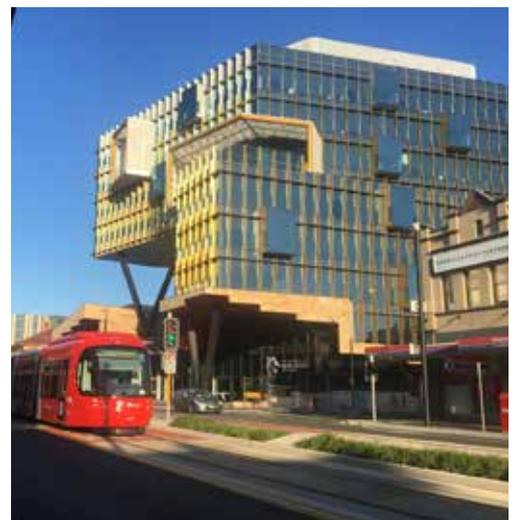


# Undergraduate Research News Australasia

Australasian Council for Undergraduate Research – Issue 16 • November 2019

## Editorial



Since our last issue, there have been two memorable undergraduate research conferences. This year's Australasian Conference for Undergraduate Research (ACUR) was held at the University of Newcastle in early October. There is a conference report on the next page, followed by seven short articles by students who participated. As usual these are notable for the inherent interest of the research topics, the clarity with which these are presented, and a strong sense of the wider possibilities of the work. This is crystallized in the four contributions from undergraduate researchers in Central Queensland University's Motivations of Health Behaviour Lab on the centre pages.

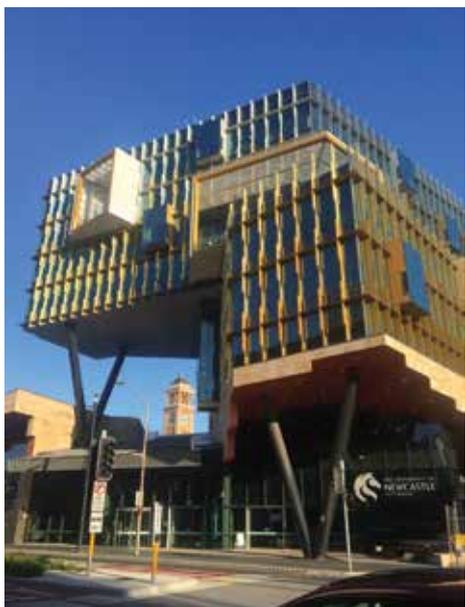
The other event to be featured is the Second World Congress of Undergraduate Research held in Oldenburg in Germany in late May. Small numbers of both Australian and New Zealand undergraduates attended this event, along with three members of the ACUR Executive. There are two reports about this experience on page 6, one from one of the student group from the University of Auckland, and one from a student from Uganda Christian University. They reflect on some of the wider insights they gained from participating in an international meeting, and the value of presenting their research to a diverse audience.

*Top two images courtesy of the University of Oldenburg*

A gratifying aspect of the development of ACUR has been the increasing role of students. The ACUR Student Committee is currently looking to refresh its membership, with details on page 7. This is followed by a report on an initiative in which a member of the ACUR Steering Group has a key role: the establishment of a co-operative university across the UK. This takes the spirit of an organization like ACUR, by engaging students, academics, administrators and partners in running an educational project for the benefit of its members and society.

**Eric Pawson**  
University of Canterbury

# The Eighth Australasian Conference of Undergraduate Research



This year's conference was hosted by the University of Newcastle on 2 and 3 October in its downtown NewSpace building on Hunter Street, one block back from the city's regenerating riverfront. NewSpace was an ideal venue, with well-designed meeting rooms for presentations readily accessible on adjacent levels. Refreshments were available on the ground floor, making this a convivial setting.

There were nearly a hundred presentations in six concurrent streams, with posters in addition. Sessions ranged from 'Neuroscience' and 'The World of Plants' to 'Physical Fitness' and 'Gender and Sexuality'. For something different, there were talks on topics like the symbolic significance of snakes and political homophobia in the recent Indonesian elections. Overall there was plenty of variety, as the student contributions to this newsletter attest.

The keynotes were held close by in the Harold Lobb Concert Hall at the university's Conservatorium. The opening address by Emeritus Professor Angela Brew, the chair of ACUR, stressed the value of learning through research to prepare for the challenges of tomorrow. She was followed by one of the Conservatorium's students, Jacob Ridgeway, who discussed his life in music as a Worimi and Gamilaroi man. Jake spoke about performance anxiety and protest song - which resonated strongly with the audience - and performed his single *Bullyman* which mixes traditional Indigenous sounds with R'n'B, and was inspired by his aunt's experiences as a child of the Stolen Generation.

The third keynote, on the second day, was by Dr Dan Johnstone from the School of Medical

Sciences at the University of Sydney. Dan underlined the value of research in a societal context of growing 'anti-evidence', and talked of the importance of communication skills and finding good mentors. This led on to a wide ranging panel discussion back in NewSpace, covering many aspects of research and writing. It was in the room used the night before for the entertaining (and challenging!) ACUR quiz, compered by Jason Woods.

Alison Campbell (University of Sydney) won the award for best overall combined abstract and presentation for her paper on investigating the properties of nanomaterials through single molecule spectroscopy. Other awards and commendations went to Nathan Jones (University of Adelaide), Bianca Oliva (Macquarie University), Jacob Ridgeway (University of Newcastle), Liam Bond, Chanon Kachornvuthidej and James Santiago (University of Queensland), and Zoe Stawyskyj (University of Sydney). Prizes to international students were given to Kunal Mishra (Nanyang Technological University, Singapore), and shared by Kerri Tang and Kenneth Davis (University of Alabama).

ACUR is grateful to our Newcastle hosts for a memorable and very well organised conference, especially to Professor Liz Milward who worked hard to ensure that the occasion was a real success, assisted by a willing team of nearly twenty students who helped with registration, and chairing, timing and judging of sessions. It's well worth watching the conference video by Daniel Bisegna, available on the ACUR website at [www.acur.org.au](http://www.acur.org.au), under 'events and conferences'.

**Eric Pawson**  
University of Canterbury

## It's not what you know: it's who you know

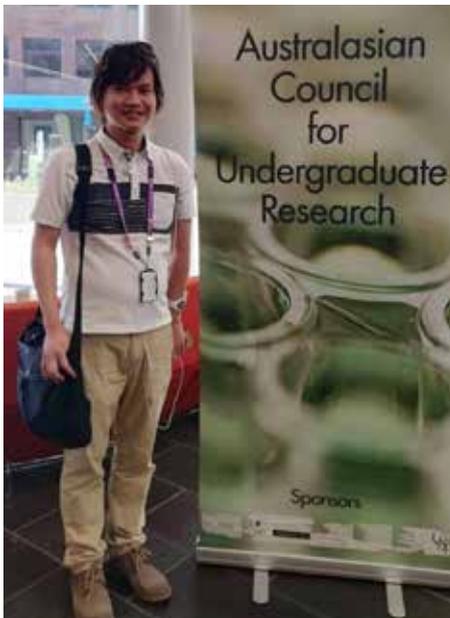
As a final year undergraduate chemistry student, I jumped at the opportunity to present my honours research on hair testing at ACUR 2019. Hair is a popular matrix in criminal investigations, workplace drug testing and postmortem toxicology for the detection of drugs of abuse and drugs associated with crime. The major advantage of hair testing is the longer window of drug detection, up to several months after administration. In my research, I have developed and validated a method to detect performance enhancing drugs in hair.

This multi-disciplinary conference was a fantastic way to present my research findings as it forced me to peel away the nitty-gritty details in order to focus on the impact of the work in the grand scheme of things. As researchers, this is an essential skill as we are only one link in a chain of discovery and need to be able to communicate our findings to the wider community. It is only through collaborating with others both within and outside our field of academic research that significant scientific and technological advancements are made.

By bringing like-minded young academic researchers together from a diverse range of backgrounds including science, engineering and the humanities, ACUR 2019 has laid the foundations for future collaborations. True to the theme, 'Accelerating Action Through Research', this conference was an amazing event to connect with other students who are as passionate about research as I am, but in different areas of study. It was a chance to learn new concepts and an opportunity to share novel ideas with others in a friendly environment. ACUR 2019 has been an incredible launchpad for undergraduate students to enter the research field and I am very thankful for the opportunity to present my work.

**Erin Humphries**  
University of Sydney





## Finding fortitude

**Before Luke Skywalker became one of the greatest Jedi that ever lived, he was Obi-Wan Kenobi's padawan. A person that took on this role of mentorship for me was Dr Louisa Parkinson.**

When I applied for the summer research scholarship at the University of Queensland, I had to knock on the door of various supervisors as there was no guarantee that I would get my preferred choice. Different supervisors had different ways to select students. Some required only an application form and transcript of records, while others required an interview. Dr Parkinson was in the latter group and I still remember having the interview with her in an empty conference room at the Ecosciences Precinct. A few weeks later, I got accepted into her team, and this alone was an achievement. But the real challenges were yet to come. During the next two months, I would enhance my theoretical knowledge on certain concepts, improve my networking skills, formulate a research proposal, and learn how to work independently, including polishing my laboratory techniques.

Dr Parkinson said something in passing to me once, when we were doing lab work. I was bending over a bit while pipetting samples. She advised me that it would be better to keep my back straight while doing this and that this small matter could make a difference to my health in the future. She then said, 'When you get out of this building, I am going to make you a scientist with the best lab techniques'. Those words hit me more than she could ever have imagined. The trust that she put in me gave me confidence to move forward with my research with my head held up high. If we were in a movie this would be a scene in flashback when I am about to deal the final blow on my opponent.

My research was on detecting a pathogen in avocados using molecular techniques. At one point during the research, Dr. Parkinson and I had to go to Duranbah to pick up some avocado seedlings from a farm. Seeing the relevance of my research in the field was another important moment during that summer as I was reminded that science is done ultimately as a service to humanity. During the drive, Dr Parkinson talked about her days as a student. This was when I realized that before she got to where she was, she was also once in my shoes. I've always felt a bit intimidated by the big personalities that surround me. But now I know that whatever career path we choose, there are always going to be people that are ahead of us, who were also like us before, and who will guide us towards where we want to be.

When I got accepted to present at ACUR 2019, the fear of being around the best academic minds was one of my concerns as I felt scared to present to people who I thought would already be masters of the craft. This prompted me to contact Professor Liz Milward who echoed what I already knew - that the people who I was scared to present to were also once in my place. During my presentation, all the nerves disappeared and I was able to communicate the significance of my research for the community. This presentation capped off for me what was a wonderful experience of finding answers through the scientific method. In the beginning, it was a journey to find a purpose in this world, but along the way, for me more than anything else, research was finding fortitude.

**James Ian Santiago**  
University of Queensland

## If I stare at a screen long enough will my essay write itself?

**As researchers, one of the essential skills we require is an ability to communicate our research to others. When writing for an academic journal or indeed for an essay for university, we need to ensure we adequately encapsulate and reflect the current research, add our own data and describe our conclusions. Whether it be writing up my own research or summarizing a collection of others' research, I find this difficult.**

During one of the panel discussions at the ACUR conference I asked the question: 'What is the best way to improve academic writing?' and there were incredibly varied responses. There was the brain storming approach where all the ideas of an essay or article are initially written as they materialize. The initial draft of the writing would not necessarily flow well or make for a nice article. The ideas are revised and edited, often many times, to form something more cohesive.



The next approach described was more structured. The panel member would spend a lot of time planning the structure, noting ideas beneath subheadings and adding evidence before putting together the final piece of writing. In both approaches, editing was key to producing a piece of work the authors were proud of. Despite this, panel members mentioned that their articles are still rejected, and revisions are still requested. For me it was nice to hear that the best academics in their field still have rejection letters, that not everyone is perfect. We all still have room for improvement.

A follow up discussion after the panel also gave me additional insight into how I can develop in my academic writing ability. It was pointed out that I have been focusing on the mechanics of my writing: the grammar, the structure and the technical components. I should also take some time out to reflect on my writing and improve my creative processes. This is a skill which cannot be explicitly taught during the academic writing workshops I have been attending. Instead, I need to practice.

In a world where we are all seeking quick answers to our problems, such as my desire to get better at writing, this was not exactly what I wanted to hear. However, I have now started to go outside and experience the world, taking my dog on various walks around my neighbourhood instead of staring at that blank screen. There have been two immediate positive effects to this approach; Rolo no longer whines at me that she wants a walk (she has begun hiding from me instead), and I have been able to formulate this piece of writing and begin planning others in my head whilst enjoying nature.

**Lesley Gough**  
Western Sydney University

# Predicting health behaviour change

**The single best experience of my student life this year was the opportunity to attend the ACUR conference hosted by the University of Newcastle. I am a second year Bachelor of Psychological Science student at Central Queensland University studying full-time via distance, i.e. online.**

I became interested in dementia when my father was diagnosed. To get an insight into the condition, I needed the foundational knowledge of concepts and processes of science. To gain entry to higher education I enrolled in CQ University's enabling course, Skills for Tertiary Education Preparatory Studies (STEPS). It was 30 years since I attended school and the STEPS course provided me with the confidence, knowledge and skills to begin my undergraduate degree.

I enrolled in elective units that focused on research and statistics and became captivated by what there is still yet to know. Mentored by Dr Amanda Rebar, Director of the Motivation of Health Behaviours Lab, I was introduced to the exciting world of science and research. Through the university's Rising Star Program, I was offered the opportunity to assist with data collation on a research project being undertaken by Dr Rebar in collaboration with Dr Jaclyn Maher of the University of North Carolina, Greensborough. This has piqued my curiosity and interest in behavioural regulation.

I was excited and proud when I was asked if I would be interested in representing CQ University and presenting at the ACUR Conference. This was my first conference presentation, and a huge milestone in my student experience. My paper was titled 'Physical activity behaviour: a dual process approach to predicting health behaviour change.' It drew from a study, itself part of a larger project, to understand physical activity, behaviour and motivation on a day-to-day basis. To do this, we investigated daily fluctuations in behaviour and two types of motivation: behavioural regulation and automatic evaluation. We tested whether behavioural regulation moderated the impact that automatic evaluation has on physical activity. Although we did not see

a significant interplay between these processes, it was innovative to consider this potential moderation effect. It will be exciting to see what further research comes from the wider study so that we can begin to understand what motivates people to change their physical activity behaviour.

Learning about other students' research at the conference was also inspiring. With limited experience in presenting and as a newcomer to research, I found everyone really welcoming and friendly, tirelessly offering and giving support over these two days. It does not matter which university you are from, it is about meeting other students and discovering the amazing research that they are doing. I really enjoyed my learning experience and the opportunity to present meaningful research that can make a difference in the community.

**Kim Abell**  
Central Queensland University

# The world of gamification in health interventions

**I first started looking at a future in research at the beginning of my honour's year. Submitting a particularly arduous piece of coursework triggered a late-night epiphany: I don't want to be a clinical psychologist. Faced with the reality of exiting university with a degree I'd only ever imagined leading to private practice, my focus was blown wide apart when I had the opportunity to meet with researchers in CQU's Motivation of Health Behaviours (MoHB) Lab. Suddenly, a brave new world opened up.**

This year, I delved into the world of gamification in health interventions with the Flex app, a funded mHealth intervention project headed by our lab director, Dr Amanda Rebar. While the larger study tests the effectiveness of our 'brain-game' mobile app in the real world, my project looks at the demographics of our user data—who used our app, which games did they play, and how often? This information is essential to designing interventions that are successful in engaging our target demographic, Australian



L to R: Kristie-Lee Alfrey, Kim Abell, Felix Parker, Rachael Smallwood, Dr Am

adults. Bringing together the best of exercise and health science from six universities, the project aims to lead to meaningful, positive changes in exercise behaviour for Australians.

ACUR 2019 offered me the opportunity to debut at a conference presenting a piece of my own research. From the first tentative meetings with the MoHB Lab in January, to abstract deadlines in July, this year has been a whirlwind ride from excel spreadsheet to conference stage. At first the conference felt like a backdrop of a hundred nervous faces, but we all soon realized it was our time to shine. Months of preparation was clear in the calibre of presentations over the two days. Sitting down after my own fifteen minutes of fame, my first thought was 'I can't wait to do this again!'

Seeing and hearing so many of my undergraduate peers from such a range of research fields was an unforgettable experience. From the most niche, cutting-edge modern studies, to the most ancient of questions, ACUR 2019 helped me to realize the importance of scientific research for every aspect of society. Being one small part of a new generation of researchers, I hope that every student left ACUR with the same feeling I did - hope for a bright future, with the dream of doing research that leads to a better world.

**Felix Parker**  
Central Queensland University





Amanda Rebar

## Mental health and exercise rehabilitation

During my university preparatory studies at CQ University, the class was asked to write about the role they would like to gain from their intended undergraduate studies. My response was: 'I don't want to be the type of psychologist who looks after people in a clinic every day. I want to study human behaviours and write reports that help us to understand why people do the things they do'. Little did I know that I was actually hinting at the processes of psychological research.

In fact, it wasn't until the first lecture in my Bachelor of Psychological Science that I realized that psychological research was actually 'a thing'. Then, in my second week, we had a guest lecturer, Dr Amanda Rebar, who spoke about her research in Health Psychology and mentioned that she was looking to develop an undergraduate research lab, so I got in contact with her.

This is how, in my first term of undergraduate studies, I began my first research project as lead

student researcher investigating the health behaviours and wellbeing of Australian fly-in, fly-out (FIFO) workers and their partners. Fast-forward three years and I have been involved in 11 research projects, have published papers, addressed the media, and presented at conferences.

In 2018 I had the honour of being research coordinator for a project investigating why patients do, or do not, engage in physical activity during and after a cardiac and pulmonary exercise rehabilitation program. Over the course of 12 months, I worked with patients and clinicians involved in such a program, gathering subjective and objective quantitative measures and performing qualitative interviews. During this time, I noticed the varying levels of mental health in our participants and began to wonder if mental health might impact physical activity behaviour and motivation – both during and after the rehabilitation program.

This question of mental health in exercise rehabilitation became the question for my ACUR 2019 presentation. Utilizing subjective quantitative variables from monthly patient surveys, we conducted multilevel modelling to investigate mental health, physical activity behaviour and physical activity motivation during and following the exercise rehabilitation program.

Our results suggested that, while overall mental health did not specifically impact on physical activity behaviour, higher levels of patient stress were associated with lower levels of intrinsic motivation for physical activity. They also showed that physical activity behaviour and motivation diminished once the eight-week exercise rehabilitation program had finished. We concluded that a gradual reduction in program-based support may be more successful in easing patients into self-regulated, habitual physical activity thereby maintaining patient fitness, health and quality of life.

Being involved in such important health psychology research is truly amazing. Having these opportunities while completing undergraduate study has not only given me an impressive CV and professional network with which to graduate, it has also allowed me to better understand my coursework, gain higher grades, and has boosted my self-confidence. I cannot imagine where I would be today if I had not become involved in undergraduate research with the MoHB lab, but my passion for a future in psychological research is crystal clear.

**Kristie-Lee Alfrey**  
Central Queensland University

## Motivations to engage in exercise rehabilitation

Who would have thought that attending a webinar about the Rising Star Program for research would see me presenting at a conference a year later? Previous participants gave inspiring recounts of their experience with research in a variety of schools at CQ University – and I was hooked. A few weeks later, I was launched into the world of qualitative research on a Motivation of Health Behaviours project with Dr Amanda Rebar. To build my knowledge from zero, I met with leading experts in qualitative research, was given books to track down, journal articles to absorb and a software tool called NVivo 12 Pro to master. Then the real work began.

A group of cardiovascular and pulmonary rehabilitation patients were interviewed as part of their involvement in a study which sought to understand what influenced people's motivation to continue exercising after attending an eight-week rehabilitation exercise program. Armed with my new knowledge of qualitative research methods, I began to pick apart 78 verbatim transcripts of the interviews. With copious amounts of patience and encouragement from the team, I became absorbed in the thoughts and opinions of these patients. Some very clear themes emerged, such as the importance of social connections when exercising, financial constraints and understanding the benefits of exercising. These could be used to advise future enhancements of rehabilitation clinic programs as well as provide a basis to inform the direction of future research.

When the chance to attend ACUR 2019 arose, I jumped at it, realizing it would be a fantastic platform to share the findings and insights from this research. The highlight of the conference was experiencing the outstanding quality of the other student presentations. It didn't matter which session I attended, they were invariably communicated so clearly that any subject became a fascinating educational journey. I am extremely grateful for the inspiration and support provided by the CQU LEAP Centre and the School of Health, Medical and Applied Sciences to attend and present at ACUR. It has reinforced how grasping each new opportunity can open many more doors.

**Rachael Smallwood**  
Central Queensland University

**MoHB Lab**  
OF HEALTH BEHAVIOURS LAB

# Presenting my research at the Second World Congress



**In May, I had the immense privilege of attending the Second World Congress on Undergraduate Research. Hosted in Oldenburg, a small town in rural northwest Germany, the event was a magnificent display of talent and innovation. The variety of content was truly staggering, ranging from a talk that focused on novel methods for food storage in Kenya, to a study on the use of the spiny mouse as a model for regeneration of damaged skeletal muscle. However, the one aspect that remained consistent throughout the conference was the quality – I was definitely inspired!**

Presenting your research on an international stage is a daunting endeavour. But it is well worth the sweat and the tears. Not only does it place you in a position to practice your presentation skills, it gives you an opportunity to learn about what sort of presentations are engaging, what draws in the audience and makes them want to hear more. Presentations are important in academia; if you want to succeed, it helps to be able to share your research in simple terms – what does your work actually mean; why is it important?

A lot of the skills that you learn about the presentation of information, both in a written and an oral format, have value that extends beyond the world of research. For example, my research skills have undoubtedly enhanced the quality of my presentations and case reports in medical school. I would therefore thoroughly recommend everyone to try their hand at research, regardless of their future career aspirations.

My research is on the development of skeletal muscle, a tissue that is essential for movement and maintenance of posture. The arrangement of the macroscopic anatomy of each skeletal muscle is optimized to produce the force and/or contraction velocities required for specific movements or postures. This arrangement is known as muscle architecture.

Despite the importance of muscle architecture, however, very little is known about its development: what architectural changes are required for an infant to start walking? To quantify muscle architecture prior to weight bearing and gait we created an extremely precise model of the muscle architecture of a six-month-old infant's lower limb, using a digital pen to record the 3D position of every muscle fibre and connective tissue element in each skeletal muscle. This model can then be compared to adult models to analyse architectural differences.

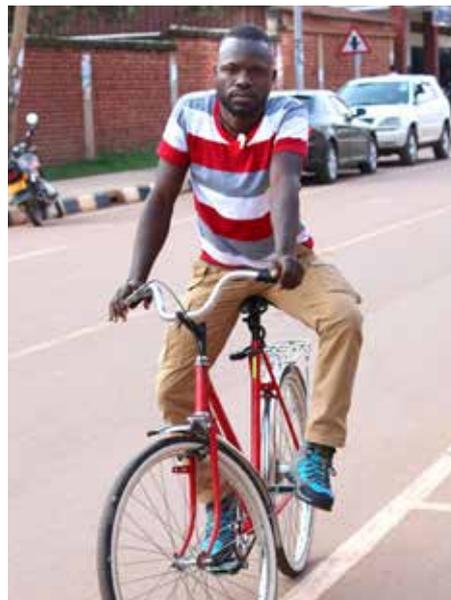
Gastrocnemius and soleus were the two muscles that were the focus of my thesis. The results of my study suggest that differences in the force production and mean fibre bundle length between each head of gastrocnemius in the adult, may not be present in the infant. Further work is needed to replicate this finding and understand how the architecture of these muscles evolves with growth. Specifically, the results of this study could be used to develop in vivo ultrasound protocols to study normal development of gastrocnemius and soleus architecture throughout infancy, childhood and adolescence.

It is exciting to think that one day we may be able to provide an explanation of the mechanisms responsible for the commencement of gait, and that this may ultimately pave the way for the development of new techniques for detection and intervention in disorders (e.g. cerebral palsy) affecting the development of muscle architecture.

I would like to thank the School of Medicine Foundation, University of Auckland, for their funding of my research and my attendance at the Second World Congress on Undergraduate Research.

**Luke Bradshaw**  
University of Auckland

## World Congress 2019: a pillar for exchange of vital ideas



**Ever since I started developing passion in development journalism, I nurtured a dream about travelling overseas and I remained resolute in my hope. Exploring new places, meeting new people, strange languages, and new education systems have always fascinated me. My story changed with the Second World Congress on Undergraduate Research at the Carl von Ossietzky University, Oldenburg, Germany.**

From the look of the green serenity and the abundant cyclists traversing the streets of Oldenburg with enthusiasm, one comes to a conclusion that the people have the city in their soul. Coming from a country where a bicycle is linked to poverty, I was in shock seeing the people cycling not only to save time or have fun

but also to save the city from the risky fumes from cars or motorbikes. It is a quiet city without crowded bus stations, commuter taxis and 'boda bodas' (bicycles and motorcycles taxis). It's a magical place.

The social programs and interactions with my host Mr Andrii Matvienko made me come to the realization that if developing countries like Uganda can change their attitudes and actions towards the environment, they can achieve sustainable development. Simple decisions like recycling techniques, shopping bags, transport choices, waste disposal, and family planning have great impact on the environment. These are small personal decisions that reflect a bigger picture of what needs to be done by the common people but contributes to bigger transformation in our societies.

The expert presentation from Nepalese-American planetary scientist Dr Lujendra Ojha, who tackled the grand challenges related to resource scarcity in the future, made the World Congress a valuable experience and a response to my quest for the 'Role of radio in community mobilization for sustainable development in Uganda'. We need natural resources for our survival but they also need us. However, the current rate of extraction of these resources in most developing countries is alarming. For sustainable development to become a reality, it's high time we start thinking of alternative sources of energy, otherwise if we use every single thing that we can lay our hands on, where will the next generations get what they need to survive?

**Jatim Morris**  
Uganda Christian University

# Report of the Chair

In May this year, I had the privilege to attend the Second World Congress on undergraduate research in Oldenburg, Germany. It was wonderful to catch up with the Australian and New Zealand students who attended and to experience the excitement and camaraderie of students from 35 different countries as they came together and presented their research. I witnessed a similar excitement in our own conference at the University of Newcastle in October. I've come to the conclusion that if you put a hundred or so student researchers together, the atmosphere always becomes electric. You can witness what students say about the conference on our video on the ACUR website.

As well as the conference, an innovation this year is to provide an opportunity for academics, supervisors, members of the ACUR Steering Group and institutional managers to exchange ideas, and hear about good practice in supporting undergraduate research engagement. The first UGR Xchange Colloquium is being held in collaboration with the University of Sydney Business School on 4

December. Registration for this event is also available on the ACUR website under 'events and conferences'.

This year, ACUR established a series of memberships open to universities and other organisations as well as to students and other individuals. In January, 88 students who had presented at the 2018 conference became inaugural

ACUR student members. In April, institutional membership became available with 11 universities joining in the first six months, a number that has continued to grow. It was wonderful to see whole groups of students from member universities at the conference. Membership means that we are able to do more to support undergraduate research within universities and colleges. We now offer consultancy, resources, and complimentary attendance at ACUR events to member institutions. Individual members also receive resources and can attend events at reduced rates.

The organisation and management of ACUR has become a big task, so we have recently engaged professional assistance and Donna Bennett has joined the Executive

as our Executive Officer. Other members of the Executive work hard on a voluntary basis to make possible the smooth running of ACUR's website, events and publications. I am indebted to them all and to the many people who work within their institutions to promote ACUR and advance undergraduate research in various ways.



**Angela Brew**  
Macquarie University

## ACUR Student Committee: expressions of interest

We are seeking expressions of interest to join the Student Committee (ACURSC). The ACURSC is a body of members who act as ambassadors for ACUR. As the ACURSC continues to take shape, I am excited about the real and meaningful influence it can have on improving the undergraduate experience via both ACUR directly, as well as within institutions. Hence, if you share our vision, I sincerely hope that you will express your interest in joining.

To be eligible, you must be a present member of ACUR (as are all students who attended this year's conference); be willing to attend regular video conference meetings; and share a passion for undergraduate research and an eagerness to further the goals of ACUR. If you are interested, please contact the Chair, Lachlan Deimel, at ACURSC@gmail.com.

Lachlan is completing Honours as part of the research-intensive Bachelor of Philosophy (Science) at The Australian National University. His primary laboratory

appointment is to the Molecular Mucosal Vaccine Immunology Group at the John Curtin School of Medical Research, where he focuses on developing vaccination strategies to improve HIV-specific immunity. He also works for the Liver Cancer Research Group at the Canberra Hospital, evaluating pathways associated with fatty liver disease-associated hepatocarcinogenesis. He is a predoctoral fellow at the California Institute of Technology, where he utilises synthetic Cas9 variants and guide RNAs as a platform to establish programmable gene regulation.



**Lachlan Deimel**  
The Australian National University



## Undergraduate Research X-Change Colloquium

This event, on 4 December 2019 at the University of Sydney Business School, will provide an opportunity to hear and share ideas about new student research initiatives. Many of the speakers are long-standing members of the ACUR Steering Group and there will also be a panel of student researchers. Themes include:

- Developing students' employability
- Enhancing undergraduate engagement at your university
- Increasing the numbers of students who go on to postgraduate study
- Developing students as partners
- Bringing teaching and research together
- Implementing research-based learning
- Finding ways for students to present their research

Further information and registration, details are available at: [www.acur.org.au/acur/events-and-conferences/](http://www.acur.org.au/acur/events-and-conferences/)

# The Co-operative University: making a link between research and teaching

**The project to connect research and teaching can go beyond the student production of knowledge and extend to how higher education is organised and governed. Angela Brew has made this point in her writing and I have developed the idea with work I have done with my friend and colleague Joss Winn. It is at the heart of a scheme to establish a co-operative university across the United Kingdom.**

The initiative takes advantage of recent UK legislation, the Higher Education and Research Act 2017. This allows new institutions to challenge mainstream higher education providers. The project to create a co-operative university is led by the Co-operative College in Manchester and involves a network federation of independent and autonomous higher education co-operatives. The network

currently includes RED Learning Co-operative (Oxford), the Centre for Human Ecology (Glasgow), Leicester Vaughan College, the Feral Art School (Hull) and the Preston Co-operative Education Centre.

These higher education co-operatives will teach a range of undergraduate degree courses, including co-operative and labour studies, the arts and humanities and environmental studies. It is expected that the network and range of courses will expand as the social movement to establish co-operative higher education develops. I am the Chair of the Interim Academic Board, tasked by the Co-operative College to deliver co-operative higher education across the UK.

The co-operative university project is grounded in the politics and principles of the worldwide

co-operative movement. A co-operative enterprise is run democratically by its members, in this case, students, academics, administrators, co-operators and external partners, for the benefit of its members and society. At the Co-operative University these benefits will be gained through teaching undergraduate programmes in a co-operative and collective fashion and by the production of socially useful knowledge.

The British project is supported by Mondragon University, a co-operative university based since 1997 in the Basque country in Spain. This has created a foundational co-operative pedagogy where research-engaged teaching is a defining principle. It is hoped that the Co-operative College and the autonomous higher education co-operatives

that make up the federation will start admitting students by October 2020. The establishment of a Co-operative University across the UK has been endorsed by the Labour Party as part of their strategy to create a National Education Service. You can find out more about the Co-operative University at [www.co-op.ac.uk/pages/category/co-operative-university](http://www.co-op.ac.uk/pages/category/co-operative-university).



**Mike Neary**  
Lincoln, United Kingdom

## BCUR, April 2020

**Abstract submissions are now being accepted for the British Conference of Undergraduate Research, to be held at the University of Leeds, 6-7 April 2020. Undergraduates of all levels are invited to submit papers, to present posters, creative show and tell, oral presentations and performances to the conference. Abstracts are peer-reviewed and those accepted will be invited to attend. Abstracts should be no more than 250 words.**

The deadline for submission of abstracts is midnight Sunday 5 January 2020. All abstracts will be reviewed by a panel, with decisions conveyed by email before 31st January 2020.

Registration details are available from the 4 February 2020. For further information and to submit an abstract, visit <https://eu.eventscloud.com/ehome/bcur2020/200471793/>

## Contact us

For further information, or to submit an item for consideration for the next newsletter, contact:

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## CUR, June 2020

'Inclusivity in research: scholarly inquiry through the undergraduate curriculum', at Purdue University, West Lafayette, IN, 27-30 June 2020. The 2020 CUR National Conference provides an opportunity for faculty, administrators, staff, academic and community partners, and policy-makers to share ideas, and to showcase models of undergraduate research at all types of higher education institutions.

For further information, visit [www.cur.org/what/events/conferences/curconf/2020/](http://www.cur.org/what/events/conferences/curconf/2020/)

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