Australian Physiological Society

THE PROFESSIONAL ASSOCIATION FOR AUSTRALIAN PHYSIOLOGISTS

AuPS News – June 2021

Mid-Year Update from the National Secretary: Professor Glenn Wadley, Deakin University

For many of us, 2021 has been "more of the same", with COVID-19 still disrupting our professional and personal lives. Most of us who work at Universities are still doing a large proportion of teaching online and many are looking forward to spending more time on campus and less time on zoom. Whilst anecdotally many people have reported publishing more research in 2020, it is clear that the disruptions over the past 15 months have had major disruptions on our research pipeline, particularly data collection that will be felt for years to come.

Council worked hard last year to replace the postponed 2020 Gold Coast Meeting, with some virtual offerings. We held a very successful Education Forum kicked off with Keynote Speaker Prof Dee Silverthorn (University of Texas), and the forum had over 75 attendees and 20 presenters. Congratulations to A/Prof Christian Moro (Bond University) and Dr Angelina Fong (University of Melbourne) in taking out the oral presentation prizes. A big thank you to Dr Julia Choate who organised and facilitated the event. A highlight for 2020 was our virtual Student and ECR Forum with 20 oral and video poster presentations and over 100 registrants. Congratulations to Dr Angus Lindsay (Deakin University), Laetitia Hughes (University of Western Australia) and Dr Nicholas Saner (Victoria University) for taking out the oral presentation prizes and to Crystal Seng (University of Queensland) for winning the video poster prize. Thank you to Macsue Jaques, Cassandra Smith, Danielle Hiam, Renee Ross and Nir Eynon for putting the program together.

At the end of 2020 we said thank you to several people who stepped down from their roles on Council. Prof Gordon Lynch is one of the most respected physiologists in the country and has made a huge contribution to AuPS over many years. I would like to thank him for not just his many years of service and leadership, but also the assistance and support he has provided to me as President when I took over the National Secretary role. We welcomed incoming President Prof Robyn Murphy into the role at the AGM and Robyn has seamlessly transitioned into her new role. At our AGM we said thank you and goodbye to Nicole Beard, Richard Mills, Natalie Trevaskis and Chris Shaw on Council and welcomed three new councillors Adam Rose (Social Media Manager), Kevin Watt (Sponsorship Officer), Andrew Moorhouse (Education Officer), along with Ben Perry who has transitioned into the role of Associate Editor.

Our current council consists of early-career, mid-career and more senior physiologists. In August this year we will be putting out a call for nominations for 3 new Council members and a PhD student representative, so please consider joining AuPS. Council is particularly keen for female members to nominate for a role on Council this year so we can maintain our gender balance.

We recently announced the outcomes from the AuPS PhD grants scheme. Congratulations to Yuqin Wu (Monash University), Emily Attril (University of Tasmania) and Nykola Kent (University of Queensland) who were awarded grants from a very competitive field of 17 applicants towards the costs of their research.

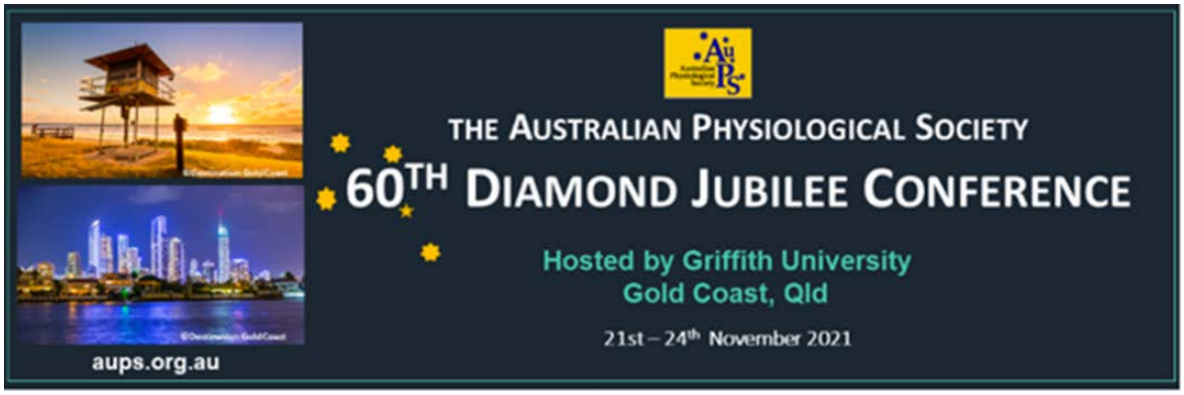
We would like to confirm that our Annual Scientific Meeting (60th Diamond Jubilee) will be going ahead on the Gold Coast on 21-24 November and hosted by Griffith University. This will be a blended Meeting, which will be primarily face to face, but with International symposium speakers presenting virtually. For those domestic attendees unable to make it to the Gold Coast due to COVID-19 related travel restrictions there will also be a virtual option. Council are currently working on a plan for how the blended meeting will operate. Please stay tuned as we will be providing more details of the blended Meeting over the coming months. I would like to congratulate Prof Matthew Watt for being selected to present the AuPS Invited Lecture and A/Prof Andrew Moorhouse and Dr Charles Sevigny who will be presenting their Michael Roberts Excellence in Teaching Award lectures in 2021. We currently have 13 symposia confirmed for the Meeting.

With our 2021 Scientific meeting being moved to a blended format, I would like to remind you that our annual prizes for Michael Roberts Teaching Award, AK McIntyre Award, the Post-Doctoral and PhD publication prizes will still be going ahead this year. These award open in July this year, so please refer to our website for more information. In particular, we have received few nominations over the past 2 years for one of our most prestigious prizes – the AK McIntyre Prize - which is open to members up to seven years postdoctoral. I would encourage any eligible members to discuss with their supervisors /mentors nominating for the prize.

With all the travel disruptions in 2020 and 2021 we have been forced to cancel our Research Training Awards for PhD members, which were to be held at Victoria University. We are still hopeful we can hold this event in 2022 (venue to be decided) and we will put out a call in 2022 when we have more details about this event.

To all our members currently in lockdown, working from home, or under some sort of COVID-19 travel restrictions we wish you well and hope for some better news soon.

I look forward to seeing many of you either in person at the Gold Coast or online for our Annual Meeting in November.



Professor David J. Adams

A Journey in Membrane Physiology!

Professor Adams is a former president of the AuPS, and has generously provided his autobiography detailing his journey in physiology in both Australia and abroad.

I studied science at the University of New South Wales, but I didn't really know what I wanted to do other than enjoy the 'university experience'. However, things started to turn around in my third year when I attended lectures on membrane physiology by Professor Peter Gage; an inspirational lecturer and researcher who was at the forefront of ion channel research. I did Honours in his lab in 1973 working on the electrical properties of a pacemaker neuron, R15, in Aplysia abdominal ganglion. I was also conscripted for National Service in 1973 but together with the election of Gough Whitlam as Prime Minister and being awarded a Commonwealth Postgraduate Scholarship, it was deferred indefinitely.

I attended my first meeting of the Australian Physiological and Pharmacological Society (APPS) in 1973 which was held at the University of Queensland (UQ) with Prof Stella O'Donnell as the Local Secretary. Peter Gage strongly encouraged his students to attend the APPS meetings to present our findings and it was a great opportunity to meet and connect with other PhD students, postdoctoral fellows and academics in Australian physiology (see the photograph taken at APPS Dinner held in Sydney 1977).

The 'Gage lab' provided a stimulating research environment and was a hive of activity driven by Peter's enthusiasm and competitiveness. I was fortunate to overlap with many accomplished postdocs and students including Robert McBurney, Angela Dulhunty, Peter Barry, Susan Andrews, Ron Balnave, Ian Spence, Dirk van Helden, Owen Hamill, Ken Takeda and Nick Datyner. Under Peter Gage's supervision, I had my first paper published in Science in 1976 and the output of my PhD also included two papers in Nature and four in the Journal of Physiology.

APPS Dinner Sydney 1977. L to R: Helen Drennan (ANU), Dirk van Helden (UNSW), Belinda Walker (Monash), David Adams (UNSW), Nancy Grant (USyd), Ken Takeda (UNSW), Susan Dawe and Dr. Alan Bretag (South Australian Institute of Technology/UniSA).

When I first went overseas in early 1978, I soon realised that the research on calcium channels in Aplysia neurons I had been doing in Professor Gage's lab was at the cutting-edge. I was awarded a Muscular Dystrophy of America Postdoctoral Fellowship (1978-80) to work with Bertil Hille at the University of Washington, Seattle, and then I obtained a Grass Fellowship in Neurophysiology to work at the Marine Biological Laboratory, Woods Hole MA (1980). Both were stimulating experiences that involved learning new electrophysiological recording techniques using frog skeletal muscle and squid axons, respectively. I subsequently moved to London on a Beit Memorial Fellowship for Medical Research

(1981-84) working with David Colquhoun in the Department of Pharmacology, University College London. My time at UCL was a defining period in that the patch clamp technique had just been developed allowing electrophysiologists to record the activity of single ion channel proteins. A frequent visitor to David Colquhoun's lab was Bert Sakmann, Nobel Laureate 1991, and together with the other eminent electrophysiologists at UCL, including Sir Bernard Katz and Sir Andrew Huxley, it was an exciting time to be there. By 1983, I was becoming more independent and ready to establish my own research program and started exploring faculty positions in the US.

I returned to Australia for 3 months at the end of 1983 at the invitation of Peter Gage to assist building and to teach Graham Lamb, a postdoc with Peter, the vaseline gap voltage clamp technique to record charge movement associated with excitation-contraction coupling in skeletal muscle. At that time, David McKinnon, Brian Robertson, Pankaj Sah, and Rowland Taylor were PhD students in Peter's lab, who moved with him when he was appointed as Head of the Department of Physiology at the John Curtin School of Medical Research (JCSMR), Australian National University in late 1984. Peter was inspirational and many of the students he mentored have gone on to become leading scientists in their fields. I am indebted to him for the opportunity to have a career in physiology.

In 1984, I was recruited by the University of Miami School of Medicine as an Assistant Professor in the Department of Molecular & Cellular Pharmacology. Before relocating to take up my position in Miami, I spent six months working with Prof Geoffrey Burnstock to help set up an electrophysiology (patch clamp) rig and learn how to isolate and culture mammalian autonomic neurons. I was fortunate to obtain an NIH RO1 grant in 1985 to study nicotinic acetylcholine receptors and synaptic transmission in rat intrinsic cardiac ganglion neurons. As co-PI on an NIH RO1 grant with Prof Casey van Breemen at

University of Miami, School of Medicine, 1993: L to R: Javier Cuevas (PhD student), Dr Tom Nutter (AHA postdoctoral fellow) and Prof. David Adams

Miami, I also studied calcium mobilization in vascular endothelium using fluorescence calcium imaging and patch clamp techniques.

During this period, my family and I returned to Cornwall each summer and I taught for a number of years in the 'Workshop on Microelectrode Techniques for Cell Physiology' held at the Laboratory of the Marine Biological Association, Plymouth. The Workshop led by David Ogden has been held every year since 1984 and a number of physiologists in Australia have benefited from the experience (the poster for the 2021 workshop can be seen at the end of the article). I was promoted to Associate Professor with tenure in 1989 and to full Professor in 1993. While at Miami, I was involved in establishing and was Associate Director of the National Institutes of Environmental and Health Sciences (NIEHS) Center for Marine Biomedical Research, and I was Director of the Graduate Program in Molecular & Cellular Pharmacology.

I returned to Australia in 1995 to take up the Chair of Physiology at UQ, bringing my electrophysiology equipment and two postdoctoral fellows. The Pro Vice-Chancellor (Biological Sciences) at the time was Professor Alan Pettigrew, who 20 years later was Chair of the Illawarra Health & Medical Research

Institute (IHMRI) Board of Directors when I was appointed as CEO and Executive Director of IHMRI in December 2015.

Prof. David Adams: Chair of Physiology and founding Head of School of Biomedical Sciences, UQ (2000-2007) taken in 2010.

I was able to successfully transition my research into the Australian environment obtaining two NHMRC Project Grants and an ARC Discovery Grant in 1996. The other research group at UQ that were to have significant impact on my future research direction were members of the Centre of Drug Design and Development (3D Centre); Richard Lewis, David Craik, and Paul Alewood who were working on venom-derived peptides from cone snails. In 2001, we were awarded a 5-year ARC Discovery Grant for ~$2.5 million and subsequently we obtained an NHMRC Program Grant which was twice renewed (2005-19). In 2004, we were a Finalist for the Royal Societies of Australia Eureka Prize for Interdisciplinary Scientific Research – 'Conotoxin Research Team' and, in 2011, we were a NHMRC Ten of the Best Health and Medical Research Projects.

It was an interesting time in Queensland with the transition in 1996 to a new Vice-Chancellor, Professor John Hay, and the election of Peter Beattie as Premier of Queensland. UQ went through a restructure consolidating around 90 departments into 30 schools. I was Head of the Department of Physiology & Pharmacology (1998-2000) and I then became the Head of the School of Biomedical Sciences (2000-07). In that role, I was keen to build on the strength of neuroscience research at UQ and together with Professor Jack Pettigrew, presented a neuroscience initiative to the Vice Chancellor which led in 2002 to the recruitment of Professor Perry Bartlett and his group from WEHI and Pankaj Sah from JCSMR. Donations from Atlantic Philanthropies, coupled with University and State Government funding, saw the Queensland Brain Institute (QBI) founded in late 2003. After 10 years in a senior leadership role, I stepped down as Head of School and moved into QBI in 2008 where I responsible for setting up the UQ Neuroscience Program as Director.

Shortly after returning to Australia in 1995, I reconnected with APPS after an 18-year absence and was elected to the APPS Council (1995-1997). Prof John Young, President of APPS (1995-2000) approached me to Chair the Congress Organising Committee for the Australian Physiological and Pharmacological Society's 66th Meeting which was held in Brisbane, in conjunction with the 4th Congress of the Federation of the Asian and Oceanian Physiological Societies (FAOPS), the 2nd Congress of FAONS (The Federation of Asian-Oceanian Neuroscience Societies) and the Annual Meeting of the Physiological Society of New Zealand. It was a highly successful meeting with more than 500 delegates attending. I was again elected to the APPS Council in Nov 2002, and at the Sydney 2003 meeting, a motion was passed to return to the original name of the Society, and in February 2004 the necessary changes to the Constitution were passed to effect the change of name to the "The Australian Physiological Society Inc." (AuPS). In Nov 2004, I

was elected President AuPS succeeding Prof Peter Gage who passed away at the age of 67 of myeloid leukemia in Aug 2005. As President of AuPS (2004-2009), I was fortunate to be supported by David Saint as National Secretary, Craig Neylon and Stefan Broer as Treasurers and Dave Davey as Editor. Professor David Allen succeeded me as AuPS President in 2010 and I gave the AuPS Invited Lecture at the joint AUPS and Australian Neuroscience Society (ANS) meeting held in Sydney in Feb 2010.

I left UQ in Aug 2009 to become Director of the Health Innovations Research Institute (HIRi) at RMIT University, Melbourne. The Institute was launched in 2010 with Professor Erwin Neher, who shared the Nobel Prize with Bert Sakmann in 1991. At RMIT, I focused on recruiting research-active and externally funded researchers in the biomedical sciences, and the institute was instrumental in building the research culture and infrastructure at RMIT's Bundoora campus. I acted as Deputy Vice-Chancellor (Research & Innovation) at RMIT (May 2013 - Feb 2014) which was a great experience and gave me insights into university-wide challenges and initiatives. However, with the departure of the Vice-Chancellor, Margaret Gardner, to take up the role at Monash University in late 2014 and the change in research focus and direction at RMIT with the appointment of the new DVC (R&I), I explored other opportunities.

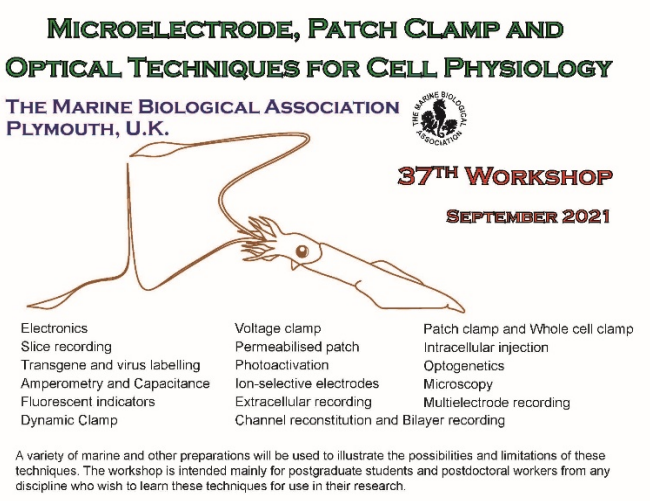
My interest in the role at IHMRI was sparked upon contact with Professor Pettigrew. I realised the opportunity at IHMRI was unique in that it is a partnership between the University of Wollongong (UOW) and Illawarra Shoalhaven Local Health District (ISLHD) and was established in 2010 as an independent, not-for-profit company. IHMRI was largely modelled on the Hunter Medical Research Institute (HMRI) at Newcastle i.e. a partnership between the local area health district and the University, with strong community focus and engagement. I am passionate about research translation and the opportunity of working with clinicians, and the broader Illawarra community, is a model that provides real opportunities for research impact.

IHMRI, University of Wollongong. L-R: Lydia Bye (PhD student), Dr Han-Shen Tae (Postdoc), Dr Jeffrey McArthur (Postdoc), Dr Rocio Finol-Urdaneta (Lead Scientist, IHMRI Electrophysiology Facility), Prof David Adams, Justin Bourke (Postdoc), Dr Arsalan Yousuf (Postdoc), Claire Blayney (Hons Student), Anuja Bony (PhD student).

Today, in biomedical research, the biggest change I've seen since I started is that in order to be competitive, you need to have or be part of a research team. You can't do it yourself; the majority of my publications in the first 10 years had two authors whereas my publications over the last 5 years average seven authors. One of my major roles at IHMRI has been developing an environment and culture where early-mid career researchers in particular feel supported to build successful careers. An important part of this involves the attraction and retention of talent, and the building of depth; people, expertise, and profile. We need to recognise the achievements of early-mid career researchers, celebrate and promote them, not wait until their retirement! The advent of the COVID-19 pandemic has had a substantial economic and social impact on Australian universities and medical research institutes; the challenge is to foster careers in academic research as attractive and exciting options to the next generation.

My current research involves the use of state-of-the-art electrophysiological and fluorescence imaging techniques to investigate the target(s) and mechanisms of action of analgesic peptides on membrane receptors and ion channels expressed in sensory neurons of pain pathways. Currently, my lab is pursuing the investigation of peptides derived from the venom of marine cone snails (conopeptides) as novel candidates for treating chronic pain. Chronic pain affects 1 in 5 Australians, and is associated with an annual economic burden of >$100 billion. There is a desperate need for new and effective analgesics that have minimal side effects which is particularly apparent given the current 'epidemic of opioid use' in an attempt to treat chronic pain. My research vision over the next five years is to provide mechanistic insights into conopeptide modulation of membrane receptors and ion channels in nociceptive pathways and to develop new drugs for the management and treatment of chronic pain.

In conclusion, I have been fortunate to have worked with outstanding physiologists early in my career and to have had many talented PhD students and postdoctoral fellows in my labs in the US and Australia. It is their contribution to the research activities and publications (>250 refereed journal articles) from my lab that has led to any success that I have achieved. In recent years, I have become a Fellow of The Physiological Society (FTPS), a Fellow of the American Physiological Society (FAPS) and a Fellow of the Australian Academy of Health and Medical Sciences (FAHMS), however, my longest association with any professional society has been as a member of APPS/AuPS for ~45 years! I look forward to maintaining my connection with and contributing to the Society for many years to come**.**



'Workshop on Microelectrode Techniques for Cell Physiology' Poster for 2021 in Plymouth, UK.

Member Profile:
Dr. Jack Darby

University of South Australia

Dr. Jack Darby was the winner of the 2020 AuPS Post-doctoral publication prize

Publication: **Umbilical vein infusion of prostaglandin I_2 increases ductus venosus shunting of oxygen-rich blood but does not increase cerebral oxygen delivery in the fetal sheep. J Physiol, 2020, 598:4957-4967.**

Congratulations on the prize. Can you tell us about your award winning publication?
Thank you, I am extremely honoured to receive the postdoctoral publication prize. In this study we utilised cutting edge MRI techniques to measure and visualise blood flow and oxygenation within the fetal circulation in response to Prostaglandin I_2 administration.

The fetal circulation is characterised by unique shunts; one of these being the Ductus Venosus (DV). The DV allows a fraction of oxygen and nutrient rich blood returning to the fetus from the placenta via the umbilical vein to bypass the hepatic circulation and flow directly into the inferior vena cava before entering the right side of the heart. In response to both acute and chronic hypoxaemia, the DV is capable of dilating in order to allow more of this substrate rich blood to avoid the liver and preferentially stream toward more vital organs such as the heart and brain. Whilst the DV has also been shown to be responsive to prostaglandin I2 *in vitro*, this is the first study to show that this is also the case *in vivo*. Moreover, this is the first study to combine the use of 4D flow MRI and T2 oximetry in an effort to calculate oxygen delivery in the fetal circulation. We have shown that the combination of 4D flow MRI and T2 oximetry is sensitive enough to detect a change in response to a vasoactive agent. This paves the way for this combination of MRI techniques to be used to assess potential interventions against poor fetal oxygenation.

If you are interested in seeing what this preferential streaming through the DV looks like, check out the supplementary videos of the manuscript at the links below:

1. Blood flow coded by vessel of origin
https://physoc.onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1113%2FJP280019&file=tjp14320-sup-0001-videoS1.mp4

2. Blood flow coded by velocity
https://physoc.onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1113%2FJP280019&file=tjp14320-sup-0002-videoS2.mp4

What is your current position/role?
I am currently a postdoctoral ECR in the Early Origins of Adult Health Research Group at the University of South Australia. Our group's research

aims to better understand how some babies grow up to have an increased risk of developing chronic disease in later life. Specifically, my research focuses on understanding the molecular mechanisms by which sub optimal *in utero* conditions such as fetal hypoxaemia and hypoglycaemia influence cardiac development and program adult onset cardiovascular disease. More recently, I have been focused on combining clinically translatable MRI measures with molecular techniques to test the effectiveness of intervention strategies that may reverse or prevent these detrimental molecular, morphological and functional changes from occurring in the fetal heart.
In the long term, I hope to not only validate better MRI based detection methods of fetal growth restriction but also develop an intervention strategy for growth restricted fetuses so that every baby, no matter how small, has the best heart health in later life.

What made you want to follow a career in research, and where do you see yourself heading professionally?
I don't think I ever thought about a career in research until the last semester of my undergraduate degree. As part of our program, we were required to complete a reproduction and development course. Unknowingly to me at the time, this reproduction and development course was run by my would-be PhD supervisor and now mentor, Professor Janna Morrison. It was through her excitement and passion for the field that I became fascinated in fetal development; specifically, how changes in fetal development could impact your health for years to come. This led to me pursuing an honours project investigating how maternal obesity can impact heart development and then a PhD investigating mechanisms by which reduced fetal nutrient and oxygen supply can detrimentally impact heart development.

Towards the latter end of my PhD and over the course of my postdoctoral career thus far my research has changed tack a bit. I am now predominantly focussing on linking MRI measures, that have the potential to be used in the clinic, with both gene and protein expression of signalling molecules. In this way, I hope to bridge the gap between the preclinical and clinical research setting.

Outside of work/research, what do you do to relax?
I think it's incredibly important to have a good work-life balance. In my down time I try to stay active, I play rugby and I find that to be a good way to unwind.

Member Profile: Zhengxiang Huang

University of Queensland

Zhengxiang Huang was the winner of the 2020 AuPS PhD publication prize

Publication: **Dapagliflozin restores insulin and growth hormone secretion in obese mice. J Endocrinol 2020, 245(1), 1-12**

Congratulations on the prize. Can you tell us about your award winning publication?
First of all, I would like to thank the AuPS for choosing me for this prize. I am very grateful. This paper demonstrated the changes in insulin and growth hormone and their effects in the dapagliflozin-mediated fat mass loss in an obese mouse model. Dapagliflozin belongs to a family of sodium-glucose co-transporter 2 inhibitors (SGLT2i), which are newly developed anti-diabetic drugs. Little is known about the effect of SGLT2i in the stage of obesity or pre-diabetes. Our results showed the beneficial effects of this drug in obesity to regulate glucose and lipid metabolism, and the involvement of changes in insulin and growth hormone. It not only provides evidence for applying SGLT2i as an anti-obesity drug in the clinical practice, but also highlights the importance of insulin and growth hormone in the development and management of obesity. Based mainly on this manuscript and literature from the laboratory and within clinical medicine, we were invited to publish a review to propose [Insulin]:[growth hormone] ratio as a biomarker for monitoring and managing the development of obesity in top endocrine review journal - Trends in Endocrinology and Metabolism.

What is your current position/role?
I completed my PhD in March 2021 and started my first Postdoc in May 2021. I am currently working on developing a novel co-culture system that can culture multiple cell types (probably more than 3). It may become a useful tool to study cell-cell interaction, and to mimic organs for *in vitro* drug screening.

What made you want to follow a career in research, and where do you see yourself heading professionally?
I changed my career path from clinical medicine to research after I obtained MBBS in China in 2016 due to some personal reasons. Personally, I feel happy to concentrate on a research project, especially when there is some positive outcome. In addition, the time arrangement for a researcher is flexible, which gives me a good work-life balance. I know that it is more and more difficult in the academic field. I will try it first in the next few years and see how it goes.

Outside of work/research, what do you do to relax?
I have two hobbies, photography and music. I like to take photos of the landscape and animals in nature. For music, I sometimes play musical instruments or make arrangements, and upload my works on my YouTube channel.

Member Profile:
Assoc. Prof. Christian Moro
Bond University

In 2020, the AuPS held an education forum, which was particularly relevant given the challenges of remote learning instigated by the response to COVID-19. Associate Professor Christian Moro won the award for the best oral presentation on employing augmented reality for the provision of stroke education.

Congratulations on winning the prize. Can you tell us more about the teaching practice/strategy you presented?

We've found some great success towards enhancing student engagement using technology-enhanced learning during physiology laboratories and workshops. In the past, this practice has utilised virtual, augmented and mixed reality. However, our interventions were always very single-organ based, such as learning about the brain, or the heart in stand-alone sessions. In this study, we branched out a bit and used augmented reality to teach various diseases. The exciting thing here, is that to teach a disease holistically, we needed to integrate physiology, anatomy, immunology, pathology and more. The potential for integrating other disciplines in a seamless way within our physiology labs was exciting and something we hadn't formally engaged with before. As such, we set out to validate this practice with evidence, and commenced a research project surrounding this, with stroke as one of the targeted diseases in this case.

Can you tell us briefly about your research background, and what made you interested in teaching practice/research?

I am a laboratory physiology researcher, primarily focussing on the function of the urinary bladder, in particular, separating the internal lining (the urothelium) from the smooth muscle (the detrusor) and identifying how the mechanisms of contraction work in each of these tissue layers. Before my time in universities, I was a senior school science teacher. The educational research somewhat feels like a natural progression towards linking my passion for teaching in with my love of research. Research into my teaching endeavours also helps verify some of the interventions we use in the classroom, and the results are not always positive. For example, focus groups highlighted a range of reasons where our virtual reality classes were not well-received by some students, who found it often distracting or overwhelming. This type of insight has been fantastic, and I've found research into teaching has really helped me remould and change my classes to suit the evidence.

What do you see as future challenges for physiology educators in the coming years?

Students studying physiology can obtain such a great experience from hands-on laboratories, workshops and activities. It may provide a range of challenges in the future as the general trend internationally appears to be a move to more multi-modal and online learning in many tertiary courses. Finding ways to represent human physiology effectively, while continuing to engage students with the content when teaching online will be one of the challenges as we enter the next few years.

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The next issue of AuPS News will be distributed to members in September 2021.
All contributions for AuPS News should be sent to: associateeditor@aups.org.au before the end of August; please feel free to email any articles or article ideas.

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