All contributions for AuPS News should be sent to: newsletter@auaps.org.au before the end of November.

Thank you to the supporters of AuPS:



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- Oxford Optronics GelCount colony counter for automating the detection, counting and analysis of mammalian cell colonies
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