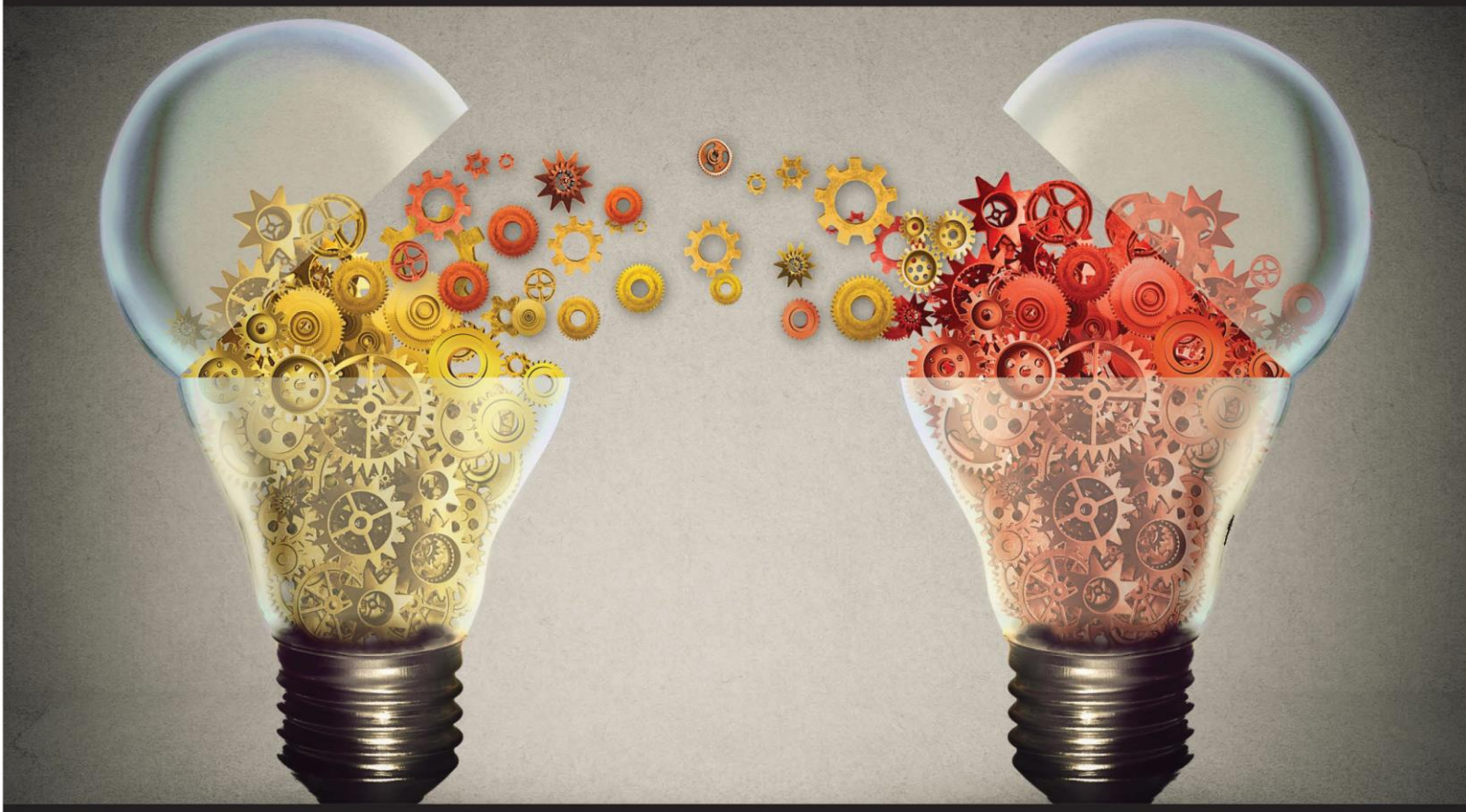
UNE Postgraduate Conference 2021



'Intersections of Knowledge'

23-24 June 2021

Conference Proceedings

une University of New England

Student Services and Amenities Fee (SSAF)

Conference Proceedings

“Intersections of Knowledge”

UNE Postgraduate Conference 2021

23rd and 24th June 2021
Natural Resources Building
University of New England

Acknowledgement

Dr Phillip Thomas – Associate Director PhD.I – Office of the DVCR: Organising Committee Chair and Event Convenor

Once again, I have had the pleasure and honour to chair the organising committee and convene the 2021 UNE Post Graduate Research Conference. The work of our committee members from across the University has made this hybrid (face to face, live-online) conference bigger and more accessible than any previous Intersections of Knowledge conference. In 2021, I again want to acknowledge the outstanding contribution from Ms Kerry Gleeson, IT Trainer with Technology and Digital Services. It is also important to note that without the ongoing support of the office of the DVCR, the Research Services Directorate teams, University Library and University Faculty staff volunteers, this event would not be able to be organised.

Postgraduate Conference Organising Committee: – Olivia Dooner, Susan Field, Kerry Gleeson, Michael Hoult, Chanel Hopkinson, Pauline Jenkins, Edward Lefley, Huw Nolan, Carolyn Sonter, Philip Thomas (Chair)

Support: Research Services, Audio-Visual Support - Technology and Digital Services, Office of Advancement, Communications and Events, Strategic Communications and Media, the Vice Chancellors' Unit, IT Training - Technology and Digital Services, School of Science and Technology, UNE Faculties research support staff University Library.

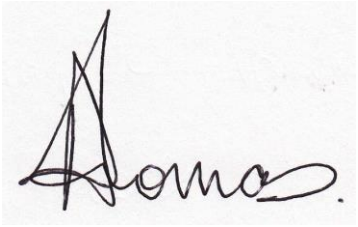
Sponsor: In appreciation of financial support: Student Services and Amenities Fee (SSAF), office of the DVCR and UNE Life.

As the Chair of the Organising Committee, welcome to your 6th "Intersections of Knowledge" Postgraduate Research Conference. This event is offered free to UNE postgraduate researchers, and possible only as a direct result of the commitment of individual UNE staff and the participation and enthusiasm of postgraduate candidates and their supervisors. The Student Services and Amenities Fee (SSAF) committee have again provided the crucial financial support to enable us to continue our efforts to ensure your conference provides relevant and exemplary student training and education. This year, significant efforts have been directed to our first hybrid (face to face, live online) conference.

The sub-theme of this year's conference is "Researcher innovation and resilience in a challenging environment". Acknowledging the immense challenges of the last 12 to 18 months, it has never been more important for researchers to take opportunity to hone their communication skills and use their voices to communicate their research. The opportunity to personally demonstrate the contribution that the creation of new knowledge from research has to make to our society should not be missed. I hope this year's theme has prompted reflection on the changes that may have been necessary to many of the research journeys presented.

Our concern this year, was that due to the challenges we all faced, interest in this conference may have waned. This has not been the case, and we have met the challenge of combining UNE's diverse research portfolio into a hybrid format, again over a full two-day program. To cater for our online participation, this year we have over 100 of our audience attending online. In addition, of the 70 presenters, 14 of our researchers will be participating online from locations across the world. This brings a new dimension to the excellent networking opportunity that your conference, provides. Please take time to listen to as many presentations as you can, outside your discipline or interest area. This year we have added a function to our program that allows the audience to provide feedback to the presenters. From your past comments we understand that feedback is extremely valuable and desired. Noting this I urge all delegates to take the opportunity to provide constructive feedback to your colleagues.

Finally, we have an impressive line-up of Keynote and Special presenters this year. I am sure their presentations will provide you with valuable information and will include accounts of their experience and knowledge on important aspects of research and research training. Please take time to attend as many of these presentations as possible.



Dr Philip Thomas
Associate Director PhD.I – Office of the DVCR: Organising Committee Chair and Event Convenor

PROGRAM
UNE POSTGRADUATE CONFERENCE – INTERSECTIONS OF KNOWLEDGE 23rd and 24th JUNE 2021

DAY ONE – WEDNESDAY 23rd JUNE

Time	Session
8:30 to 9:00	**Welcome and Sign On** Room: Resource Management Building Courtyard W055
9:00 9:00 to 9:05 9:05 to 9:15	Welcome: Dr Philip Thomas **Acknowledgement to Country: Lesley Widders** **Opening Speech: Professor Brigid Heywood** Vice-Chancellor Lecture Theatre: W055 Building EM1 room 272
9:15 to 10:10	**Keynote Speaker: Professor Brigid Heywood In the pursuit of Knowledge** Lecture Theatre: W055 Building EM1 room 272
10:10 – 10:20	Housekeeping – Dr Philip Thomas Lecture Theatre: W055 Building EM1 room 272
10:20 to 10:40	**MORNING TEA - Resource Management Building** **For our online guests watch UNE PhD candidate Lou Streeting released 141 baby Bell's turtles into a creek near Armidale NSW Release of baby Bell's Turtles - YouTube**

STREAM ONE

	Session One			Session Two			Session Three			Session Four		
Session titles	**Genetics**			**HASS**			**Cereal**			**Insects**		
Time	Chairperson: Sally Larsen Co-Host/Co-Chair: Rikki Jones & Michael Hoult			Chairperson: Liang Joo Leow Co-Host/Co-Chair: Huw Nolan & Amanda Rose			Chairperson: Dom Waters Co-Host/Co-Chair: Olivia Dooner & Sheeraz Ahmad			Chairperson: Lucy Farrow Co-Host/Co-Chair: Carolyn Sonter & Torie Hall		
10:45 to 11:05	1	**Tamene Tolessa** Resistance Gene Diversity and Evolution in the Genome of Diverse Myrtaceae Species	EM1 Room 272	11	**Iqthyer Uddin Md Zahed** Forced Migration and Ethnic Cleansing of Rohingya from Myanmar Understanding "Why"	EM2 Room 274	21	**Toni Petronaitis** The secret life of cereal killers and how we can stop them in their tracks	EM6 Room 232	31	**Abby Davis** Comparing the Pollination Efficiency of Flies and Bees in Berry Crops	EM3 Room 105
11:05 to 11:25	2	**M Sharif-Islam** The predicted benefits of genomic selection in pig breeding programs	EM1 Room 272	12	**Adrian Tito Cardinali** Missing India? Conceptions of Home in Italian Literature from Indian background Authors	EM2 Room 274	22	**Kianoush Nikoumanesh** Accelerating canola breeding by multivariate genetic evaluation and indirect selection for the Australian canola industry	EM6 Room 232	32	**Carolyn Sonter** Can bees detect PFOS?	EM3 Room 105
11:25 to 11:45	3	**Andrew Lynn** Genomic prediction of consumer perceived beef eating quality	EM1 Room 272	13	**Liang Joo Leow** The Interpreter — Servant to Meaning or Master of Words?	EM2 Room 274	23	**Emmanuel Bunei** Factors influencing farmers compliance with agri-food safety regulations in Kenya	EM6 Room 232	33	**Thomas Heddle** Do pasture types influence the reproductive capabilities of temperate dung beetles?	EM3 Room 105
11:45 to 12:05	4	**Zhi Loh** Effects of Genetic Architecture and Experimental design on power and false positive rates of GWAS	EM1 Room 272	14	**Helena Widolf** Ideology and Propaganda Foundational to Animal Industries and their Patrons	EM2 Room 274	24	**Munique Reid** Hydrogeomorphic character = landscape heterogeneity… but do the fish care?	EM6 Room 232	34	**Mukta Mala** The Influence of Warming with Temperature Oscillations on the Life History Traits of the Pea Aphids, *Acyrthosiphon pisum*	EM3 Room 105
12:05 to 12:25	5	**Lucy Farrow** A novel approach to quantifying neuronal density across taxa.	EM1 Room 272	15	**Caitlin D'Gluyas** A Liminal Landscape: Point Puer and the Archaeology of Nineteenth Century Juvenile Convictism	EM2 Room 274	25	**UNE Video Series** Getting started with research data management at UNE	EM6 Room 232	35	**UNE Video Series** eResearch Training and Support	EM3 Room 105
12:25 to 12:55	**LUNCH - Resource Management Building Courtyard** **For our online guests our Online Event is a quick look at the Museum of Antiquities**											
1:00 to 2:00	**Special Presentation - APR Intern – Lisa Farrar – National Program Manager** Australian Postgraduate Research Intern (APR.Intern) is Australia's only national PhD internship program spanning all sectors and disciplines. Panel: Dr Susan Wilson Associate Professor in Environmental Pollution, Andrew Sampaklis from Legacy Mines and Steven Doherty PhD candidate											

STREAM TWO

	Session Five			Session Six			Session Seven			Session Eight		
Session Title	**LAW**			**HASS**			**Mixed bag**			**Health**		
Time	Chairperson: Toni Petronaitis Co-Host/Co-Chair: Rikki Jones & Michael Hoult			Chairperson: Andrew Lynn Co-Host/Co-Chair: Huw Nolan & Amanda Rose			Chairperson: Paul Hawkins Co-Host/Co-Chair: Olivia Dooner			Chairperson: Robert Smith Co-Host/Co-Chair: Carolyn Sonter & Torie Hall		
2:05 to 2:25	6	**Jane Gudde** Assessing Australian agricultural sustainability assurance schemes for legitimacy and effectiveness	EM1 Room 272	16	**Chris O'Neill** Bad Press: Populism and the Newspapers of fin-de-siecle Vienna	EM2 Room 274	26	**Karen Williams** But I don't have a widget? Beginning legal and social systems research	EM6 Room 232	36	**Naomi Gyamfi** A systematic review of measures assessing mental health professionals' perspectives of recovery ***Live from Newcastle NSW***	EM3 Room 105
2:25 to 2:45	7	**Susan Margaret Field** The teaching of Elder law - A practical approach for students and multi-disciplinary practitioners	EM1 Room 272	17	**Coralie Sanderson** To the Ends of the Anxious Earth: Eco-Anxiety, Ecological Thought and the Turn in Nordic Noir TV	EM2 Room 274	27	**UNE Video Series** Library Services for Higher Degree Research Students (HDRs)	EM6 Room 232	37	**Alycia Messing** Parkinson's Disease in Australia: National Online Survey	EM3 Room 105
2:45 to 3:00	**AFTERNOON TEA - Resource Management Building** **For our online guests our Online Event is a quick look at a Night at the Museum**											
Session Title	**Pharmacy** Chairperson: Toni Petronaitis Co-Host/Co-Chair: Rikki Jones & Michael Hoult			**Around the world** Chairperson: Andrew Lynn Co-Host/Co-Chair: Sheeraz Ahmad			**Business** Chairperson: Paul Hawkins Co-Host/Co-Chair: Olivia Dooner			**Health** Chairperson: Robert Smith Co-Host/Co-Chair: Carolyn Sonter & Torie Hall		
3:05 to 3:25	8	**Henok Tegegn** A qualitative study exploring barriers to and facilitators of medication adherence in Ethiopia: hospital pharmacists' perspectives ***Live from Addis Ababa, Ethiopia***	EM1 Room 272	18	**Wole Kinati Wakjira** Understanding Agency within context: the case of emerging livestock-based institutions in Ethiopia ***Live from Addis Ababa, Ethiopia***	EM2 Room 274	28	**Paul Hawkins** What leads to Eureka! Moments and what can innovation practitioners do to reliably create these?	EM6 Room 232	38	**Rukshan M Rafeek** Group A and G Streptococcal antigens induces an autoimmune mediated carditis and neurobehavioural changes	EM3 Room 105
3:25 to 3:45	9	**Asnakew Ayele** Involvement and practice of community pharmacists in maternal and child health services: A systematic review ***Live from Gondar, Ethiopia***	EM1 Room 272	19	**Ping Zhu** Local Government and The Quality of Company Environmental Information Disclosure in China - Economic and Political Influences ***Live from Hangzhou, China***	EM2 Room 274	29	**David Hill** Introducing a Sustainability Framework for all Organisations	EM6 Room 232	39	**UNE Video Series** SAGE Research Methods	EM3 Room 105
3:45 to 4.05	10	**Mohammed Biset Ayalew** Potentially inappropriate prescribing for adults with diabetes mellitus: A scoping review ***Live from Gondar, Ethiopia***	EM1 Room 272	20	**Christopher M Kanyama** Community-Based Indigenous Poultry Development Program Key to Enhancing Rural Livelihoods in Zambia	EM2 Room 274	30	**UNE Video Series** Introduction to Open Access Publishing	EM6 Room 232	40	**UNE Video Series** EndNote for Postgraduates	EM3 Room 105
Special Sessions												
4:10 to 5:10		**Introduction to SOL:AR** Julie Orr, Kerry Gleeson, Peta Scott, Anna Du Chesne	EM1 Room 272		**Computationally Intensive Research: Computer Vision, Machine learning and Simulation** Dr Mitchell Welch	EM2 Room274			EM6 Room 232		**Carbon Matter(s)** Includes Carbon Matter(s) Exhibition Maria Cotter	EM3 Room 105

Meet Greet and Network Evening Event
The Stro 5:30pm – 7:30pm

UNE POSTGRADUATE CONFERENCE – "INTERSECTIONS OF KNOWLEDGE." 23rd and 24th JUNE 2021

DAY TWO - THURSDAY 24th JUNE

Time	Session
8:30 to 9:00	**Welcome and Sign On:** Resource Management Building W055 Courtyard
9:00 to 10:00	Keynote Speaker**: Media for Science Communication. ABC Journalist, Sean Murphy, Chief Scientist, Food Agility CRC, Professor David Lamb; General Manager – Commercial Programs at SQ Landscapes and PhD. Innovation Candidate, Darren Marshall** Lecture theatre W055 EM1 Room 272
10:00 to 10:15 MORNING TEA - Resource Management Building Courtyard **For our online guests our watch Darren Marshall's full Landline story Pest Control**	

STREAM THREE

	Session Nine			Session Ten			Session Eleven		
Session Titles	**International Impact**			**Technology is our Friend**			**Living a Pandemic**		
Time	Chairperson: Hussein Al Moadhen Co-Host/Co-Chair: Rikki Jones & Sheeraz Ahmad			Chairperson: Maria Cotter Co-Host/Co-Chair: Huw Nolan & Amanda Rose			Chairperson: Jane Gudde Co-Host/Co-Chair: Carolyn Sonter & Torie Hall		
10:20 to 10:40	41	**Tian Jihadhan Wankar** Selling differentiated Nusa Tenggara Barat (NTB) beef in urban markets in Indonesia ***Live from Yogyakarta City, Indonesia***	EM1 Room 272	49	**Ian Wiltshire** DDoS Readiness and Capability ***Live from Brisbane QLD***	EM2 Room 274	57	**Prashneel Ravisan Goundar** Commencing a PhD in the Pandemic on writing skills for undergraduate students in Fiji ***Live from Nadi, Fiji***	EM3 Room 105
10:40 to 11:00	42	**Saraswoti Sapkota ERS** Developing and Testing of a payment for ecosystem services innovation for conservation and livelihood outcomes in protected areas of Nepal	EM1 Room 272	50	**Matt Balogh** To do lists vs infinite inboxes: Encounters in Personal Electronic Records Management	EM2 Room 274	58	**Robert Smith** A Tale of Two Pandemics: Fake News and COVID-19	EM3 Room 105
11:00 to 11:20	43	**Osama Alowaimer** Undergraduate Accounting Curriculum in Saudi Arabia: Redesigning Content	EM1 Room 272	51	**Meaad Tori** New lightweight algorithm based on XOF and Genetic Algorithms	EM2 Room 274	59	**Ursula De Almeida** In-depth interviewing across borders and generations in a COVID-normal world ***Live from Melbourne VIC***	EM3 Room 105
11:20 to 11:40	44	**Ateeq Alhazzaa** Cause and effects of Corporate Social Responsibility: An examination of CSR in Saudi Arabia	EM1 Room 272	52	**Sally Larsen** Using Pre-existing data for Higher Degree Research	EM2 Room 274	60	**Denise Palmer** Bare BnB: The impact of COVID-19 on Airbnb and the relationship between hope, trust and risk in a post-pandemic world	EM3 Room 105
11:40 to 12:00	45	**Cody Davis** Marriage and Masculinity of British-World Soldiers during the First World War	EM1 Room 272	53	**Abdullah Ali Alghamdi** Unified Data Store for distributed SDN controllers ***Live from Newcastle NSW***	EM2 Room 274	61	**UNE Video Series** Research Integrity at UNE	EM3 Room 105
12:00 to 12:30 LUNCH - Resource Management Building **For our online guests our watch Prof David Lamb's full Landline story Future in the Cloud**									
12:30 to 1:30	**What do investors want?** Join us for a deep dive into the world of investment in research with Natasha Rawlings (Investment Manager for Uniseed) and Lou Conway (Director of the UNE SMART Region Incubator). **What you will get:** In this session you will learn how to prepare for your first chat with an investor. You get to hear an unfiltered view of what investors look for, and how to pitch your research in a way that will be appealing to investors, not other academics.								

STREAM FOUR

	Session Twelve			Session Thirteen			Session Fourteen		
Session Titles	**Meat**			**Political**			**Education**		
Time	Chairperson: David Hill Co-Host/Co-Chair: Rikki Jones & Sheeraz Ahmad			Chairperson: Munique Reid Co-Host/Co-Chair: Huw Nolan & Amanda Rose			Chairperson: Cody Davis Co-Host/Co-Chair: Carolyn Sonder & Torie Hall		
1:40 to 2:00	46	**Dom Waters** Exploring the genetics and robustness in Australian Sheep	EM1 Room 272	54	**Dale Clancy** Was Australian politics of the 1920s and 1930s influenced by politicians who had served in the military during the Great War? ***Live from Brisbane QLD***	EM2 Room 274	62	**Saidat Adenji** Systematic Review in the Educational Context	EM3 Room 105
2:00 to 2:20	47	**Hussein Al Moadhen** Lamb loin shear force is impacted by fatness and carcass size	EM1 Room 272	55	**Md Mahbub Alam Prodip** Facilitating factors of quota women's political empowerment in India and Bangladesh: A comparative perspective	EM2 Room 274	63	**Harriet Ridolfo** Critical organisational factors for successful implementation of e-learning: A case study of selected universities in NSW ***Live from Wagga Wagga NSW***	EM3 Room 105
2:20 to 2:40	48	**Uddhav Paneru** Comparisons of methods in predicting accuracy of breeding value of carcass traits by including weight as covariate to post-analysis of variance for carcass traits	EM1 Room 272	56	**Naomi von Senff** Carl Maria con Weber, Political music, and the rise of German Nationalism	EM2 Room 274	64	**UNE Video Series** Copyright and your thesis	EM3 Room 105

2:40 to 3:00 AFTERNOON TEA - Resource Management Building JUDGING OF POSTERS FROM 2:45PM

For our online guests watch a video from the UNE Video Series UNE Wellness Centre-Counselling and Psychological Services

Poster Presentations Judged by

Ali Alkhathami Business Incubation in Saudi Arabia: An Empirical Investigation into the Effects of Business Incubators on New Venture Creation	**Asma Aljohani** Exploring Preschool Teacher Perspectives on Implementing Play-Based Learning in Saudi Arabia	**Mukta Mala** Warming with Temperature Oscillations Impacts on the Host-Parasitoid Interaction	**Thomas Heddle** A Time Sorting Pitfall Trap for capturing dung beetles	**Wawat Rodiahwati** Acid catalyzed-pyrolysis of iota-carrageenan

3:10 to 4:00	**Special Event** **The challenges and innovation of researchers during this pandemic?** **Chair: Dr Andrew Johnson, Director Research Services**
4:00 to 4:45	Prize Giving and Acknowledgements - Dr Philip Thomas (4:15) Closing Address: Deputy Vice-Chancellor, Professor Michael Wilmore Natural Resources Building W055 Lecture Theatre EM1 Room 272

Table of Contents

Abstracts by Streams and Sessions

STREAM ONE

Session One - Genetics
Session Two – Health, Arts and Social Sciences
Session Three - Cereal
Session Four – Insects

Session One – Genetics

Resistance Gene Diversity and Evolution in the Genome of Diverse Myrtaceae Species

Tamene Tolessa, Rose Andrew, Shubiao Wu and Benjamin Schwessinger

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environment and Rural Science

Oral Presentation

The Myrtaceae family in general and the iconic forest tree genus, Eucalyptus, in particular are the most economically and ecologically important forest trees across Australia. Many members of this important plant family are now threatened by the invasive pathogen Austropuccinia psidii causing myrtle rust. Identification and characterization of resistance gene (R-gene) family that confer resistance to pathogens is a primary step of determining proper management options for agricultural crops as well as forest trees. A group of genes that belongs to the intracellular nucleotide-binding sites and leucine-rich repeat immune receptors (NLR) are known to play key roles in pathogen recognition and plant immunity. Novel pathogen recognition can also be acquired through the fusion of non-canonical integrated domains (IDs) in to NLR. Long-read sequencing data from 22 Myrtaceae species were used to predict R-gene models and annotate NLR-encoding genes and its IDs to study their diversity and evolutionary features. A total of 42,249 NLR genes were annotated and a range of 975 to 2966 genes per species were identified. Annotation of NLR-IDs resulted in the identification of 236 unique IDs across all species. The unique NLR-IDs are ranged from 37 to 73 per species with repeated integration count across all species estimated to 5023. The top five NLR-IDs including Jacalin, DUF3700, RVT_2, Pkinase and Retrotran_gag_2 were found the most abundant domains accounting for 59 % of domain integration. This analysis of diversity in NLR genes and the IDs provides an important foundation for understanding NLR gene evolution in Myrtaceae and for future characterization and identification of novel and functional R-genes.

Keywords: Diversity, Genome Annotation, Integrated Domains, Myrtaceae, NLR, R-Gene

Research Method: Quantitative

The predicted benefits of genomic selection in pig breeding programs

M Sharif-Islam[1], JHJ van der Werf[2], V Boerner[1] and S Hermesch[1]

Doctorate

Animal Genetics and Breeding Unit (AGBU)

Oral Presentation

[1]Animal Genetics and Breeding Unit (AGBU), a joint venture of NSW Department of Primary Industries and University of New England, Armidale 2351, Australia
[2]School of Environmental and Rural Science, University of New England, Armidale 2351, Australia

This study aimed at predicting response to genomic selection in pig breeding programs and comparing the predicted genetic gain with the genetic gain in conventional breeding program. Different scenarios of genomic selection based on different size of reference population were evaluated. Deterministic model was used to simulate breeding programs and genomic selection was modelled assuming genomic breeding values as additional traits in the selection criteria. Breeding programs were evaluated for genetic gain per round of selection in maternal traits, production traits in growing pigs as well as overall response in breeding objective for both maternal and male line of pigs and selection accuracy in two breeding objectives. The results showed that genomic selection scenarios increased overall response of the breeding objectives for both maternal line (7 to 45%) and male line (3.5 to 27%) in a range of genomic selection accuracies. Maternal traits with limited number of records achieved larger response while the production traits that are easy-to-measure, achieved smaller responses resulting in overall increase in breeding objective. Genetic gain in breeding objective traits did not increase linearly with the increased size of reference population (500 to 5000 in increments of 500). Increased overall response for breeding objectives in this study showed the potential benefit for implementing genomic selection in pig breeding programs.

Keywords: Genomic Selection, Pig Breeding, Genetic Gain

Research Methods: Quantitative

Genomic prediction of consumer perceived beef eating quality

A Lynn, P McGilchrist, J van der Werf and S Clark

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental & Rural Science

Oral Presentation

Per capita consumption of beef has been in decline globally in recent decades. Consumers have expressed reduced confidence in the quality and consistency of beef on market shelves. In an attempt to counteract this decline, the red meat industry has strived to improve not only quality but the identification, labelling and packaging of that quality based on objective carcass measurements. However, there is space for improvement within these areas to increase the accuracy of prediction for consumer perceived eating quality. Genomics has been used to identify areas of the bovine genome that may influence objective carcase measurements linked to eating quality and therefore is expected to allow for increased accuracy of eating quality prediction directly. By examining the DNA from approximately 2200 Australian cattle with Single Nucleotide Polymorphism chips imputed up to 700k, we expect to find associations through genome wide association studies between the genome and the consumer derived eating quality scores which are currently used to assess the relationship previously found with objective carcase measurements. These associations will be tested by examining the accuracy of prediction of the eating quality for a subset of cattle based on their genomic information. If proven accurate, genomic prediction of eating quality may be used to aid in the consistency of beef quality in our markets domestically and internationally, assist in early identification of superior animals for either breeding selection or correct market allocation and strengthen current quality classification methods which will benefit all members of the production chain from paddock to plate.

Keywords: Beef, Genomics, Eating Quality

Research Method: Quantitative

Effects of Genetic Architecture and Experimental Design on Power and False Positive Rate of GWAS

Zhi Loh, Julius van der Werf and Sam Clark

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental and Rural Science

Oral Presentation

In 1866 Gregor Mendel published a paper on the inheritance of traits in garden pea, and unbeknown to him that paper would later serve as a foundation of modern genetics. While Mendel assumed that traits are caused by single locus, later works suggested that many traits such as meat quality in cattle depends on large numbers of loci. Identifying the location of these loci is easier said than done; however, with 2.7 billion possible loci in cattle, finding the causal loci of a trait would be similar to finding a few slightly greyed out letters in a roll of paper that could stretched across Pacific Ocean. Statistical tools that could locate these loci would thus be desirable, and one such tool is Genome-Wide Association Study (GWAS). As in any statistical tool however, large numbers of loci that need to be searched means an increased number of false positives, thus requiring a multiple testing correction method. Several correction methods had been suggested, but some of them have suffered from reduced power due to stringent threshold, while others have its false positive rates (FPR) largely untested. The aim of this study to test the balance of power and FPR for GWAS under varying dataset size, effect sizes of genetic variants and number of markers. This experiment is done using simulation. Results suggested that increasing the sample size improves the power of GWAS, although when the markers are correlated some increase in FPR is also observed. Large numbers of loci could also decrease the power of GWAS. If the effect of the genetic variants is large it is also easier to be found using GWAS. The suitability of a correction method has also been affected by these factors, highlighting the importance of choosing an appropriate correction method when conducting a GWAS experiment.

Keyword: GWAS, Power, False Positive Rate

Research Method: Quantitative

A novel approach to quantifying neuronal density across taxa

Lucy Farrow, Nicholas Andronicos, Paul McDonald and Adam Hamlin

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental & Rural Science

Oral Presentation

Anthropomorphic disturbances place a variety of additional physical and cognitive challenges on the lives of many organisms. This increase in challenges is believed to test the information processing capacity (IPC) of individuals, wherein working memory and mental manipulation are key to survival at the individual, species and community level. Brain function is widely accepted to be influenced by a variety of factors, including relative size, number of neurons and neuronal densities. Therefore, in order to understand what may drive an animals IPC, we have developed a novel protocol to analyse the neuronal density of organisms using the Isotropic Fractionator method in combination with high-throughput flow cytometry. The method allows for non-biased quantification of neuronal density across six primary regions of the brain; the cerebellum, optic tectum, basal forebrain, brainstem, diencephalon and, importantly, the cortex. By calibrating the forward scatter channel of the flow cytometer with size count beads, we were not only able to quantify neuronal density, but also nuclei sizes across these regions. We anticipate that in creating a methodology that is concise and obtainable for many laboratories that have access to a flow cytometer, future research regarding brain morphology across species and/or taxa will become comparable. This, in turn, would help shed some (forward scatter) light onto what makes a species capable of thriving in a rapidly changing environment.

Keywords: Behavioural Flexibility; Neuronal Density; Neuronal Sizes

Research Method: Mixed Methods

Session Two – Health, Arts and Social Sciences

Forced Migration and Ethnic Cleansing of Rohingya from Myanmar: Understanding 'Why'

Iqthyer Uddin Md Zahed

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts & Social sciences

Oral Presentaion

The Rohingya are an ethnic group of Myanmar; they have been living in this area since the eighth century AD. This ethnolinguistic group established a distinctive culture, language, traditions, and history since they settled in Arakan, a region within Myanmar (Burma), which is now identified as Rakhine state. They did not face any questions about their ethnicity and citizenship until the military junta, during Ne Win's tenure, started agitating against them in 1962. General Ne Win began a process of expulsion of Rohingyas in 1978, and his successors followed the same strategy ever since. Ne Win introduced the Citizenship Act of 1982 in order to expel the Rohingya people from Myanmar. According to the Burmese government, Rohingyas are illegitimate settlers in Arakan state; they are said to have migrated into Burma as agricultural labourers during the British colonial period. The Myanmar government refuses to recognise the Rohingya as citizens, labelling them illegal Bengalis. The Myanmar military has engaged in ethnic cleansing and genocidal activities at different times during its history: in 1978, 1992, 2012, 2016, and 2017. Based on evidence from my research, I argue that these actions were deliberate in a bid to destroy the Rohingya community and drive them out of Myanmar. Almost two-thirds of the Rohingya community faced forced displacement, with the remaining one-third being interned in camps as IDPs (Internally Displaced Persons). They suffered forced labour, extortion, detention without trial, confiscation of land and properties, imposed movement restrictions, economic strangulation, irrational marriage restrictions, exorbitant arbitrary taxation, and had no access to education and health care. The objective of these proceedings is to gain a deeper understanding of the root causes behind Rohingya forced migration and ethnic cleansing. The main findings from my field research will be discussed and the leading causes of Rohingya forced migration and ethnic cleansing explained in terms of politicization of religion, discriminatory state policies, geo-economic interests - with respect to land ownership and distribution, historical legacy, ethnic conflict and the controversial ARSA (Arakan Rohingya Salvation Army), racism, and lack of social integration of Rohingyas into the mainstream Burmese community.

Keywords: ARSA, Rohingya, Myanmar, State Policy, Forced Migration, Ethnic Cleansing

Research Method: Qualitative

Missing India? Conceptions of Home in Italian Literature by Indian Background Authors

Adrian Tito Cardinali

Master of Arts

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts and Social Sciences

Oral Presentation

Since the 1990s there has been a growing body of Italian language literature written by first and subsequent generation migrants to Italy. It has captured substantial recent scholarly attention and research. Arguably most prominent amongst the authors who have come to attention has been Igiaba Scego, a Somali background author born and brought up in Rome. Her prominence is partly because of a maturing oeuvre. It's also because of her articulate advocacy for migrants in and amongst literary writing. Scego is far from alone in this growing contemporary scene. It includes writers from Indian backgrounds. Amongst them Laila Wadia, Gabriella Kuruvilla and the complicated example of Jhumpa Lahiri have all had various degrees of prominence. For reasons not yet clear scholarly engagement with this work appears slender. Under-recognised is that the Indian background population in Italy is the largest of any country in continental Europe. Like Scego, the other authors noted here grapple with questions of home and what it means to constitute home. The intention of the current research is to carefully explore such work, against the background of works by authors of differing diverse backgrounds, as well as against the more established Italian literary scene. There is good reason to expect we will find rich and provocative contemporary thinking, on the urgent question of what constitutes home in our home-poor and home- deprived age. Given research has only recently commenced, the presentation will consist of a brief account of its genesis, some background on the constitution of the Indian migrant community in Italy, and an introduction to a selection of Italian language works by Jhumpa Lahiri.

Keywords**:** Migration, Home, India, Italy, Literary Studies, Italian Studies, Igiaba Scego, Jhumpa Lahiri

Research Method: Qualitative

The Interpreter Servant to Meaning or Master of Words?

Liang Joo Leow

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts & Social Sciences

Oral Presentation

Interpreting (spoken), alongside translation (written) is essential for communication between parties who do not share a common language. By convention, an interpreter works from one language (source language/SL) into another (target language/TL). Interpreter training reflects this convention as students learn techniques to convey a message from *one* SL to *one* TL at any one time, after a speaker has paused or finished speaking (consecutive interpreting/CI), or concurrently while the speaker is talking (simultaneous interpreting/SI). There is also a new awareness of hybrid models of interpreting that challenge a rigid delineation between CI and SI. In addition, the rigidity in defining a source language makes no allowance for people who combine different languages when they speak. This phenomenon of *translanguaging*, has not been widely studied in the context of interpreting and interpreter training. It appears that while interpreters are necessarily multilingual, interpreting is not well-placed to manage the potential richness of a multilingual speaker's *language repertoire*. Traditionally, interpreting relates to the transfer of spoken words in one language into those of another language at a particular time. However, the concept of a message, and more broadly of communication, encompasses far more beyond spoken words. This includes accents, non-verbal communication or body language, and *inherent culture*. Inherent culture represents the cultural basis by which any utterance is made and by which it is then heard and understood. Communicating this effectively and accurately relies on listeners having a degree of common cultural knowledge with the speaker. Interpreters must bridge a cultural gap in the absence of such common knowledge. This presentation explores approaches to these challenges both in the practice of interpreting as well as in interpreter training.

Keywords: Interpreting Translation Translanguaging Culture Multilingualism Sociolinguistics

Research Methods: Qualitative

Ideology & Propaganda Foundational to Animal Industries & Their Patrons

Helena Widolf

Masters by Research

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts and Social Sciences

Oral Presentation

The need for human societies to better understand the root causes of humankind's mistreatment of nonhuman animals cannot be overstated. Without a voice to articulate their experiences and without the same legal standing as humans, animals remain powerless to put an end to their own suffering–suffering that is often imposed by human lifestyle choices. Three of the most notorious animal industries in today's consumer markets include the meat industry, the animal experimentation industry, and the animal entertainment industry. In seeking to divulge underpinning drivers of the marginalization and disenfranchisement of animals, four concepts investigated within social psychology research are targeted: egocentrism, anthropocentrism, speciesism and moral disengagement. Qualitative research methods are used to carry out a content analysis to identify how these four elements manifest within ideology and propaganda foundational to animal industry continuity and promotion, including industry patronage. Working definitions have been created to examine the extent to which these elements endorse the exploitation and abuse of animals. Data components, including textual, audio and visual items are further assessed to determine existing relationships between the four elements. Overall research findings are assessed to produce a realistic picture of the moral implications of animal industry ideology and propaganda, in view of current trends in industry growth.

Keywords: Animal Industries, Speciesism, Egocentrism, Anthropocentrism, Moral

Research Method: Qualitative

A Liminal Landscape: Point Puer and the Archaeology of Nineteenth Century Juvenile Convictism

Caitlin D'Gluyas

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts & Social Sciences

Oral Presentation

Criminal juveniles made up a significant portion of the convict population that were transported to Australia from Britain and were often treated separately from adults. Yet, due to poorly implemented and variable methods for identifying and managing young convicts, colonial practices of their treatment and the convicts' own experiences are difficult to interpret from the available archaeological record. The concept of 'liminality' represents a rite of passage, where a process of transformation occurs. The application of liminality to juvenile convictism assists in unravelling the reasons why their separate treatment occurred and the ways in which the places of their separate treatment were different from adult equivalents. This presentation therefore explores the liminal landscape archaeology of Point Puer, a convict reformatory that operated between 1834 and 1849 for criminal boys. The research integrates archaeological and documentary sources to consider how the separation, transformation and reintegration of juvenile convicts occurred within colonial Australia and why this process was an essential part of British colonisation. It is argued here that the archaeology of Point Puer embodies liminality and nineteenth century ideologies of juvenile reform but was also marred by haphazard colonial decision-making and limited resources.

Keywords: landscape archaeology; liminality; youth; Australian history

Research Method: Qualitative

Session Three – Cereal

The secret life of cereal killers and how we can stop them in their tracks

Toni Petronaitis, Clayton Forknall, Steven Simpfendorfer,
Richard Flavel and David Backhouse

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental and Rural Science

Oral Presentation

Yield loss to stubble-borne cereal diseases are increasing, collectively costing hundreds of millions of dollars damage to the Australian wheat industry alone. The fungal pathogens that cause stubble-borne diseases are capable of post-harvest (saprophytic) colonisation of cereal stubble, which may increase disease inoculum when cereal stubble is retained. The saprophytic colonisation of different cereal stubble (two bread wheat, two barley, one durum wheat and one oat) by three important cereal pathogens (*Fusarium pseudograminearum*, *Bipolaris sorokiniana* and *Pyrenophora tritici-repentis*) were compared under a range of moisture conditions. Sterile cereal stubble was inoculated with a single pathogen culture and placed under constant humidity conditions (90, 92.5, 95, 97.5 and <99.9% relative humidity, or RH) for 7 days at 25 °C. Cereal stubble was cultured to determine the amount of inoculum produced (%) and the maximum length colonised (cm) after 7 days. The moisture conditions required for growth in all cereal stubbles was lower for *F. pseudograminearum* (92.5% RH) compared to *B. sorokiniana* and *P. tritici-repentis* (both 97.5% RH). The maximum colonisation and total inoculum produced by *F. pseudograminearum* was also higher than for *B. sorokiniana* and *P. tritici-repentis*, suggesting *F. pseudograminearum* has higher saprophytic fitness of the three pathogens. Field experiments at Narrabri and Breeza in NSW examined whether reducing harvest-height of a cereal crop infected with *F. pseudograminearum* can limit this post-harvest pathogen colonisation. Pathogen survival was assessed within standing cereal stubble at harvest in 2019, and 6-months and 12-months post-harvest. *F. pseudograminearum* was recovered higher within stems in tall and medium harvest-height treatments at 6-months and 12-months post-harvest compared to harvest levels in 2019. Shortening cereal harvest-heights could limit this inoculum production and should be considered as a new disease management strategy to improve stubble-borne disease management.

Keywords: Disease, Epidemiology, Post-Harvest, Inoculum, Wheat, Barley

Research Method: Quantitative

Accelerating canola breeding by multivariate genetic evaluation and indirect selection for the Australian canola industry

Kianoush Nikoumanesh, Li Li, Wallace Cowling and Harsh Raman

Doctorate

Animal Genetics and Breeding Unit (AGBU)

Oral Presentation

Although the canola industry in Australia is relatively new, but with an export value of almost 1 billion USD per year resulted from a constant global demand, canola plays a key role for the Australian agriculture. On the other hand, with a limited genetic diversity in canola's germplasm, Australia faces new challenges in the 21st century, exacerbated by adverse climatic conditions. Several approaches developed in animal breeding, such as multivariate genetic evaluation, can be very important for sustainable canola breeding. Innovative plant breeding strategies are required to accelerate the genetic improvement for this industry, while maintaining genetic diversity for long term gains. In my PhD, I will address these issues through the following research: 1) To apply the animal breeding model to multivariate genetic analysis in canola. With the accumulation of more and more phenotypic data (multiple cycles, sites and traits), it is important to use all data in the genetic evaluation to increase the accuracy of estimated breeding values; 2) To explore the potential of early indirect selection to reduce the breeding interval. I am going to conduct field and glasshouse experiments that evaluate early vigour by measuring root and shoot growth in the glasshouse and assess the genetic correlation with field-based traits such as early vigour and grain yield; 3) To implement genomic selection (GS) to accelerate the rate of genetic gain in canola. I will explore the potential applications of SNP markers in canola breeding using methods like genome-wide association studies (GWAS), genomic best linear unbiased prediction (GBLUP) and single-step GBLUP, which combines pedigree and genomic relationship information. The outcome of my PhD is going to help improve the efficiency of canola breeding programs. In other words, the Australian canola industry can benefit from new elite cultivars in a faster and a more cost-effective way.

Keywords: Canola, Plant Breeding, Animal Breeding Model

Research Method: Quantitative

Factors influencing farmers' compliance with agri-food safety regulations in Kenya

Emmanuel Bunei, Bernice Kotey, Elaine Barclay and Alistair Harkness

Doctorate

Faculty of Science, Agriculture, Business and Law

UNE Business School

Oral Presentation

This paper presents the findings of a study that examined the factors that influence farmers' compliance decisions concerning agri-food safety laws in Kenya. A total of 160 farmers in Uasin Gishu County in Kenya were surveyed using semi-structured interviews. Twelve variables were used to test the associations between farmer demographics, instrumental and normative factors as independent variables on agri-food safety regulatory compliance. Regression analysis revealed that deterrence factors, farmer training and extension services, and legitimacy factors were significantly related to farmers' compliance with agri-food safety regulations. These findings suggest that regulators should not only focus on enforcing and tightening regulations but also improve the provision of training and information on agri-food safety regulations for farmers. More effort should be directed to making laws simpler, clearer, relevant and appropriate to farmers.

Keywords: Farmers, Food Safety, Agri-Food Safety Laws, Compliance, Kenya

Research Method: Quantative

Hydrogeomorphic character = landscape heterogeneity… but do the fish care?!

Munique Reid, Cara Miller, Michael Reid and Ross Thompson

Post-doctorate

Faculty of Science, Business and Law

School of Science and Technology

Oral Presentation

It is challenging to determine the combined influence of hydrology and geomorphology on fish community dynamics, particularly when considering their interaction at multiple spatial and temporal scales. Several hydrogeomorphic variables representing two spatial (10s m to 10s km) and two temporal (inter-annual to decadal) scales have been identified in previous work by the authors as contributing to spatio-temporal heterogeneity of the Upper Mississippi River System (UMRS) floodplain. This study aims to test if these same variables explain variation in fish community structure among eighteen backwater and island lake habitats representing gradients of hydrological connectivity and ecosystem size. Preliminary results suggest that many of the hydrogeomorphic variables contributing to the spatio-temporal heterogeneity of the UMRS are indeed important to fish community structure. Patch scale variables (e.g. depth and shape of entry cross-section) and hydrological variables at the short-term scale (e.g. duration and magnitude of connection) and long-term scale (e.g. duration and period between connections) influences on both species' presence and species assemblage. Landscape scale variables such as position of habitats in the landscape and proximity to neighbouring habitats do not seem to be important to fish community structure despite their contribution to heterogeneity of the landscape.

Keywords: Floodplain Complexity, Scale, Community Structure.

Research Methods: Quantitative

Session Four – Insects

Comparing the Pollination Efficiency of Flies and Bees in Berry Crops

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Oral on Campus

Wild and managed insects are the primary pollinators of ~75% of global food crops. However, our reliance on a small number of managed bee species facing stressors, coupled with increasing reports of wild pollinator declines, has the potential to impact global crop yields. To ensure ongoing, high quality crop production into the future, it is critical to evaluate the capacity for other insects to provide pollination services to crops. After bees, flies are the most common insect group to visit flowers, yet few studies have directly compared their effectiveness to bees. In a pilot study, I determined that the endemic blowfly *Calliphoria stygia* (Diptera: Calliphoridae) is capable of effectively pollinating blackberry to commercial standards (> 8 grams / berry) in one single visit to a flower. Based on these data, I will evaluate the pollination efficiency of two flies, *C. stygia* and *Eristalis tenax* (Diptera: Syrphidae) sold commercially for pollination services in three berry crops in the Coffs Harbour region of New South Wales by assessing how many flower visits are required by flies to produce berries that meet commercial standards. The weight of fly-pollinated berries will be compared to bee-pollinated berries, to determine if flies can potentially be used as supplementary or alternative pollinators of blueberry, blackberry and/or raspberry. I will also discuss the challenges of working with an insect that is plagued with stigmas, and why flies are promising supplementary or alternative pollinators to bees in certain crop systems.

Keywords: Pollination, Flies And Bees

Research Method: Quantitative

Can bees detect the contaminant, PFOS?

Carolyn A Sonter, Romina Rader and Susan C Wilson

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental & Rural Science

Oral Presentation

Bees provide essential pollination services to managed and wild ecosystems but are threatened globally due to multiple stressors, including exposure to contaminants. Perfluorooctane sulfonate (PFOS) is a persistent pollutant sourced from firefighting foams that is found on 1000s of sites worldwide. Perfluorooctane sulfonate accumulates in biota and biomagnifies in food chains. It adversely affects honey bee (*Apis mellifera*) colonies when exposed, and may transfer to honey and present a risk for humans. Honey bees appear to have the capacity to avoid or be attracted to certain organic contaminants (e.g. neonicotinoid pesticides) and this could mediate and possibly enhance exposure. However, their capacity to detect, avoid or be attracted to PFOS is not known. In this study the behaviour of individual bees to PFOS was studied in Y-mazes using unspiked and PFOS spiked sugar syrup, at concentrations of 0.07 and 100, 200 and 300 μg L^{-1}, which include water quality guideline concentrations and concentrations detected in water at contaminated sites. Bee activity was recorded for 10 minutes, specifically observing behaviour including choice, consumption duration and consumption traits pre, during and post drinking. The bees showed PFOS avoidance and a higher incidence of tasting without drinking only at PFOS concentrations of $\geq$ 200 μg L^{-1}. In addition, those bees that accessed the PFOS spiked sugar syrup showed a shorter consumption time, but behaviour prior to and after drinking did not change. This work demonstrates that bees access PFOS contaminated resources with no demonstrated avoidance at concentrations significantly exceeding values currently considered toxic. This has implications for pollinator services and potentially human health in contaminated areas.

Keywords: Honey Bee, Behavioural Study, Perfluorooctane Sulfonate

Research Method: Mixed Methods

Do pasture types influence the reproductive capabilities of temperate dung beetles?

Thomas Heddle, Nigel Andrew and Zac Hemmings

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environment and Rural Science

Oral Presentation

Australia has a wide variety of pasture types and the subsequent dung as a result of grazing of the 22 million cattle varies with season, time of year and diet subsities. Adult dung beetles provision food for their offpsring in the form of balls of dung, known as brood balls. Dung acquired from irrigated pastures has been shown to be of greater benefit to dung beetles compared to grain-based diets. However, little research has been conducted comparing pasture types and the influence on dung beetle reproduction. Here, we compared three pasture types (native improved, rye/clover & forage oats) and the influence on the reproduction of four common and important temperate dung beetles. Specifically, we ask 1) if pasture type influence the number of broods produced, 2) does the size (weight and volume) of broods vary between pasture types, 3) does the organic matter & energy content of broods vary between pasture types, 4) does the moisture content of broods vary between pasture types and 5) does the amount of dung buried vary between the pasture types. At the time of writing experiments were still underway. From preliminary experiments and dung analysis, we expect to see differences between pasture types due to the difference in energy and carbon content of dung. We expect to see the improved pasture to be of greater benefit for dung beetle reproduction due to a higher energy content (18%), carbon content (43%) and higher pH (7.3). Oat dung (Energy 15%, carbon 36%, pH 6.7) shall be the least beneficial due to its low energy and low carbon content. Potential impacts on reproduction may be due to the higher nitrogen content of rye grass/clover pasture (3.0% vs 2.6 & 2.7% for oat and improved) which has been shown to impact reproduction

Keywords: Improved Pasture, Dung Beetles, Preference, Reproduction

Research Method: Quantitative

The effects of Fluctuating and Constant Temperature on The Life History Traits of The Pea Aphids, Acyrthosiphon pisum

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Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental & Rural Science

Oral Presentation

Organism in natural habitat simply experience diurnal temperature fluctuation rather than constant temperature. However, research is mainly based on mean daily, monthly or annual temperatures to understand the thermal biology of an organism, which overlooks the potential effects of daily temperature fluctuations. Variable environmental condition (e.g. fluctuating temperature) could have tremendous impacts on the insect population, e.g. temperature alteration may directly affect biology on an individuals. This present study demonstrates the impact of constant and fluctuating temperature regimes on the life history triats of Pea aphid (*Acyrthosiphon pisum*). We applied, four constant temperature (19°C, 21°C, 23°C and 24°C), four fluctuating temperature (increased by +0°C, +2°C, +4°C and +5°C from field-recorded, diurnally fluctuating base temperatures) and a control temperature of 25°C to understand the demography of Pea aphid. We made life tables for Pea aphid by using these temperature regimes. Aphids exposed to base + 0°C temperature have the highest rate of population growth than the other treatment. Nymphal period, adult longevity, fecundity, mean generation time, population doubling time and life expectancy were increased in fluctuating temperature than constant temperature. As aphids can respond significantly to different temperature regimes, we cannot ignore diurnal temperature variation and this should be incorporated in our current research arena.

Keywords: *Acyrthosiphon Pisum*, Development, Fecundity, Life table, Survival

Research Methods: Quantitative

Abstracts by Streams and Sessions

STREAM TWO

Session Five – Law and Pharmacy
Session Six – Health, Arts and Social Sciences and Around the World
Session Seven – Mixed bag and Business
Session Eight – Health

Session Five – Law

Assessing Australian agricultural sustainability assurance schemes for legitimacy and effectiveness

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School of Law

Oral Presentation

There is an urgent need to address the environmental sustainability of Australian agriculture, to safeguard future food security, protect natural assets, maintain export income, and fulfil Australia's obligations under international agreements. Sustainability assurance schemes, including certification, are increasingly prominent. They are private governance systems that make use of markets to promote environmentally and socially beneficial practices. Several schemes operate in the Australian agricultural sector. They typically create standards for sustainable agriculture, and assess and enforce farmers' compliance with the standards. The most widespread is organic certification, but others have become established, including in the cotton, sugar, dairy, beef, wool and wine industries. Sustainability assurance schemes potentially provide consumers, retailers and exporters with verifiable evidence of sustainable agricultural practices. However, schemes need to establish and maintain legitimacy to be effective. The ways in which schemes are governed, make decisions, prepare standards, carry out assessments and communicate with their stakeholders and the wider community can affect their perceived legitimacy. Failure in any of these areas can lead to accusations of greenwashing, which can impact negatively other schemes, including reputable ones. This paper presents a framework for the analysis of the legitimacy of agricultural sustainability assurance schemes in Australia. The analytical methodology aims to enhance acceptance and awareness of sustainability assurance by producers, consumers and retailers. Drawing on the literature on private governance legitimacy and its broad categories of input, procedural and output legitimacy the framework establishes a set of criteria and indicators to assess schemes operating within Australian agriculture. Some results from interviews and a desktop review are presented as examples.

Keywords: Agriculture Assurance Sustainability Certification Legitimacy

Research Method: Mixed methods

The teaching of Elder Law – A Practical Approach for Students and Multi-Disciplinary Practitioners'

Susan Margaret Field

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School of Law

Oral Presentation

As a PhD.I candidate my presentation will take an innovative approach. I am developing a financially viable product for an industry. My product is the development of a comprehensive model for the teaching of Elder Law, not just to law students (as is currently the case) but to a multitude of stakeholders not only within the confines of tertiary institutions but also to multi-disciplinary professionals and the wider community. My industry is the School of Law at UNE. The presentation that I will give canvases the basic principles underlying Elder Law and they are the four essential issues facing older people: -

- Where am I going to live?
- Who am I going to live with?
- What am I going to live on? And
- Who could make decisions for me if I were unwilling or unable to make them myself?

However, what will become apparent within my presentation is the fact that these questions are not generally asked either by older individuals, or their professional advisors, until it is too late. My hypothesis is that the reason that these questions are not asked is because of the paucity of knowledge amongst professionals and the community about the legal issues that impinge on the lives of older people and therefore without this knowledge the relevant questions are not asked. My presentation will address these issues and highlight the importance of my research project as the means of filling the current gaps in the education and training of students, professionals and the community.

Keywords: Elder Law, Education, Multi-Disciplinary

Research Method: Mixed Mode

Session Five – Pharmacy

A qualitative study exploring barriers to and facilitators of medication adherence in Ethiopia: hospital pharmacists' perspectives

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Doctorate

Faculty of Medicaine and Health

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Live Online Presentation from Addis Ababa, Ethiopia

Introduction. Ethiopian pharmacists are involved in providing direct patient care services that assist patients with medication adherence. However, no study has explicitly explored the hospital pharmacists' perspectives on patient's medication adherence. Aims**.** To explore hospital pharmacists' insights into barriers to and facilitators of medication adherence in Ethiopia. Methods. Semi-structured face-to-face interviews with hospital pharmacists, actively involved in direct patient care, were conducted via ZOOM/SKYPE. All interviews were audiotaped, transcribed verbatim, translated into English and analysed using thematic analysis to identify main themes and subthemes. Results. A total of 14, predominantly male (12), participants participated in the study. Participants discussed five main topics including: Medication adherence measurement and definition; perceived roles of pharmacists in medication adherence; enablers of medication adherence; barriers to medication adherence; and ways forward. Five facilitators were identified including pharmacist education, clinical pharmacy services, physical structure, source of medication information, government initiatives to reduce the financial burden, whilst 6 barriers emerged including medication adherent measurement, inadequate medication counselling, patients' socioeconomic and health behaviour, relational coordination among healthcare providers, medical condition and its treatment, and national medication supply system. Patients' socioeconomic and health behaviour involved economical difficulty, medication knowledge, patient's preference of dosage forms. Discussion**.** Pharmacists described they could play their part to improve medication adherence through directly interacting with patients including medication counselling, and via collaborative work. And they identified the new pharmacy education program, the launch of clinical pharmacy service, and instituting a drug information centre that could help to improve medication adherence. Despite this, pharmacists felt that there have been impediments including inadequate medication counselling. However, preference for dosage forms has not been reported previously and should be considered along with medication complexity and medication knowledge when considering medication adherence.

Keywords: Medication Adherence, Barriers, Facilitators, Qualitative, Pharmacist, Ethiopia

Research Method: Qualitative

Involvement and practice of community pharmacists in maternal and child health services: A systematic review

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Doctorate

Faculty of Medicine and Health

School of Health

Live Online Presentation from Gondar, Ethiopia

Introduction**:** Community pharmacists are pivotal in the provision of Maternal and Child Health (MCH) services, yet level of involvement, practice and barriers and facilitators in providing these services is largely unknown. Objective**:** The objective of this review is to summarize available evidence on the involvement and practice of community pharmacists in MCH services. Methods**:** Seven electronic databases were searched for articles published in English since inception of the database to November 30, 2019. Papers were included if they assessed involvement and practices of community pharmacists in maternal and child health services. Full articles identified and included for the final analysis were assessed for quality using the Mixed Method Appraisal Tool (MMAT) (2018) by all authors and data were extracted by one author and cross-checked by all authors. Result**:** A total of 2830 articles were identified. Following the assessment against the inclusion criteria, 14 full text articles were included for the final analysis. In eight studies, community pharmacists were reported to be involved in maternal health services, in terms of providing breastfeeding guidance, counselling about the benefit of vitamins during pregnancy, provision of emergency contraception advice, and responding to illness symptoms such as back pain. In three studies, community pharmacists were providing advice in managing acute diarrhea in children. Medication use services and counselling about medication for children were also reported in three studies. Perceived consumer attitudes, problem with insurance coverage, lack of time among pharmacists and lack of incentives for the services provided were reported by pharmacists as the main barriers to service provision. Conclusion**:** Community pharmacists were involved in various MCH services in community pharmacy settings. However, the extent of practices was not as per the joint International Pharmaceutical Federation (FIP)/World Health Organization (WHO) guidelines on good pharmacy practice in some services such as management of diarrhea.

Keywords*:* Community Pharmacist, Community Pharmacy, Public Health, Maternal Health, Child Health, Health Services

Research Method: Mixed Methods

Potentially inappropriate Prescribing for Adults with Diabetes Mellitus: A Scoping Review

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Doctorate

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Live Online Presentation from Gondar, Ethiopia

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Background**:** Inappropriate prescribing is a significant health care management concern and a potential threat to patient safety. People with diabetes mellitus (DM) are at high risk for potentially inappropriate prescribing (PIP) as they often experience multiple comorbidity and polypharmacy. Objective**:** The aim of this scoping review was to explore and map studies conducted on PIP among people with DM and identify gaps in the study of PIP among this group of people. Methods**:** PIP was the concept of interest for this scoping review. Studies that reported any type of PIP (contraindication, omission, dosing problem, drug-drug interaction (DDI), inappropriate selection, unnecessary drug therapy) were included. Studies conducted on people aged <18 years of age or with the diagnosis of gestational DM or prediabetes were excluded. No restrictions to language, study design, publication status, geographic area, or clinical setting were applied in selecting the studies. Articles were systematically searched from 11 databases. Results**:** Among the 190 studies included in this review, the majority (64.0%) were conducted in high income countries**.** Clinical practice guidelines were the most frequently used standard references for identifying PIP. None of the studies used an explicit tool specifically designed to identify PIP among people with DM. Nearly half (47.4%) of the studies reported contraindications. The most frequently reported PIP in high income countries was contraindication while in low- and middle-income countries prescribing omission was the most common. Software and websites were mostly used for identifying DDIs. The specific events and conditions that were considered as inappropriate were not consistent across the studies. Conclusion**:** Contraindications, prescribing omissions and dosing problems were the most commonly reported PIPs. Prescribers should carefully consider the individual prescribing recommendations of a medication. Future studies focusing on the development of explicit tools to identify PIP for people with DM are needed.

Keywords**:** Inappropriate Prescribing, Diabetes Mellitus, Scoping Review

Research Method: Quantitative

Session Six – Health, Arts and Social Sciences

Bad Press: Populism and the Newspapers of fin-de-siècle Vienna

Chris O'Neill

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Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts & Social Sciences

Oral Presentation

Despite the extensive literature on the culture and politics of fin-de-siècle Vienna and the interest it continues to generate, scholars know little about Viennese newspapers of the period. Wide-ranging surveys of Viennese newspapers (such as those conducted by the Institute for Comparative Media and Communication Studies in Vienna) give practical biographical details of fin-de-siècle Austrian print media. Thus, my project will expand on the scholarship by focusing on one newspaper to demonstrate the presence of populism as a means to lay claim to the loyalty of the Viennese Catholic artisan and working classes. The Catholic-conservative Reichspost (affiliated with the Christian Social Party) flourished in an era of post-Liberal mass politics, playing a considerable role in legitimising bringing to power Christian Social politicians in Vienna at the turn of the century. By applying critical discourse analysis to the text within the Reichspost, including an in-depth analysis of the myth-creation surrounding Karl Lueger, I highlight the newspaper's populist appeal to 'the people.' I, therefore, intend to show that Christian Social mass political print media was the site of what is often considered a recent phenomenon: populism. This study provides a multi-disciplinary contribution to the body of research on Viennese and Austrian history and the history of ideas and press history. Due to unfortunate travel restrictions, I have been unable to consult archives and academics in Vienna – both of which I scheduled for September 2020. Thankfully, the Austrian National Library's online database 'Austrian Newspapers Online' allows me unfettered access to all the archives' newspapers. Zoom has facilitated communication with Austrian academics instead of a research trip.

Keywords: Vienna, Newspapers, Populism, Mass Politics, Christian Socialism, Karl Lueger

Research Method: Qualitative

To the Ends of the Anxious Earth: Eco-Anxiety, Ecological Thought and the Fabulative Turn in Nordic Noir TV

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Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts and Scoial Sciences

Oral Presentation

Situated at the intersection of media studies, environmental humanities and folklore studies, my doctoral research project examines the transnationally influential genre of Nordic Noir detective crime drama through an eco-critical lens. It investigates the creep of supernatural, gothic, horror and folkloric themes into the genre and posits that a richly-variegated form of cultural expression, described as EcoNoir, has emerged as a conduit through which ecological thought might be parsed. In keeping with the conference theme, this presentation will also comment on the role of SVOD platforms during lock-down as the primary mediators of screen fiction, and how the contemporary concerns that are ordinarily reflected in EcoNoir have been heightened by the uncertainties associated with the ongoing global pandemic. Although the cognitive and affective functions of EcoNoir might serve to *temporarily* assuage anxiety, its ecological themes nevertheless remind viewers that when the curtain finally falls on the pandemic, the nebulous spectre of climate change is waiting in the wings to take centre stage once more.

Keywords: Television, Crime Drama, SVOD, Anxiety, Eco-Criticism, Nordic Noir

Research Method: Mixed Methods

Session Six – Around the World

Understanding Agency Within Context: the case of emerging livestock-based institutions in Ethiopia

Wole Kinati Wakjira, Elizabeth Temple, Derek Baker,
Dina Najjar and Reta Hailu

Doctorate

Faculty of Medicine and Health

School of Psychology /

Live Online Presentation from Addis Ababa, Ethiopia

The role of agency in all dimensions of empowerment, whether individual or collective, is long been at the centre of the discourse in the empowerment literature. Although highly context dependent, studies on agency are less contextualized. Based on available dataset collected through mixed methods, this study generated in-depth understandings of what constitutes agency, effective participation, and contextual factors related to livestock-based institutions across three locations in Ethiopia. Although qualitative assessments suggest that the conceptualizing aspects differ along gender lines, we conclude that the ability to make effective participation in the breeding cooperative is conceptualized based on four main dimensions: the ability to develop trust with breeding coop leadership, share work burden from domestic responsibilities, have access to information, and be able to fully function as a 'farmer'. Nevertheless, regional residency, used as a proxy to the normative cultural differences between study sites in the logistic regression, is an important variable. Moreover, agency enabling resources such as family size, land holding, sheep flock size, number of women in the leadership committee, along with distance to extension services variables are associated with the ability to make effective participation in the breeding cooperatives in Ethiopia. It appears that cooperative members are aware of the influence of normative culture but lack the power to challenge it, which remains an important shortcoming to be addressed. If supported properly and used as a means, the breeding cooperative itself could potentially serve to generate its members such power.

Keywords: Agency, Participation, Sheep Breeding, Cooperatives, Ethiopia

Research Method: Mixed Methods

Local Government and The Quality of Company Environmental Information Disclosure in China – Economic and Political influences

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Live Online Presentation from Hangzhou, China

Abstract: Different from previous studies which predominantly focus on the regulatory enforcement from the Chinese central government on Environmental information Disclosure (EID) quality, this paper pays specific attention to the role of local/provincial governments and empirically examines how the underlying economic and political factors associated with local government in China has influenced the quality of EID. Using 234 Chinese heavily polluting companies listed on the Shanghai and Shenzhen Stock Exchanges during 2013–2015 as the research sample, this study evidences that local/provincial prioritisation of economic development and political geographical connectedness of local government with the central government collectively influence local/provincial governments' environmental oversight of corporate EID. In addition, local prioritisation of economic development has a stronger influence on EID quality than the central-local political connection levels, implying that the economic factor is still the main determinant influencing local/provincial governments' attitudes and behaviour towards sustainable development in China. The results suggest that the central government needs to provide more financial assistance to relatively poorer local/provincial governments to help them overcome fiscal constraints and become fully resourced for environmental improvement.

Keywords: Local Governments, China, Institutional Theory, Environmental Information Disclosure

Research Method: Quantitative

Community-Based Indigenous Poultry Development Program Key to Enhancing Rural Livelihoods in Zambia

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Doctorate

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Oral Presentation

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Agriculture is the primary livelihood source for most rural communities in Sub-Saharan Africa (SSA). Over 80% of small scale farmers (SSF) keep small livestock, including indigenous poultry or indigenous chickens (IC) *(Gallus domesticus),* for their household incomes, food and nutritional security and livelihood. SSF are the primary custodians of essential indigenous animal genetic resources (AnGRs) in the region. Women own nearly 70% of the IC, leading to socio-economic empowerment and ownership of crucial livelihood assets. IC offer SSF more significant opportunities for socio-economic gains than commercial chicken lines. The price for IC is twice that of broilers, with many consumers preferring IC to broilers based on health and taste attributes. However, in the past decades, significant erosion of indigenous AnGRs has been observed. Among the avian species, chicken varieties are in the most danger, with over 62% of chicken strains being of unknown status, 33% at risk and 3.4% extinct (FAO, 2019). If not mitigated, these losses may negatively impact rural communities in Zambia and many parts of SSA who depend on them. Therefore, the community-based indigenous poultry development program (CBIPDP), an innovation research project whose main objective is to use researcher-community-stakeholder engagements in identifying challenges and designing sustainable solutions on the loss of indigenous poultry – AnGRs and the low social-economic gains experienced by SSF in Zambia. A purposive and cluster sampling strategy and an online Qualtrics survey will collect data from 900 rural farmer households in Agro-ecological Region II in Zambia. The data will be analysed using SPSS and R-studio. The research method and plan were modified due to COVID 19 experienced in 2020/2021. The CBIPDP interventions are expected to contribute significantly to the sustainable use and conservation of IC AnGRs and improved rural livelihoods among rural communities in Zambia.

Keywords: Indigenous-Poultry, Animal Genetic Resource, Small-Scale Farmer, Livelihood, Rural Community

Research Method: Quantitative

Session Seven – Mixed bag

But I don't have a widget?
Beginning legal and social systems research

Karen William

Masters by Course Work

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School of Law School

Oral Presentation

I am at the beginning of my PhD.I journey. I was attracted to the structure offered, and the overall pragmatic approach. However, I don't bring a fully formed idea (widget) I can drop into one industry sector, test it, then reveal the results. I am beginning my literature research by reading around the edges of a 3 way intersection of the following systems: acute hospital care, aged care and guardianship. This review occurs through a legal and human rights lens. Although there are large numbers of people in our health system who are "older", this 3 way intersection remains hidden to most. This is also despite a recent Royal Commission into Aged Care Quality and Safety (Royal Commission). An approach to this 3 way intersection, with widgets such as road signs, speed humps, traffic signals and a set of rules for the road would be useful for health workers, lawyers, advocates, guardians, Tribunal members, family and friends and older people themselves. The "space" comprising this intersection involves numerous professional disciplines, care systems financed by both state (including territory) and federal governments, older people and their friends and families often in a health and social crisis. The numerous and relevant findings by the Royal Commission include:

- most people prefer to stay at home and not enter residential aged care;
- lack of integration or clarity between healthcare and aged care; and,
- market failure in provision of aged care.

Whilst I work my way through my PhD.I, hopefully concurrent community conversations shine a brighter light on this 3-way intersection, making it more obvious as to the type of "widget" required to assist those professionals guiding older people, their family members and supporters. I look forward to this challenge and being graciously assisted by my supervisors and peers.

Keywords: Aged Care, Healthcare, Legal

Research Method: Qualitative

Session Seven – Business

“What leads to Eureka! moments and what can innovation practitioners do to reliably create these?”

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Oral Presentation

The proposed research sets out to discover what leads to ‘Eureka!’ moments of innovation. Purported to have been exclaimed by Archimedes, as he ran naked through the streets of Syracuse (after it occurred to him that the water displaced by an object in a bathtub could be used to measure its volume and, indirectly, density) (Perkins, 2001), the term has come to represent the sudden, unexpected realisation of the solution to a problem and similar ‘flashes of insight’ have appeared in the biographies of inventors and innovators across the centuries. The suddenness and certainty of these moments of brilliance make them seem as mysterious as a rabbit conjured from a hat, but the emergence of neuroscience, along with its ability to measure brain activity using functional magnetic resonance imaging (fMRI) and electroencephalogram (EEG) has made it possible to elicit and study these experiences. However, these laboratory studies have not translated easily to practice and are not meaningfully applied by innovation practitioners. The proposed research will evaluate the development of insights using a multi-disciplinary innovation methodology developed by Crazy Might Work, called Disruptive^{by}Design® (‘DBD’). The methodology incorporates a variety of approaches thought to facilitate innovation, including appreciative inquiry (Cooperrider, 1987), systems thinking (Meadows, 2009), social neuroscience (Rock & Page, 2009), cognitive neuroscience (Cassotti et al., 2016), design thinking (Kelly, 2015) empathy (Herd & Mehta, 2019) and even game design (Despain & Acosta, 2013). The DBD methodology has evolved over a five-year period and been applied to a wide variety of strategic (single-organisation) and systemic (multiple organisation) challenges, ranging from type II diabetes to mental health in the workplace and NSW Health credit the methodology for development of its internationally-acclaimed COVID-19 contact-tracing methodology. This research will seek to establish whether DBD supports the generation of Eureka! Moments and, if so, which elelments do so most reliably.

Keywords: Innovation, Insight, Eureka!

Research Method: Mixed Method

Introducing a Sustainability Framework for all Organisations

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Oral Presentation

Bombarded by discordant and competing sustainability messages, the average organisation struggles to separate the greenwash from the real, and to establish a more wholistic approach to the environment. The Business Sustainability Hierachy has been developed to help organisations choose a doable mix of sustainability options while valuing what organisations do, namely produce the goods and services that people need to live. Further, the Heirarchy also helps organisations already doing the right thing by guiding them to next steps, and eventually to sustainability leadership. The Heirarchy reinforces the need for organisations to firstly get the basics right and then to focus on broader environmental issues and the organisation's role in the environment, such as helping to avoid obselesence, product life cycle management and designing out waste and polution.

Keywords: Sustanability, Business Processes, Sustainability Leadership, Sustainability Planning

Research Method: Mixed Methods

Session Eight – Health

A systematic review of measures assessing mental health professionals' perspectives of recovery

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Online Live Presentation from Newcastle NSW

Recovery is internationally recognized as a concept to improve the well-being of consumers. Compared with the numerous measures assessing consumer perspectives of recovery, only a few measures have been developed to assess Mental Health Professionals' (MHPs) perspectives of recovery to inform practice. The present study aims to systematically review the literature to identify existing measures designed to assess MHPs' perspectives of recovery and evaluate their psychometric properties, and the methodological considerations of the design and use of these measures. We searched literature across eight electronic databases: MEDLINE, Web of Science, PsycINFO, PsyArticles, CINAHL, Scopus, EMBASE, and Google scholar. We identified 2631 articles across all databases. Of these, 40 articles met the inclusion criteria, which comprised 14 original measures assessing mental health recovery and 26 articles reassessing the psychometric properties of the original 14 measures. Our results suggested that whilst there are existing measures for assessing MHPs' perspectives of recovery, only a few of these measures met standard evaluation criteria for psychometric properties. Specifically, the validation of the identified measures is still in its infancy. For example, the easiness of applying the measures differs among the studies, and only a few of the measures fully involved consumers in the scale development phase. The implication of the findings for future use and development of recovery measures in mental health practice and research are discussed and recommended.

Keywords: Mental Health Professionals, Recovery; Measures; Psychometric Properties; Systematic Review

Research Method: Quantitative

Parkinson's Disease in Australia: National Online Survey

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Oral Presentation

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In Australia, Parkinson's disease (PD) is the second most common neurological disorder and has no known cure. The prevalence of the disease and the barriers to accessing clinical care are increased in regional and rural Australia compared to metro-areas. These geographic disparities in the management of PD, can vary based on the communication between GPs, neurologists, and carers, and can negatively impact patients' quality of life. Examining the geographical predictors of Parkinson's related quality of life and how objective clinical assessments are delivered in a way that make care accessible to regional and rural Australians could increase health literacy, engagement of underreported lived regional experiences, quality of life, and potential to improve disease progression monitoring. This presentation focuses on the impact of in-person data collection restrictions on the originally planned project and how this led to the creation of a new online study which will be the first to provide quantitative data on the differences between rural, regional, and metropolitan Parkinson's patients across Australia.

Keywords: Parkinson's, Survey, Online

Research Method: Mixed method

Group A and G Streptococcal antigens induces an autoimmune mediated carditis and neurobehavioral changes

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Oral Presentation

Background: Group A streptococcal (GAS) infection is associated with a spectrum of autoimmune diseases including Acute Rheumatic Fever/Rheumatic Heart Disease (ARF/RHD) and neurobehavioral disorders. Cross-reactivity of anti-GAS antibodies with host tissue proteins followed by the infiltration of circulating T-cells into heart and brain initiate these complications. Since *Streptococcus dysgalactiae subspecies equisimilis or* group G streptococci (GGS), also express similar antigens to GAS and the throat carriage of GAS is low in some ARF/RHD endemic regions, we hypothesised that streptococci other than GAS can also cause both ARF/RHD and neurobehavioral disorders. Methods: Electrocardiography, behavioural assessments, histology, enzyme-linked immunosorbent assay (ELISA) and western blot analysis were performed on Lewis rats following injection with GAS and GGS M proteins. Results: Lewis rats exposed to GAS and GGS M antigens demonstrated functional and behavioural defects and developed myocarditis and valvulitis along with impairment in motor symptoms and obsessive compulsive behaviour. Histological, immunological, and functional changes in the hearts of rats exposed to GAS and GGS are indistinguishable to patients with ARF/RHD. Furthermore, autoantibodies against GAS and GGS antigens reacted with cardiac myosin, collagen, tropomycin, laminin, lysoganglioside, dopamine 1, dopamine 2 receptors and tubulin. Conclusion: The behavioural, functional, histological and immunological changes in the hearts and brains of rats exposed to GAS and GGS antigens were comparable with the human disease. Additionally, our results demonstrate that M protein of the GGS can also induce autoimmune mediated carditis and neurobehavioral changes which may have clinical consequences.

Keywords: Autoimmunity, Group A Streptococcus, Rheumatic Heart Disease, Lewis Rats, *Streptococcus dysgalactiae subspecies equisimilis*, Sydenham Chorea

Research Method: Mixed Methods

Abstracts by Streams and Sessions

STREAM THREE

Session Nine – International Impact
Session Ten – Technology is our friend
Session Eleven – Living a Pandemic

Session Nine – International Impact

Selling differentiated Nusa Tenggara Barat (NTB) beef in urban markets in Indonesia

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Live Online Presentation from Yogyakarta City, Indonesia

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Beef consumption in Indonesia is growing due to increasing population and increasing consumer preference for beef. Approximately 15% of total beef consumed in Indonesia is high-quality beef and most of this demand is currently fulfilled by imported beef. Cattle from Nusa Tenggara Barat (NTB) province have the potential to supply high-quality beef for the domestic market. A consumer survey was conducted in two large cities in Java Island, Bandung and Yogyakarta, to understand the preferences and characteristics of consumers that represent the potential domestic market and to assist in the development of a marketing strategy to sell differentiated NTB beef. A total of 850 respondents in the two cities were interviewed to collect information about their purchase habits, food motives, psychographics, beef product attributes preferences, their propensity to buy and their willingness to pay for NTB-differentiated beef. The majority of respondents surveyed in Yogyakarta (96.75%) and in Bandung (88.22%) indicated a preference to buy differentiated NTB beef. In the case of the Bandung market, 54.2% of respondents were willing to pay premiums for NTB-differentiated beef, above the price of domestic standard-quality beef, with an average premium of Rp 16,700 per kg. In the case of the Yogyakarta market, 85.7% of respondents were willing to pay premiums for NTB-differentiated beef, with an average premium of Rp 35,090 per kg. Based on a cluster analysis, the potential target market for NTB-differentiated beef in Bandung and Yogyakarta markets were mostly female, of middle ages, living with more than three people and with children at home. Therefore, the industry could prioritise this segment in their campaigns to sell NTB-differentiated beef. Finally, based on a factor analysis, the beef attributes that influenced the purchase decision in both cities were production method, halal slaughtering, low price, origin, beef certification and quality assurance.

Keywords: Differentiated Beef, Consumer Preferences, Marketing Strategy, Indonesia

Research Method: Quantitative

Developing and Testing of a Payment for Ecosystem Services Innovation for conservation and Livelihood Outcomes in Protected Areas of Nepal

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Oral Presentation

Protected areas (PAs) provide a range of ecosystem services (ES) and play a crucial role in offsetting the impacts associated with the loss of ES elsewhere. Payment for ecosystem services (PES) is a mechanism that is increasingly being applied to maintain or improve ecosystem functions and service provision, and locals' livelihoods. Various strategies have been employed in Nepal, including buffer zone (BZ) programs and wildlife damage compensation payments to gain public support for the conservation of PAs by compensating neighbours for lost access to resources. Previous studies report that current incentive programs for Chitwan National Park (CNP) are insufficient to compensate the local peoples' opportunity cost of conservation. Thus, a comprehensive inventory of the ESs provided by CNP and subsequent design of an appropriate payment mechanism is required to address the unique environmental and socio-political conditions of the region. To date, there have been no studies to support the design of a PES in CNP and its BZ area. More specifically, no innovative research has been carried out to design a PES scheme and test its applicability and future implications prior to its enforcement on a larger scale. This innovation study aims to identify, assess and map the priority ES of CNP using a participative approach to design an innovative and effective payment mechanism to compensate local communities. Semi-structured interviews, focus group discussions, participatory mapping and developmental evaluation will be employed. Knowledge gained in this study will support planning and management of PAs. An integrated investment strategy and institutional mechanism can be developed to incentivise local people and continue positive externalities from the PAs. The simple and easily replicable process, outcomes and approach developed can be applied in any PAs in Nepal and will be instrumental to achieve the dual goal of conservation and local livelihood support.

Keywords: Protected Area, Ecosystem Services, PES

Research Methods**:** Mixed Methods

Undergraduate Accounting Curriculum in Saudi Arabia: Redesigning Content

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Oral Presentation

The purpose of the research was to examine the accounting education curriculum in the Kingdom of Saudi Arabia, to determine the effectiveness of the current curriculum from the perspective of accounting academics and accounting practitioners. In the research identified and evaluated opportunities and barriers for curriculum changes in Accounting Education in Saudi Arabia. In conducting the research, Pinar's model was considered as the key theoretical framework that informed the analysis. The model proposes four key stages that may be considered in the process of curriculum development and implementation: regressive, progressive, analytical and synthetic. These key stages play critical role in reflecting and re-evaluating some of the content and approaches use curriculum development drawing on past, present experiences to inform the future. The research involved the use the qualitative research interviews to collect data from a sample of twenty-five accounting academics and twenty-five accounting practitioners. In the data analysis, relied on a thematic analysis approach, which involved the use of the qualitative data analysis software NVivo 12. The results highlighted that both accounting academics and practitioners held the view that the undergraduate accounting curriculum being used in Saudi Arabia contains significant gaps related to the skills and competencies required in the labour market. This was largely linked to the view that the curriculum is outdated and lacks opportunities for students to develop the necessary professional skills and experiences that are required by employers. Additional concerns for accounting practitioners and accounting academics were the lack of professional accreditation of courses, and the low level of English proficiency among students, which undermines to access work opportunities during and after their studies. Participants agreed that students need a variety of preparation and practical programs and learn the skills required for their career. Participants also recommended that the accounting curriculum be strengthened by adapting the international curriculum, and involvement of ministry and practitioners with academics in order to make well-informed decisions. Description of research method: In the research, a constructivist research paradigm was adopted which is consistent with the qualitative methodology. Data were collected through conducting fifty semi-structed interviews, 25 interviews for each group of accounting academics and accounting practitioners. In terms of data analysis, the researcher used NVivo 12 qualitative analysis software.

Keywords: Accounting Education, Accounting Curriculum, Undergraduate Accounting

Research Method: Qualitative

Causes and effects of Corporate Social Responsibility: An Examination of CSR in Saudi Arabia

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Oral Presentation

Importance of Corporate Social Responsibility (CSR) has been recognised for a long time in both developing and developed economies of the world. More recently two important developments have brought CSR into sharp focus: Widespread agreement on The Global Goals for Sustainable Development (or the SDGs) and emphasis placed by institutional investors on sustainability in through Socially Responsible Investments (SRI). The SDGs have been adopted globally starting in 2015. Saudi Arabia undertook a Voluntary National Review of SDGs in Saudi Arabia in 2018 (SDGs, 2018). The National Review highlights the importance of SDGs and the need to integrate SDGs with the Saudi Vision 2030. This theses aim is to investigate the association between the corporate social responsibility (CSR) and the corporate governance and CEO characteristics, as well as to investigate the relationship between CSR and financial performance and financial risk. The study will empoly the SDGs to measeur CSR as business increasingly recognized the role of SDGs goals in reducing the level of poverty, improve the quality of education, and achieve equal representation for gender and other forms of diversity in corporate board rooms. The study will focus on all the non-financial firms listed at the Saudi Stock Exchange (Tadawul) from 2016 to 2019. The study will employ panel regression analysis to examine the causes and consequences of CSR in Saudia Arabia.

Keywords: Corporate Social Responsibility (CSR), SDGs, Financial Performance, Financial Risk

Research Method: Quantitative

Marriage and Masculinity of British-World Soldiers during the First World War

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Oral Presentation

Abstract: This paper examines a key case-study of a married man's experience of service in the First World War. Between 1914 and 1918, some 1.8 million married men served in the British, Australian and Canadian Armies, of whom many experienced what can be termed a 'competition of ideals' or clash of loyalties, between the expected masculine wartime duty of service to King and Country and the peacetime duty of a married man to his wife and family. The stock-broker Max Shaw enlisted in October 1914, leaving his wife, Amy, and two young sons. Right from the beginning of basic training, Max's military service was a constant mediation between his position as husband and father with his sense of duty to the war-effort. Electing to bring his family with him to Falmouth where he trained - disrupting the period of transition from civilian to soldier - and throughout his wartime letters, Max demonstrated a strong attachment and reliance upon his wife and children and a keen desire to be near them. These attachments were keenly disrupted upon arriving in France in May 1916 where he began writing letters almost daily to his wife. These letters provide insight into how Max outwardly expressed an internal struggle between his role as a soldier and his desire to return home and to his civilian life. Furthermore, complications began to arise with financial and parental matters, with Max attempting to offer assistance to his wife as effectively as he could through writing letters. My research more broadly attempts to redress an imbalance between the growing scholarship of married soldiers in France, Germany, and Austria-Hungary (of which Martha Hanna, Benjamin Ziemann, and among others have been notable), and the relatively little attention given to their British counterparts.

Keywords: Marriage, Letters, WW1

Research Method: Qualitative

Session Ten – Technology is our Friend

DDoS Readiness and Capability

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Live Online Presentation from Brisbane QLD

Historically, cyber security boundaries reflected an organisation's physical limits. Firewalls were placed at connections to the Wide Area Network (WAN) and traffic entering the organisation's domain was assessed for legitimacy before being permitted entry. In the past this was a good protective strategy, but the world is changing. Cyber-attacks such as Distributed Denial of Service (DDoS) do not try to find gaps in security but rather utilise legitimate entry points for illegitimate purposes. Analysing traffic for legitimacy would seem to be a logical approach but, as organisations embrace cloud technologies, organisational entry points become 'clouded'. Added to this complexity is the rapid shift to remote working (fueled by Covid-19) and the ever-increasing number of connected devices external to the organisation. An organisation's security boundary now appears fragmented. Examination of practice and academic literature revealed that DDoS is outpacing internet growth and ever-changing with vandalism, criminal and ideological motivations. At a state level, DDoS becomes an attack method either as a retaliatory or anti-competitive method, although preliminary attacks can expose vulnerabilities that support a more destructive conventional attack. From a defence perspective, the human factor remains the weak link due to proneness for mistakes and oversights and the variety of application methods expressed by various cultures. To address the identified gaps, organisational employees were approached to uncover the DDoS threats and acceptance of educational responsibility perceptions. Website analysis and in-depth interviews with 30 respondents were conducted. Initial exploration of macro themes was then followed by deeper qualitative analysis using NVivo software to identify micro themes of importance with conceptual coherence. Early results confirm a high perception of risk but consider data loss as more concerning. As such, lack of contingency plans as reported by a third of respondents highlights the problem intensity and the need for clarity of intelligence.

Keywords: DDoS, Cyber Security,

Research Method: Mixed Methods

To-do lists vs Infinite Inboxes: Encounters in Personal Electronic Records Management

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School of Science and Technology

Oral Presentation

The field of Personal Information Management (PIM) has been explored extensively, with many studies and several hundreds of papers published – of which almost all relate to PIM in the workplace. Personal Archiving studies the long-term preservation of personal digital possessions, leaving a significant gap to be filled in the study of electronic personal information and document management at home, such as bills, accounts and vehicle documents – Personal Electronic Records Management (PERM). This paper reports on an initial exploratory stage of research conducted during Covid lockdown by means of video-recorded virtual guided-tour interviews in which participants discussed and showed the researcher how they managed their personal information and documents. Participants were recruited via a social media post and interviewed using Facebook Messenger. The findings show many similarities to workplace studies, such as a high level of reliance on email applications to manage information and a tendency to leave all email in the inbox. Methods used for storing PERM outside of email can be laborious and there is considerable unnecessary reversion to paper records. Retrieval of items is hampered by inconsistent PERM and a tendency not to download documents that are provided as links rather than attachments (pull vs push). Additional research is needed to measure the extent of the problem as well model the degree to which various practices impact on a person's overall sense of effective PERM.

Keywords: Personal Information Management (PERM), Personal Information Management PIM), Records, Archiving, Email.

Research Method: Mixed method

New lightweight algorithm based on XOF and genetic algorithms

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School of Science and Technology

Oral Presentation

Small devices like radio frequency identification (RFID) tags, microcontrollers and sensors are widely used and have become an integral part of our daily lives. They represent the development of a new vision of easy-to-use systems that provide high luxury living. They can be found in home automation, health-care applications, and smart-city and -factory technologies. However, while these devices are constrained in terms of memory, power and processing capabilities, they collect, store and process important information. This can have security implications and users should be concerned about this information's privacy. Because there is no standard cryptographic solution that performs well in these low-resource devices, most devices do not provide adequate privacy and security guarantees. Instead, these devices are either built without security in mind or use nonstandard security algorithms that could potentially be broken. Over the last decade, attention in designing new encryption algorithms for constrained devices has significantly risen. These algorithms are called Lightweight cryptography algorithms. "Lightweight" reflects the efficient implementation of the algorithms that work well in these constrained devices. Our proposal is a lightweight cryptographic XOF (extendable-output function) algorithm whose goal is to compete with existing NIST candidates in terms of hardware/software performance while also providing stronger security and/or privacy guarantees. When designing a new lightweight security algorithm, there are two main considerations: the security of the algorithm and its resource requirements. To develop the new algorithm, a sponge construction will be used in conjunction with a new permutation discovered through genetic algorithms. To evaluate the security of the algorithm, differential and linear cryptanalysis attacks will be attempted on the proposed algorithm, and security bounds will be defined. To determine its resource requirements, the algorithm will be implemented in software and modelled in hardware to determine time, memory, and power requirements in both these implementations.

Keywords: Lightweight Cryptography, Extendable-Output Function, Genetic Algorithms

Research Method: Mixed Method

Using Pre-existing Data for Higher Degree Research

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School: Psychology

Oral Presentation

The COVID-19 pandemic has disrupted the processes of higher degree research and altered the progress of many research projects. One of the central disruptions has been the limitations imposed on data collection. Restrictions around travel and face-to-face meetings have made some data collection endeavours difficult or impossible. For students in the midst of their candidatures, having projects cancelled or deferred indefinitely can seem an insurmountable problem: what are research students to do while we wait and see how the research landscape resets? How can we progress our research if we cannot collect data? One option may be to consider accessing pre-existing data to help answer our research questions. There are a multitude of large, ongoing research projects, in Australia and internationally, which allow data access for external researchers. Australian government agencies also collect and store data in a variety of domains, some of which can be made available to researchers. In this talk I will describe some of the data repositories available for social and educational research, focusing mainly on Australian datasets, and explain the procedures and timelines involved in accessing some of them. I will summarize some of the advantages and disadvantages of using pre-existing data in higher degree research, using examples from my own PhD research which has relied heavily on accessing and using pre-existing data to answer developmental research questions in the field of education.

Keywords: Secondary Data; Quantitative Methods; Longitudinal Research

Research Method: Quantitative

Unified Data Store for distributed SDN controllers

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Live Online Presentation from Newcastle NSW

These days we are used to technology. We know we are using technology while we utilize our computers, tablets and smart phones, but we are generally unaware of precisely how such devices are connected. We live life in the network, making phone calls, checking email, making purchases using our credit cards, checking our social media apps etc. In the computer world, a network is a set of computers which utilise communication protocols over digital inter-connections with the goal of exchanging files, sharing resources or enabling electronic communications. Nowadays, the Internet is utilized as a global communication platform for applications, services and devices. The Internet has led to the existence of digital communities, where everything is linked and accessible from anywhere. However, traditional networks suffer from the difficulty and complexity of managing them. It is hard to configure the network based on pre-defined policies and program it to respond to faults and changes, especially when changes are so frequent. Traditional networks which rely on manual configuration are cumbersome and error prone. Thereby, such networks cannot make complete use of the capability of the underlying forwarding devices. Software Defined Networking (SDN) technology is considered as one of the most hopeful solutions for future internets. SDN is characterized by two features: separating control tasks from underlying forwarding devices, which simplifies network management and facilitates network development, and offering programmability for network application development. As a result, SDN offers more efficient configuration, improved performance and higher flexibility in order to accommodate innovative designs. In my talk, I begin by introducing SDN, including its motivation, importance and benefits, illustrating how it differs from traditional networking and presenting the key building blocks of its architecture. After that, we describe the main challenges and research efforts in SDN. In particular, I describe how we will tackle the issue of interoperability and incompatibility between different SDN controller implementations by enabling them to exchange control information, such as topology information and flow entries, to allow full collaboration between different SDN control implementations to achieve the expected benefits that SDN can provide.

Keywords: SDN, Distributed Controller, Control Information

Research Method: Mixed Research

Session Eleven – Living a Pandemic

Commencing a PhD in the Pandemic on Writing Skills for Undergraduate Students in Fiji

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Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts, and Social Sciences

Live Online Presentation from Nadi, Fiji

Fiji is a multilingual, multiracial country situated in the South Pacific. Due to the colonial history of Fiji, English became the lingua franca among the various ethnolinguistic groups in the country. Today, English is the sole medium of instruction at all Fijian tertiary education institutions. This results in a sociocultural problem when students enter universities in Fiji from different high school backgrounds. Some come from urban or semi-urban high schools, while others come from rural high schools, which are located in the interior of the country, including on smaller islands. Depending on the school, students may acquire different levels of English abilities. This raises a flag regarding educational inequalities that exist due to students' inadequate English language skills. The goal of this project is to investigate the nature and extent of educational inequalities or social injustices that are mostly manifested through the academic language testing evaluation. This study will use grounded theory methodologies to gain insight into the underlying educational inequalities and social injustices emanating from lack of epistemic access for those students with adequate English language skills. To this end, this study aims to analyse the level of difference in writing abilities at the beginning of the first year of study and at the end of the first year program of undergraduate students, in order to generate new insights that could inform ongoing efforts towards the amelioration of educational inequalities in Fiji. This study will use the Common European Framework for Reference (CEFR) to evaluate student writing skills. The outcomes of this research will be significant in the field of language testing. The methodological contributions and the unique data set of the study will advance scholarly and social policy conversations on this topic. The findings of this study are expected to inform higher education policies for improving support systems to enhance the smooth transition of multilingual students from high school through university and into the workforce.

Keywords: Fiji, Language Testing, Grounded Theory, Educational Inequalities, Epistemic Access

Research Method: Qualitative

A Tale of Two Pandemics: Fake News and COVID-19

Robert Smith

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Law

Oral Presentation

Whilst fake news has been around since the time of Aesop and, COVID-19 has been around for around 18 months, they joined ranks in 2020. There is no definitive definition of fake news. Fake news includes satire or parody, which has the potential to fool; misleading content; fabricated content; imposter content; fabricated content; false connections between captions and content; false context; and manipulated content. Hate speech is considered to be a subset of fake news. The most urgent response should be to remove fake news from cyberspace. Prosecutions should only be take place when the ramifications of the fake news are serious, and there is intent to deceive. Examples will be provided of disinformation campaigns by non-state actors, disinformation campaigns by state actors, fake online identities, and the growth of online vigilantes. Finally, several fact-checking sites developed by countries in Southeast Asia will be described. The fact-checking sites have been essential during the COVID-19 pandemic: the most ambitious is the Anti-Fake News Centre of Thailand, where over 17 million reports of misinformation were lodged on the Centre's website during its first year of operation. Over 18,000 reports were confirmed as fake news using artificial intelligence (AI) and human screening. In addition. in September 2020, 6,411 reports were being assessed, with 55% related to health, 39% to government policy, 4% to the economy and 2% to disasters. These statistics would only include cases handled by the Centre or referred to them by the police.»

Keywords: Fake News, Hate Speech, Cybercrime, Fact-Checking Sites

Research Method: Qualitative

In-depth interviewing across borders and generations in a COVID-normal world

Ursula De Almeida

Masters by Research

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts & Social Sciences

Live Online Presentation from Melbourne VIC

In-depth interviewing is a method that is probably best done face-to-face but in a COVID-normal world this is not possible. This presentation will explore ways to do interviews, using an indigenous post-colonial methdology, over the phone and online that is sensitive to the interviewee. I have chosen this methodology as this particular study entails working with people that have been oppressed and possibly living with trauma. The thesis "Peacebuilding and the Timorese Diaspora: Opportunity or Opportunism?" is employing autoethnographic and indigenous / post-colonial methodology to gain an understanding of the perceptions and experiences of the diaspora. Interview participants come from different generations, speak different languages and live in different countries and cities. This presentation will discuss how these complexities were navigated remotely. Four key questions were asked of two different cohorts: people from the Timorese diaspora; and Timorese who are studying or have studied in Australia. Interviews were also held with non-Timorese people who worked or conducted research in or about Timor-Leste. It is hoped that the outcomes of this research can contribute to the discussion of indigenous decolonised methodolodgy. This research is using a traditional Timorese song as part of the methodology. Tetum, Timor-Leste's official language, uses metaphors as well as borrowing words from Portuguese, English and Bahasa Indonesia. This song is of a mother calling her children to come home before it gets too late in the day. Many Timorese also see this song as a calling for Timorese living abroad to come back to their motherland. Interview participants from the Timorese diaspora were asked an additional question about the song and whether it held any meaning for them.

Keywords: Interview; Qualitative; Diaspora

Research Method: Qualitative, Mixed Methods

Bare BnB: The impact of COVID-19 on Airbnb and the relationship between hope, trust and risk in a post-pandemic world

Denise Palmer

Doctorate

Faculty of Science, Agriculture, Business and Law

UNE Business School

Oral Presentation

Global economies have been heavily impacted by the spread of COVID-19 and subsequent lock-downs. The travel and tourism industry has suffered significant losses, as countries closed borders and citizens stayed home. Approximately 8 out of 10 hotel rooms in the United States were empty at the height of the pandemic, while sharing economy accommodation giant, Airbnb, shed almost 2,000 staff and slashed forecast revenue by 50%. As countries slowly start to open borders, I suggest the travel and tourism sector design marketing strategies which focus on innovative changes to service delivery, in order to alleviate consumers' perceived risk, strengthen trust in travel brands, and increase the level of consumer hope in booking accommodation while the threat of coronavirus lingers.

Keywords: Sharing Economy, Airbnb, Innovation

Research Method: Quantitative

Abstracts by Streams and Sessions

STREAM FOUR

Session Twelve- It's all a Meat
Session Thirteen – All things Political
Session Fourteen – Education

Session Twelve – It’s all about Meat

Exploring the genetics of robustness in Australian Sheep

D.L.Waters, J.H.J van der Werf, N.Moghaddar and S.A Clark

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental and Rural Science

Oral Presentation

Extensively farmed livestock, such as sheep, receive very little protection from environmental extremes. Despite this challenge, they are expected to perform consistently in order to return an income for the farmer. Animals which perform more consistently over diverse environmental conditions are said to be more robust. Although robustness is not included explicitly in livestock breeding programs at the moment, the selection of animals based on their robustness could become more important in the future, as environments are predicted to become more extreme due to climate change. A common way to model robustness for a given trait is through the use of reaction norms. This produces both an estimate of overall merit (intercept) as well as sensitivity to environmental variation i.e robustness (slope). The purpose of this study was to examine the level of genetic variation in robustness of Australian lambs to different environments using reaction norms and relate this variation to their DNA markers. The growth of 21,187 lambs recorded between 2007 and 2019 across 8 farms throughout southern Australia was used to achieve this. DNA markers consisted of 60,345 single nucleotide polymorphisms (SNPs) measured on each lamb. The reaction norm model detected significant genetic variation in robustness between Australian lambs. To search for regions of the genome that contribute to the genetic control of robustness, a statistical procedure was used to associate DNA markers with levels of robustness estimated from the reaction norm. Two genomic regions were detected that influenced overall performance (intercept), while one region was detected that influenced robustness (slope). The study indicates it should be possible to manage the level of robustness in Australian sheep through selective breeding, and that there are genomic regions associated with robustness.

Keywords: Robustness, Sheep, Genomics

Research Method: Quantitative

Lamb loin shear force is impacted by fatness and carcass size

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Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental and Rural Science,

Oral Presentation

[1] School of Environmental and Rural Science

Shear force (SF) is a measurement commonly used to evaluate meat tenderness, one of the most important eating quality aspects of sheep meat. According to Meat Standards Australia tenderness explains 30% of the variation in eating quality as determined by consumers, but the size of effects for various phenotypic traits on tenderness are still unclear. Phenotypic variance in tenderness could be linked to cold shortening, a condition influenced by carcase weight and subcutaneous fat cover. This study investigated the size of the effect for phenotypic carcass traits that affect cold shortening, and the associated increase in the SF value. It was hypothesised that heavier lambs with a higher level of subcutaneous fat would have a lower risk of cold shortening. Data from 17,991 lambs from the Sheep CRC Information Nucleus flock and Meat and Livestock Australia resource flock collected across eight sites from 2007 to 2019 were analysed. The effect of the covariates subcutaneous fat (CC Fat) and hot standard carcase weight (HCWT) on SF were analysed using linear effects models in R with cohort also included as a fixed effect. Results showed that CC Fat and HCWT had a significant ($p < 0.001$) impact on shear force. When CC Fat increases by 5mm, shear force value decrease around three newtons (N). When HCWT, increases by 5 kg, SF value decreased by 2.5 N. These effects may be a result of increased cold shortening risk associated with a lower level of CC Fat and smaller carcases which supports our hypothesis.

Keywords: Shear Force, Cold Shortening, Tenderness

Research Method: Quantitative

Comparisons of methods in predicting accuracy of breeding value of carcass traits by including weight as covariate to post-analysis of variance for carcass traits

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Doctorate

Faculty of Science, Agriculture, Business and Law

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Oral Presentation

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Ultrasound scanning of eye muscle depth and fat depth on live animals are the two most important carcass traits measured to evaluate the value of carcass in the lamb industry. In the current Australian sheep genetic evaluation (OVIS), weight of the live animals at scanning is fitted as a quadratic component to estimate the breeding value of carcass traits independent of the weight of animals. However, weight is itself a trait and including weight as both trait as well as environmental effect for another trait in the bivariate analysis might not be the best thing to do and could affect the genetic variance and estimated breeding values (EBVs). This study aimed to estimate genetic parameters of carcass traits without fitting weight as a covariate and post-analyse variance for carcass traits afterward based on covariance with weight and compare them. Predictability of resulting EBVs was estimated through forward prediction using 130,337 animals for eye muscle depth and 130,294 animals for fat depth. The current method resulted in a genetic correlation of -0.32, -0.30 for eye muscle and fat depth with weight, and it improved with a slightly less negative estimate of -0.24 and -0.20 after adjustment for weight from post-analysis. Accuracy of EBVs was observed 0.63 and 0.44 with fitting weight as a covariate in eye muscle depth and fat depth respectively. Post-analysis of variance slightly increases the accuracy in eye muscle depth to 0.66 but was non-significant and significantly lower accuracy was observed in fat depth (0.38). Further, bias estimates of EBVs were observed 1.09 and 0.96 with fitting weight as a covariate in eye muscle depth and fat depth respectively and were significantly better than post-analysis of variance (0.88 and 0.87). Post-analysis of variance did not significantly improve the worth of EBVs in predicting future progeny performance.

Keywords: Carcass traits, EBVs, Covariate, Forward Prediction, Accuracy

Research Method: Quantitative

Session Thirteen – All things Political

Was Australian politics of the 1920s and 1930s influenced by politicians who had served in the military during the Great War?

Dale Clancy

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts and Social Sciences

Live Online Presentation from Brisbane QLD

Between 1919 and 1939, seventy-four of the 317 members of Australia's federal parliament had previously served in the military forces during the Great War. While the majority served in parliament on the backbench, twenty-one achieved high political office, with two serving as Prime Minister. Despite constituting roughly a quarter of the members of federal parliament in the inter-war years, little is known about the backgrounds, motivations and contributions to Australian politics and broader society of many of these predominantly 'citizen-soldier-politicians'; particularly those who did not achieve high office. This research will address this gap in our understanding of Australian politics and society in the inter-war years by examining the role and influence that soldiers, sailors and airmen of the Great War who were members of Australia's federal parliament had on Australian political and community life. The research will employ a *prosopographical* approach by asking a series of questions about a defined historical group. A close and detailed reading of the speeches made, and questions asked, in parliament by these 'soldier-politicians', together with an analysis of how their actions were reported in contemporary newspapers, will be undertaken. In doing so, how the soldier-politicians' background and their experience of war influenced their political and community role will be identified. It is anticipated that the research will show that, while some of the soldier-politicians had a major impact on Australian politics and society during the inter-war years through the offices they held, as a group, the impact of the soldier-politicians was limited due to the nature of governmental decision making. The research will broaden our understanding of Australian society during the inter-war years, an underexplored area of the historiography.

Keywords: Federal Politics, Inter-War Years, Soldier-Politicians.

Research Method: Mixed Methods

Facilitating factors of quota women's political empowerment in India and Bangladesh: A comparative perspective

Md Mahbub Alam Prodip

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Humanities, Arts & Social Sciences

Oral Presentation

This comparative case study compares the facilitating factors that promote quota women's political empowerment in local-level politics, in the Gram Panchayat in India and the Union Parishad in Bangladesh. This study reveals that gender quotas do not promote women's political empowerment spontaneously. Rather, women's political empowerment depends on a number of institutional and political factors -gender quotas with provisions, party affiliation and political experience, socio-economic and cultural factors - education and training, labour force participation, religion, and limited patriarchy; and individual-oriented factors - civic duty and political ambitions, honesty, sincerity and good behaviour, and forming coalitions with other members. It also found that these facilitating factors do not have an equal impact on quota women in India and Bangladesh. This study thus offers a new direction for the research on the enablers of quota women's political empowerment examining the determinants of women's representation in local-level politics.

Keywords: Gender quotas, facilitating factors, women's political empowerment, local council, India, Bangladesh.

Research Method: Qualitative

Carl Maria von Weber, Political music, and the rise of German Nationalism

Naomi von Senff

Masters by Research

Faculty of Humanities, Arts, Social Sciences and Education

School of Sociology

Oral Presentation

Proto-nationalism, or the duty to ones ethnic or ancestral origins is demonstrated by Carl Maria von Weber's political music. While better known for his use of medievalism, the intersection of sacred and the profane, and unusual chords; it is von Weber's work in political music, and advocation for a unified German language opera that marks the progression from a collection of nation states into the German Unified Nation in 1871. While it is Wagner whose works contributed to Nazi propaganda, it is von Weber's music that fueled the early stages of German nationalism following Napoleon's defeat in Leipzig. The development parallels Pohlsander's Dornröschen or cultural awakening theory rather than adhering to social protocols and acceptance of unifying symbols.

Keywords: Nationalism, Opera, Germany, History

Research Method: Mixed Methods

Session Fourteen – Education

Systematic Review in the Educational Context

Saidat Adeniji, Penelope Baker and Martin Schmude

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education

School of Education

Oral Presentation

It is no news that the Covid-19 pandemic disrupted many activities including academic and research. One major challenge everyone faced was how to adapt to the global virus and, at the same time, make good progress in our pursuit. In response, this paper presents the innovative strategies employed to continue my research and in particular, a review technique applied during this period – systematic reviews. Some of the steps taken to adapt to the new normal are to: change from traditional thesis to thesis by publication, embark on different types of reviews, re-design the methods of data collection to accommodate Covid-19 safety rules, and attend professional learning seminars and workshops to improve my academic prowess. Specifically, this presentation will consider systematic review in the educational context. Systematic reviews identify, appraise and synthesise available evidence on a subject using a repeatable method to provide answers to a set of formulated questions. This review is not very common in education as it is predominantly utilised in the medical and health sciences. Therefore, we report in this paper how systematic reviews are carried out using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, the most popular checklist for systematic reviews, and how to successfully adapt this guideline to suit educational research. Finally, this paper will contribute to the measures of developing transparency in educational review, enlightening educators about systematic reviews in education and avoiding unnecessary research duplicates.

Keywords: Systematic Review, Education

Research Method: Mixed Methods

Critical organisational factors for successful implementation of e-learning: A case study of selected universities in New South Wales

Harriet Ridolfo

Doctorate

Faculty of Humanities, Arts, Social Sciences and Education«

School of Education

Live Online Presentation from Wagga Wagga NSW

My thesis is an investigation into critical organisational factors for successful e-learning implementation. Located within the constructivist-interpretive paradigm, my research methodology takes a case-study approach, follows a qualitative research process by constructing theory through induction and utilises interviews for data collection. In a recent position, there was strong resistance to a university wide e-learning implementation initiative, despite leadership, support, resources, and dedicated support staff existing. This situation raised several questions for me. If strategy, organisational and technical infrastructure were in place to enable all that e-learning has to offer, why was implementation seemingly proving so difficult? Why was e-learning not more deeply embedded institutionally? Why was designing, developing and delivering of e-learning still seen as "new", "special" or "optional" instead of an integrated part of operations? What lay behind some of the powerful critiques of e-learning? From my examination of the literature on both e-learning implementation and organisational change theories, it became clear that further understanding of stakeholder's perceptions of e-learning implementation, within the university in which they worked would be valuable. Utilising Fullan's (2016) Dynamic Change Model to guide the collection and subsequent coding of interview responses I am currently analysing the findings from interviews from four stakeholder groups: academics, learning designers, local leaders and students.

Keywords: eLearning, e-Learning Implementation, Stakeholders Perceptions, Organisational Change

Research Method: Qualitative

POSTER PRESENTATIONS

Business Incubation in Saudi Arabia: An Empirical Investigation into the Effects of Business Incubators on New Venture Creation.

Ali Alkhathami

Doctorate

Faculty of Science Agricultura, Business and Law

UNE Business School

Poster Presentation

This study aims to explore and investigate business incubation in Saudi Arabia through empirically investigating the effects of business incubators on new venture creation. Business incubation research has received considerable critical attention in the developed countries. However, studying the Saudi context seems to offer new insights. Therefore, this study's primary purpose is to empirically investigate and develop an understanding of the factors affecting the business incubation processes leading to successful venture creation. This research will employ a sequential exploratory strategy to pursue its set objectives, starting with the qualitative in-depth interviews followed by the quantitative approach.

Keywords: Business Incubation, Business Incubators, Business Incubation Process

Research Method: Mixed Method

Exploring Preschool Teacher Perspectives on Implementing Play-Based Learning in Saudi Arabia

Asma Hulayyil Aljohani, Sue Elliott, Margaret Sims and Jo Bird

Doctoral

Faculty of Humanities, Arts, Social Science and Education (HASSE)

School of Education

Poster Presentation

Play is central to children lives as a way to explore their environments, interact with adults and peers, practice agency, and construct understandings. In educational settings, play is defined as significant and valuable for promoting children's learning and development. However, play is a culturally and socially situated concept, which means that every culture may vary in how play is perceived and how to best pedagogically support children's play in learning environments. In recent years, the Saudi Arabian (SA) government has mandated the implementation of Play Based Learning (PBL), a Western approach to learning and development, in preschools. However, the SA social, cultural and religious context can be expected to influence preschool teachers' understandings of this approach, including play and relevant pedagogies. Therefore, in this project I will explore SA preschool teachers' perspectives about play as a way to promote children's learning and development and their perceived pedagogical roles in supporting PBL. Also, I will investigate the key enabling or constraining factors that may impact their implementation of PBL. A qualitative design informed by social constructivism and an indigenous methodology will be employed. A total of 18 early childhood teachers from three different preschools (public, private and charity-based funding) in the city of Madinah, SA will be the study participants. I will employ semi-structured interviews (twice individually), documents (teachers written plans), and focus groups (a minimum of 6 teachers, 2 from each preschool) to generate the data. The collated data will be analyzed with NVivo software. The overall study aim is to enhance understandings of PBL as an introduced Western approach to preschool learning and development in the unique SA socio-cultural context.

Keywords: Play-Based Learning, Western Approach, SA Social, Cultural and Religious Context.

Research Method: Qualitative

Warming with Temperature Oscillations Impacts on the Host-Parasitoid Interaction

Mukta Mala, Cara Miller and Nigel Andrew

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Environmental & Rural Science

Poster Presentation

Rearing insects in constant temperatures has been one of the cornerstones of entomological research over the past few decades, and insects' response to climate change, including interactions among trophic groups, have also been extensively examined using increased constant temperatures. However, the impacts of fluctuating temperature regimes on the host and their parasitoids; and how they interact under these environmental conditions are not well understood. Variable environmental conditions (i.e. fluctuating temperature) could enable host insects and their parasitoids to perform more 'naturally' (as they have a period of recovery) compared to constant temperatures (where they do not have thermal recovery periods) and impact on the host/parasitoid interactions. This study investigated how constant and variable temperatures can affect the interactions between pea aphid, *Acyrthosiphon pisum* and parasitoid, *Aphidius ervi.* The findings of this study demonstrated that insects with more natural thermal regimes could substantially alter their biological responses as compared to constant temperatures. Results also revealed that these variable environmental conditions affect interactions among trophic levels of Arthropod, which has implications for the future research/study assessing insect responses using thermal regimes.

Keywords: Host-Parasitoid Interactions, Pea Aphid, *Aphidius ervi*

Research Method.: Quantitative

A Time Sorting Pitfall Trap for Capturing Dung Beetles

Thomas Heddle, Nigel Andrew and Zac Hemmings

Doctorate

Faculty of Science, Agriculture, Business and Law

Environmental and Rural Sciences/Zoology»

Poster Presentation

Dung beetles (Coleoptera: Scarabaeidae) are important in both natural and modified ecosystems due to their ability to provide a range of ecosystem services through their reliance on a high quality, but scattered and ephemeral resource. As a result of competition for these resources, dung beetles display niche differentiation which is readily apparent in dung beetle communities. Seasonality, diel activity, trophic preferences, dung colonisation times as well as nesting and foraging strategies are all examples of niche partitioning for dung beetles within local species assemblages. The majority of research associated with dung beetle niche partitioning is around spatial and seasonal community variation, with limited diurnal temporal niche partitioning being researched. We developed a new type of pitfall trap that allows for automatic time sorted sampling to investigate the diel activity and abiotic correlation with dung beetle flight. We compare this time sorting pitfall trap (TSPT) to a standard pitfall trap design commonly used to collect and sample dung beetle communities. Specifically, we ask if 1) the prototype will capture dung beetles at different time points, 2) the TSPT captures the species diversity and total abundance at the same equivalence as a standard pitfall trap, 3) whether the height of the TSPT has an effect on the efficiency by comparing a raised pitfall trap to the TSPT and a standard pitfall trap and 4) whether or not the efficiency of trapping is influenced by the time baits are set up in the field under morning and afternoon baiting. Results indicate that the TSPT is an effective method for sampling dung beetles, and the example data shows that it can identify the flight periods for dung beetles. For the morning trappings, dung beetle abundance and diversity was not significantly different between the traps. These results indicate the trap successfully captured dung beetles and can be as efficient as a standard pitfall trap.

Keywords: Diel Activity, Dung Beetles, Niche Partitioning, Time Sorting Pitfall Trap

Research Method: Quantitative

Acid catalyzed-pyrolysis of iota-carrageenan

Wawat Rodiahwati, Trevor Brown and Ben Greatrex

Doctorate

Faculty of Science, Agriculture, Business and Law

School of Science and Technology

Poster

The extraction or production of fine chemicals from seaweed polysaccharides are in early development. This is especially the case for processes that use acid-catalyzed pyrolysis methods. In this study, the fine chemicals produced during the acid-catalyzed pyrolysis of iota-carrageenan, a polysaccharide extracted from red seaweeds, are investigated and characterized. Differential Scanning Calorimetry (DSC) is used to determine the reaction temperatures and enthalpies of iota-carrageenan decomposition with and without sulphuric acid and polyethylene glycol (PEG) and showed that the decomposition activation energies are significantly lowered by acid catalysis in PEG. Acid-catalyzed pyrolysis of iota-carrageenan with different sulphuric acid concentrations (1%, 2%, 3% & 4%) in PEG was then conducted in a purpose-built reaction system, with long horizontal glass tube inside a tube furnace and under vacuum. Gas Chromatography/Mass Spectrometry (GC/MS) analyses of the evolved, volatile products showed that sulphuric acid in PEG significantly increases the yields of levoglucosenone (LGO) and furfural.

Keywords: Iota-Carrageenan, Pyrolysis, Acid Catalyst, LGO, Furfural, DSC

Research Method: Quantitative

KEYNOTE SPEAKERS

SPECIAL PRESENTERS

SPECIAL SESSIONS

KEYNOTE SPEAKERS

Keynote Address – Day 1

In the Pursuit of Education

Professor Brigid Heywood

UNE Vice-Chancellor and CEO

Biography

The University of New England's 14th Vice-Chancellor, Professor Brigid Heywood, joins the University following an academic career spanning several countries. From leadership positions in regional and online universities in the United Kingdom, New Zealand and Australia, Prof. Heywood has successfully driven advances in academic excellence, research performance and engagement through innovation knowledge transfer. Given her proven commitment to education as an instrument for social and economic opportunity, Prof. Heywood is well placed to lead UNE as the University adapts to a changing higher education environment. Prof. Heywood joins UNE from the University of Tasmania, where she was Deputy Vice Chancellor (Research). During her time in this role, UTas's research income lifted above $100 million for the first time, and its success rate with government research funder and support from industry were all improved significantly.

Before joining UTas in 2015, Prof. Heywood was at New Zealand's Massey University, initially as Assistant Vice Chancellor – Research and Enterprise (2011–13), then Assistant Vice Chancellor – Research, Academic and Enterprise (2013–15). In these roles she was responsible for strategic development of the university's research and enterprise agenda, and for academic advancement of teaching and learning, curriculum development, quality assurance and student support. In her native United Kingdom, Prof. Heywood was Pro Vice Chancellor — Research and Enterprise at The Open University (2005-2011) and Pro Vice Chancellor — Research and Enterprise at Keele University (1996–2005).

At The Open University, she was instrumental in broadening the institution's culture from a purely academic focus to a strategic engagement with discovery and applied research. At Keele, Prof. Heywood was also responsible for strategic development of the university's research and innovation agenda, and was portfolio manager of the institution's key research and enterprise units. She joined Keele as the first woman in the UK to hold an established chair (Professor of Inorganic Materials Chemistry), aged 33, and set her foot on the first rung of her executive career as Keele's Head of Department of Chemistry a year later. Her first degree, from Manchester University (UK), was in Biological Sciences; her PhD — an investigation of the basic cellular processes that control biomineralisation — was completed at Liverpool University (UK). At UNE, Prof. Heywood aims to bring her years of experience to bear on expanding UNE's role in servicing its communities, and exploring how the University can improve opportunities for students from all walks of life while supporting them as lifelong learners.

Keynote Address – Day 2

Media for Science Communication.

Sean Murphy[1], David Lamb[2] and Darren Marshall[3]

[1]Landline Reporter, Australian Broadcasting Corporation (ABC)
[2]Chief Scientist in Food Agility
[3]General Manager with Southern Queensland Landscapes

Biography

Sean Murphy has been the Sydney-based Landline reporter since 2002. He's been reporting across newspapers and television since 1979. He originally hails from Rottnest Island in Western Australia and still has a keen interest in rural issues in his home state. Sean's story interests are wide-ranging but he specialises in Australia's commercial fishing and aquaculture industries. In 2013, Sean's report on the management of genetically-modified crops in WA won the International Federation of Agricultural Journalists broadcast award.

David Lamb is a physicist whose research interests include applied optics and precision agriculture. He has worked in precision agriculture for more than 25 years and has led more than 40 industry-funded R&D projects. David established the University of New England's Precision Agriculture Research Group, and the internationally renowned SMART Farm project. He recently completed a national review of telecommunications challenges and opportunities for Australian agriculture. He is a member of the National Positioning Infrastructure Advisory Board and is an advisor on a number of agricultural sector-specific technical innovation groups and communities of interest. David currently serves as the UNE-hosted, Chief Scientist in Food Agility, a $150M+, 10-year Cooperative Research Centre focussed on transforming the agrifood sector using the power of digital. He is also the Australian representative for the International Society for Precision Agriculture. In 2016 he received the McClymont Distinguished Professorship (Research) at UNE in recognition of his ongoing service to agriculture innovation and research leadership.

Darren Marshall is a specialist in engaging people in effective, coordinated pest animal control and landscape scale environmental management. Darren is currently a General Manager with Southern Queensland Landscapes. He is completing a PhD.I, testing different engagement strategies, which use scientific research as a vehicle to motivate landholders to take collective action to address the feral pig issue in Australia. This study is part of a collaboration with the University of New England and Penn State University (USA). Darren has also worked with Inglewood Shire Landcare, (the then) Queensland Department of Natural Resources, the Queensland National Parks and Wildlife Service and the Australian Army. Darren's interests lie in improving environmental management

through working with land managers to tackle issues that can only be addressed at a landscape scale, particularly linking good research with on-ground outcomes.

Session Overview

In this session, ABC News Journalist for Landline, Sean Murphy, will team up with General Manager - Commercial Programs at SQ Landscapes and PhD. Innovation candidate, Darren Marshall and Chief Scientist, Food Agility CRC, Professor David Lamb.

This session will provide a unique insight into the researcher – journalist story telling process, using UNE researcher's Landline produced stories"

SPECIAL PRESENTERS

Special Presenter – Day 1

APR.Intern program

Lisa Farrar

National Program Manager

Lisa is the National Program Manager of the APR.Intern program, taking up the role in March 2020. APR.Intern is a division of AMSI (the Australian Mathematical Sciences Institute), and in January this year she also took on the role of Co-Chief Operating Officer of the institute. Lisa is an experienced senior executive with expertise leading vision and strategy in the higher education, not for profit and government sectors. Her leadership style was informed by twelve years in her early career in the United States, working alongside Silicon Valley tech start-ups; and rounded out by the Senior Executive MBA from Melbourne Business School. She holds a deep belief that positive culture supports strategic success and feels incredibly grateful to be leading Australia's only national PhD internship program - bridging research and industry to unlock innovation. Lisa is a qualified company director and has served on a number of government and not for profit boards. Her focus outside work is supporting her son through year 12, going to Pilates three times a week; attempting to make a spotty running and cycling routine, a habit.

Joining Lisa online and on campus for the Panel discussion will be:

Dr Susan Wilson is Associate Professor in Environmental Pollution at University of New England (UNE), Armidale, NSW. She is an environmental chemist and leads the UNE Pollution Science Research Group. Her research answers questions on the cycling, processing and fate of contaminants in terrestrial systems to provide solutions for management and remediation. She has worked on legacy pollutants as well as emerging concerns including PFAS and microplastics and is an expert on the biogeochemistry of the metalloid antimony. Susan has supervised more than 30 PhD, Masters and Honours students to completion, as well as post-doctoral researchers, and is a strong advocate of training and development of early career researchers. Projects are integrated with industry, governments and community in areas of strategic importance, to place Australia at the forefront of innovation with next generation skills.

Steven Doherty is a PhD student in the School of Environmental and Rural Science. Steven's research focuses on the geochemistry of environmental contaminants sourced from historic mine operations. This background provided an opportunity to undertake a 5-month APR Internship with the NSW Legacy Mines Program in 2020. The internship coincided with COVID-19 restrictions on travel in NSW which necessitated a flexible and dynamic approach to the project from all parties. Steven will discuss his experience during the program and the outcomes achieved.

Andrew Sampaklis from Legacy Mines. Department of Regional NSW Andrew has spent the past 7 years working on the NSW Government's Legacy Mines Program, overseeing the assessment and remediation of abandoned mines across NSW. Originally

studying aquatic sciences at the University of Newcastle, Andrew has worked on site assessment and contaminated site management for the past 10 years. He has over 15 years of experience working in the environmental management and natural resources field

Special Presenter – Day 2

What do investors want? A deep dive into the world of investment in research

Natasha Rawlings[1] and Lou Conway[2]

[1] Investment Manager for Uniseed
[2] Director of the UNE SMART Region Incubator

About Natasha Rawlings:

Natasha is an investment manager with Uniseed. She has led, founded and mentored early and mid-stage tech and science-based start-ups, with a particular focus on creating revenue through sales and marketing. Prior to this, Natasha had a successful career as a marketer holding top management positions at Australian and UK companies. Natasha's previous roles include CEO and Founder of StreetHawk, a mobile relationship management platform, and CEO of Heads Over Heels, an organisation that helps women entrepreneurs with scalable businesses grow.

Natasha is also a Non-Executive Director of three start-ups including Cardihab (digital therapy) and Wildlife Drones (sensor to find tagged wildlife) and holds a Bachelor of Business from the University of Technology, Sydney and is a Graduate of the Australian Institute of Company Directors. Follow Natasha @TashSR and

https://www.linkedin.com/in/natasharawlings/

What you will get: In this session you will learn how to prepare for your first chat with an investor. You get to hear an unfiltered view of what investors look for, and how to pitch your research in a way that will be appealing to investors, not other academics.

About Uniseed: Uniseed is a unique commercialisation fund helping researchers from its partner organisations turn their ideas into products and services. Uniseed is Australia's longest running venture fund, operating at the Universities of Melbourne, Queensland, Sydney & New South Wales, and the CSIRO, with investment capital provided by these organisations. Uniseed invested in 57 start-ups over a broad range of technology sectors and has exited ten investments.

About the UNE SMART Region Incubator: The UNE SRI as it is commonly known, is a university-led incubator to support new and existing startups to grow and scale. By working with founders who may be researchers, alumni or community members to build their business in the New England North West, the UNE SRI is supporting new business development to grow jobs and innovation in our regions.

SPECIAL PRESENTATIONS

Session One- Introduction to SOL:AR

Presenter Name Julie Orr, Peta Scott, Anna Du Chasne and Kerry Gleeson

SOL:AR is designed to create a comprehensive and cohesive approach to HDR training for UNE students. Resources throughout the modules come from Research Services, UNE Library, the Academic Skills Office, and Technology and Digital Services (TDS).

Session Two - Computationally Intensive Research: Computer Vision, Machine Learning and Simulation

Dr Mitchell Welch

Representing the Computational Science Discipline and collaborators

When working with large data sets and complex simulations, the computational requirements of analysis projects can quickly overwhelm the capabilities of the desktop machines and the software they operate. In this presentation we will examine the nature of how data and processing scales across common analysis scenarios and introduce the high-performance computing (HPC) technologies that are used to approach these larger problems. This will be demonstrated through a showcase of research projects form the computational science discipline covering topics including:

- Machine learning and computer vision for automatic weed detection for cropping/grazing systems, sports player positional tracking and detection of animals in camera trap imagery.
- Collecting and managing large datasets for the analysis of Laying Hen Behaviour RFID technologies.
- Large Agent-Based simulation of insect invasions and collective movement patterns.

These projects will provide some insight into the technologies available for large-scale analysis and the training resources needed to master them.

Session Three – Carbon Matter(s)

Maria Cotter

Carbon Matter (s) is a collaborative, mixed-media exhibition between poet and photo essayist Maria Cotter and landscape artist Tess Cullen that seeks to both fragment, and nuance, the scientific, environmental and rhetorical lens through which we, in a time of Climate Crisis, observe and interact with Carbon.

Thank you
for attending the
Postgraduate Conference

Next Postgrad Conference expression of interest - unepgconference@une.edu.au

Thoughts and suggestions on this and the next conference - unepgconference@une.edu.au