

Undergraduate Research News Australasia

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Editorial



Like everyone else, the Australasian Council for Undergraduate Research has had an ‘interesting’ year. Nonetheless there have been some great innovations to encourage undergraduate research, and this issue of the twice-yearly newsletter highlights some of the best.

When the annual conference was postponed to 2021, the ACUR Student Committee, led by Lachlan Deimel, initiated the Great ACUR Undergraduate Research Writing Project. The winning entries are featured on pages 2 to 4. Nearly sixty undergraduate researchers - from 18 Australian and four overseas universities - took the opportunity to write about how the pandemic has affected their field of interest. The first prize of \$500 was donated, and the Australian Learning and Teaching Fellows gave the second and third prizes of \$300 and \$200. In addition, the Department of Psychology at Macquarie University provided two prizes of \$250 each for the best entries concerning psychological and/or social aspects of the pandemic, with one of these for an Aboriginal or Torres Strait Islander author.

In September, Kristie-Lee Alfrey, Felix Parker and Kim Waters (ACUR 2019 presenters), Anna Rea and Dr Amanda Rebar from Central Queensland University organised a very successful Online Conference for Undergraduate Research in Australia (OCURA). Over two days, this hosted 42 undergraduate presentations from 12 Australian and New Zealand universities, with 117 registered audience members. A broad range of disciplines was represented, around the theme of ‘Rise to the



Challenge’. Virtual trivia night, lunchrooms, and social rooms gave a chance to connect in between sessions and the student and research Q&A panels in particular were well attended. Feedback on the conference noted the relaxed, engaging atmosphere and the high quality of the presentations. Some of the best papers from OCURA are highlighted on pages 6 and 7.

Other pages in this issue feature the Chair’s report, as well as the report from the Chair of the Student Committee, and a research article on revolutionary semiconductors by one of



Image sources: top left (University of Sydney), top right (Kate Pedley), centre (ACUR), above (University of Otago)

the members of the Committee. And there is an outline of an innovative project from the Sydney Business School in which groups of undergraduate students were encouraged – with great success – to undertake publishable research for a leading business journal. This is a wonderful illustration of what an undergraduate class can achieve in a well-mentored situation online.

Eric Pawson
University of Canterbury

Winners of the Great ACUR Undergraduate Research Writing Project



The effects of narcissism during a global pandemic

Princess Amara De Leon
Macquarie University

The recent coronavirus (COVID-19) has thrown the world into disarray, evoking a perpetual sense of loss and anxiety in the lives of millions. Despite the turbulence, emerging research has revealed a unique perspective on how narcissism can influence one's response to unprecedented events such as a global pandemic (Coleman, 2020; Zajenkowski et al., 2020). Narcissism is a complex personality trait characterised by grandiosity and a lack of empathy (Krizan & Herlache, 2018). This article argues that the impact of COVID-19 can exacerbate maladaptive behaviours in highly narcissistic individuals, consequentially endangering the health and wellbeing of themselves and others. This may manifest by not complying with government restrictions (Zajenkowski et al., 2020) and becoming more vulnerable to developing stress-related disorders (Coleman, 2020).

The first effect of narcissism during COVID-19 is that highly narcissistic individuals are less likely to comply with government restrictions. As cases increase, it is of utmost importance to comply with regulations, such as wearing a mask and self-isolating, to protect others from being infected (Zajenkowski et al., 2020). Littrell et al. (2020) found that narcissistic behaviour was positively associated with poor decision-making based on pure instinct. Zajenkowski et al. (2020) examined 263 individuals and found that those who scored lower on agreeableness scales, whilst scoring higher on narcissism scales, were less likely to comply with COVID-19 restrictions. Government restrictions can act as threats towards a narcissist's autonomy and sense of supremacy. This may be due to hypersensitivity and the inability to self-regulate, leading to non-compliance. Consequentially, non-compliant

behaviour in highly narcissistic individuals can create unhealthy, stressful circumstances for themselves and others by contributing to the spread of COVID-19.

Secondly, the impact of COVID-19 can increase the prevalence of stress-related disorders in highly narcissistic individuals. The co-occurrence of two or more disorders in one individual (i.e. comorbidity) is related to severe health problems and expensive health care costs (Coleman, 2020; Valderas et al., 2009). Levi and Bachar (2019) found a positive association between narcissism and the development of post-traumatic stress disorder (PTSD). According to Volkert et al. (2018), approximately 1.2% of the Western population is clinically narcissistic. This implies that the incidence of COVID-19 can trigger the development of stress-related disorders, such as PTSD, in clinical and non-clinical populations who are at high risk. Hence, the number of stressful events occurring internationally may cause highly narcissistic individuals to become more susceptible to having a poorer quality of life and severe health outcomes.

In conclusion, future research is encouraged as the literature presented minimally accounts for the full impact of COVID-19 on highly narcissistic individuals. In addition not all individuals who lack compliance, and are diagnosed with stress-related disorders, should be labelled narcissistic. Alternatively, those who display narcissistic behaviours are more likely to disobey government policies and are more vulnerable to developing stress-related disorders. Hence scientists should aim to identify narcissistic behaviour in the community to ultimately protect the safety and wellbeing of the population during, and beyond, COVID-19.

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The impacts of COVID-19 on the use of telehealth for mental health treatment

Foti Paradisis
The University of Queensland

Prior to COVID-19 quarantines, the use of telehealth was slowly growing as a solution to access and treatment disparities in rural communities (Myers, 2018) and in response to disasters (Lurie & Carr, 2018). Telehealth allows clients to circumvent barriers to treatment by removing the need to physically see providers. Additionally, telehealth enables providers to avoid dual relationships with rural clients, something which was previously unavoidable in many communities (Coduti & Luse, 2015).

The psychological effects of quarantine indicate a need for large-scale telehealth access to alleviate long-term impacts of COVID-19 and support affected individuals. In a rapid evidence review, being quarantined was identified as a strong predictive factor of acute stress disorder, post-traumatic stress, substance abuse, and depression symptoms in quarantined healthcare workers, parents and children (Brooks et al., 2020). While the same review found no significant difference in mental health problems for undergraduates who had been quarantined, it is possible that this conclusion cannot be generalised to the wider population due to the differing experiences of undergraduates compared to full-time employees (Brooks et al. 2020). These data highlight a need for large-scale telehealth services as many countries continue with lockdowns.

The Lieber Recovery Clinic in New York City published a frontline report exploring their transition to telehealth services for serious mental illness (Medalia et al. 2020). The clinic was able to continue offering all services and maintain continuity of care with high efficacy and participation. However, the article identified a few major limitations of telehealth - particularly how socioeconomic status impacts on access to high-speed internet, technology, and private living spaces. Further research must be conducted into the access disparities of telehealth, and solutions must be investigated to ensure treatment equity across classes.

In a Letter to the Editor published in the *Journal for Schizophrenia Research*, Thirhalli et al. (2020) outlined the importance of video consultations in the face of mask mandates. They claim that face masks undermine the therapeutic alliance and pose telehealth as an effective solution to this. It was noted that videoconferencing is safe, reliable, and perceived as acceptable and satisfactory in the assessment of individuals with psychotic disorders (Sharp et al., 2011). The only potential limitation of telehealth for this context is in physical examination, which forms part of clinical assessment. The authors proposed a virtual physical examination to combat this and are validating its efficacy through rapid rigorous research (Manjunatha et al., 2020).

The current research investigating telehealth for the COVID-19 pandemic clearly illustrates a need for rapid, large-scale telehealth implementation, something which many governments' policies have facilitated (Haque, 2020). Through the uptake of telehealth, service providers also have the opportunity to explore whether the use of videoconferencing could be implemented into mental health treatment after the pandemic. Haque identified areas of consideration for future research into the integration of telehealth: namely, service selection, operational challenges, technical infrastructure, staff engagement, financial and regulatory concerns, evaluations and continuous improvement. As research expands into these areas, the use of telehealth will continue to develop and integrate into post-pandemic treatment models to optimise mental health treatment outcomes.

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COVID-19 impact on the organ transplantation sector

Inoue van den Berg
Leiden University, The Netherlands

The classification of COVID-19 as a pandemic was made on March 11, 2020, by the World Health Organisation, three months after the initial finding of a group of pneumonia patients with unknown cause (Zhang et al., 2020). Since then, the impact the virus has had on the modern world has become more transparent as it leaves its traces across societies. Unarguably, one of the sectors that has been heavily affected by the pandemic is the healthcare industry. In this piece, a closer look will be taken at the influences of the coronavirus disease within the sector, specifically with its effects regarding organ transplantation.

Firstly, effects of COVID-19 within transplant centres can be seen in the reduced number of organ transplantation procedures. In a recent survey of transplant centres (Boyarsky et al., 2020), it was found that the percentage of total live kidney transplants halted as an effect of the virus was 71.8% and 67.7% for live liver transplants. In Italy, another study (Angelico et al., 2020) showed a national decrease of 25% regarding dead organ transplants. This decrease in both dead and live organ transplantations is heavily felt as the donor organ shortage was already a widespread concern.

The rise of COVID-19 also has many consequences for recipients of donor organs. These patients form an immunologically susceptible cohort and are therefore more sensitive to the dangers of the coronavirus. It has been suggested that extra preventive measures be taken to minimize infection risk of these patients through educational follow-ups via online resources (Zhang et al., 2020). Besides this, the care of this patient group has also changed. In the transplant centres survey (Boyarsky et al., 2020) it was shown that visits to solid organ transplantation centres were limited in 98.4% of the cases and the use of telemedicine was widely adopted

in 98.8% of them. Once patients contracted the coronavirus disease, treatments were also shown to be altered. Reduction or cessation in the administration of immunosuppressants, a standard prescription for most of these patients, was applied (Boyarsky et al., 2020). All these changes could damage patient care quality and health.

Healthcare workers within the transplant division have also been affected by COVID-19.

The number of healthcare workers who have tested positive for the virus has been shown to be significantly greater than that of the general public (Nguyen et al., 2020). Concerning organ procurement organisation workers, the danger of disease contraction is especially prevalent as they often face necessary social contact. Despite these risks, workers continue to perform diligently while adhering to social distancing and new hygienic regulations. Online communication tools are highly utilized to limit in-person contact. Besides this, researchers (Zhang et al., 2020) suggest psychological tutoring for healthcare professionals to help them cope with the increased amount of stress they face.

The impacts of the coronavirus have been heavily felt within the organ transplant sector as organ donation has decreased, patients face altered care and health-endangering circumstances and healthcare personnel have to adapt to new working environments and stress. It is crucial to be aware of these influences and to improve current procedures and practices to protect a vulnerable patient group and healthcare workers.

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The entries

Students were asked to submit a 500 word paper or an A3 poster describing how their chosen academic field of study is likely to be transformed by the COVID-19 pandemic. Entries were double blind reviewed by staff reviewers who were not from the entrants' universities. The best entries, as assessed against the published criteria on the ACUR website, were then ranked and winners selected by a review panel consisting of the Chair and Treasurer of ACUR, the incoming and outgoing Chairs of the ACUR Student Committee, and the Editor of URNA.



COVID-19 was the motivation Australian service providers needed

Brooke Ottley

University of Technology, Sydney; Darwin NT

Government departments and universities in Australia have been especially slow to adopt and fully implement more efficient and accessible service delivery channels. Many have had an apparent preference for face-to-face interactions, hardcopies and snail mail – and often there has been no good reason for it.

Before COVID-19, it seemed that the more prestigious the university, the less likely they were to offer fully online study options or to facilitate the recognition of prior learning or experience. High-ranking universities have long viewed low retention rates and alleged poor engagement and underperformance of online learners as threats to their reputations (Morer et al., 2019). Conversely, exclusively online education providers were perceived as substandard, and not equivalent to their face-to-face counterparts (Tait, 2018). These attitudes ensured quality education

remained inaccessible to potential students who were unwilling or unable to relocate to a more populous city or state.

Leading Australian universities tend to, and are required to, reject credit transfer requests that do not meet their unique standards (Frawley et al., 2017; Kirkwood, 2016). Credit transfer applicants are unlikely to be proficient in tertiary education regulations and their administration, yet must overwhelmingly prove the quality of their prior studies is on par with that of their prospective university.

In 2018, a university of technology insisted I submit all 200 pages of my credit transfer request in hardcopy, from the other side of the continent. This year, while a public transport app was instructing users to stay home, its staff were demanding I attend a post office to submit a form. It was their policy to accept refund forms via snail mail only. But educational and government service providers have rushed their transition to digital services and communication because of COVID-19. However, they could have been doing these things years ago, if they wanted to.

This has become exceptionally clear now, six months into the pandemic, as digital communication is preferred and encouraged. Today, that university is allowing online submissions for credit transfer requests. A ministerial complaint finally compelled that public transport department to accept my form via email. Providing a better, digital customer experience wasn't a priority in 2018, but COVID-19 is making it so.

At the same time, I sympathise with the highly casualised staff of these institutions who have borne the brunt of the rapid, COVID-induced changes to 'normal' service delivery. They were unfairly asked to maintain existing methods whilst introducing or expanding digital channels. The pressure to fulfil these unreasonable expectations amidst threats to their job security must be immense.

Digital methods need not always be the default or primary means of service delivery, but they should always be a genuine and fully supported option. Residents of regional and remote areas should not have to interrupt their life, relocate interstate and forfeit their employment income to acquire a degree. Nobody should be forced to leave their home to print a form and go to a post office in a pandemic. COVID-19 has resulted in more innovative and more accessible services, and customers, users, students, and mobility-impaired people everywhere can only benefit from it.

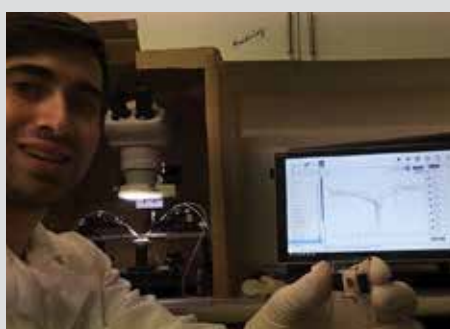
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Working with revolutionary semiconductors

I recently finished my Honours year in Physics at the University of Sydney. My project was about the characterisation of single crystal hybrid perovskites, which are an exciting potentially revolutionary semiconducting material, due to their optoelectronic properties.

Over the past decade halide hybrid perovskites have been discovered as a promising intrinsic semiconductor for applications in the optoelectronics areas of photovoltaics, photodetectors, lasers and transistors. In particular MAPbBr₃ and MAPbI₃ single crystal hybrid perovskites are of great interest, due to the absence of grain boundaries, low trap density and excellent charge-transport properties. However, in-depth insights regarding how photo-induced charge-transport properties behave remain unclear.

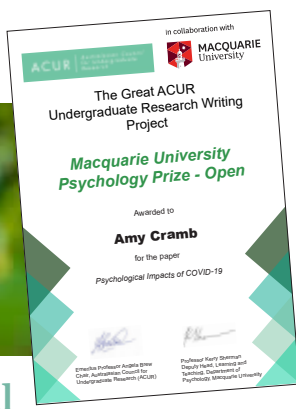


Josh holding a MAPbBr₃ single crystal he synthesised; measurements of its properties are displayed on the probe-station behind.

The first part of the project involved the synthesis of the crystals using the inverse temperature crystallisation method, where producing bulk single crystals ranging from millimetres to

centimetres in scale. In our quest to characterise these crystals, we used X-ray diffraction, Raman spectroscopy, scanning electron microscopy and optical absorption microscopy to analyse their optoelectronic properties. We also made use of the space-charge-limited method, which applies the Mott-Gurney power law to current-voltage curves, allowing us to find an estimate for the trap density and mobility within the crystals, for each of the faces of a unit cell of the crystal.

However, we found that some of the critical assumptions made in using the commonly applied Mott-Gurney power law by researchers do not hold up when applied to hybrid perovskites, causing a loss in the precision of the measurement. So although the hybrid perovskites are promising, displaying the potentially revolutionary properties that can be utilised for optoelectronic technology, more



Psychological impacts of COVID-19

Amy Cramb
The University of Queensland

In December 2019, the novel coronavirus disease (COVID-19) began to spread across Wuhan, China. Merely a month later, COVID-19 outbreaks were documented across the world and the virus was declared as a global public health emergency. To mitigate against the infectious and almost greedy nature of COVID-19, individuals were, and still are, being restricted to their homes as physical distancing strategies were implemented worldwide. However, being removed from the outside world means also being removed from social events, day-to-day routines, employment, and ultimately the freedom to choose how to bide one's time. As many of us have experienced, being confined in this way can thwart our mental health.

The mental health ramifications stemming from 'lockdowns' (i.e. stay-at-home periods) are evident across the globe. In a Chinese study, social media posts from 18,000 users illuminated that negative emotions like anxiety, depression and indignation have substantially increased,

whilst positive emotions like happiness and life-satisfaction decreased following COVID-19 (Li et al., 2020). In India, 33.2% of respondents in a survey study reported significant psychological impacts from COVID-19 including unwanted thoughts or feelings, avoidance of feelings or situations, and anger, with 13% feeling that these psychological impacts were severe (Varshney et al., 2020). The mental health situation in Spain, as depicted

by a large-scale survey study, is even worse. Of the 3055 respondents, 30% reported severe psychological impacts stemming from COVID-19, with the most prominent issues being depressive symptoms and stress (Rodríguez et al., 2020).

Why are so many individuals struggling psychologically during COVID-19? Boredom, limited information on the pandemic, fear of limited supplies, and financial losses are common stressors resulting from lockdown periods (Brooks et al., 2020). Many of us are also acutely aware about how COVID-19 impacts our daily routines (Rodríguez et al., 2020) - an awareness that can be unsettling. With such a long list of potential stressors, it is no wonder that living through the mass societal lockdowns brought on by COVID-19 can rupture mental stability.

When attempting to tackle these psychological problems, one should consider the following questions. Firstly, who is most susceptible to mental health problems currently? Generally, negative psychological effects from the virus are most severe for younger individuals, females, students, and those who have lost their job (Rodríguez et al., 2020; Varshney et al., 2020; Wang et al., 2020). Secondly, what may improve

psychological well-being during COVID-19? Research suggests that participating in leisure activities, satisfaction with information received regarding the pandemic, and perceiving oneself to be in good health are some factors associated with better mental health in the present climate (Rodríguez et al., 2020).

Lastly, as Dr. Kerkhove (Disease Epidemiologist, World Health Organisation) put it, 'Asking the question "are we doing enough?" regularly and repeatedly is critical' (in Valentic, 2020). This final question is asked frequently in relation to stopping the spread of COVID-19, but we must not forget how critical the question is for encouraging mental health as well, especially during these tough times. *Are we doing enough?*

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research needs to be completed, to increase the stability of the crystals so they can become commercially viable.

My experience at presenting at the Newcastle ACUR conference in October 2019 was highly insightful and informative. It allowed me to collect my ideas together and present them in a way that was engaging to research-oriented people who are part of the laity in regard to my area of research. It also allowed me to witness the wide breadth of undergraduate research taking place in quite diverse fields.

The experience of presenting at the conference was also invaluable practice for my Honours presentation which took place the following week. Like most of the other presenters, it was my first academic conference, and enabled me to encounter other researchers in ways that otherwise would not have likely happened until towards the end of a postgraduate degree.

Josh Maggiora
University of Sydney

Supporting publication of student research during a pandemic

In session 1, 2020, International Business students in the Bachelor of Commerce at The University of Sydney Business School experienced 'doing research' like never before. They worked in teams to contribute to the literature by writing for publication under the supervision of Dr David Shao.

He introduced them to the writing-for-publication process, arranging consultation sessions via Zoom to help those who completed assignments at a high standard to publish their work. Students learned about the importance of writing for a particular journal and audience, and were coached through the submission and revision process.

Thirty-six students formed groups and submitted their capstone unit assignments to a special

issue of *The Journal of Risk and Financial Management*, exploring how COVID-19 might affect international business. One student author commented that the process 'offered us the real opportunity to become published authors before we have left university ... giving us an experience that we might not have again in the future.' Five groups received revise and resubmit responses from the journal, with three papers subsequently being accepted, and two undergoing further revision.

Group members May McMaster, Charlie Nettleton, Christeen Tom and Belanda Xu, whose accepted article (with Cheng Cao, and Ping Qiao) is titled 'Risk management: rethinking fashion supply chain management for multinational corporations in light of the COVID-19 outbreak'

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Online Conference for Undergraduate Research in Australia

Dentition and nutrition status of aged New Zealanders



I am a fourth-year student studying for a Bachelor of Dental Surgery at the University of Otago, New Zealand. At the recent Online Conference of Undergraduate Research in Australia, where I was the

only New Zealander to participate, I won the People's Choice Award in the poster division with my research 'Dentition and nutrition status of aged New Zealanders in aged residential care'. My research used a nationally representative sample of aged New Zealanders to investigate associations between dentition and nutrition status. We found that nearly forty percent of these individuals in aged residential care are either malnourished or at risk of it. Our multivariate modelling for malnourishment among individuals who had teeth (dentate) showed that, other factors being equal, those in psychogeriatric care were 2.8 times as likely to be malnourished or at risk of it relative to those in nursing home-level care.

I was first introduced to the topic of New Zealand's ageing population and its issues back in early high school social science classes. It has always been an area of interest, as the nation's ageing population and its consequences is a

significant issue for my generation. I was very excited to be reintroduced to this topic during my dentistry studies. Throughout my degree, we have studied the history of dentistry in New Zealand as well as contemporary issues and future challenges. I am fortunate to have one of the world leaders in gerodontology, Professor Murray Thomson, lecture me over the years and he agreed to supervise my research studentship.

This area of research is highly relevant to New Zealand. We currently have no provisions in place specifically for older people's oral healthcare. Historically, New Zealand had the world's highest rates of edentulism (all teeth extracted). However, with changes in attitudes, understanding and technology, older people are now retaining their own teeth. The older generation therefore when moving into rest homes require ongoing oral healthcare. As they age, they depend on carers for daily brushing, and visits to dentists become more challenging. This is becoming a significant health concern as the number of older New Zealanders increases.

I would like to continue researching in the area of gerodontology as this will be an expanding area over coming years. I would love to contribute to the field of research through defining and quantifying the problems that exist, thereby providing evidence to support the need for the current systems to change and adapt to the oral health care needs of the ageing New Zealand population.

Maria van Kuijk
University of Otago



How beliefs influence experiences of pain



Pain is typically thought of as a sensory experience directly related to damage in the body. However chronic, or persistent, pain describes a continuing experience of pain (that lasts beyond normal tissue healing time), transcending this traditional view of pain as indicative of injury. Contemporary research defines pain as a biopsychosocial phenomenon, influenced by beliefs, expectations and context, in addition to physiology.

This year I had the opportunity to conduct my Psychology Honours research in the Cognitive and Systems Neuroscience Research Hub at the University of South Australia. My undergraduate research project combined pain science and neurolinguistics to better understand the 'language of pain'. Specifically, we aimed to explore how participants (both those with and without persistent pain) process general and self-referential statements about pain. To do this, we examined an event-related potential (fluctuations in electrical brain activity time-locked to an event) related to the presentation of 'unexpected' words.

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said how proud they feel 'that the effort we put into researching, collating, and refining the paper has gained recognition ... This has been a highlight of our time at university.'

Mary Loxton, whose accepted article, with Robert Truskett, Brigitte Scarf, Laura Sindone, George Baldry, and Yinong Zhao (pictured), is 'Consumer behaviour during crises: how coronavirus compares to historic shock events and crises', says that 'becoming a published author during our university studies was something that none of us ever expected would happen. When David told us that he would submit the best papers from the class to an international journal, it inspired us to really increase the quality of



Mary Loxton, Brigitte Scarf, Laura Sindone, Robert Truskett and George Baldry at Sydney harbour

our assignment ... We are all very excited to say that we are now published authors.'

Brigitte Scarf, from the same group, sums up the experience and its value: 'Writing an academic article during the COVID-19 lockdown was a unique experience. Instead

of in-person meetings, we mainly collaborated online through long calls using Zoom. The process was time consuming, however ultimately extremely rewarding, as our research gave us a foundational explanation for our personal experiences of the pandemic, as

well as research and reporting skills that will benefit us in our careers.'

In a year when teaching and learning has been difficult, this exercise demonstrates how - with suitable incentivization and mentoring - students can be excited and committed to both undertaking research and seeing it through to publication. The School and Dr Shao have been so encouraged by the pandemic class of 2020 that they hope this is just the start of a long line of undergraduate research publications in International Business from Sydney.

Lilia Mantai
The University of Sydney
Business School

This work was part of a larger investigation aiming to empirically investigate how words matter in clinician and patient dialogue and potentially uncover the neurophysiological basis of successful pain education programs. While we didn't find what we expected, the research identified unique patterns of electrical brain activity in those with persistent pain, when compared to those who are typically pain-free, highlighting potential neural mechanisms that may be associated with the experience of persistent pain.

I am passionate about the conception of our perceptions being so individualised to each one of us. Just as pain is a subjective, idiosyncratic experience, how we perceive the world at each and every moment is biased by our previous experiences, our predictions, and how our brain interprets and processes information. We have seen time and again the incredible effects of expectations in placebo research across both pharmaceutical and physical treatments. For me, the influence of expectations and beliefs highlights the immense power we have over our experiences. In clinical settings, encouraging patients to see how their beliefs and expectations are important to their pain experiences could help to promote feelings of empowerment, control and acceptance during treatments and therapies.

There is no doubt that 2020 will go down as one of the most interesting years of undergraduate research, and I am grateful for every laboratory zoom meeting, virtual coffee and particularly the online conference to share my research - a big thank you to OCURA 2020. I hope that in the next few years I can continue investigating the individual differences in our brains and our experiences of the world during a PhD (fingers crossed!).

Chloe Dziego
University of South Australia

Managing lower limb osteoarthritis



This year was a difficult year for research as an undergraduate student. Practical assessments, clinical placements and research were deferred due to the restrictions imposed by the coronavirus

pandemic. In the midst of all this, I also became a new mother in June and was actually in labour when completing my online exams! I opted to complete my studies, which included online study, research and clinical placement at the university clinic and St Vincent's Hospital, Darlinghurst, full-time with a newborn. In these challenging times OCURA, hosted by Central Queensland University, filled a void in the lack of available conferences and presented a wonderful opportunity to present my research on Zoom.

I became interested in podiatry in high school and have loved every minute of the course. When I started thinking about the research topic for Honours projects I was interested in what treatments and approaches podiatrists are using for treating osteoarthritis (OA) in the lower limb as it is a common condition which impacts the lives of many Australians. Personally, I have OA in my big toe (first metatarsophalangeal joint). I was mentored by my lecturers, Dr Malia Ho and Ms Laura Hutchison, and was propelled into the exciting and challenging world of research. I formulated an e-survey under their guidance and conducted a research study titled 'What are podiatrists offering in practice to manage lower limb osteoarthritis? An e-survey.'

The e-survey made available to practitioners in Australia received 59 responses from a broad variety of podiatrists in different settings. The survey identified that podiatrists use or recommend multiple treatment options to manage lower limb OA. The research also found that podiatrists are broadly using management strategies that are evidence-based and in line with national guidelines on the treatment of OA in the lower limb. It was limited as respondents were asked to report management options used for lower limb OA in general instead of by separate anatomical site. Based on results of my work, future studies could investigate the type of treatment chosen over time for specific patients and report results based on changes in mobility and pain status.

When I found out about OCURA, I immediately took up the opportunity to join the conference. This was my first experience of conference presenting. OCURA provided me with a platform to share my research with a wider audience and receive useful feedback. This has sparked my interest in pursuing a research career, which was a daunting prospect before I started my Honours project. Listening to the project presentations of fellow students was also inspiring. OCURA provided a supportive and encouraging environment where undergraduate research is shared and peer reviewed. I am looking forward to continuing my research studies as a postgraduate student.

Zahava Robinson
Central Queensland University

Life-changing research in the psychology of sport



During my undergraduate Psychology degree at Central Queensland University, positive psychology grabbed my attention. If hardships are inevitable, then the idea of building assets to help people cope seemed to make sense. When I

started psychology, I knew I wanted to nurture

people's wellbeing, rather than repair it. However, I was unsure how to accomplish this. That was until this year when I fell in love with the research experience while completing my Honours thesis.

Psychology and sport have always been passions of mine. As a swimming teacher and coach with a sporty family, I have connected with children and adolescents in and out of the sporting arena. I have observed coaches who excel at, or struggle with, helping athletes develop physical and personal skills. I have witnessed young athletes thrive in life because of a coach's positive influence. I have always believed that community environments, such as sport, can help youth develop the skills and values necessary for living happy, healthy, successful lives. It wasn't until I started researching that I discovered this concept is known as positive youth development through sport. So, what better topic for my thesis on 'Coaching is key: Positive youth development as outcome of coaches' education, efficacy and education'?

Considering the prominent role of sport in Australian culture, I was surprised to find very little research on positive youth development in Australian sport. Without empirical information how can sports coaches be confident in their strategies to help young athletes beyond sporting skills? The results from my thesis confirmed that Australian youth coaches want more support in helping youth athletes, further escalating my interest in the topic.

Working on my thesis had nurtured my desire to pursue a PhD and a career developing strategies to educate sports coaches in positive youth development, consequently, improving youth wellbeing.

But there was one problem. I knew so little about research, and with less than a year before I would have to apply for a PhD, I lacked experience. So, with the help, belief and frankness of my irreplaceable thesis supervisor, Dr Michele Lastella, I immersed myself in the research experience while completing Honours, studying research articles and participating in the Central Queensland University's Motivation of Health Behaviours Lab. I have worked with fellow students and academics from across the globe, all of whom have helped me learn to appreciate different perspectives and experiences.

This year of research has pushed me out of my comfort zone but brought incredible rewards. Presenting at the recent OCURA conference was one such event. Not an avid public speaker, I overcame my fear to present a three-minute poster presentation on my thesis. The whole experience was life changing in the academic and personal sense, and to top it off I won the Best Poster presentation!

A year ago, I never would have thought that research could be motivating. But now, I am excited to see how research is going to change my life and help me to change the lives of others.

Jaimee Bateman
Central Queensland University

Report of the Chair



The pandemic has revealed the importance of research in solving contemporary problems, not just in medicine but in a range of disciplines. Policymaking has had to be dependent on research. We have seen the devastating effects, of policymakers ignoring research evidence, in the huge numbers of COVID-19 cases and deaths in particular countries. As individuals, we ourselves have needed to be flexible, finding ways to change our lives to cope with changed conditions. We have needed creativity to deal with uncertainty. The ability to discern and make use of well-founded evidence has perhaps never been more important. This is all a reminder of the importance of undergraduate research. It is needed not only for future careers, but also as a basis for living.

As an organisation, ACUR has had to become adaptable. Members of the ACUR Executive have been asking: what are our values; what is important to us as an organisation? We are an inclusive community of university students and staff working to advance undergraduate research in all its forms. We respect a diversity of approaches to undergraduate research engagement in line with the needs and requirements of universities and in support of their varied missions, and we value the transformative power of research as a vehicle for individual and collective learning.

Over recent months we have been asking how we can add value to our memberships? Universities have been adapting to the challenges of online learning that come from periodic lockdowns and restrictions on face-to-face learning. Under such conditions, how can we utilize our knowledge-base and connections to work with the ACUR community to provide realistic and challenging opportunities for undergraduates to engage in research?

We already provide a range of useful resources on our website and have recently added more information, research findings, documents, and events to suggest and share strategies that will further undergraduate research. We have introduced an online discussion forum so that ideas and strategies can be shared. We look forward to hearing your ideas and learning about what you are doing to further undergraduate research. Look for *InConversation* on our website at www.acur.org.au/share-ideas-strategies/.

Angela Brew
Macquarie University

Student Committee Report



Despite the many challenges that 2020 has presented, it has been a fabulous year for the Student Committee. From the very onset of the pandemic, we were determined to provide a sense of community amongst undergraduate researchers, adapting to the constraints of this new, highly virtual world. I'm proud to share some of our achievements.

We were keen to revamp our social media platforms, and I would like to thank Molly Turnbull for running several inspiring media campaigns, including the 'Student Spotlights', which showcased ACUR members who are making meaningful contributions to their respective fields. Between Facebook, Instagram and the new *InConversation* forum, there are diverse means by which we can communicate and exchange ideas. This remains an integral part of the ACUR experience - a sense of community amongst its student members.

In absence of a conference, the Student Committee resolved to engage members by other means and, to that end, launched the Great ACUR Writing Competition, led by Olivia Jessop. It is really good to see the five winning entries on pages 2 to 4 of this issue of URNA. This summer we are also launching a photography competition (so keep an eye on our social media - there will be prizes).

The Student Committee also redrafted its Terms of Reference, expanded our efforts to recruit new members, assisted in the planning and organising of the 2021 conference and began discussions for a Posters in Parliament session. The Committee is still only in its second year and there's no doubt it will continue to develop. I am thrilled to congratulate Olivia Jessop (University of Queensland) to her recent election as the new chair. Olivia is passionate about undergraduate participation in research, and I know that her leadership will advance the mission of ACUR in both providing opportunity to and advocating for undergraduate researchers.

Lachlan Deimel
University of Oxford

ACUR Conference 2021

The next ACUR conference is at the Australian National University on 16-17 September 2021. The theme is 'Your Search, Our Future'. Students from all academic disciplines are invited to submit an abstract illustrating how their research offers greater insight into our future, whether through a more thorough understanding of the past, a solution for a current problem, or the identification of a challenge impacting our future. Conference organisers will be extending eligibility for presenting at the 2021 conference to students who intended to present this year.

www.acur.org.au/2020-conference-acuranu/

Contact us

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