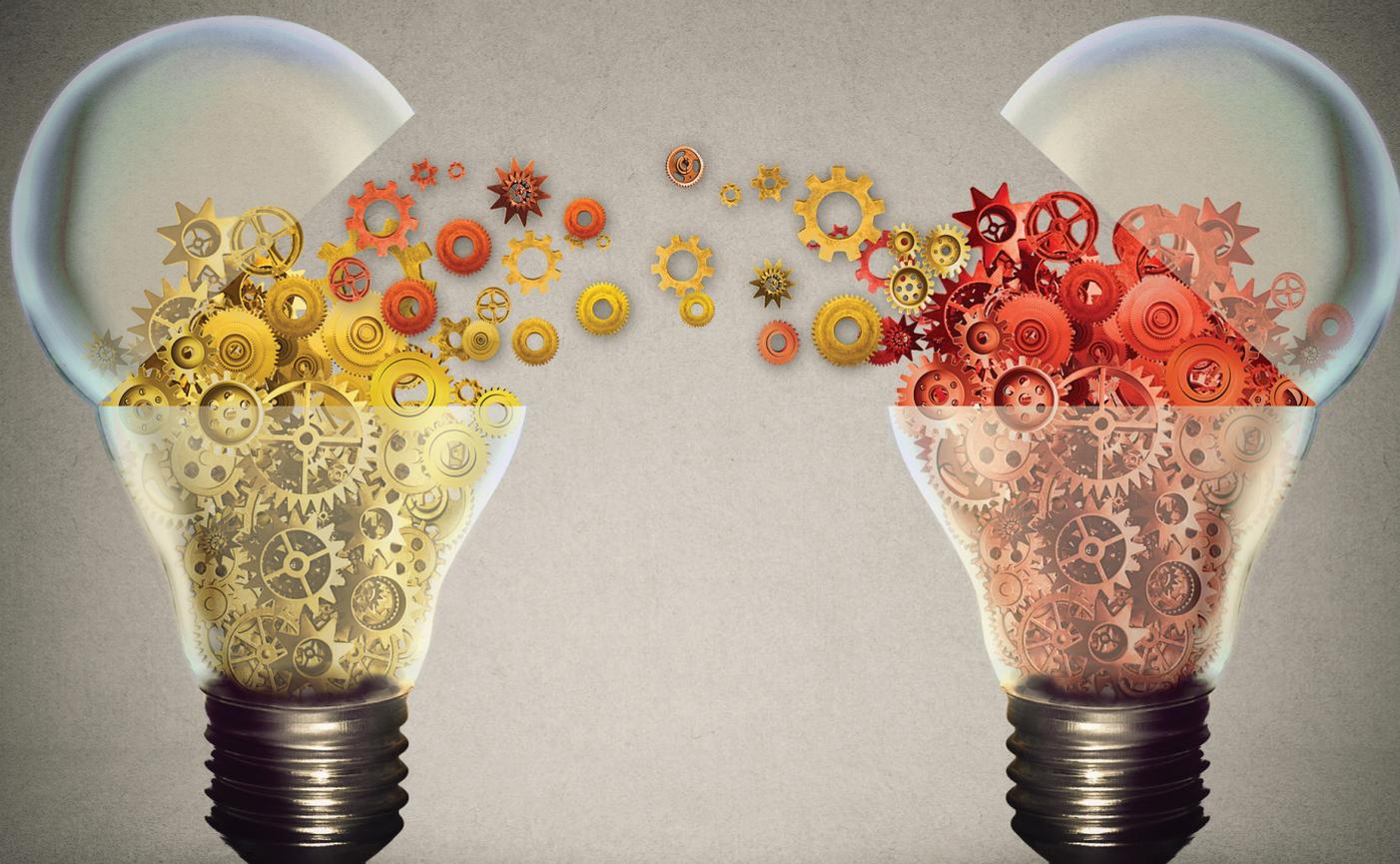


Inaugural UNE Postgraduate Conference 2016



‘Intersections of Knowledge’
19-20 January 2016

Conference Proceedings



une
University of
New England

**Postgraduate
Conference**

Conference Proceedings

“Intersections of Knowledge”

UNE Postgraduate Conference 2016

19th and 20th January 2016
Education Building
University of New England

Acknowledgement

Phillip Thomas – UNE Research Services

Postgraduate Conference Organising Committee: – Solomon Biharie (Chair)
Eliza Kent, Grace Jeffery, Lionel Pearce, Kodjo Kondo, Karma Jigyel, Nadiezhda Yakovleva
Zitz Ramirez Cabral, Apeh Omede, Vivek Vishnudas Nemane, Sue Gregory, Sami
Samiullah, Yve Ahrens and Elizabeth Davies

UNE Areas : IT Training, Research Services, Audio-Visual Support , Marketing and Public Relations, Corporate Communications, Strategic Projects Group, School of Education, VC's Unit, Workforce Strategy and Development Unit

Sponsor: University of New England Student Association (UNESA)



It is with great satisfaction that I write this Foreword to the Inaugural University of New England (UNE) Postgraduate Conference, 19 - 20 January 2016, 'Intersections of Knowledge'

I am writing this on the behalf of my fellow Conference Management Subcommittee members, Solomon Birhanie (Chair) and Elizabeth Davies, in acknowledgement to their contribution to the organisation of this event. I would also like to acknowledge the contribution of the whole Organising Committee, listed elsewhere in this document. This conference organisation could not have been achieved without the combined collaborative efforts and enthusiasm of individuals from Directorates and Service Areas across the university.

The high quality of the researcher's abstracts herein reflects the thinking and focus of men and women on a journey to become experts in their particular fields. Their contributions make this Conference an outstanding event and a showcase of the strength and focus of the research being carried out by higher degree candidates at UNE.

The presentations contribute recent scientific knowledge in the fields of: education and inclusive teaching and learning strategies; sustainable natural and production environments; ethics, policy and law, on the world stage; agricultural technologies and advancements in science; and organisational management and leadership.

The purpose of this conference is to create "intersections of knowledge," bringing our postgraduate researchers together within an opportunity to communicate their work to colleagues, academics and interested individuals from across UNE and the community.

These Proceedings present the development of new knowledge, relevant locally, nationally and internationally and I trust will be an impetus for healthy and vigorous exchange during and following the conference

A handwritten signature in black ink on a white background. The signature is stylized and appears to read 'Philip Thomas'.

Philip Thomas

PROGRAM
UNE POSTGRADUATE CONFERENCE – “INTERSECTIONS OF KNOWLEDGE” 19TH AND 20TH JANUARY 2016 EDUCATION BUILDING , E07
Day One – Tuesday 19th January 2016

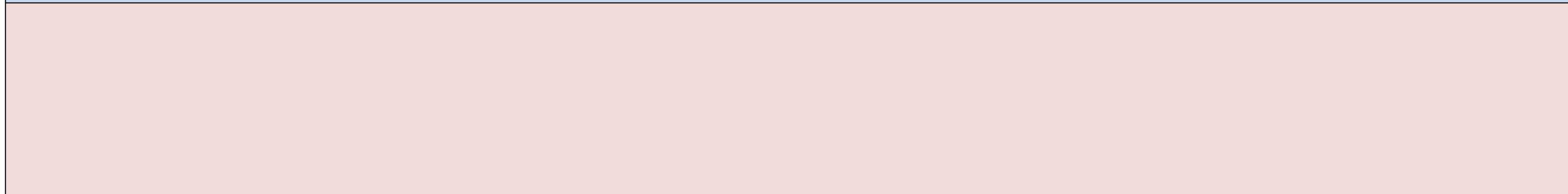
Time	Session
8:30 to 9:00	Sign On First Floor Foyer Education Building UNE (E07)
9:00 to 9:15	Acknowledgement to Country Opening Speech – Professor Annabelle Duncan Education Lecture Theatre One (Room 133)
9:15 to 10:30	Keynote Speaker – Professor Ray Cooksey Education Lecture Theatre One (Room 133)

10:30 to 10:50 Morning Tea

STREAM ONE

	Session One		Session Two		Session Three		Session Four	
	Leadership Practice in Education & Social Order Comment		Saving the World		Learning Environments		Problems in the Paddock and Pen	
	Chairperson: Jackie Lea Co Chair Vicki Parker		Chairperson: Kodjo Kondo		Chairperson: Sue Gregory Co: Nadiezhda R Cabral		Chairperson: Rose Amazan CoChair: Apeh Omede	
10:50 to 11:10	Writing a preliminary research proposal Philip Thomas (Invited Speaker)	Room 104	Improved legal and institutional arrangements for peri-urban invasive animal control and management. Vivek V. Nemane	Room 105	From the Golden Age of Antibiotics to an Australian Flora Screening Platform. Dane Lyddiard	Room 106	Effects of chronic cold stress and acute stress of pregnant ewes on lamb vigour traits Lea Labeur	Room 120
11:10 to 11:30	A study into the philosophy and practice in TAFE leadership and its influence on teaching Geethani Nair	Room 104	Saving the World with Organic Agriculture; how is grass roots environmental adult education contributing to development in Myanmar? Johanna Garnett	Room 105	Measuring student attitudes towards school-science using single-item scales in a digital instrument John Kennedy	Room 106	Can lambs learn to self-medicate with feed containing flunixin after ring castration and tail-docking Danila Marini	Room 120
11:30 to 11:50	Imprisonment as Punishment: The Problem of Retribution Kayt Hogan	Room 104	To dam or not to dam: the tale of three Ethiopian dams and their impact on malaria transmission Solomon Birhanie	Room 105	The role of vocal timbre in the perception of emotional meaning in sung word: Towards new methods of analysis for vocal timbre in 1960-70s protest music Kristal Spreadborough	Room 106	The Australian strains of infectious bronchitis virus differentially affect brown eggshell colour in commercial laying hens Sami Samiullah	Room 120
11:50 to 12:10	How nineteenth-century teetotallers made Victoria radical Helen Monro	Room 104	Common ground as practical ground: Cultivating environmentally peaceful communities Vanessa Bible	Room 105	Romanisation of Indian languages: a diachronic analysis of its failure Arvind Iyengar	Room 106	Effect of sodicity on mycorrhizal colonisation of cotton (Gossypium hirsutum L.) Samieh Eskandari	Room 120
12:10 to 12:30	Student nurses speaking up for patient safety: implications for undergraduate nursing curricula Anthea Fagan	Room 104	Ethical life in an age of relativism Nishanathe Dahanayake Video	Room 105	The potential of games-based pedagogy for developing students' knowledge about language. Imogene Cochrane	Room 106	Can certain triticales be used to outcompete with annual ryegrass (Lolium rigidum L) in crop? Husam Khalaf	Room 120

12:30 to 1:00pm Lunch



STREAM TWO

	Session Five		Session Six		Session Seven		Session Eight	
Time	New Approaches to Classrooms		Improving Worlds – both of the Environment and the Human Mind		Youth & Learning (and invited speaker)		Now for Something Different	
	Chairperson: Sue. Gregory Co: Karma Jigyel		Chairperson: Nadiezhda. R. Cabral		Chairperson :Bob Boughton Co: Vivek V Nemane		Chairperson: Rose Amazan	
1:00 to 1:20pm	The effect of the Bios pedagogy on the classroom learning of science Stephen Tynan	Room 104	Mobile mapping applications: opening opportunities at the grassroots RM Blackley	Room 105	Giving a voice to the unheard Jocelyn Craig	Room 106	The role of spirituality in psychotherapeutic intervention Lynda Dolan	Room 120
1:20 to 1:40pm	Understanding outdoor learning & physical activity: An early childhood educator professional learning journey Llewellyn Wishart	Room 104	Determinants of improved cassava varieties' adoption and its intensity in Ghana: implications for extension activities Kodjo Kondo	Room 105	An evaluation of student knowledge and stakeholder expectations of Civics Education in Bhutan Rinzin Wangmo	Room 106	The Relationship between Company Size and Effective Tax Rates Carol Matchett	Room 120
1:40 to 2:00pm	A Global Navigation Satellite system for measuring athlete stride length and frequency. Michael Price	Room 104	Impacts of climate change on suitability of <i>Neoleucinodes elegantalis</i> (tomato borer) in South America Ricardo Siqueira da Silva	Room 105	Endurance exercise and physical activity: means to delay the end Joshua Denham (Invited Speaker)	Room 106	Social responsibility is not the same as corporate social responsibility (CSR) for universities Daphne McCurdy	Room 120
2:00 to 2:20pm	An exploration of 'Scaffolding Literacy' in the teaching and learning of writing exposition texts to low proficiency Secondary Five second language learners in Hong Kong Tsui-yuk MAN (Withdrawn)	Room 104	Can a rat be depressed? Nicarla Glyde	Room 105	Young children's experience and understanding of deployment within an Australian Defence Force family: Mosaic and narrative Approaches Marg Baber	Room 106	Electricity and magnetism in space: How <i>on Earth</i> can we find out about them and their effects? Margaret Sharpe	Room 120
2:20 to 2:40 pm	Digital dissections and muscle reconstructions: estimating musculature of extinct species using their closest living relatives Ada Klinkhamer	Room 104	Sensory Integration Therapy reverses neurodevelopmental and behavioural deficits in a rat model of chronic early life stress. Stuart Fisher	Room 105	To what extent are Aboriginal students studying away from home happy and achieving? Kevin Bell Video	Room 106	Can we monitor coeliac disease severity using discriminant analysis of histological and gene expression data? Richard Charlesworth	Room 120
2:40 to 3:00pm Afternoon Tea								
	Special Session One		Special Session Two		Special Session Three			
	Chairperson: Philip Thomas		Chairperson:		Chairperson: Elizabeth Davies			
3: 00 to 4:30	Smoothing out the bumps on the road to publication and Copyright for postgraduate students Pam Bidwell, Leonie Sherwin, Berenice Scott (Library)	Room 104	Word for Thesis Writing Kerry Gleeson (IT Trainer)	Room 105	Risk Management for temperature controlled environments Sam Hills (Audit and Risk)	Room 106		
Special Session for Education 4:30 to 5:00 and discussion panel from 5:00 to 6:00pm Room 224								
Evening Session for presenters, supervisors and invited guests from 5:30pm at The Stro								

* Blue shows late change so presentation topic Orange shows invited speakers may not align to session title * Title of abstract and presenters name is displayed (for all authors refer to table of contents or abstract itself)

UNE POSTGRADUATE CONFERENCE – “INTERSECTIONS OF KNOWLEDGE” 19TH AND 20TH JANUARY 2016 EDUCATION BUILDING , E07 FIRST FLOOR

Day Two - Wednesday 20th January

Time	
8:30 to 9:00	Welcome and Sign On
9:00 to 10:00	Keynote Speaker – Prof Robert van Barneveld, Room 133
10:00 to 10:20	Morning Tea

STREAM THREE

	Session Nine		Session Ten		Session Eleven	
Time	Catalyst Nominees		Climate and Change		Learning Diversity & Diverse Learners	
	Chairperson: Glen Wilson		Chairperson: Solomon Birhanie Co Chair: Apeh Omede		Chairperson: Karma Jigyel Co Chair : Sue Gregory	
10:20 to 10:40	Head hopping: Using landmark GMM to determine primary locomotion of Simosthenurus Occidentalis John Cook	Room 104	Possibility of transition to a low carbon place through changes in public policy Darren Keegan	Room 105	Square pegs for square holes: The challenges of identifying and meeting the learning needs of gifted rural students through local specialist online provisions Maria Russell	Room 106
10:40 to 11:00	Blood pressure management - Isometric handgrip exercise reduces hypertension Debra Carlson	Room 104	Title: Adaptation to climate change in Pacific Island countries: The role of risk perception Shalini Lata	Room 105	Opening the doors of possibility for gifted children with learning difficulties: Initial identification procedures for primary school teachers MaryAnne Haines	Room 106
11:00 to 11:20	Low-dose phase-contrast CT imaging for 3D mammography Darren Thompson	Room 104	Tropical cyclones, rainfall and landslides in a mountain city in the Philippines: A review of extremes and impacts Dymphna Javier	Room 105	Twice exceptional? What's that? Anne O'Donnell-Ostini	Room 106
11:20 to 11:40	Withdrawn presentation	Room 104	Change of climate suitability in common bean Nadiezha R. Cabral	Room 105	The impact of physical activity on students with learning disabilities within the classroom: A Fundamental Movement Skills approach. Rebecca Clisdell	Room 106
11:40 to 12:00	Thermal decomposition of polymers prepared with switchable N-Methyl, N-(4-pyridyl)dithiocarbamate RAFT agents Sarah J Stace	Room 104	Carbon footprint of rice cropping systems - using crop residue for biochar production and application into soil Ali Mohammadi	Room 105	Teachers' fidelity of implementation of Inquiry based learning in the International Baccalaureate Primary Years Program classroom Liz McKenna	Room 106

12 to 12:40pm	Lunch
----------------------	--------------

Special Session Five

12:40 to 1:50	Writing Professional Papers – Brian Hardaker	Room 133 Chairperson: Philip Thomas
----------------------	---	--

STREAM FOUR

	Session Twelve		Session Thirteen		Session Fourteen	
Time	Securing Borders and Boundaries		Ethics and Agency		Language, Literacies and Education	
	Chairperson: Glen Wilson		Chairperson: Apeh Omede Co Chair: Solomon Birhanie		Chairperson: Vivek V Nemanie Co Chair: Sue Gregory	
2:00 to 2:20	Oil exploration and youth unrest in Nigeria Delta: A study in the rise and impact of socio-cultural group insurgency in Nigeria 1956-2014 Christian Chukwuma Madubuko	Room 104	Agency in Thai political science texts on the 2006 Thai coup Ingrid Wijeyewardene	Room 105	An Indigenous Education Discourse Taxonomy for Policy Analysis Chloe Parkinson	Room 106
2:20 to 2:40	Securitization of Australian Asylum Seeker Policy Chaminda Jayasinghe	Room 104	'Personalist' regimes emergence in Small Island States Mosmi Bhim	Room 105	Approaching a longitudinal study of the sustainability and durability of the gains of adult literacy acquired through the Yes I Can campaign Ruth Ratcliffe	Room 106
2:40 to 3:00	A case study in the politics of land ownership in NSW: the county of Sandon, 1884-1960 Margaret Small	Room 104	The ethics of civil disobedience: A rational approach Saurabh Bhattacharya	Room 105	Physiological responses of heterothermic mammals to fire Anna C. Doty	Room 106
3:00 to 3:20	Three anti-corruption protests in independent India: A contrast Debarchana Chakrabarty	Room 104	Withdrawn Presentation	Room 105	Educating for Gross National Happiness (GNH): A case of the intended and taught GNH-Infused curricula in the secondary schools of Thimphu and Samtse districts, Bhutan Pema Thinley	Room 106

3:20 to 4:00	Afternoon Tea
---------------------	----------------------

From @ 4:00 to 4:30	Closing and Prize Giving – Provost and Deputy Vice-Chancellor Professor Sue Thomas and Solomon Birhani Room 133
----------------------------	--

Table of Contents

STREAM ONE.....	1
Session One - Leadership Practice in Education and Social Order	
Session Two - Saving the World	
Session Three - Learning Environments	
Session Four - Problems in the Paddock and Pen	
Some Tips on How to Write a Higher Degree Research Proposal	
Dr Philip Thomas	2
A Study into the Philosophy and Practice in TAFE Leadership and its Influence on Teaching.	
Geethani Nair and Mutuota Kigotho	3
Imprisonment as Punishment: The Problem of Retribution	
Kayt Hogan and Tony Lynch.....	4
How Nineteenth-Century Teetotallers made Victoria Radical.	
Helen Monro.....	5
Student Nurses Speaking up for Patient Safety: Implications for Undergraduate Nursing Curricula.	
Anthea Fagan and Vicki Parker	6
Improved Legal and Institutional Arrangements for Peri-urban Invasive Animal Control and Management	
Vivek V. Neman.....	7
Saving the World with Organic Agriculture; How is Grass Roots Environmental Adult Education Contributing to Development in Myanmar?	
Johanna Garnett	8
To Dam or not to Dam: the Tale of Three Ethiopian Dams and their Impact on Malaria Transmission	
Solomon Birhanie, G. Glenn Wilson and Darren Ryder.....	9
Common Ground as Practical Ground: Cultivating Environmentally Peaceful Communities..	
Vanessa Bible	10

Ethical Life in an Age of Relativism

Nishanathe Dahanayake 11

From the Golden Age of Antibiotics to an Australian Flora Screening Platform¹²

Dane Lyddiard, Graham Jones, Ben Greatrex and Nicholas Andronicos 12

Measuring Student Attitudes towards School-science using Single-item Scales in a Digital Instrument.

John Kennedy 13

The Role of Vocal Timbre in the Perception of Emotional Meaning in Sung Word: Towards New Methods of Analysis for Vocal Timbre in 1960-70s Protest Music.

Kristal Spreadborough, Ines Anton-Mendez and Donna Hewitt 14

Romanisation of Indian Languages: a Diachronic Analysis of its Failure

Arvind Iyengar 15

The Potential of Games-based Pedagogy for Developing Students' Knowledge about Language.

Imogene Cochrane and Susan Feez 16

Effects of Chronic Cold Stress and Acute Stress of Pregnant Ewes on Lamb Vigour Traits

Lea Labeur, Alison Small, Geoff Hinch and Sabine Schmoelzl 17

Can Lambs Learn to Self-medicate with Feed containing Flunixin after Ring Castration and Tail-docking

Danila Marini, Ian Colditz, Geoff Hinch, Carol Petherick and Caroline Lee 18

The Australian Strains of Infectious Bronchitis Virus Differentially Affect Brown Eggshell Colour in Commercial Laying Hens

Sami Samiullah, Juliet Roberts and Kapil Chousalkar 19

Effect of Sodicity on Mycorrhizal Colonisation of Cotton (*Gossypium hirsutum* L.)

Eskandari, S., C.N. Guppy, O.G.G. Knox, D. Backhouse and R.E. Haling 20

Can certain Triticale be used to Outcompete with Annual Ryegrass (*Lolium rigidum* L) in Crop?

Husam Khalaf, Brian Sindel, Paul Kristiansen and Robin Jessop 21

STREAM TWO..... 22

Session Five – New Approaches to Classrooms

Session Six – Improving Worlds

Session Seven – Youth and Learning

Session Eight – Now for Something Different

The Effect of the Bios Pedagogy on the Classroom Learning of Science

Stephen Tynan23

Understanding Outdoor Learning and Physical Activity: An Early Childhood Educator Professional Learning Journey

Llewellyn Wishart.....24

A Global Navigation Satellite system for measuring athlete stride length and frequency

Michael Price and Aron Murphy.....25

An Exploration of ‘Scaffolding Literacy’ in the Teaching and Learning of Writing Exposition Texts to Low Proficiency Secondary Five Second Language Learners in Hong Kong

Tsui-yuk Man.....26

Digital Dissections and Muscle Reconstructions: Estimating Musculature of Extinct Species using their Closest Living Relatives

A. Klinkhamer¹, D. R. Wilhite², S. Wroe¹27

Mobile Mapping Applications: Opening Opportunities at the Grassroots

RM Blackley28

Determinants of Improved Cassava Varieties’ Adoption and its Intensity in Ghana: Implications for Extension Activities.

Kodjo Kondo, Euan Fleming, Oscar Cacho and Renato A. Villano.....29

Impacts of climate change on suitability of *Neoleucinodes elegantalis* (tomato borer) in South America

Ricardo Siqueira da Silva, Lalit Kumar, Farzin Shabani, Marcelo Coutinho Picanço.....30

Can a Rat be Depressed?

Nicarla Glyde, Nick Andronicos, Adam Hamlin, Chris Sharpley, Linda Agnew31

Sensory Integration Therapy reverses neurodevelopmental and behavioural deficits in a rat model of chronic early life stress.....

Stuart Fisher, Geetha Ranmuthugala, Stuart Wark, Andrew Talk & Adam Hamlin32

Giving a Voice to the Unheard	
Jocelyn Craig, Rafat Hussain, Stuart Wark and Trevor Parmenter.....	33
An Evaluation of Student Knowledge and Stakeholder Expectations of Civics Education in Bhutan.	
Rinzin Wangmo	34
Endurance Exercise and Physical Activity: Means to Delay the End	
Joshua Denham ^{1 3 4} , Brendan J. O'Brien ² , Priscilla R. Prestes ³ , Nicholas J. Brown ² , Fadi J. Charchar ^{3 4} ...	35
Young Children’s Experience and Understanding of Deployment within an Australian Defence Force Family: Mosaic and Narrative Approaches	
Marg Baber, Margaret Sims, Tanya Hathaway and Dr Sue Elliott.....	36
To what Extent are Aboriginal Students Studying Away from Home Happy and Achieving? ..	
Kevin Bell and Inga Brasche	37
The Role of Spirituality in Psychotherapeutic Intervention	
Lynda Dolan, Anna Kokavec and Eugene Hlywa	38
The Relationship between Company Size and Effective Tax Rates	
Carol Matchett and George Chen.....	39
Social Responsibility is not the same as Corporate Social Responsibility (CSR) for Universities	
Daphne Mc Curdy and Nick Reid	40
Electricity and Magnetism in Space: How on Earth can we find out about them and their Effects?	
Margaret Sharpe, Peter Barnes and Stephen Bosi	41
Can We Monitor Coeliac Disease Severity by Using Discriminant Analysis of Histological and Gene Expression Data?	
Richard Charlesworth, Nicholas Andronicos, James McFarlane and Linda Agnew	42
STREAM THREE.....	43
Session Nine – Catalyst Nominees	
Session Ten – Climate and Change	
Session Eleven- Learning Diversity and Diverse Learners	

Head Hopping: Using Landmark GMM to determine Primary Locomotion of Simosthenurus Occidentalis

J. Cook, S. Wroe and E. Sherratt.....44

Blood Pressure Management - Isometric Handgrip Exercise Reduces Hypertension

Carlson, D.J., Inder, J., McFarlane, J.R., Dieberg, G. and Smart, N.A.....45

Low-dose Phase-contrast CT Imaging for 3D Mammography

Darren Thompson, Konstantin Pavlov, Timur Gureyev and Yakov Nesterets.....46

Thermal Decomposition of Polymers Prepared with Switchable N-Methyl, N-(4-pyridyl) dithiocarbamate RAFT Agents

Sarah J Stace, Christopher M Fellows, Graeme Moad and Daniel J Keddie.....47

Possibility of Transition to a Low Carbon Place Through Changes in Public Policy

Darren Keegan, Philip Thomas and Ted Alter48

Adaptation to Climate Change in Pacific Island Countries: The Role of Risk Perception

Shalini Lata and Navjot Bhullar.....49

Tropical Cyclones, Rainfall and Landslides in a Mountain City in the Philippines: A Review of Extremes and Impacts

Dymphna Javier and Lalit Kumar50

Change of Climate Suitability in Common Bean

Nadiezhdha R. Cabral, Lalit Kumar and Subhashni Taylor.....51

Carbon Footprint of Rice Cropping Systems - Using Crop Residue for Biochar Production and Application Into Soil

Mohammadi, A., A. Cowie, M.L. Anh, P. Kristiansen, R.A.de la Rosa, M. Brandao and S. Joseph52

Square Pegs for Square Holes: The Challenges of Identifying and Meeting the Learning Needs of Gifted Rural Students Through Local Specialist Online Provisions

Maria Russell and Michelle Bannister-Tyrrell.....53

Opening the Doors of Possibility for Gifted Children with Learning Difficulties: Initial Identification Procedures for Primary School Teachers

MaryAnne Haines, Linley Cornish and Michelle Bannister - Tyrrell.....54

Twice exceptional? What’s that?	
Anne O’Donnell-Ostini, Michelle Bannister Tyrrell and Jeff Bailey	55
The Impact of Physical Activity on Students with Learning Disabilities within the Classroom: A Fundamental Movement Skills Approach	
Rebecca Clisdell, John Haynes, Jeff Bailey and Valeria Varea	56
Teachers’ Fidelity of Implementation of Inquiry Based Learning in the International Baccalaureate Primary Years Program Classroom	
Liz McKenna, Jeff Baily, Michelle Bannister-Tyrrell and Robert Whannell.....	57
STREAM FOUR	58
Session Twelve- Securing Borders and Boundaries	
Session Thirteen – Ethics and Agency	
Session Fourteen – Language, Literacies and Education	
Oil Exploration and Youth Unrest in the Niger Delta: A Study in the Rise and Impacts of Socio-Cultural Group Insurgency in Nigeria, 1956 – 2014.	
Christian Madubuko.....	59
Securitization of Australian Asylum Seeker Policy	
Chaminda Jayasinghe, Helen Ware and Sirisena Gamage.....	60
A Case Study in the Politics of Land Ownership in NSW: the County of Sandon, 1884-1960	
Margaret Small and Andrew Piper	61
Three Anti-corruption Protests in Independent India: A Contrast	
Debarhana Chakrabarty	62
Agency in Thai Political Science Texts on the 2006 Thai Coup	
Ingrid Wijeyewardene, Mary Macken-Horarik, and Zuocheng Zhang.....	63
‘Personalist’ Regimes Emergence in Small Island States	
Mosmi Bhim	64
The Ethics of Civil Disobedience: A Rational Approach	65
Saurabh Bhattacharya.....	65

An Indigenous Education Discourse Taxonomy for Policy Analysis

Chloe Parkinson66

Approaching a Longitudinal Study of the Sustainability and Durability of the Gains of Adult Literacy Acquired Through the Yes I Can Campaign

Ruth Ratcliffe.....67

Physiological Responses of Heterothermic Mammals to Fire

Anna C. Doty, Jaya Matthews, Clare Stawski and Fritz Geiser68

Exploring the Role of Family Support in Encouraging Kindergarten Participation for Families with Refugee Experience.

Cherie Lamb Margaret Sims, Ahmed Bawa Kuyini-Abubakar and Yukiyo Nishida69

Educating for Gross National Happiness (GNH): A case of the intended and taught GNH-Infused curricula in the secondary schools of Thimphu and Samtse districts, Bhutan

Pema Thinley, John Haynes and Kathy Jenkins.....70

KEYNOTE SPEAKERS

Frames and Configurations: Using a Systems Perspective for Social and Behavioural Research

Emeritus Professor Ray Cooksey, UNE Business School71

Research in the Commercial World - It's Academic

Professor Robert van Barneveld.....74

SPECIAL SESSIONS

Session One- Smoothing Bumps on the Road to Publication and Copyright for Postgraduates

Pam Bidwell, Leonie Sherwin and Berenice Scott76

Session Two - Word for Thesis Writing

Kerry Gleeson76

Session Three - Risk Management for Temperature Controlled Environments

Sam Hills76

Session Four – Writing Professional Papers

J Brian Hardaker77

Invited Speakers

Some Tips on How to Write a Higher Degree Research Proposal

Dr Philip Thomas78

Endurance Exercise and Physical Activity: Means to Delay the End

Joshua Denham^{1 3 4}, Brendan J. O'Brien², Priscilla R. Prestes³, Nicholas J. Brown², Fadi J. Charchar^{3 4} ...78

Abstracts by Streams and Sessions

STREAM ONE

Session One - Leadership Practice in Education and Social Order

Session Two - Saving the World

Session Three - Learning Environments

Session Four - Problems in the Paddock and Pen

Some Tips on How to Write a Higher Degree Research Proposal

Dr Philip Thomas

Invited Oral Presentation

Your research proposal should clearly identify the problem you are proposing to investigate and explain why it is significant enough to warrant the use of resources you will need. You would also need to explain the method you plan to use and demonstrate that it is suitable and feasible for the task. Most important is that you indicate that the research is original, needed and how the results from the research are likely to prove useful and to whom. Schools and faculties often have information on the structure of a proposal available. In most cases this structure would include: aims and objectives, significance, a review of previous research in the area, showing the need for conducting the proposed research and supporting your proposed methods and expected outcomes and their importance. In most cases and particularly in experimentally based research, requirements for equipment, materials, field trips, technical assistance and an estimation of the costs would be required. A time line indicating the stages of the research and the approximate time each stage is expected to be completed, should be included.

A Study into the Philosophy and Practice in TAFE Leadership and its Influence on Teaching

Geethani Nair and Mutuota Kigotho

School of Education

Oral Presentation

This is an exploratory study of four teaching units from four TAFE institutes selected from New South Wales and Victoria. The study focuses on TAFE Head Teachers as educational leaders and their influence on teaching when responding to the performance expectations in a competitive demand-driven VET environment. The study will explore the expected patterns of behaviour, obligations and privileges attached to a regular TAFE Head Teacher position. The objective of the research is to study how a Head Teacher facilitates a learning culture within the teaching unit with characteristics that would place the teaching unit with a competitive advantage in a demand-driven VET environment. The study analyses Head Teachers' values, educational philosophies and leadership styles. This study also investigates the existing dynamics within teaching units and explores the work relations, organisational cultures, learning attributes and attitudes, expectations and apprehensions within teaching units. A secondary purpose of this research is to bridge the gap in literature on leadership tensions of TAFE Head Teachers operating in a demand-driven VET environment. A mixed method approach is chosen for this study. It is anticipated that data from this study will assist in understanding the dynamics of managing teaching units within the VET environment.

Keywords: TAFE, teaching, head teacher, VET, culture

Imprisonment as Punishment: The Problem of Retribution

Kayt Hogan and Tony Lynch

School of Humanities

Oral Presentation

Recidivism is a significant problem in New South Wales. Over fifty per cent of adult prisoners will return to prison. This figure does not take into account juvenile inmates who later return to prison as adults, so the figure could be much higher. This is a real concern, and consequently the effectiveness of imprisonment as a punishment should be addressed. I argue that when it comes to punishment, retributivist motives tend to encourage recidivism, as opposed to reducing crime, and therefore undermine the proper and basic aim of the practice of punishment. A retributive theory of punishment links punishment to the notion of desert through guilt, and holds that the suffering punishment involves is a good in itself. The alternative theory of punishment is a utilitarian theory of punishment. A utilitarian punishes because the practice has the ability to prevent and deter offenders from committing further crime. I defend the utilitarian theory of punishment. If legal punishment is the most appropriate way to achieve social order, it provides the reason as to why utilitarianism is the best theory, because it is the only way to achieve the aims of punishment. Punishment should encourage good order in society, but this is not at the heart of retributivism.

Keywords: punishment, retributivism, utilitarianism, imprisonment

How Nineteenth-Century Teetotallers made Victoria Radical.

Helen Monro

School of Humanities

Oral Presentation

Members of teetotal societies in nineteenth-century Victorian country towns tried to persuade their fellow citizens not to drink alcohol and supported legislative reform to restrict liquor sales, earning a reputation for wanting to prevent others from enjoying themselves. Female members were particularly concerned with the impact of alcohol on the wellbeing of families, women and children. Unable to address these issues without engaging in public debate, they increasingly campaigned for social changes such as women's suffrage which supported their Christian and temperance objectives. These changes were of benefit to the whole community but the teetotallers were given little credit for their contribution. Contemporary newspaper reports suggest that temperance societies were dominated by men, with women supporting the cause by providing cups of tea and cakes. In fact, the key role played by members of the Woman's Christian Temperance Union (WCTU) in influencing social attitudes and legislation indicates that many women had already developed organisational and promotional skills through temperance activities and were well-regarded by men in the movement. Based on evidence from newspapers and archival material, this paper will argue that the longstanding commitment of teetotal women to their objectives, along with the WCTU structure and processes, provided a foundation for the public support and political influence the WCTU was able to achieve. The evidence considered in this study suggests that associations contributed effectively to the public good beyond their specific objectives and that experience in their operation empowered association members, both female and male.

Keywords: temperance, teetotal, liquor, WCTU, female suffrage.

Student Nurses Speaking up for Patient Safety: Implications for Undergraduate Nursing Curricula.

Anthea Fagan and Vicki Parker

School of Health

Oral Presentation

Aim: This research aims to inform and improve patient safety education through investigating student nurses speaking up behaviours in a simulated clinical environment.

Background: “Speaking up” is assertive communication in clinical situations that requires action through questions or statements of opinion or information with appropriate persistence until there is a clear resolution (Schwappach & Gehring, 2014). Speaking up maintains patient safety. However, a dilemma occurs due to the challenges and consequences to those who report (Okuyama et al. 2014). Patient safety is often not explicit focus in nursing curricula; rather emphasis has been on safe practice through development of competency standards (Tella et al 2015). Evidence suggests that translation of learned speaking up behaviour is problematic for many students for a range of socio-cultural reasons (Mansour, 2013). It is incumbent on educators to build robust skills and student confidence that will overcome challenges and ensure patient safety. Simulation learning offers a safe, reflexive context in which this can occur.

Method: Using a qualitative ethnographic approach this study investigates factors impacting on student nurses’ ability to speak up disclosing errors in practice. Video ethnography and focus groups will be used to explore students’ behavioural responses of speaking up for patient safety. Simulation will be utilized as the vehicle to engender critically reflexive responses to error in clinical practice. Evaluation of the simulation learning sequences and their capacity to transform student behaviour in practice contexts will inform embedding of patient safety behaviour development across the undergraduate curriculum.

Results: The study findings will inform patient safety undergraduate nursing curricula, adding to theoretical understanding of students’ behavioural and attitudinal responses when disclosing errors in practice. It will further develop student nurses’ professional practice and improve patient safety

Keywords: speaking up, patient safety, student nurse, curriculum.

Improved Legal and Institutional Arrangements for Peri-urban Invasive Animal Control and Management

Vivek V. Nemane

School of Law

Oral Presentation

This research is concerned with implementation of biosecurity laws and policy for the control and management of invasive animals. The research seeks to investigate the potential for legal and institutional changes to facilitate the application/adoption of invasive animal control and management. Laws pertaining to the use of lethal controls, animal welfare laws, legal liability issues for landholders as well as government agencies, political and media intervention based on human health and ethical concerns are the key considerations for potential legal and institutional innovations to facilitate a coordinated action for invasive animal control and management.

The exploration of legal and institutional issues of invasive species in peri-urban context needs an inter-disciplinary methodology. The research employs a negotiated problem-solving approach that includes a dialogue with “client” stakeholders, and the co-development of possible solutions through consultations with multiple stakeholders and peri-urban authorities responsible for invasive animal management and control, particularly for wild dog and feral deer control and management. The research techniques being utilized are of qualitative nature including semi-structured and unstructured interviews, observation and feedback sessions and data analysis. It is expected that the research will result in actionable proposals to advance the implementation of more effective controls of invasive animals in peri-urban areas.

Key words: biosecurity policy, invasive animals, legal-institutional, innovations, implementation, peri-urban

Saving the World with Organic Agriculture; How is Grass Roots Environmental Adult Education Contributing to Development in Myanmar?

Johanna Garnett

School of Humanities

Oral Presentation

Humanity in the 21st century is experiencing an ecological and social crisis of planetary proportions. Human behaviour is resulting in environmental insecurity, injustices and inequities round the globe and less developed countries are being impacted more severely. Myanmar has a long history of poor environmental governance under an authoritarian regime. Since 2011, following political and economic reforms, Myanmar has adopted an industrialised development strategy centred round extractive industries and agri-business. This mainstream development is having serious environmental ramifications and is impacting negatively on traditional communities and cultures. This thesis is based on a case study of a grass roots environmental organisation in Myanmar that has developed a transformational pedagogical program aimed at young adults from various ethnic groups and geographical regions within the country. It is focusing on raising awareness of the environmental degradation and social alienation that is inherent in the processes of modernisation and development and is working on alternative, more sustainable processes and practices. These are centred round organic agriculture, sustainable livelihoods and ecologically sound environmental management systems. This organisation is an example of the myriad localised initiatives that are emerging from the South in response to contemporary environmental problems. It is argued that an understanding of such local initiatives is vital if we are to collectively address contemporary global environmental and associated socio-economic issues.

Keywords: Myanmar, sustainable development, grass roots, education, organic agriculture

To Dam or not to Dam: the Tale of Three Ethiopian Dams and their Impact on Malaria Transmission

Solomon Birhanie, G. Glenn Wilson and Darren Ryder

School of Environmental and Rural Science

Oral Presentation

A number of dams are currently under construction in Africa to help ensure food security and promote economic development. However, the impact of dams on malaria could outweigh their intended advantages. This study looked at the impact of dams on malaria in three dams at different eco-epidemiological (elevation) settings in Ethiopia. Larval and adult mosquito data were collected from dam and non-dam villages around the Kesem (lowland), Koka (midland) and Koga (highland) dams between October 2013 and July 2014. Five years of monthly malaria case data (2010-2014) were also collected from health centers in nearby villages. Mean monthly malaria incidence in the lowland dam village was twice that of the nearby non-dam village, and 10-fold higher in midland and highland dam villages than in their respective non-dam villages. The total surface area of anopheline breeding habitat and the mean larval density was significantly higher in the lowland dam village compared with the midland and highland dam villages. Similarly, the mean monthly malaria incidence and anopheline larval density was generally higher in dam villages than non-dam villages in all three dam settings. *Anopheles arabiensis*, *An. pharoensis* and *An. funestus* were the most common species, largely collected from lowland and midland dam villages and mainly in reservoir shoreline puddles and irrigation canals. Mean adult anopheline density was significantly higher in the lowland and midland dam villages than the highland villages. Our findings suggest that the presence of dams intensifies malaria transmission in lowland and midland eco-epidemiological settings. Dam and irrigation management practices need to be developed for these regions to reduce vector abundance and malaria transmission.

Keywords: malaria, mosquito breeding, water management, dams, irrigation, Africa.

Common Ground as Practical Ground: Cultivating Environmentally Peaceful Communities

Vanessa Bible

School of Humanities

Oral Presentation

The rapidly evolving field of the environmental humanities is considered to be a response to the age of the Anthropocene. The environmental humanities resituate the human within the environment that we are so inextricably a part of, mending the ecological crimes that dualist nature/culture thought have wreaked upon the earth. As such, the environmental humanities offer insight into the role humans must play in righting human-induced ecological violence. Inevitably, the question is asked of the environmental humanities – how can the idealistic humanities contribute to practical real-world solutions? This paper unites the disciplines of environmental history and peace studies to offer such a solution. This paper explores how we can mend the imagined nature/culture rift by considering the deep relationship that exists between humans and their natural environment. By enquiring into the environmental history of the ecologically conscious communities of the Northern Rivers in NSW, what is revealed is a deep and enduring connection to place. A strong sense of belonging creates environmental attachment; a place-based response comes from a deep, emotional connection to the local natural environment and offers a fertile foundation on which to build environmentally conscious communities. Applying the practical language of peacebuilding allows us to consider how this earthly connection can form the basis for *environmental* peacebuilding. While individual expressions of belonging may differ, what unites us is the common ground to which we belong. This paper will demonstrate how common ground can become practical ground on which to build environmentally peaceful and ecologically sustainable futures.

Keywords: environmental peace, environmental history, Anthropocene, Northern Rivers, peacebuilding.

Ethical Life in an Age of Relativism

Nishanathe Dahanayake

School of Humanities

Video Presentation

I question the validity of Enlightenment conceptions of the ethical life.

Whilst fundamentally agreeing with the analyses of Rousseauian, Hegelian and Marxian theory concerning the root causes of human problems in modern capitalist society, I contend that seeking solutions for these problems solely in terms of material means, structural and institutional, is essentially inadequate. A “spiritual” dimension is essential here.

I argue that recognising and embracing a global relativism gives us the resources for forms of spirituality (religious or secular) that would help safeguard systems of human interaction from vicious wars, and the exploitation and empty consumerism of contemporary society. I argue that, rightly understood in terms of global relativism, the spiritual teachings and practices of eastern philosophies such as Buddhism and of the western religions such as Christianity, with a clear emphasis in inner peace, and approaches such as meditation and solitude, show us the way(s) to achieve fulfilment.

Keywords: spirituality, relativism, Nietzsche, Rousseau, Marx, Buddhism

From the Golden Age of Antibiotics to an Australian Flora Screening Platform

Dane Lyddiard, Graham Jones, Ben Greatrex and Nicholas Andronicos

School of Science & Technology

Oral Presentation

A public health crisis is emerging which threatens to return us to the days before antibiotics existed: bacterial pathogens are becoming increasingly resistant to the drugs on which we depend to treat common diseases and antibacterial drug development is experiencing a lull. New high-tech methods for discovering antibiotics are failing to provide a stream of valuable leads and so it is time to look to past successes. The 'golden era' of antibiotic discovery in the early half of last century was largely the result of simple, systematic approaches to screening natural products from microorganisms. Eventually this approach failed to produce new leads. Like microorganisms, plants are excellent producers of complex natural products which can inhibit bacteria. Taking the simple, systematic approach of the golden age and applying it to plants forms the basis of an Australian flora antibacterial drug discovery platform.

Keywords: antibiotic resistance, microbiology, plant science, drug discovery

Measuring Student Attitudes towards School-science using Single-item Scales in a Digital Instrument.

John Kennedy

School of Education

Oral Presentation

There have been many attempts over the last half-century to measure students' attitudes towards school and towards school-science. Many of these quantitative studies have investigated attitudes towards just one or two aspects of science or school science and have utilised relatively large numbers of items to draw descriptive summaries of the educational landscape at those particular times. Even after fifty years of study, an understanding of attitudes towards science, and how these change over time, remains of particular importance to educators in Australia and worldwide, who are forming a response to the continued declines in enrolments seen in post-compulsory science courses. In this presentation, a gap among the available instruments is identified for a tool that can measure multiple facets of attitudes using a minimal number of items, while being suited for use in pre- and post-test and longitudinal studies by educators and educational researchers alike. I will outline how a digital survey tool was defined, validated, and statistically refined so that it could use single-item web-based visual analogue scales to measure five key perceptions of school science and lead to the formation of a Science Attitude Profile. This approach was extended so as to offer a suitable item to measure students' enrolment intentions towards post-compulsory science courses. Significantly, it is shown—through the use of multiple, simple statistical measurements—that in certain circumstances single-items can be as reliable as multi-item scales in measuring self-report attitudes.

Keywords: science education, attitudes, enrolment intentions, instrument development, single-items, attitudinal profiles)

The Role of Vocal Timbre in the Perception of Emotional Meaning in Sung Word: Towards New Methods of Analysis for Vocal Timbre in 1960-70s Protest Music.

Kristal Spreadborough, Ines Anton-Mendez and Donna Hewitt

School of Behavioural, Cognitive and Social Sciences /School of Arts

Oral Presentation

Although the field of popular music analysis is continuing to expand, few studies deal exclusively with the analysis of vocal timbre (the unique sounds of a singer's voice, particularly when expressing emotion). A contributing factor to this is that vocal timbre is best assessed as an aural musical element. That is, we have limited methods available for capturing it graphically. Spectrographs are the exception to this, however these can also be problematic as they are very information rich and as such cannot always provide clear representation. Furthermore, a well-rounded analysis must also account for linguistic content of sung words. This research aims to address this through considering new methods of analysis for vocal timbre that account for both the words and the vocal timbre. This research specifically focuses on applying such methods to protest song from the 1960-70s. To achieve this, this research poses the question: Does vocal timbre alone carry emotional meaning? To test this, an experiment was designed which primed participants with an emotionally charged vocal timbre, then presented them with an emotionally charged word. It was reasoned that, if vocal timbre alone carries emotional meaning, we should see participants identifying emotional valence of words faster and more accurately when they are sung in an emotionally matched vocal timbre than when they are sung in an emotionally mismatched vocal timbre. Results confirm this. This paper will explore how this finding may inform future analysis methods for vocal timbre in 1960-70s protest song and make suggestions for further research.

Keywords: vocal timbre, emotional valence, protest music of 1960-70s, lexical processing.

Acknowledgements: Special thanks to Dr Jenny Game-Lopata

Romanisation of Indian Languages: a Diachronic Analysis of its Failure

Arvind Iyengar

School of Behavioural, Cognitive and Social Sciences

Oral Presentation

India is a land with numerous scripts, for example Devanāgarī (देवनागरी), Perso-Arabic (عربی), Tamil (தமிழ்), among others. This paper will examine the rich but understudied history of the usage of the Roman script (ABCD...XYZ) for the languages of the Indian Subcontinent. The romanisation—or conversion into the Roman script—of non-European languages in regions such as East and South-East Asia, Africa and the Middle East, has been relatively well-documented and studied. However, any comprehensive historical analysis of the—ultimately unsuccessful—attempts at romanising languages in India has yet to appear. This paper is an initial effort in that direction. The first part of the presentation spans the years 1616 to 1947. It will describe initial efforts by Europeans in India to transcribe Indian languages in the Roman script, and subsequent attempts by various European and Indian proponents to introduce a uniform romanisation system throughout India. The second section will seek to explain why these attempts—some of them by highly influential parties—ultimately failed

Keywords: sociolinguistics, writing systems, transliteration

The Potential of Games-based Pedagogy for Developing Students' Knowledge about Language.

Imogene Cochrane and Susan Feez

School of Education

Oral Presentation

The inclusion of the Language Strand in the Australian Curriculum: English (AC:E) demonstrates renewed support for the importance of developing students' Knowledge about Language (KAL) in the primary years of schooling. Although the implementation phase of the AC:E has begun, teachers do not have a substantive body of classroom-based research to inform their enactment of the curriculum aspirations with engaging pedagogical approaches. Teachers are unsure how to translate this new language content into effective and successful classroom practice. The aim of this research project is to provide teachers with an evidence based approach to developing students' KAL by trialling the use of games-based pedagogies in an early years classroom. Recent research (Cochrane et al 2012) suggests that games-based pedagogies have considerable potential for fostering student to student interactions. As part of a dialogic approach, a key outcome of this research will be the development of an analytical tool to describe the nature of dialogic exchanges between students during game-play in relation to the students' use of the metalanguage associated with rhetorically oriented grammar. The development and application of a tool that describes talk in both ideational and interpersonal functions will allow the research team to better understand and identify 'types of talk' about language that students may engage in during game play and how these may foster the development of students' cumulative KAL. As the project is still in the early development stages and the anticipated research has not yet been undertaken, this paper will discuss the preparation towards and potential challenges of developing a suitable analytical tool that may be used once data collection has taken place.

Keywords: primary education, pedagogy, grammar, language, games

Effects of Chronic Cold Stress and Acute Stress of Pregnant Ewes on Lamb Vigour Traits

Lea Labeur, Alison Small, Geoff Hinch and Sabine Schmoelzl

School of Environmental and Rural Science

Oral Presentation

Lamb survival is a welfare issue as well as a cause of considerable economic loss. The overall aim of this work is to determine measurements which define the phenotype of a strong and resilient lamb which has functional thermoregulation, and is able to follow its mother. Both factors affect lamb survival rates. In this experiment, we want to investigate the effect of chronic cold stress and yarding + transport induced stress at different stages of pregnancy of the ewe on the fitness of the lamb. 108 animals were divided in 3 groups: mid-pregnancy stressed, late-pregnancy stressed and control. The cold exposure and stress of pregnant ewes took place 5 times at mid-pregnancy (90 days of pregnancy) or at late-pregnancy (120 days of pregnancy) when the brown fat (required for thermogenesis) deposition is expected. Ewes were yarded for 15 min and transported by trailer to a cold room at 2°C for three hours. All cold treated ewes were wetted prior to the exposure to cold. All live-born lambs were assessed for behavioural and physical lamb vigour traits. At 4 hours after birth, body weight, girth circumference, crown-rump and leg length of lambs were recorded. Subsequently lambs were assessed for bleat and return to ewe latency, then taken to a cold room set at 4C and exposed to cold for 60 min. immediately after the cold stress treatment, lambs were behaviour tested again. Data analysis is ongoing.

Keywords: lamb, vigour, pregnancy stress, bleat latency

Can Lambs Learn to Self-medicate with Feed containing Flunixin after Ring Castration and Tail-docking

Danila Marini, Ian Colditz, Geoff Hinch, Carol Petherick and Caroline Lee

School of Environmental and Rural Science

Oral Presentation

Animals in the wild and in experimental settings have been observed to self-medicate for parasitic burdens as well as during purportedly painful conditions. In experimental settings animals can be taught to self-medicate using a conditioned place preference paradigm and associative learning. This project is exploring the potential to train lambs to self-administer a non-steroidal anti-inflammatory (flunixin) to provide pain relief following ring castration and tail-docking. Using odour cues to allow lambs to distinguish between feed containing flunixin and normal feed the objectives of this study are to castrate lambs and offer them medicated feed in a 4 day 'training' period. The lambs will then be tail-docked a week later and offered the medicated and non-medicated feed to see if they have a preference. If lambs have learnt to associate pain-relief with the odour used on feed containing flunixin, to show self-medication they should have a preference for it following tail-docking. Five weeks after tail-docking lambs will be retested for their preference of the two feeds, it is expected if they are no longer experiencing pain they should show no preference. If lambs can learn to self-medicate, their voluntary choice to ingest medications that are non-addictive is a strong indicator that they feel unwell and are motivated to alleviate that negative affective state. If animals can learn to self-medicate when in pain, there would be potential benefits for the livestock industry as it could provide producers with an easy method of pain-relief administration.

Keywords: self-medication, sheep, welfare, non-steroidal anti-inflammatory, husbandry procedures

The Australian Strains of Infectious Bronchitis Virus Differentially Affect Brown Eggshell Colour in Commercial Laying Hens

Sami Samiullah, Juliet Roberts and Kapil Chousalkar.

School of Environmental and Rural Science

Oral Presentation

The aim of the current study was to assess any significant effect of different IBV strains prevalent in Australia on the shell colour in brown shelled eggs. In experiment 1, eggs were collected from day 1 to day 13 post infection (p.i.) from unvaccinated laying hens challenged with IBV wild strains T and N1/88 and a negative control group of hens. In experiment 2, eggs were collected from day 2 to day 22 p.i. from unvaccinated and vaccinated laying hens challenged with IBV wild strains (T and N1/88) and vaccine strains (Vic S, A3) in addition to a control group hens. Eggshells were processed for measurement of shell reflectivity (%), shell colour (L* component) and PP IX quantification from shells with and without cuticle. In experiment 1, there was a significant effect ($P < 0.05$) of day p.i and viral strain on shell reflectivity, L* and PP IX in eggshells with and without cuticle. Shell reflectivity and L* for the control eggs were significantly lower compared to those from hens challenged with both strains of IBV and were also significantly lower on day 1 compared to day 5, after which colour was being restored back to normal values. The mean PP IX in 1g of shell with and without cuticle was significantly higher on day 1 p.i. compared to day 7, after which PP IX increased with day p.i. The amount of PP IX in whole eggshell was highest for the control group and lowest for the T strain group, with the N1/88 group intermediate. In experiment 2, shell reflectivity and L* increased and PP IX decreased with increased day p.i until day 12, suggesting an increasing viral load in the shell gland. Shell reflectivity and L* decreased slightly but insignificantly after day 12 and slightly increased again towards day 22. The amount of PP IX tended to increase after day 12 p.i. but this was not statistically significant, suggesting that, after day 12 p.i., the viral load started declining and thus shell colour was being restored in the challenged hens. The higher shell reflectivity and L*, and lower PP IX values, of eggshells from T and N1/88 followed by Vic S strain infected birds suggests that the T strain was most severe in its effect, followed by N1/88 and Vic S, with A3 being the more mild one. Shell reflectivity, L* and PP IX were not significantly different for eggshells from unvaccinated and vaccinated laying hens in the whole eggshell, but were significantly different in shells from which cuticle had been removed. In conclusion, the IBV strains reduced the intensity of brown shell colour to different extents.

Keywords: infectious bronchitis, shell gland, brown egg laying hens, cuticle

Effect of Sodicity on Mycorrhizal Colonisation of Cotton (*Gossypium hirsutum* L.)

Eskandari, S., C.N. Guppy, O.G.G. Knox, D. Backhouse and R.E. Haling

School of Environmental and Rural Science

Oral Presentation

More than half of soils used for growing cotton are affected by sodicity. Cotton is reputedly a mycorrhizal dependent plant, but physical and chemical constraints of sodic soils might affect mycorrhizal colonisation of cotton. We investigated the development of vesicular-arbuscular mycorrhizas on cotton in two sodic soils (A and B with ESP of 21 and 14, respectively) in two glasshouse experiments for 6 weeks. Initially, cotton plants were grown with a commercial inoculum. In the second experiment, cotton was grown in the presence of a root based inoculum source, which was comprised of soil and highly colonised (91%) maize (*Zea mays* L.) root placed 3 cm below the seeds. Control treatments included an autoclaved non-sodic vertosols and sodic soils to which either no inoculum or autoclaved soil and maize root was added. No mycorrhizal cotton roots were detected either with commercial inoculum or the sterilised soil and maize root in soils A and B after 6 weeks. In the second experiment, percentage of root length colonized in control sodic soil A and B was 1% and 0%, respectively, which increased with inoculum to 18 % and 25% in soil A and B, respectively. The inoculated autoclaved non-sodic soil had 37% colonisation, which was significantly higher than in sodic soil A. Zn uptake improved in inoculated cotton plants in sodic soil B and plant Na accumulation decreased slightly ($P=0.06$) by increasing colonisation in soil A. No significant enhancement was observed in P uptake of inoculated cotton plants.

Keywords: P uptake, sodic soil, vesicular-arbuscular mycorrhizae, Zn uptake

Can certain Triticale be used to Outcompete with Annual Ryegrass (*Lolium rigidum* L) in Crop?

Husam Khalaf, Brian Sindel, Paul Kristiansen and Robin Jessop

School of Environmental and Rural Sciences

Oral Presentation

Weed infestations have been a major problem in agronomic systems and wheat production in particular. Annual (or rigid) ryegrass (*Lolium rigidum*) is considered to be the most problematic weed species in Australian cropping. Many reports have confirmed that this species is one of more than 36 weed species which has developed herbicide resistance. Wheat is less competitive than other crops such as rye, triticale and canola. Triticale is a relatively new man-made grain first produced in 1875. It combines the high tolerance for environmental stresses of rye with the high yielding ability of durum wheat. This project is carried out in order to investigate the competitive ability of triticale against annual ryegrass. So far, two glasshouse experiments have been performed at the University of New England in 2014 and 2015 examining 17 triticale and 2 wheat cultivars in the first experiment, and 8 triticale and 2 wheat cultivars in the second experiment. The results showed that there is a negative correlation between crop plant height and both number of tillers and leaf area reflecting considerable variability in the growth habit between triticale cultivars. Some varieties were able to reduce number of tillers and biomass of ryegrass while other varieties only reduced plant height and number of heads. We are planning to conduct a field experiment this winter and also next year, as well as some more glasshouse experiments regarding the factors which may affect crop competitive ability with annual ryegrass. In this year's field experiment, we will test row spacing and sowing rates as two of many environmental factors which may be related to the crop competitive ability.

Keywords: triticale, annual ryegrass, competitive ability

STREAM TWO

Session Five – New Approaches to Classrooms

Session Six – Improving Worlds

Session Seven – Youth and Learning

Session Eight – Now for Something Different

The Effect of the Bios Pedagogy on the Classroom Learning of Science

Stephen Tynan

School of Education

Oral Presentation

Professional practice in teaching is largely ignorant of the biological means by which students learn, especially regarding the role of language. By applying my scientific understanding of the learning brain, I formulated 5 propositions to guide my teaching and implemented them into my professional practice. Comparatively, this resulted in student gains in memory formation and subsequent application, which seem to have occurred directly and indirectly via reading skills. It is concluded that by teachers enhancing the nature of the episodic engagement with their students, students will be more engaged with classroom learning and become better learners.

Keywords: autobiographical memory, language, working memory, cognitive architecture, constructive memory

Understanding Outdoor Learning and Physical Activity: An Early Childhood Educator Professional Learning Journey

Llewellyn Wishart

School of Education

Oral Presentation

This presentation outlines current doctoral research about the professional learning of early childhood educators in relation to children's movement, physical activity and the outdoors. The importance of young children's movement development and outdoor experience has been a focus over recent years within the early childhood education field in Australia and internationally. More broadly, this focus can be viewed in the context of worldwide trends of declining physical activity levels, children's reduced contact with nature and limited outdoor play. On a range of measures being physically active outdoors and in direct contact with nature are protective of young children's development, health and wellbeing. Research suggests that early childhood educators can be highly influential in young children being physically active outdoors and connected to the natural world. The literature also suggests that early childhood educator influence can be bidirectional – both problematic and beneficial. Here I offer some initial reflections about my experience of leading a group of early childhood educators in a professional learning cycle with the aspiration to positively influence pedagogy and practice in this area. The presentation explores three reflective questions. Firstly, does the professional learning process edge participants towards a more embodied and kinaesthetically focused outdoor early childhood pedagogy or not? Secondly, how and what might the researcher learn from leading the professional learning process and direct engagement with the research participants? Finally, what may be the value of professional learning as a research centrepiece for both the participants and the researcher?

Keywords: early childhood, outdoor pedagogy, professional learning

A Global Navigation Satellite system for measuring athlete stride length and frequency

Michael Price and Aron Murphy

School of Science and Technology

Oral Presentation

For an athlete the difference between success and failure is often measured in millimetres, making accurate measurement of their position and velocity an essential component in sporting success. One of the central tools, used for measuring athlete position and velocity is the Global Navigation Satellite System (GNSS) receiver and it is critical for technology performance evaluation, in both team and individual sports. The accuracy and precision of position and velocity measurements using a satellite receiver system is complex and dependent upon the application which is being measured.

The receiver technology used in sports applications is typically inherited from navigation systems, which are designed based on differing measurement requirements. For example navigation applications require absolute position on the Earth's surface over time, while in sports applications it is the relative position from a starting point over time which is important. There is little information which discusses the impact of these differing environmental and operational requirements on assessing human movement position and velocity. As such, there is the potential to increase accuracy from meters to centimetres. With higher resolution, innovative GNSS applications can be developed which will enable exercise scientists, coaches and athletes to improve assessment of fatigue, performance, gait biomechanics and injury risk.

The goal of this research is to determine the impact of receiver signal acquisition, antenna location and antenna multipath on human movement measures. Further, to the author's knowledge, there is currently no commercially available GNSS that enables the precise measurement of stride length and frequency. This research will drive innovation in receiver sports science design, improve data accuracy and applications and provide commercial opportunities for Australian sports engineering companies.

Keywords: Global Navigation Satellite System, human movement, Sports Science

An Exploration of ‘Scaffolding Literacy’ in the Teaching and Learning of Writing Exposition Texts to Low Proficiency Secondary Five Second Language Learners in Hong Kong

Tsui-yuk Man

School of Education

Video Presentation

This paper presents my Doctor of Education proposal in the field of literacy education in an ESL context. The rationale of this study is that low proficiency students in a local school in Hong Kong experience problems in the learning of writing, partly due to the inappropriateness of the current in-practice literacy pedagogy. To deal with this problem, the study explores whether new literacy pedagogy, ‘Scaffolding Literacy’, will be a more effective one. Scaffolding Literacy is built on a ‘functional approach to language in social context’ to teaching writing. It has proved to be an effective intervention program to accelerate the literacy levels of students in Australian and Hong Kong classrooms. This action research will explore the role of the pedagogy ‘Scaffolding Literacy’ in the teaching and learning of exposition texts (analytical and hortatory) to students with low language proficiency in a Secondary Five second language learners’ classroom in a Chinese speaking community. Findings will be obtained mainly by annotation of pre- and post-test student work samples using a systemic functional linguistics toolkit. Comparison of language features in the two types of student work samples will be analysed using SPSS. An anticipated outcome of this study is that students’ writing performance will improve particularly in the areas of text organization and language features as a result of the intervention, and give impetus to teachers in Hong Kong schools to trial this new literacy pedagogy.

Keywords: scaffolding literacy, exposition texts, action research

Digital Dissections and Muscle Reconstructions: Estimating Musculature of Extinct Species using their Closest Living Relatives

A. Klinkhamer¹, D. R. Wilhite², S. Wroe¹

1. University of New England, School of Environmental and Rural Science NSW 2351
2. Auburn University, College of Veterinary Medicine, Alabama USA 36849

Oral Presentation

An essential part of studying the locomotion of both living and extinct taxa is understanding limb anatomy. Hard tissue (i.e. bones) is predominately all that is preserved in extinct taxa. Therefore, muscle dissections from close living relatives are frequently used to reconstruct the soft tissue of extinct species to predict how they moved. We digitally dissected an Australian salt-water crocodile (*Crocodylus porosus*) from a composite of a full-body CT scan and MRI scan. In total 25 muscles in the forelimb and 27 muscles in the hind limb could be correctly identified. From this, we created an interactive 3D PDF which provides in depth information on the limb anatomy and muscle attachments of this species. This information will be used to infer limb musculature of an Australian sauropod dinosaur (*Diamantinasaurus matildae*). While digital dissections are commonplace for cranial musculature, this is the first study that we are aware of to complete a limb digital dissection in any species, and has wide-scale application in understanding the locomotion and limb anatomy of archosaurs.

Keywords: digital dissection, muscle reconstruction, extinct species

Mobile Mapping Applications: Opening Opportunities at the Grassroots

RM Blackley

School of Law

Oral Presentation

The ubiquity of mobile devices with locational and contextual awareness means they will play an increasingly fundamental role in how we collect, share and use information. We highlight some new uses for mobile devices relevant to natural resource managers and decision makers. Technologies leveraged include:

- Open data publishing and services, on our way to Web 3.0
- Collaborative, cloud-based platforms
- Reports & dashboards with live, automated visualisation, queries and analysis of data.

We describe our motivation, our architecture, and our prototype implementation. There are a broad range of tools available to small community groups and organisations that can be quickly modified to suit immediate needs, the key is knowing where to look and determining what's useful. We focus on solutions that deliver what we need quickly (within a few hours) and efficiently (free – very low cost). This means we can then focus on building and sharing mobile mapping application (mApps) with the following priorities:

- Participatory problem solving to empower citizens
- Make it local. Keep it local.
- Working on smaller pieces of the larger tasks, not solving the world's problems.

The technology will change, so anything built now has to be compatible with past efforts and not limit future opportunities. Before building a widget there needs to be a system to support long term data management. We find it's often not just a critter/crisis issue, it's the people, organisations and information sharing that can be the greatest barrier to long term solutions.

Keywords: agile application development, citizen science, open data, decision making

Determinants of Improved Cassava Varieties' Adoption and its Intensity in Ghana: Implications for Extension Activities.

Kodjo Kondo, Euan Fleming, Oscar Cacho and Renato A. Villano

UNE Business School

Oral Presentation

Cassava is an important tropical root crop for household food security and national economies. In Ghana, it is the most important staple food that is also used in breweries and high-quality cassava flour production for the bakery and confectionery industries. The national research institute has released a number of high-yielding and resistant varieties in partnership with international agricultural research institutes and regional programs including the World Bank-funded West Africa Agricultural Productivity Program. These improved cassava varieties (ICVs) are being promoted in the rural communities through the establishment of demonstration plots, distribution of planting materials, formation of innovation platforms and media releases. This study assesses the current rate of ICV adoption and investigates the socio-economic and demographic factors, the varietal attributes and mostly the dissemination mechanisms that affect farmers' decision to adopt the ICVs and the intensity of adoption (that is, the proportion of area under cassava planted to ICVs). A mixed-method approach is employed. It combines preliminary qualitative enquiries with a subsequent questionnaire-based survey of 608 farmers randomly selected in eight treated communities (with demonstrations) and six control communities (without demonstrations) in six districts located in the Ashanti and Brong-Ahafo regions. Summary statistics indicate adoption rates of 38.36 percent and 0.46 percent in the treated and control communities respectively. Results of econometric analyses reveal the significant drivers and impediments to adoption and factors influencing the intensity of adoption. They are presented and discussed along with policy recommendations.

Keywords: determinants, adoption, intensity, cassava, mixed-method.

Impacts of climate change on suitability of *Neoleucinodes elegantalis* (tomato borer) in South America

Ricardo Siqueira da Silva, Lalit Kumar, Farzin Shabani, Marcelo Coutinho Picanço

School of Environmental and Rural Science

Oral Presentation

Climate change is not new topic, there many evidence of an increase of temperature worldwide. As a result of changed climate, areas can become more or less suitable for insect-pests in the future. *Neoleucinodes elegantalis* (Guenée) (Lepidoptera: Crambidae), known as a small tomato borer, is one of the major pests of solanaceous in South America causing great economic losses on tomato cultivation due to the direct damage caused to the fruits. Forecast of the pests distribution under current and future climate are important to make informed decisions to reduce risks in agricultural systems. Thus, our aim was develop a model of the climate for *N. elegantalis* using CLIMEX software package for South America using A2 SRES (Special Report on Emissions Scenarios) emission scenarios for future using a model CSIRO-Mk3.0. The results of model indicate that large areas in South America that are climatically suitable at the present time will become climatically unsuitable for *N. elegantalis* by 2100 as a consequence of progressive increase of dry stress. However, in South Chile will become suitable for *N. elegantalis* on areas where this pest does not occur. These results are helpful in developing future strategies to take advantage of new opportunities in Solanaceas crops in regions that may be unsuitable for *N. elegantalis* and provide important information to prevent introduction and establishment of *N. elegantalis* in new areas.

Keywords: (min 3; max 6)

Climate change, small tomato borer, Solanaceae, CLIMEX, modelling

Can a Rat be Depressed?

Nicarla Glyde, Nick Andronicos, Adam Hamlin, Chris Sharpley, Linda Agnew

School of Science and Technology

Oral Presentation

Depression is a pervasive mental disorder worldwide and can affect us all. It can damage physical health, relationships and cognitive performance. Depression has been shown to represent a mortality risk equal to smoking, even when related health factors are taken into account. Often depression will come with symptoms of anxiety along with the depressed mood and loss of interest or pleasure it is known for. Despite the high occurrence of depression and the personal and societal costs depression relies on processes that are relatively open for confounds. Currently depression is determined by clinical interview or standardised paper pencil tests. Identifying the interaction between the behavioural and biological systems is fundamental to better understanding depression and anxiety. To understand the effect of stress on an organism requires a multidisciplinary approach including the measurement of physiological and behavioural parameters.

This study investigates the behaviour of rats in response to early and/or later life stress. Additionally the study examines biological measures at the conclusion of the behavioural model to determine the physical state.

Keywords: rodent model, anxiety behaviour, biomarkers

Sensory Integration Therapy reverses neurodevelopmental and behavioural deficits in a rat model of chronic early life stress.

Stuart Fisher, Geetha Ranmuthugala, Stuart Wark, Andrew Talk & Adam Hamlin

School of Science and Technology

Oral presentation

Chronic early life stress can lead to deficits in neurological development that increases the risk of developing mental disorders such as post-traumatic stress disorder, anxiety and depression. Sensory Integration Therapy (SIT) is a technique employed in children with chronic early life stress that is thought to reverse neurological deficits and lead to a reduced risk of mental illness, but this has not been validated. SIT is based on a theory that proposes that sensory-motor stimulation can improve brain processing to produce purposeful responses to its environment. However, the use of SIT in the treatment of maltreated and neglected children is in its infancy with no real support in the current literature. The aim of this study is determine whether SIT can reverse neurodevelopmental, cognitive, emotional and social deficits in a rat model of chronic early life stress. By using a rat model we will be able to precisely determine if SIT can reverse neurological deficits induced by chronic early life stress by measuring changes that are occurring in the brain, such as neuronal plasticity and neurogenesis. We will then be able to correlate these findings to behavioural improvements in cognition, emotional processing and socialization. These findings will then provide a rationale for translating these psychological interventions in the treatment of children whom have suffered early life trauma.

Keywords: (early-life stress, sensory integration therapy, cognition, neurogenesis, rat)

Giving a Voice to the Unheard

Jocelyn Craig, Rafat Hussain, Stuart Wark and Trevor Parmenter

School of Rural Medicine

Oral Presentation

This presentation discusses the methodological difficulties of including older people with intellectual disabilities in research using validated quantitative tools. The findings come from a comparative study looking at the health, wellbeing and quality of life of people both with and without lifelong intellectual disabilities aged 60-years and over. This particular type of comparative quantitative research has not been done before with these cohorts in Australia. Rather than distributing surveys through a paper or electronic format for individuals to complete independently, validated quantitative survey tools were completed by people with intellectual disabilities working directly with researchers. This approach is costly and time consuming for researchers, organisations' staff and the participants themselves, however it was the only methodology that would facilitate contribution from this previously overlooked group. Some of the research challenges experienced in supporting participation were cognitive ability, language and communication barriers, participants living in disperse locations, and low participation rates. Strategies used to complete the survey included researchers allocating pre-interview time to build rapport; using a pre-test to ensure all participants can consent and comprehend the questions; allowing appropriate space for participants to respond; reframing/clarifying questions as needed; and ensuring participants stayed on task but at the same time allowing them sufficient time to contribute. It is acknowledged that this methodology is time-intensive and expensive, but it enabled the participation of individuals who previously been denied the opportunity to participate in a survey. This approach has potential application to other groups with limited opportunities for their voice to be heard.

Keywords: intellectual disability, ageing, methodology, quantitative research

An Evaluation of Student Knowledge and Stakeholder Expectations of Civics Education in Bhutan.

Rinzin Wangmo

School of Education

Oral Presentation

Bhutan's current civics texts have been taught in schools since 2008. They now merit a review. There is a need to assess their impact on young people's understanding of civics as well as citizenship. So far, no one has undertaken research into civics education in Bhutan, nor has there been regular centralised testing of students' civics knowledge. This study aims to find students' level of knowledge of the subject matter of the civics curriculum in Bhutan. It is an attempt to provide an empirical foundation for policy makers, curriculum designers, teacher educators, as well as teachers and the public, to understand the current state of the acquisition of civics knowledge in Bhutan. An objective type test was conducted on 270 students from nine schools from different regions of the country. These same students and their teachers were then interviewed about their perceptions of, and attitudes towards, civics learning and civics content. The test results and the interviews were evaluated and the results shown to key stakeholders for their responses. They were encouraged to make their own impressionistic evaluations of the results and to share their views on future directions for civics education in Bhutan. Students' level of knowledge of the subject matter of the civics curriculum in Bhutan: Overall performance by 270 sample students from 9 schools, comparison between the performance of public and private schools, between schools in different regions, urban and semi-urban schools, and between girls and boys. Further, comparisons between performance in Civics test vis-à-vis students' performance in English and Dzongkha (National language of Bhutan) in 2014 National Examination shall also be presented to see the inter-subjects performance trend. English and Dzongkha are the common subjects of all the streams of study.

Keywords: Dzongkha (national language), civics education, Bhutan, student knowledge

Endurance Exercise and Physical Activity: Means to Delay the End

Joshua Denham^{1 3 4}, Brendan J. O'Brien², Priscilla R. Prestes³, Nicholas J. Brown², Fadi J. Charchar^{3 4}

¹ School of Science and Technology, University of New England, Armidale, NSW, Australia.

² Faculty of Health, Federation University Australia, Mount Helen, Victoria, Australia.

³ Faculty of Science and Technology, Federation University Australia, Mount Helen, Victoria, Australia.

⁴ Australian Centre for Research into Injury in Sport and Its Prevention (ACRISP), Federation University Australia, Mount Helen, Victoria, Australia.

Invited Oral Presentation

Introduction and Aims: Telomeres are a repetitive stretch of DNA located at the ends of chromosomes that safeguard against genomic instability. Telomeres shorten with ageing and excessive telomere shortening is associated with increased risk of cardio-metabolic disease and premature death. Exercise may maintain telomeres, though the optimal amount is unknown. The aim of the present study was 1) to confirm our previous results that endurance athletes possess longer leukocyte telomeres than their non-athletic peers; 2) elucidate whether telomere-regulating genes are differentially expressed between athletes and controls; 3) analyse physical activity and cardiorespiratory fitness in context with telomere length and expression of telomere-regulating genes.

Methods: 61 endurance athletes and 61 healthy controls completed physical activity questionnaires and a maximal oxygen uptake test. DNA and RNA were extracted from donated blood for telomere length and gene expression analyses using quantitative polymerase chain reactions.

Results: Relative to the controls, athletes possessed 7% longer telomeres and up-regulated TERT and TPP1 genes, with known roles in telomere length maintenance (all $p < 0.01$). Physical activity and maximal oxygen uptake were positively correlated to telomere length, TERT and TPP1 gene expression (all $r > 0.20$, $p < 0.01$). Exercise volume was associated with telomere length and gene expression such that moderate and high amounts of exercise were associated with significantly longer telomeres compared to low amounts.

Conclusion: Endurance athletes with superior cardiorespiratory fitness possess long leukocytes telomeres and up-regulated telomere-regulating genes, which may underpin the improved longevity and low incidence of disease observed in epidemiological studies. Rather than extensive exercise training performed by athletes, moderate amounts of exercise training may be enough to prevent premature biological ageing and cardio-metabolic disease.

Keywords: biological ageing, cardiorespiratory fitness, telomerase

Young Children's Experience and Understanding of Deployment within an Australian Defence Force Family: Mosaic and Narrative Approaches

Marg Baber, Margaret Sims, Tanya Hathaway and Dr Sue Elliott

School of Education

Oral Presentation

Military deployment is considered stressful for families (Palmer, 2008), normally lasting between 3-9 months for Australian Defence Force (ADF) personnel. To date, insufficient research has been conducted concerning children who experience deployment (Seibler, 2009). This study seeks to provide valuable insight into young children's understandings and experiences of military deployment in their families in an Australian context. An adapted research framework, based on the policies from the United Nations Convention on the Rights of the Child (UNCRC, 1989 and Clark and Moss 2011), has been created in order to listen to and privilege, the often marginalised, child's voice. Using the qualitative research approach, the Mosaic Method, multiple methods of data collection are combined to gather various insights into children's experiences. Embracing an interpretivist epistemology, the researcher aims to create a shared knowledge of the children's understanding and experiences, progressively building insight into the child's experience and allowing discussions to take place about their experiences. Data analysis has been conducted using thematic verification and case analysis. Additionally, a smaller set of subsequent data has been collected and analysed using Narrative Research methods, rather than Mosaic Research. The central goal of Mosaic Research 'is not to make children's knowledge unquestionable, but to raise it to such a level that children's knowledge about their lives is central to adult discussions' (Clark and Moss, 2011, p. 65). Such knowledge about children's understandings and experiences with deployment can only be helpful for effective support of parents, educators and professionals that work with these children in the community.

Keywords: mosaic, narrative, socio-ecological, thematic analysis, constructivist

To what Extent are Aboriginal Students Studying Away from Home Happy and Achieving?

Kevin Bell and Inga Brasche

School of Education

Video Presentation

There has been much written of late on the positives and negatives of Aboriginal students studying away from home and community, and their attendance at boarding schools, and other away from community school education environments.

In my study I have asked the students, the parents (and carers) and staff at their schools as to whether they believe the students are happy in their environment away from their community and as to whether they are achieving in their chosen educational environment. This study is a mixed method study involving qualitative data collected from two dozen interviews with a number of Aboriginal students, the school staff and their parents and carers, as well as two quantitative surveys of students attending boarding schools in Darwin and Melbourne. The concept of happiness is problematized, with a theoretical framework largely incorporating the work of Sonya Lyubomirsky (2004). Quantitative data collected through surveys and qualitative data collected through interviews, is measured against happiness indicators as set out in a Happiness Table, largely developed from Lyubomirsky's happiness table. The achievement of the students is analysed in terms of their development in social capital. The importance of social capital as an indicator of social cohesion, trust and well-being is recognised as a tool to quantify often intangible elements of achievement. Social capital is quantified using a table developed in Australia by Onyx and Bullen (2000) to gauge one's social capital development. One of the more interesting aspects that many students and their family members comment on is the freedom the students feel through the opportunity of studying away from the community.

Keywords: indigenous students, education, boarding school, happiness, achievement.

The Role of Spirituality in Psychotherapeutic Intervention

Lynda Dolan, Anna Kokavec and Eugene Hlywa

School of Health

Oral Presentation

BACKGROUND: The words spirituality and religion are often used interchangeably. However, these two terms do not mean the same thing. Spirituality is defined as the internal invisible force within the human being that promotes the person's life. Alternatively, religion is defined as a particular system of faith and worship. Spirituality can reveal itself in a person's dedication to a style of life and personal goal. Thus, in the context of the individual spirituality and religion relate to some internal or external need, respectively.

AIM: The primary aim of this study is to investigate the role of spirituality in the psychotherapeutic context. A secondary aim is to explore whether the inner self, revealing itself as spirit, influences the personal development of the individual and whether hypnotic phenomena enhance the potentiality of the human being.

HYPOTHESES: It is expected that psychotherapy will be more effective when the role of spirituality is understood and fully incorporated into the psychotherapeutic process.

METHOD: A total of 5 adults aged 18 years or over who have been referred to a private psychology clinic for treatment for a range of conditions will be recruited for this study. The study methodology will include a minimum of 5 individually tailored sessions. The maximum number of sessions to be conducted will depend on the needs of the client. The psychotherapeutic style to be adopted will be consistent with a person-centred approach.

RESULTS: Data from the 5 case studies will be analyzed using a qualitative approach.

Keywords: spirituality, psychotherapy, person-centred, hypnosis;

The Relationship between Company Size and Effective Tax Rates

Carol Matchett and George Chen

UNE Business School

Oral Presentation

This study investigates whether large Australian companies use their political power to lower their effective tax rates. It also tests whether there is an industry effect on effective tax rates for the mining and financial industries in Australia. This study compliments and expands the current research into the effect of political power on effective tax rates by incorporating other tax rate theories. Using 402 mature Australian public companies over a 13-year period the study applies three separate tests to profitable companies. Firstly that the effect can be seen over a long period by using panel data testing methodology allowing for the capture of individual company fluctuations in fifty five profitable companies. Secondly that the effect can be seen using cross-sectional analysis on a year-by-year basis of companies that were profitable in a specific year. Finally by extending the existing methods to take into account non-financial information in the 2012 financial year this study then expanded to include the effect of other tax rate theories on the data. Findings from this study provide evidence that there are mixed results in the relationship between company size and effective tax rates and that further testing expanding the use of non-financial data would be needed to counter the effect of political costs on individual companies.

Keywords: effective tax rates; company size; net operating losses

Social Responsibility is not the same as Corporate Social Responsibility (CSR) for Universities

Daphne Mc Curdy and Nick Reid

School of Environmental and Rural Science

Oral Presentation

Being socially responsible requires organisations and individuals to behave ethically and with sensitivity towards social, cultural, economic, environmental and sustainability issues. Universities as educational institutions have always had social responsibilities (SR) but in recent years an increasing number of universities have begun adopting Corporate Social Responsibility (CSR) programs to fulfil these duties. Unfortunately SR and CSR are not the same. This paper identifies the differences between CSR and SR and clarifies why the adoption of CSR by universities is a concern

Keywords: university, social responsibility, corporate social responsibility (CSR), policies, international standards,

Electricity and Magnetism in Space: How on Earth can we find out about them and their Effects?

Margaret Sharpe, Peter Barnes and Stephen Bosi

School of Science and Technology

Oral Presentation

Magnetic fields arise from electric currents, including movements and spin of electrons. We cannot measure electric currents in outer space, nor can we do experiments 'out there', so we hypothesise what effects magnetic fields (which we have evidence of now) may have on star formation. Even within the last 10 years our ability to look for, find and measure the strengths of such magnetic fields has progressed enormously. Such data can constrain hypotheses on how stars form, weakening the case for some of them and strengthening the case for others. The Zeeman effect where spectral lines of certain atoms and molecules are split in a magnetic field is one approach used for estimating the strength of magnetic fields. Many recent studies, including mine, looks at the cyanogen radical (CN) which can show the Zeeman effect. Since 2006 observations on the Mopra 22m radio telescope near Coonabarabran have been contributors to finding clouds containing this molecule in sufficient concentration to do further measurements using radio interferometry carried out on the ALMA telescope array in Chile.

Keywords: astrochemistry, the Milky Way, ISM, molecules, radio lines, star formation

Can We Monitor Coeliac Disease Severity by Using Discriminant Analysis of Histological and Gene Expression Data?

Richard Charlesworth, Nicholas Andronicos, James McFarlane and Linda Agnew

School of Science and Technology

Oral Presentation

Coeliac Disease (CD) is a chronic autoimmune disorder targeted against the harmless grain protein gliadin which affects around 1 in 300 people worldwide. CD is currently diagnosed using both serological and histological metrics although there is debate as to the accuracy of these measures. We have developed and tested a fully-annotated and MIQE-compliant 87-gene qRT-PCR array which was specifically designed to investigate the hypothesised immune pathways and processes of active CD. We have also analysed both healthy and CD mucosa under a number of standard histological stains to investigate morphological changes which occur during the condition. The aim of this research was to then examine both these datasets using discriminant analysis to generate linear predictive algorithms able to accurately and objectively classify the disease severity of CD patients. Discriminant analysis was used to analyse both these datasets and generate linear predictive equations to determine CD Marsh score (truth parameter) from the histological and gene expression data. Using histological data alone, we generated two predictive algorithms able to accurately predict CD Marsh score 79.2% of the time. Using gene expression data alone, we generated two algorithms able to accurately predict CD Marsh score 96.3% of the time. Using both histological and gene expression data, we generated two predictive algorithms able to accurately predict CD Marsh score 99.3% of the time. We have successfully generated three sets of predictive algorithms which are able to correctly predict CD severity using histological data, gene expression data and these two measures combined.

Keywords: Coeliac Disease, diagnosis, discriminant analysis

STREAM THREE

Session Nine – Catalyst Nominees

Session Ten – Climate and Change

Session Eleven- Learning Diversity and Diverse Learners

Head Hopping: Using Landmark GMM to determine Primary Locomotion of *Simosthenurus Occidentalis*

J. Cook, S. Wroe and E. Sherratt

School of Environmental and Rural Science

Oral Presentation

Due to their relatively large and robust size it has been argued that sthenurines may not have performed the same style of locomotion as extant macropodoids. Previous studies on other mammals have shown a correlation between the position of the foramen magnum and gait. By using landmarks geometric morphometric we compared the shape and size of the posterior of the skull of individuals of 15 different marsupial species, including *Simosthenurus occidentalis*. Principle component analysis indicated that while *S. occidentalis* did not group with bipedal macropods, there is a distinct difference in shape of the posterior of the skull between quadrupeds and bipeds.

Keywords: macropods, locomotion, geometric morphometrics, biomechanics, foramen magnum.

Blood Pressure Management - Isometric Handgrip Exercise Reduces Hypertension

Carlson, D.J., Inder, J., McFarlane, J.R., Dieberg, G. and Smart, N.A.

School of Science and Technology

Oral Presentation

Introduction: The anti-hypertensive effect threshold of isometric handgrip training has not been established. The usual handgrip intensity of 30% maximum voluntary contraction (MVC) used in most studies is initially challenging for some people. **Aim:** To investigate whether isometric handgrip training conducted at 30% MVC would elicit greater reductions in blood pressure than 5% MVC.

Methods: A randomised trial was conducted of 24 participants diagnosed with mild or pre hypertension, men (n=9) and women (n=15), aged 51 ± 8.2 . Participants trained 3 days per week for 8 weeks with their non-dominant hand, at either 5% or 30% of their MVC.

Participants completed 4 sets of 2 minute isometric handgrip contractions separated by 3-minute rest periods.

Results: A significant reduction in systolic blood pressure (SBP) was seen in the 30% MVC group of -10 mmHg from 133 ± 6.4 to 123 ± 12.3 ($P = 0.007$), while the 5% MVC group reduced -5 mmHg from 125 ± 11.7 to 120 ± 15.1 ($P = 0.33$). Reductions of diastolic blood pressure (DBP) in the 30% and 5% MVC groups were -4 mmHg from 75 ± 5.1 to 71 ± 7.6 ($P = 0.07$) and -6 mmHg from 74 ± 8.6 to 68 ± 9.1 ($P = 0.05$), respectively.

Conclusions: Significant reductions in SBP in the 30% group and DBP in the 5% group, with trends towards blood pressure reduction in SBP in the 5% group and DBP in the 30% group, suggest that 5% may be a suitable introductory intensity to achieve anti-hypertensive effects.

Keywords: hypertension, isometric handgrip exercise, blood pressure

Low-dose Phase-contrast CT Imaging for 3D Mammography

Darren Thompson, Konstantin Pavlov, Timur Gureyev and Yakov Nesterets

School of Science and Technology

Oral Presentation

Breast cancer is one of the two leading causes of cancer fatalities among women in most industrialised countries. It is an aggressive cancer, with successful treatment depending predominately on early detection. Presently, 2D X-ray mammography is the main screening and diagnostic technique employed. Despite significant advances, conventional 2D mammography has inherent difficulty in being able to distinguish regions of similar overlying density whereby breast tissue may camouflage adjacent masses. Approximately 20% of breast cancers are not detectable due to this issue. Our research intends to explore the application of 3D mammography utilising phase-contrast computed tomography (CT) utilizing both synchrotron and conventional X-ray sources. It is generally accepted that CT delivers superior fidelity to 2D modalities, such as conventional mammography. Recent developments in the field of phase-contrast CT may allow imaging of soft tissue and tumours at higher resolution with better contrast and a smaller radiation dose compared to current clinical mammography. In this presentation we describe a simplified form of a CT reconstruction algorithm which mathematically combines phase retrieval for objects having weak absorption contrast, such as breast tissue and CT reconstruction in a single 3D step as opposed to the common 2D slice based method in which phase retrieval performed followed by the reconstruction step. We examine the performance characteristics from a quantitative and qualitative perspective with limited projection sets and low-photon statistics against traditional and emerging CT reconstruction algorithms.

Keywords: CT phase-contrast mammography reconstruction

Thermal Decomposition of Polymers Prepared with Switchable N-Methyl, N-(4-pyridyl) dithiocarbamate RAFT Agents

Sarah J Stace, Christopher M Fellows, Graeme Moad and Daniel J Keddie

School of Science and Technology

Oral Presentation

Reversible Addition-Fragmentation chain Transfer (RAFT) polymerization is used to access functional polymers with targeted molar mass, narrow molar mass distribution and defined molecular architecture.¹ RAFT agents are selected based on the reactivity of the monomer being polymerized, with monomers characterised into the two broad categories of more active monomers (MAMs) and less active monomers (LAMs).² Inappropriate selection of a RAFT agent for a given monomer leads to poor control, typified by either high dispersity or inhibition of polymerization. The thiocarbonyl group of RAFT synthesized polymers can release sulphur compounds, be of unfavourable colouring and present problems with respect to polymer stability through their inherent reactivity. As a result the removal of the thiocarbonyl group has been explored in detail for polymers synthesized with conventional RAFT agents through a range of methods including nucleophilic displacement, radical induced fragmentation and thermal decomposition.^{3,4}

In this work we investigate the removal of acid/base switchable N-pyridinyl dithiocarbamate RAFT end-groups from polymers bearing terminal MAM or LAM units. These investigations focus on the relative reactivity of polymers in which the end-group in both the activated (i.e., protonated) and deactivated (i.e., neutral) forms via a range of techniques. Recent results obtained in these areas will be presented.

References

Keddie, D. J. 2014

Benaglia, M.; Chiefari, J.; Chong, Y. K.; Moad, G.; Rizzardo, E.; Thang, S. H. 2009

Willcock, H.; O'Reilly, R. K. 2010 Polymer Chemistry

Moad, G.; Rizzardo, E.; Thang, S.H.; 2011 Polymer International

Keywords: switchable reversible addition-fragmentation chain transfer

Possibility of Transition to a Low Carbon Place Through Changes in Public Policy

Darren Keegan, Philip Thomas and Ted Alter

School of Law

Oral Presentation

Annual global carbon emissions and the total stock of greenhouse gases in the atmosphere continue to increase and will likely increase the speed and intensity of future climate change. Many regional areas in Australia are likely to experience more extreme weather, heat stress, biodiversity loss, and declining water availability. In order to mitigate future climate change, human activities may need to transition from high emission to low emission patterns. A practitioner-researcher study has been undertaken using individual action research to collect data from informed persons in three regional community workshops, eight informed person interviews, and researcher self-reflection-in-action. A thematic analysis of the observed themes informs a potential overarching low carbon policy framework and provides policy checklist that reflects the knowledge of the practitioners interviewed in this study. This study will be of relevance to practitioners contributing to the climate change mitigation policy process.

Keywords: climate change, action research, public policy

Adaptation to Climate Change in Pacific Island Countries: The Role of Risk Perception

Shalini Lata and Navjot Bhullar

School of Behavioural, Cognitive and Social Science

Oral Presentation

Environmental challenges present an important area of investigation of human-environmental interactions. There is a growing recognition that human actions are needed to address environmental threats such as climate change. Perception of environmental risks, one of many human tendencies, tends to motivate protective actions and is important in predicting behavioural intentions and policy preferences related to adaptation strategies. The present study is the first to investigate the role of risk perception in climate change adaptation in the Pacific Island Countries where people have a direct relationship with their environment. Specifically this study uses Fiji as a case study to investigate the relationship between risk perceptions and climate change adaptation strategies and policy support. Respondents (N=400, mean age = 39.78; SD = 14.93) from Fiji provided data on a range of psychological measures. Results revealed that risk perception was positively associated with self-efficacy ($r = .302$), behavioural adaptation ($r = .210$), psychological adaptation ($r = .317$), and willingness to support policy on climate change ($r = .434$). All correlations were significant at $p < .001$. Overall, these findings suggest that risk perceptions are important to understand how adaptation strategies can be mainstreamed into the Pacific communities and embedded into current national policies and planning. The current findings can inform better environmental management practices, policy development and enhance risk communication.

Keywords: climate change, risk perception, adaptation, Pacific Island countries

Tropical Cyclones, Rainfall and Landslides in a Mountain City in the Philippines: A Review of Extremes and Impacts

Dymphna Javier and Lalit Kumar

School of Environmental and Rural Science

Oral Presentation

Tropical cyclones, heavy rainfall and landslides have caused serious economic and social disruption in the Philippines, located in the Western North Pacific, where tropical cyclone formation is very active. Baguio City, an urban center in the Cordillera mountains of northern Philippines, is among those severely affected every year. We present examples of heavy rainfall induced by tropical cyclones, the meteorological conditions that have triggered such and the ensuing landslide impacts. The most devastating events are those associated with tropical cyclones during the southwest monsoon season. The extreme ones have developed rain bands of more than 1000 kilometers, or have entered the Philippine area of responsibility immediately after the exit of another, or have exhibited Fujiwhara interaction with another proximate tropical cyclone. Prior information about such potential conditions could provide guidance in issuance of early warning that could help mitigate possibly adverse impacts.

Keywords: tropical cyclone, heavy rainfall, landslides, Philippines

Change of Climate Suitability in Common Bean

Nadiezhdha R. Cabral, Lalit Kumar and Subhashni Taylor

School of Environmental and Rural Science

Oral Presentation

Weather has a major influence on crop development. Temperature, solar radiation and rainfall are the main climate factors affecting crops. During development, crops pass through different stresses. The magnitude of damage depends on the phenological stage of the crop and stress duration. Adding to these climate constraints, climate change may have significant impacts on agriculture. Climate change impacts may either improve or reduce yields in the short term for some regions. The assessment of staple crops under climate change conditions is necessary to undertake any global initiatives to tackle food security issues. Common bean (*Phaseolus vulgaris* L.) is a staple crop and the main source of proteins and nutrients in Africa and Latin America. By 2050, an increase of around 30% of common bean production is needed to feed the increasing population. The purpose of this study is to model the current and future potential distribution of common bean based on its native and cultivated distribution. This investigation used CLIMEX to assess the varied climatic conditions suitable for the common bean under current and future climate scenarios. A2 and A1B emission scenarios, and two different global climate models CSIRO-Mk3.0 and MIROC-H for the years 2050 and 2100 were used. The results indicate future climate conditions more favourable for common bean cultivation in the northern hemisphere, but less favourable in the southern hemisphere. A shift in common bean productive areas will occur with the loss of suitability on current common bean cultivation areas and an increase in cold areas. The results indicate the likelihood of change in climatic suitability and distribution of common bean at a global scale under future climate.

Keywords: *Phaseolus vulgaris* L., climate change, CLIMEX, abiotic stresses, GIS

Carbon Footprint of Rice Cropping Systems - Using Crop Residue for Biochar Production and Application Into Soil

Mohammadi, A., A. Cowie, M.L. Anh, P. Kristiansen, R.A.de la Rosa, M. Brandao and S. Joseph

School of Environmental and Rural Science

Oral Presentation

This study estimated the carbon footprint of alternative rice production systems in North Vietnam with different residue management options, using Life Cycle Assessment (LCA). The traditional practice of open burning of residues (System A) was compared with the alternative of converting residues to biochar, which was returned to the same land area from which the residues were obtained (System B). Pyrolytic cook-stoves and drum ovens were assumed to be used by households to produce biochar, and the cook-stoves produced heat energy for cooking. The annual rate of biochar applied was determined by the amount of biochar produced from the straw and husk available. We assumed that agronomic effects of biochar increased with each annual biochar application until reaching maximum benefits at 18 Mg ha⁻¹, which takes eight years to be produced in pyrolytic cook-stoves and drum ovens. The largest contributor to the carbon footprint of rice at the mill gate, was CH₄ emissions from soil, in both systems. Biochar addition reduced the carbon footprint of spring rice and summer rice by 26% and 14% respectively, compared with System A, in the first year of application. These values substantially increased to 49% and 38% after eight years of biochar addition.

Keywords: life cycle assessment, biochar system, methane emission, rice straw, pyrolytic cook-stove

Square Pegs for Square Holes: The Challenges of Identifying and Meeting the Learning Needs of Gifted Rural Students Through Local Specialist Online Provisions

Maria Russell and Michelle Bannister-Tyrrell

School of Education

Oral Presentation

Despite the best intention by enlightened government initiatives and policy to provide appropriate learning opportunities for gifted and talented students, the reality often falls short of the ideal, for a myriad of reasons. For regional and rural students these issues are exacerbated further by the tyranny of distance from experiences and opportunities that are accessible to students living in or near large cities. While technology is seen as a possible answer to many of these issues, including a lack of teacher training and access to high quality resources, online learning opportunities alone are no panacea and come with their own challenges that must be addressed to maximise learning opportunities for gifted students. This study investigates some of the issues that impact on successful eLearning opportunities for rural Primary school gifted and talented students in one region in New South Wales. Variables identified in this study include the use of appropriate identification tools, successful matching of individual student needs with online provisions, and professional development opportunities in technology-based gifted education for educators in rural areas.

Keywords: gifted students, rural, online learning

Opening the Doors of Possibility for Gifted Children with Learning Difficulties: Initial Identification Procedures for Primary School Teachers

MaryAnne Haines, Linley Cornish and Michelle Bannister - Tyrrell

School of Education

Oral Presentation

The traits linked to gifted children with learning difficulties are diverse and complex. Identification of these children can be hindered by a combination of factors, including variations in teacher knowledge and experience, inconsistencies in the visibility of high abilities co-existing simultaneously with one or more learning difficulties, and also the lack of a practical checklist questionnaire. This exploratory mixed-methods study addresses the need for assessment strategies that primary school teachers can use in the initial stage of identifying possible gifted children with learning difficulties (GLD). The first phase of the study focused on procedures leading to the development and implementation of a comprehensive and useful checklist. Comprehensiveness was developed through reviewing research-based characteristics, anecdotal lists and teacher perceptions. Section A of the Checklist is based on the six natural-ability Domains of François Gagné's Differentiated Model of Giftedness and Talent (DMGT 2.0; 2008). Section B has three familiar categories for assessing possible learning difficulties. Nine teacher participants trialed the Checklist and ranked the selected children in their classes on every item in the nine categories. Overall, the qualitative and quantitative analyses of the teachers' responses support the questionnaire's reliability and usefulness. In the second phase, six child participants were selected for case studies to determine whether other assessment strategies supported the findings of the Checklist. The results from interviews with each child, a Parent/teacher questionnaire, a general intelligence test — the 'Ravens Standard Progressive Matrices', and a 'Think aloud' assessment affirm the worthiness of the Checklist, but variations in results suggest the importance of the questionnaire being part of a comprehensive assessment protocol.

Keywords: gifted children with learning difficulties (GLD); identification checklist questionnaire; 'think aloud'; general intelligence test; comprehensive assessment protocol

Twice exceptional? What's that?

Anne O'Donnell-Ostini, Michelle Bannister Tyrrell and Jeff Bailey

School of Education

Oral Presentation

Giftedness is associated with advanced cognitive ability. Children can be identified as academically gifted and can have an additional diagnosis of a learning difficulty or disability. This 'twice exceptionality' is often under recognised or misdiagnosed. In young children, identification of this group of children is much more elusive. Information and an evidence based approach of children with twice exceptionalities, particularly from two to five years, warrant further attention. Continuing controversy surrounding gifted programs, myths and claims of elitism complicate identification within the early years. This study serves as a bridge between the gaps in literature and research of very young children who are twice exceptional. Partnership with interested practitioners will be sought to actively engage in the identification of gifted and twice exceptional children. Following the collection and analysis of data from centre based observation and teacher interviews, an identification tool will be developed. The development and implementation of an identification tool will occur collaboratively with early childhood practitioners, thus guaranteeing relevance within early childhood contexts. Feedback will assist in the assessment of the usefulness and value of the twice exceptional identification tool. Additionally, the study requires comprehensive validation of the instrument, including the use of an Expert Panel. This research will contribute to the development of an early identification tool and should raise the profile of young children with dual exceptionality in early childhood settings.

Keywords: twice exceptionality, giftedness, early childhood, identification, collaboration

The Impact of Physical Activity on Students with Learning Disabilities within the Classroom: A Fundamental Movement Skills Approach.

Rebecca Clisdell, John Haynes, Jeff Bailey and Valeria Varea

School of Education

Oral Presentation

Research has shown that Physical Activity is of great value to a person's health and wellbeing. However, is it important within the classroom? Does it have an impact on how a child may learn and achieve their best? Can physical activity help students with learning disabilities to concentrate, focus and have greater motivation to achieve improved results in their learning? Guided by different research that suggests that physical activity is important for academic performance by aiding in concentration, memory retention and focus (Castelli, 2014), the link between physical activity and learning disabilities is brought into focus. Despite the present research on physical activity and academic excellence, there is a lack of research on how physical activity may support students with learning disabilities within the classroom. The investigation proposed here, consists of 60 students with learning disabilities from three different schools (30 students in a control group, 30 students participating in the intervention program). The sample will encompass urban and non-urban schools, as well as independent and co-educational schools. All students and teachers who have consented to participate in the study will participate in an interview/survey pre-study as well as an interview/survey post-study. The intervention group will participate in 30-45minutes of physical activity, 3 times a week first thing in the morning for 6 months (2 school terms). Interview/survey questions will comprise inquiries about learning, physical activity, students motivation and concentration before, during and after physical activity and observation by their teachers as to whether their marks and/or behaviour and/or understanding has improved as a result of more physical education within the curriculum.

Keywords: physical activity, learning disabilities

Teachers' Fidelity of Implementation of Inquiry Based Learning in the International Baccalaureate Primary Years Program Classroom

Liz McKenna, Jeff Baily, Michelle Bannister-Tyrrell and Robert Whannell

School of Education

Oral Presentation

The aim of the study is to explore and examine Inquiry Based Learning (IBL) in the International Baccalaureate Primary Years Program (IBPYP) classroom and the extent to which it is being implemented with fidelity. The purpose is to investigate the factors, with the teacher as the focal point, which influence the fidelity of implementation. This qualitative case study uses a theoretical framework which is informed by the social cultural and constructivist theories of Vygotsky, Bronfenbrenner and Bruner. The conceptualisation of Inquiry based learning is informed by the contemporary theory of Dewey. This study then leads to IBL in the IBPYP classroom focusing on the factors of teachers' beliefs, pedagogical practices, understandings and experience. This study uses a single exploratory case study design with semi-structured interviews, document analysis and teacher observations. The observations will be carried out to see IBL pedagogical principles in practice and will use a modified version of Century et al. (2010) fidelity of implementation schedule as the basis for the observation schedule. Documents to be analysed are, the IB policies, the schools interpretation of the IB policies in the context of their school, and the teachers' units of inquiry (UoI). The participants in this study will be four teachers from an IBPYP school in Sydney.

Keywords: inquiry based learning (IBL), fidelity of implementation, beliefs, understandings, pedagogy, International Baccalaureate Primary Years Program (IBPYP)

STREAM FOUR

Session Twelve- Securing Borders and Boundaries

Session Thirteen – Ethics and Agency

Session Fourteen – Language, Literacies and Education

Oil Exploration and Youth Unrest in the Niger Delta: A Study in the Rise and Impacts of Socio-Cultural Group Insurgency in Nigeria, 1956 – 2014.

Christian Madubuko

School of Humanities

Oral Presentation

This is a case study of underdevelopment, high-level poverty, and environmental devastation of the Niger Delta, Nigeria, from where the oil-wealth of the country is derived. The effects of oil exploitation are found to have severely damaged and impoverished the Niger Delta environment as a result of oil leaks, spills, and gas flaring that have gone unchecked for several decades. The Deltans peaceful appeals and later insurgency against the Nigerian State and the oil companies were occasioned by social injustice to which they had and have been subjected since exploration of petro-oil began in the region in 1956. Efforts by the Nigerian government, the oil companies and the international community to resolve the conflict yielded little or no success. This study has been undertaken to discover and highlight the reasons behind the Niger Delta conflict and as to why the efforts at resolving it have not been successful. This has been achieved through five research questions. The research deployed some theoretical explanation regarding natural resource conflict by reviewing the literature and exploring the theme of the study. It uses both secondary and primary sources and data but has relied more specifically on in-depth interview research methodology in gathering and reporting its findings from the field. The research establishes that the existing problem in the conflict is structural and this is because the whole socio-politico-economic system supports and thrives on corruption. The study advocates a wise political leadership anchored in good governance with strong political will and determination to embark on institutional reforms that would facilitate positive changes in the Niger Delta and indeed Nigeria. Finally, the study makes recommendations for the way forward for Nigeria.

Keywords: crude oil, degradation, militancy, kidnapping, conflict, Niger Delta.

Securitization of Australian Asylum Seeker Policy

Chaminda Jayasinghe, Helen Ware and Sirisena Gamage

School of Humanities

Oral Presentation

Australia has experienced five waves of maritime asylum seekers since 1970. Each wave created ripple effects in the policy discourse. This paper argues that maritime asylum seeker policy falls within the dominant purview of three policy areas: foreign policy, immigration policy and maritime security policy. Australia's reaction to the Vietnamese "boat people" represents the high watermark of foreign policy dominating the refugee policy of Australia. After the end of the cold war, until 2001, the policy became trapped within the sphere of influence of immigration policy. The waves of maritime asylum seekers arriving since 2001 have become victims of a radical policy shift towards Securitization. Over the years, this evolution has resulted in asylum seekers from almost identical circumstances being subjected to incrementally harsher policies, all designed to achieve goals set by domestic political agendas. The ramifications of the rapid changes of Australian policy goals are far reaching. Asylum seeker policy has become artificially separated from refugee policy over the last decade. The ramifications of this separation are far reaching. Australian refugee policy has deviated from international best practices. Legal and physical obstacles have been placed in the path of asylum seekers, rendering it virtually impossible to seek protection on the Australian mainland. Those with genuine protection concerns face few options. Australia is leading the world in turning away asylum seekers before they reach national territory. It is argued that Australia needs to reconsider the policy moorings of the Australian asylum seeker policy.

Keywords: securitisation, asylum seekers, public policy

A Case Study in the Politics of Land Ownership in NSW: the County of Sandon, 1884-1960

Margaret Small and Andrew Piper

School of Humanities

Oral Presentation

The management of Crown land has been a defining issue in New South Wales politics from the establishment of the British colony in 1788 until well into the twentieth century. Continuing policy changes, inept legislative drafting, contradictory policies and political corruption all contributed to the chaotic way in which the land (assumed to be vacant) was transferred from the Crown to private ownership. While the way in which this process played out has been well documented in part, and in particular for the period up to 1885, there has not been a study which draws together all of the disparate policy strands. For example, while there is a considerable and useful literature on the soldier settlement scheme after World War I, this has taken no account of policies relating to civilian land settlement which were current at the time. The thesis has two parts. The first is an examination of the land legislation from 1885 to 1960 with the aim of establishing exactly what was the intention of each legislative change. The second part examines how those legislative changes impacted on land ownership in the county of Sandon, in northern New South Wales. The study will reveal how successful (if at all) legislation has been in achieving the aims of legislators and will form the basis for a formulation of a model of land settlement

Keywords: land policy; NSW colonial history; land settlement; County of Sandon.

Three Anti-corruption Protests in Independent India: A Contrast

Debarchana Chakrabarty

School of Humanities

Oral Presentation

This study focusses on three notable anti-corruption campaigns in post-independent India. These three popular waves of protest are namely the JP movement of 1973-75, the Bofors Agitation of 1987-89 and the Janlokal Bill campaign of 2011-12. Whilst the first two campaigns somehow succeeded in overturning the government of the day, the third was in fact an attempt to effect permanent transformation by following a different route. This presentation will compare and contrast the aforesaid three campaigns and their goals, principal supporters, and their attainments in terms of political and broader success. The core question to be addressed is how far idealism, in combination with Indian democracy, can play an effective role in combatting corruption in the nation.

Keywords: JP movement, VP Singh, Anna Hazare, Bofors agitation, Janlokal Bill, anti-corruption

Agency in Thai Political Science Texts on the 2006 Thai Coup

Ingrid Wijeyewardene, Mary Macken-Horarik, and Zuo Cheng Zhang

School of Education

Oral Presentation

The 2006 coup in Thailand was a significant event in Thai socio-political history, the consequences of which still continue to be felt nine years later. This paper discusses two levels of agency of the writers of three political science texts produced shortly after the coup in order to examine the nature of the intervention by these three public intellectuals in a political context that is characterised by conflict and struggle and in which the discussion of any issues relating to the Thai monarchy is severely constrained by a *lèse majesté* law. A dual account of agency provides a means to investigate, on one level, how intellectuals deploy genres of argumentation to take part in social practice by entering into the debate about the coup and engaging their readers and, on another level, how they represent actors and events as either agents or as affected by the actions of others. This paper draws on Systemic Functional Linguistics to explore how these writers exercise a “rhetorical agency” through an analysis of the generic structure of the three texts and how they represent various social actors and events through experiential meanings in the texts in order to advance their own arguments.

Keywords: agency, systemic functional linguistics, genre, transitivity, critical discourse analysis, political science texts, Thailand

‘Personalist’ Regimes Emergence in Small Island States

Mosmi Bhim

School of Humanities

Oral Presentation

Small Island Developing States (SIDS) have peculiar characteristics that largely appear to discourage coups, however, in a few SIDS, coups and authoritarian regimes have been successful. This paper will examine the post-coup authoritarian regimes in six SIDS nations: Maldives, Seychelles, Comoros, Sao Tome and Principe, Grenada and Fiji. These SIDS countries have populations of less than a million people and have been afflicted with post-coup authoritarian regimes. The paper will examine the factors that gave rise to coups in these six SIDS compared to other SIDS where coups are seen as unlikely to occur. The paper will analyse how the coups took place and the type of authoritarian regimes that emerged after the coups. The paper purports that the peculiar characteristics of SIDS nations make it more common for a ‘personalist’ authoritarian regime to emerge there and will analyse the features of SIDS which have encouraged the emergence of a ‘personalist’ regime. The paper further contends that SIDS with ‘personalist’ regimes portray an image of control which discourages the probability of outside intervention, compared to those SIDS where other types of post-coup authoritarian regimes emerged. It will look at the responses of citizens and civil society to the authoritarian regimes in these SIDS. It will analyse the responses of the international community to the post-coup authoritarian regimes to find out why outside intervention did not occur there. It will lastly look at the length of time in power for these SIDS personalist regimes and reasons for cessation of personalist rule.

Keywords: small states, SIDS, coups, authoritarian, personalist

The Ethics of Civil Disobedience: A Rational Approach

Saurabh Bhattacharya

School of Humanities

Oral Presentation

Acts of civil disobedience seek to disobey established socio-political norms in order to initiate change in the relevant environment. Such acts are disruptive by nature, since they have the potential to overturn the social order of things. The problem with the disruptive aspect of civil disobedience is its direct clash with notions of rule of law and this raises an ethical question – how can such disruptive acts gain ethical justification? In this paper, I suggest that a possible answer lies in the civil disobedience agent’s status as a rational agent. I interpret a ‘rational agent’ as one who is capable of making decisions that are autonomous, consistent and universalisable. To this end, I will outline a specific model of moral rationalism, developed by philosopher Alan Gewirth in his 1978 book *Reason and Morality*. I will use the Gewirthian form of moral rationalism to argue that, in order for an act of civil disobedience to be considered ethically justified, it is critical that the agent engaged in the act is motivated by reason (as interpreted above) rather than any individual moral beliefs or notions of conscience.

Keywords: civil disobedience, moral rationalism, Alan Gewirth

An Indigenous Education Discourse Taxonomy for Policy Analysis

Chloe Parkinson

School of Education

Oral Presentation

The Australian Curriculum claims to offer all Australian students a world-class curriculum that provides the skills, knowledge and understanding necessary to actively engage in Australian society. It also claims to build the social, intellectual and creative capital of our nation, to enable all Australian citizens to prosper in a globalised world through the development of the nation. In this environment of national curriculum policy and the continued standardisation of education in Australia, how Aboriginal and Torres Strait Islander students are represented within policy is an important area for attention. In beginning an analysis of such representation of Aboriginal and Torres Strait Islander students however, I found an appropriate conceptual framework was lacking. This presentation will address how to frame approaches to Aboriginal and Torres Strait Islander students in educational policy by providing a taxonomy of Indigenous education discourses. These discourses were researched through an extensive review of literature drawn from Australian and international sources. An orientations-based framework was then used to categorise the multiple discourses into four orientations: conservative, liberal, critical and post-modern. This presentation will detail the orientations-based taxonomy, and then discuss how it is currently being applied to a Critical Discourse Analysis of the Australian Curriculum. In doing so, how various discourses are operating within different sections of the Australian Curriculum will be highlighted. Initial analysis reveals that “Neoliberal Assimilationist” and “Liberal Multicultural” discourses are privileged within the Cross-Curriculum Priorities document whilst an “Inclusive” discourse is privileged in the Student Diversity document, however investigations are continuing.

Keywords: indigenous education, critical discourse analysis, policy analysis, Australian curriculum

Approaching a Longitudinal Study of the Sustainability and Durability of the Gains of Adult Literacy Acquired Through the Yes I Can Campaign

Ruth Ratcliffe

School of Education

Oral Presentation

This paper is an account of the work I have undertaken in the first 9 months of my PhD candidature. Firstly a historical review of the interactions between the First Nations people of the Brewarrina region and the settler education system, and secondly I will outline how I have begun to map my methodological approach to my study.

Brewarrina, on the traditional lands of the Ngemba people, is the site of the oldest known built structures on the planet, the Nghunnu or fish traps. In 1885 Brewarrina Aboriginal Reserve was established. This was to become one of the longest running and largest of the Aboriginal reserves in NSW. Today Brewarrina is one of eleven communities described as “complex and disadvantaged” that are targeted through the NSW government’s Connected Communities strategy. In September 2015 Yes I Can adult literacy classes started in Brewarrina. Yes I Can came to Brewarrina after successful intakes in Wilcannia, Bourke and Enngonia where the Cuban designed program which is centred around community ownership and involvement achieved very good results. My PhD is being undertaken under the Aboriginal leadership as expressed through the Literacy for Life Foundation who have requested research which tracks the longitudinal impact, sustainability and relativity of the gains in adult literacy developed through the Yes I Can program. As a precursor to this I am seeking to understand the historical context of English adult literacy in Brewarrina and how various historical and contemporary events have shaped people’s relationship to literacy.

Keywords: First Nations People, literacy, education, longitudinal

Physiological Responses of Heterothermic Mammals to Fire

Anna C. Doty, Jaya Matthews, Clare Stawski and Fritz Geiser

Centre for Behavioural and Physiological Ecology, Zoology, University of New England,

Oral Presentation

Historical patterns of wildfires are changing as a result of climate change and therefore are becoming an increasingly pressing global issue. However, how small mammals deal physiologically with changes in landscape and food availability due to fire remains largely unknown, although recent studies on antechinus, small terrestrial marsupials, have shown a post-fire increase in torpor for energy conservation. To fully understand the impact of large-scale environmental changes on small mammals and the role of torpor in enhancing survival, it is essential to also investigate the response of flying animals. Therefore, we determined the post-fire thermal biology of Lesser Long-eared Bats (*Nyctophilus geoffroyi*) using temperature-telemetry in Warrumbungle National Park, NSW, which experienced a devastating wildfire in 2013 that destroyed about 80% of the park. Data on these small, insectivorous and aerial mammals were compared with those collected for the terrestrial antechinus. Post-fire survival strategies differed between *Nyctophilus* spp. and *Antechinus* spp. Bats demonstrated a decrease in torpor use in response to wildfire when insect abundance increased and no change in torpor use following prescribed fire. This is in contrast to *Antechinus* spp., which used significantly more torpor both after the wildfire and prescribed fire. Although heterothermic mammals can reduce energy via a decrease in metabolic rate and body temperature, torpor use after a disaster may not always be the ideal response. It is likely that these differences in heterothermy in terrestrial and volant mammals are due to a suite of factors, such as an increase in aerial resource abundance and easier foraging for bats resulting from a decrease in vegetative clutter.

Exploring the Role of Family Support in Encouraging Kindergarten Participation for Families with Refugee Experience.

Cherie Lamb Margaret Sims, Ahmed Bawa Kuyini-Abubakar and Yukiyo Nishida

School of Arts

Oral Presentation

Lack of access to quality early childhood education for children from refugee backgrounds has been linked to long term negative consequences, in terms of limiting future access to higher educational opportunities, meaningful employment and financial security. The aim of this study is to explore the strategies that family support workers employed to work with refugee families use to build upon their strengths to assist them access and participate in quality early childhood programs. The views of both workers and parents are being considered through iterative in-depth interviews and focus groups. Once the initial data is collected, the findings will be presented to educators and other family support workers to encourage reflective practice, with the ultimate goal of increasing kindergarten participation for children from refugee backgrounds. This study is located on the interpretive/critical continuum with a social constructionist orientation. It acknowledges the way that gender, class, culture, ethnicity and power impact the design of and implementation of kindergarten programs which often promote the values of individualism over collectivism. Inductive thematic analysis will be used for all three stages.

Keywords: early childhood education; refugees; family support

**Educating for Gross National Happiness (GNH): A case of the intended and taught
GNH-Infused curricula in the secondary schools of Thimphu and Samtse districts,
Bhutan**

Pema Thinley, John Haynes and Kathy Jenkins

School of Education

Oral Presentation

Bhutan aims to provide a holistic, Gross National Happiness (GNH) values-based quality education to all the children in the country. GNH was founded based on the philosophy that happiness can be attained by maintaining a fine balance between ‘the needs of the body with those of the mind within a peaceful and secure environment’ (Gross National Happiness Commission, 2013, para. 4). Different approaches have been designed and used in implementing the ‘Educating for GNH’ in schools. The purpose of the current study is to investigate the case of Intended and Taught GNH-Infused Curricula in Bhutanese schools. This study is based upon a mixed methods approach and may have the potential to inform stakeholders whether or not the existing curriculum requires a new or different approach and content in order to achieve GNH values and principles. It is intended to gather data using a 6-point Likert-scale survey and semi-structured interviews using both quota and purposive samplings from six secondary school teachers in Thimphu and Samtse districts, Bhutan. Data are to be analysed using the Statistical Package for Social Science (SPSS), axial coding and *Leximancer’s* text mining software or Nvivo software.

KEYNOTE SPEAKERS

Keynote Address – Day 1

Frames and Configurations: Using a Systems Perspective for Social and Behavioural Research

Emeritus Professor Ray Cooksey, UNE Business School

Biography

Ray Cooksey is an Emeritus Professor in the UNE Business School having retired from UNE in September 2014, after 32+ years. His research has largely been situated within the business, education and psychology disciplines, focusing on issues such as decision making, organisational behaviour, leadership and applications of complexity science to the understanding of contextualised human behaviour as well as research methods and statistical analysis. He also has strong interests in promulgating pluralistic and more systemic research practices in quantitative and qualitative research methodology. From 2008 - 2010, he was Senior Editor of the *Journal of Management & Organization* and is a Fellow and former President and Research Fellow of the Australian and New Zealand Academy of Management (ANZAM). He is the author of a book on judgment analysis (1996), two editions of a book on statistical procedures (2007 and 2014), a book on surviving and thriving in postgraduate research (2011) and over 100 refereed journal articles, book chapters and referred conference papers. He has supervised to successful completion over 30 PhDs and professional doctorates as well as 30+ masters and honours research students in business, education and psychology as well as other disciplines.

Session Overview

My systems approach to social and behavioural research considers and harnesses the nature of and dynamic interplay between research context(s) (past, present and possibly future), the researchers' context(s), the context(s) of participants and stakeholders, the context(s) of consumers/users/adopters of that research and criteria for judging the quality of research. These are ideas and processes that I am developing more fully in a book I am currently writing entitled *Doing Convincing Research: Multiple Pathways for Understanding Human Systems* (Tilde University Press). My talk will focus on two critical aspects of my systems approach: research frames and research configurations.

Research Frames. Many of my postgraduate students have told me that they find research methods texts confusing because the term 'method' was often used not only to refer to specific ways of gathering data (e.g., interview, questionnaire) but also to more general research approaches like action research, transdisciplinary research, survey research and case study research. The problem was that different levels of conceptual abstraction were at play

here, which many authors simply ignored. What was needed was a higher-order concept for systematically organising our thinking, which led me to develop a conceptual device called a *research frame*. A research frame emerges from the dynamic and synergistic intersection of researcher positioning, research contexts, participants' contexts and positioning, research configurations and research consumer contexts, all embedded within the larger social and physical world. It therefore provides a holistic picture of how research purposes can be translated into research strategies and tactics. A research frame also signals ways of creating, learning, applying and disseminating knowledge about the social world. While a research frame may or may not implicate specific patterns of guiding paradigm assumptions or the use of specific data gathering strategies, they help you to narrow your choices as well as to identify key areas of literature you should explore. A research frame may also provide specific concepts and jargon which facilitates communication with certain types of research consumers (but could also possibly inhibit communication with other types of research consumers). As well, a research frame may come with its own in-built constraints, expectations and assumptions which you need to be aware of and work with. Research frames include: action research, case study research, evaluation or developmental evaluation research, descriptive research, exploratory research, explanatory research, survey research, cross-cultural research, indigenous research, feminist research and transdisciplinary research.

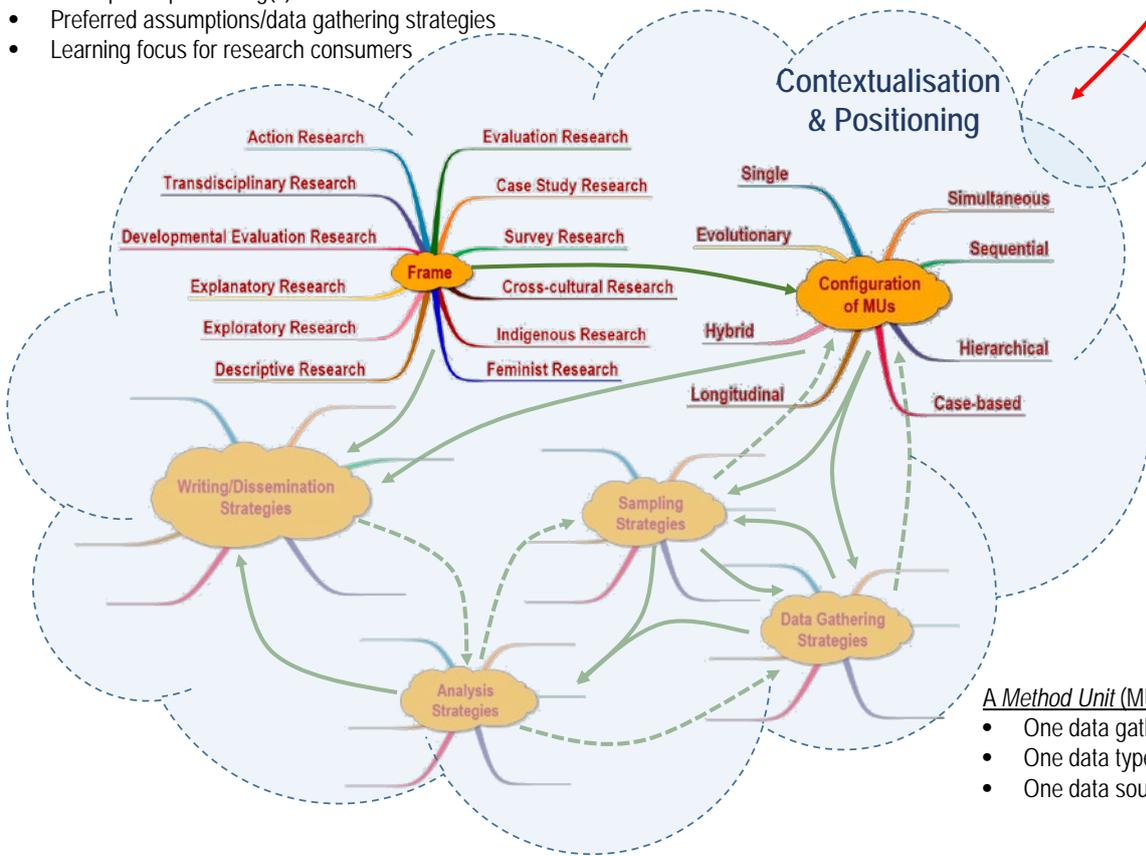
Research Configurations: I use the term 'research configuration', as opposed to the more positivist-oriented term 'research design', to signal an open and unifying approach to organising data gathering strategies within a research frame and is intended to move our thinking beyond mixed methods to a more systemic and complex level. The basic building block in research configuration is the 'Method unit' or MU. An MU is a conceptual entity comprising *one* data gathering strategy (e.g., self-report questionnaire, semi-structured interviews or paradigm-determined pairing as with an experiment/quasi-experiment coupled with a self-report measurement scale), *one* data type (quantitative or qualitative or multimedia), **and** *one* data source (undergraduate students, employees, teachers, webpages, secondary database, shoppers, managers, children...). Every other research configuration can be conceptualised as a specific amalgam or patterning of MUs. Hybrid combinations of configurations are also possible (simultaneous with sequential; longitudinal with case-based). Paradigm guiding assumptions have a dynamic influence on choices of MUs and configuration patterns, which may reduce or help to shape and delimit the available choices at any one point in a configuration. In my talk, I will discuss various categories and illustrations of research configurations within this unifying framework: single MU configuration, simultaneous MU configurations, sequential MU configurations, hierarchical MU configurations, case-based MU configurations, longitudinal MU configurations, hybrid configurations and evolutionary configurations.

Using research frames and research configurations together allows you to take a more systemic and holistic approach to positioning and implementing your research intentions. They can form an essential platform for scoping and shaping your research.

Key Facets of a Research Frame

- Researcher positioning
- Research context(s)
- Participants' positioning(s)
- Preferred assumptions/data gathering strategies
- Learning focus for research consumers

Emerging & existing contextual constraints & opportunities help shape all research processes



- A Method Unit (MU) comprises:
- One data gathering strategy
 - One data type
 - One data source

Keynote Address – Day 2

Research in the Commercial World - It's Academic

Professor Robert van Barneveld
B.Agr.Sc. (Hon), PhD., RAnNutr., FAICD

Barneveld Nutrition Pty Ltd Loganholme, Queensland, Australia.

Biography



Robert van Barneveld is a research consultant, commercial nutritionist and Company Director.

Prof van Barneveld has numerous corporate roles including being Chairman and Managing Director of SunPork Farms, a group of companies that farms approximately 40,000 sows across Australia and includes feedmills, piggeries and a genetics company (PIC Australia). He is also a Director of the Pork CRC Ltd, SunPork Fresh Foods Pty Ltd, Swickers Kingaroy Bacon Factory Pty Ltd, and Roseworthy Piggery Pty Ltd, Deputy Chair of the Autism CRC Ltd, Chairman of Porkscan Pty Ltd (a company commercialising technologies for more accurate measurement of pig carcasses), Chairman of Social Skills Training Pty Ltd (a wholly-owned company of the Autism CRC Ltd which delivers the Secret Agent Society Program to families living with ASD), and is a Non-Executive Director of the ASX-listed Ridley Corporation (Australia's largest stockfeed manufacturer).

Robert has extensive experience in diet formulation for pigs and poultry in Australia and overseas and specializes in the characterization and understanding of feed ingredients. He has worked widely with feedmills and livestock producers in Asia over the past 15 years and has a PhD in amino acid nutrition of monogastrics.

Robert is a Fellow of the Australian Institute of Company Directors, is a Registered Animal Nutritionist and is an Adjunct Professor within the School of Environmental and Rural Science at the University of New England.

Research in the Commercial World – It’s Academic – Session Overview

Many people embark on a PhD program with the ultimate objective being to establish an independent research career in their chosen field within an institutional environment like a university. This presentation provides some insights into a variety of viable paths that may exist for a fulfilling research career outside a university or government department. Using a range of personal experiences, focus will be on considerations that must be made when choosing a research career path post-PhD, how an intimate understanding of the commercial environment can greatly enhance your capacity as a scientist, demonstration that a commercial research career does not have to damage your perceived independence and future job opportunities, comparisons between the institutional research contract “treadmill” and research towards a commercial outcome, the quantum of funds available in the commercial sector and how, as an established scientist in the commercial sector, you can have significant influence over public sector research priorities and investment. The take-home message from this presentation is that commercial research can offer an extremely fulfilling career path and by no means should be viewed as a compromise when it comes to developing your standing as a scientist and your capacity to deliver meaningful, uncompromised research outcomes.

SPECIAL SESSIONS

Session One- Smoothing Bumps on the Road to Publication and Copyright for Postgraduates

Pam Bidwell, Leonie Sherwin and Berenice Scott

This session will help you avoid publishing pitfalls by elaborating on decisions which help ensure you achieve the best impact from your research outputs. Gain an understanding of where you are in your publishing career, and learn about the implications of your choices. Your decisions contribute to your success. Choices surrounding who you will work with, making sure collaboration doesn't become exploitation (sometimes you need to say *no*). There are times when you need to pick yourself up after a publishing rejection, and this session will help you find another pathway

Can you be sure you are not infringing copyright in your thesis or giving away control of your own work unnecessarily when you publish? This session provides an overview of your rights as an author and your obligations to others when you work collaboratively or make use of their work. A brief introduction to creative commons is also covered

Session Two - Word for Thesis Writing

Kerry Gleeson

The session is designed to help you cut through the rules and regulations as you prepare to format your dissertation for submission. It will show you how to make Microsoft Office Word work for you by using styles and automated options. The session aims to give you direction and guidelines as to what pages need to be included in your dissertation and how they are to be presented.

Session Three - Risk Management for Temperature Controlled Environments

Sam Hills

In the last 12 to 18 months there has been major research losses from temperature controlled environments (TCEs) across a variety of Universities within Australia, including UNE. One of the reasons behind these losses has been the failure of the controlled environment. These losses, of course, have a major impact on researchers.

From this presentation we hope to empower researchers to enhance the protection around their samples stored in TCEs. We hope to provide you with concepts surrounding what the minimum standards should be, to know the questions to ask and to manage the risks associated with keeping samples in these environments.

Session Four – Writing Professional Papers

J Brian Hardaker

Why write a paper? Have something worthwhile to write about

What to consider **The message is the thing** No ideas?

Comments on kinds of papers **Develop a concept plan**

Choose your journal carefully Follow the journal style guide etc. Start to write

Expanding the outline Getting there

Writer's block **Motivation gone?**

The art of writing good English

Some general principles More on writing clear English

Jargon: Some of my pet hates *Checking and revising your draft*

Check and re-check

Still more polishing Interaction with journal editors

Oops! The reviewers didn't like it

Dealing with rejection

Cheating **Concluding comments**

Last words

Invited Speakers

Some Tips on How to Write a Higher Degree Research Proposal

Dr Philip Thomas

Your research proposal should clearly identify the problem you are proposing to investigate and explain why it is significant enough to warrant the use of resources you will need. You would also need to explain the method you plan to use and demonstrate that it is suitable and feasible for the task. Most important is that you indicate that the research is original, needed and how the results from the research are likely to prove useful and to whom. Schools and faculties often have information on the structure of a proposal available. In most cases this structure would include: aims and objectives, significance, a review of previous research in the area, showing the need for conducting the proposed research and supporting your proposed methods and expected outcomes and their importance. In most cases and particularly in experimentally based research, requirements for equipment, materials, field trips, technical assistance and an estimation of the costs would be required. A time line indicating the stages of the research and the approximate time each stage is expected to be completed, should be included.

Endurance Exercise and Physical Activity: Means to Delay the End

Joshua Denham^{1 3 4}, Brendan J. O'Brien², Priscilla R. Prestes³, Nicholas J. Brown², Fadi J. Charchar^{3 4}

¹ School of Science and Technology, University of New England, Armidale, NSW, Australia.

² Faculty of Health, Federation University Australia, Mount Helen, Victoria, Australia.

³ Faculty of Science and Technology, Federation University Australia, Mount Helen, Victoria, Australia.

⁴ Australian Centre for Research into Injury in Sport and Its Prevention (ACRISP), Federation University Australia, Mount Helen, Victoria, Australia.

Introduction and Aims: Telomeres are a repetitive stretch of DNA located at the ends of chromosomes that safeguard against genomic instability. Telomeres shorten with ageing and excessive telomere shortening is associated with increased risk of cardio-metabolic disease and premature death. Exercise may maintain telomeres, though the optimal amount is unknown. The aim of the present study was 1) to confirm our previous results that endurance athletes possess longer leukocyte telomeres than their non-athletic peers; 2) elucidate whether telomere-regulating genes are differentially expressed between athletes and controls; 3) analyse physical activity and cardiorespiratory fitness in context with telomere length and expression of telomere-regulating genes.

Methods: 61 endurance athletes and 61 healthy controls completed physical activity questionnaires and a maximal oxygen uptake test. DNA and RNA were extracted from donated blood for telomere length and gene expression analyses using quantitative polymerase chain reactions.

Results: Relative to the controls, athletes possessed 7% longer telomeres and up-regulated TERT and TPP1 genes, with known roles in telomere length maintenance (all $p < 0.01$).

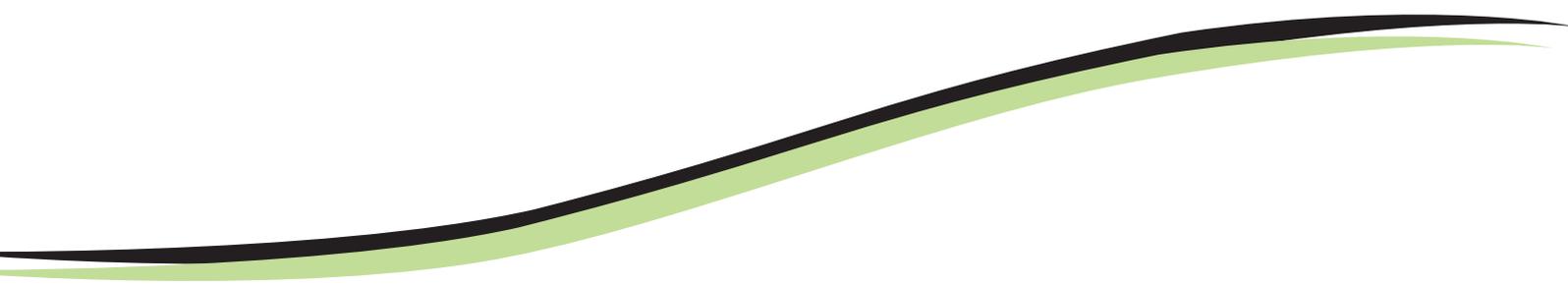
Physical activity and maximal oxygen uptake were positively correlated to telomere length, TERT and TPP1 gene expression (all $r > 0.20$, $p < 0.01$). Exercise volume was associated with telomere length and gene expression such that moderate and high amounts of exercise were associated with significantly longer telomeres compared to low amounts.

Conclusion: Endurance athletes with superior cardiorespiratory fitness possess long leukocytes telomeres and up-regulated telomere-regulating genes, which may underpin the improved longevity and low incidence of disease observed in epidemiological studies. Rather than extensive exercise training performed by athletes, moderate amounts of exercise training may be enough to prevent premature biological ageing and cardio-metabolic disease.

Thankyou for attending the conference

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

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



<http://www.une.edu.au/research/res-services/hdr>