PRAXIS 2017
4th Annual Postgrad Research & Practice Conference
15-16 June
Lismore

PROGRAM & ABSTRACTS
The SCPA wishes to acknowledge that the abstract content remains in its original form as supplied by the presenters.
Welcome from SCPA President

Dear fellow postgraduate student


This year, we are thrilled to showcase a program of truly exciting research from some 47 of SCU’s best and brightest postgraduate and honours students from all around Australia, and in disciplines ranging from the Health and Human sciences; Environment, Science & Engineering; Business and Tourism; Arts and Social Sciences and Education.

This year we have introduced Poster Presentations and the Thesis Slam to our program. This provides greater flexibility to our presenters and is a great opportunity to practice for the SCU 3MT competition later in the year.

Some of our presenters may be close to completing here at SCU, while many more will be just starting out and presenting their work for the very first time. We hope, then, that we’ll all maintain a welcoming, supportive and inclusive atmosphere throughout the conference.

Finally, I would like to thank and congratulate all of our presenters for taking the time to share your work with all of your colleagues in this way.

Best regards

BRUCE KORN
PRESIDENT
SOUTHERN CROSS POSTGRADUATE ASSOCIATION

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5th ANNUAL GENERAL MEETING

DATE: Thursday 15 June 2017
TIME: 1 pm
VENUE: H Block Lecture Theatre (H1.01) SCU Lismore Campus

AGENDA

1. Open, acknowledgement of traditional custodians and welcome by President
2. Attendance & Apologies
3. Minutes of previous AGM held Thursday 16 June, 2016
4. President’s Report
6. Election of Returning Officer
7. Election of Management Committee
   a. President
   b. Secretary
   c. Treasurer
   d. Vice President
   e. Three (3) Ordinary members of Committee
8. Thanks & Close

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## PROGRAM THURSDAY 15th June 2017

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<td>Coffee and Tea from 8:30 am</td>
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<td>OPENING (VENUE: H1.01)</td>
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<td>Brief welcome by President SCPA – Bruce Korn</td>
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<td>Welcome to Country</td>
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<td>Opening Address – Professor Andrew McAuley</td>
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<td>Thanks and housekeeping – Bruce Korn</td>
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<tr>
<td>9:30 am</td>
<td>CHAIR FOR MORNING SESSION (9:30am – lunch): Craig Wilson (VENUE: H1.01)</td>
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<td>9:30 am</td>
<td>David Noble</td>
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<td>Government procurement of university-industry research: pilot study report</td>
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<td>Kayleen Wood</td>
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<td>Mentoring and literacy: Preservice teachers’ perceptions during professional experience</td>
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<td>Emily Wolfinger</td>
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<td>Welfare debate in the comments section: Online user perceptions of sole mother poverty and welfare in Australia</td>
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<td>Mahmudur Rahman</td>
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<td>Confirmation of the presence of 2S albumin type napin genes in the Brassica rapa genome</td>
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<td>SCPA ANNUAL GENERAL MEETING (VENUE H1.01)</td>
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<th>POSTER PRESENTATION SESSIONS (VENUE H1.07)</th>
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<td><strong>Denis Richards</strong></td>
<td>Vitalism and Value: My Project From Start to Finish, With Assistance from Raphael</td>
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<td><strong>Liliana Andres</strong></td>
<td>Knowledge Representation and Database Integration to facilitate Genetic Analysis and Development of Underutilised Crop Plants</td>
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<td><strong>Katie Hotko</strong></td>
<td>Teaching the Arts during the NAPLAN years from the perspective of primary school leaders and teachers.</td>
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<td><strong>Kirsty Langdon</strong></td>
<td>Unraveling the genetics of macadamia: integration of linkage and genome maps</td>
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<tr>
<th>3:30 pm – 4:20 pm</th>
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<th>THESIS SLAM (VENUE H1.01)</th>
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<td>An Ethical Affair</td>
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<td>3:40 pm – 3:50pm</td>
<td><strong>Shae Brown</strong></td>
<td>A Patterns-based metacognitive system.</td>
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<td>3:50 pm – 4:00pm</td>
<td><strong>Peter Sun Wong</strong></td>
<td>Living with Autism: Employee Retention in Competitive Employment</td>
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<td><strong>Ken Lim</strong></td>
<td>The role savouring pleasure as a mediating factor between proximal and distal stressors on adult resilience</td>
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<td>4:10pm – 4:20pm</td>
<td><strong>Matthew Bennett</strong></td>
<td>Digital Device Somatosensory (DDS) feedback delivery.</td>
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<td><strong>CHAIR FOR MORNING SESSION (9AM – LUNCH): Kayleen Wood (VENUE: H1.08)</strong></td>
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<td>Vitalism and Value: The How and Why of My Project Methodology.</td>
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<td>Shelley Barlow</td>
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<td>Exploring the lived experiences of physiotherapists in their encounters</td>
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<td>The National Disability Insurance Scheme: Effects on Australian Carers of</td>
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<td>Individuals with Autism Spectrum Disorder</td>
<td>care: implications for care recipient wellbeing.</td>
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<td>Linda Shallcross &amp; Kathryn Oakey</td>
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<td>Jakob’s Voice – Grassroots Community Work</td>
<td>Biogeography of heterobranch (Mollusca: Gastropoda) sea slugs in</td>
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<td>Simone Blom</td>
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<td>Jeffrey Hodgins</td>
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<td>Dual citizenship makes Australia a healthier, happier and wealthier</td>
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David Noble  
Government procurement of university-industry research: pilot study report  
PhD Candidate, School of Business & Tourism

Governments throughout the OECD increasingly procure research through collaborative arrangements – often mandated – between universities and industry, with governments being the third party as the funding source. However, the literature tells us that a large percentage of alliances and partnerships fail to reach their expected goals. While generally there are well-developed procurement methodologies for infrastructure and services, university-industry collaboration (UIC) is contingent on a number of elements such as trust, interdependence, frequent communication and other relational factors being present, all of which are deemed crucial to reaching successful outcomes in a collaborative environment. At present, these elements remain largely unaccounted for in the formalised procurement processes for collaborative research. It is asserted that the inclusion of measures to assess the competency of research participants to collaborate ('soft skills') should be included, alongside other assessment criteria such as research track record and appropriate governance ('hard skills') and infrastructure, when governments procure collaborative research. In late 2016, a pilot research program (ethics approval ECN-16-327 2016-11) was conducted to test a number of conclusions developed through the literature review, a review of policy documents, and informal conversations with industry participants. The results of the study confirmed the initial conclusions to a significant degree, and these will be incorporated into a larger PhD thesis research programme. This presentation will present the initial conclusions along with the results of the pilot study. The ultimate aim of the PhD research project is to develop a Research Procurement Collaborative Competency Assessment Tool (RPCCAT), which could be used by government administrators to assess the competency of proposed collaborative teams within the application evaluation process, and thus improve the potential for UIC collaborative research to achieve successful outcomes that will benefit a wide array of stakeholders.

Notes:
Vajira Jayasooriya Digital Marketing and Sustainable Tourism
PhD (Professional), School of Business & Tourism

Abstract to be supplied

Notes:
Amanda Freeborn  What about me? The experience of being a junior campus teacher at a multi-campus college

PhD Candidate & Staff member, School of Education

The multi-campus model of secondary schooling has existed for close to 20 years in NSW and represents a distinct shift from the traditional years 7-12 high school structure. Despite this considerable reorganisation of public education, which occurred in the early 2000s and the fact that multi-campus colleges make up around 9% of all NSW public high schools, it is an area in which limited research has been conducted. Whilst there has been a focus on the value of senior campuses for students, research concentrating exclusively on junior campuses and more specifically their staff, has been mostly absent from the literature. Hence, this paper focuses on better understanding teachers’ perspectives on the value of junior campuses for staff.

For this investigation, a NSW multi-campus college was selected and information was gathered through teacher questionnaires, followed by interviews with 12 junior campus teachers. Teachers, who ranged in experience from recent graduates to senior executive staff, shared their opinions regarding the value of junior campuses for their own professional careers. Interviewed teachers discussed the benefits and challenges of teaching exclusively junior high school students and provided an insight into working within the multi-campus college model.

The research findings indicate that whilst teachers at this college can see merit in junior campuses for themselves and their careers, they feel that in the long-term teaching at a junior campus may be a disadvantage professionally. Whilst beginning one’s career at a junior campus was seen as advantageous, staff indicated that junior campuses had a limiting nature for future career development with one of the key implications from this study being the need for further research to ensure that junior campuses of multi-campus colleges do not become undesirable destinations for teachers who wish to advance their careers.

Notes:
Kayleen Wood  A gamified learning experience in accounting education
PhD Candidate, School of Business & Tourism

Far from being unstructured play, gamification of the curriculum demonstrates highly organised, achievement level, quantifiable learning outcomes. My research intends to show how a framework for designing and evaluating a gamified learning experience is developed for an accounting and finance technical threshold concept, and how that model could be adapted and replicated across other subjects and other disciplines to enhance student engagement and performance.

Expanding gamification, defined as using game elements in non-game contexts (Deterding, Dixon, Khaled, & Nacke, 2011), to utilising serious games, drawing on learning and motivation theories (Grund, 2015), the focus lands on teaching educational content and improving skills. A gap in the research is that in most game situations, students make decisions and engage with the game in isolation, without impediments, and with no uncontrollable independent variables.

Applying Nulty’s (2012) Relational Curriculum Design, as an extension of Biggs and Tang’s (1986, 1987) constructive alignment, and combining this with Tasker’s (2012) cognitive learning concept where constructivism meets reflection, this research will show how student engagement and performance can be achieved and enhanced. Learners become active participants in designing their own learning trajectories, are motivated to succeed, and engage in deep learning with the content within the boundaries negotiated with the teacher. The teacher partners are mentors in the learning process, guiding students to seek their own destinations, each of which can be unpacked and assessed using criterion marking.

This research is grounded in a rethinking of accounting, finance, and economics teaching and learning in an online environment, specifically, core technical threshold concepts. It will develop, contrast and evaluate the effectiveness of a gamified curriculum using a blended teaching and learning delivery method. This will assist educators to further develop appropriate pedagogies to meet the needs of 21st century learners and to better equip them for professional life.

Notes:
Sarah James Mentoring and literacy: Preservice teachers’ perceptions during professional experience
PhD Candidate, School of Education

Recent reviews into teacher education have highlighted the role of the mentor teacher during professional experience. While university programs teach theoretical concepts, the role of the mentor teacher during professional experience assists preservice teachers to enact theories and knowledge learned at university. The impact of the mentor is highlighted as important in the literature in the development of the preservice teacher. Of significance is mentoring as a catalyst for success which has implications for preservice teachers’ and their acquisition of knowledge, skills and processes for competence in teaching. This study proposes to explore and describe the perceptions of preservice teachers about their mentoring experiences, specifically in relation to the teaching of literacy during their professional experience. The definition of literacy is broad, therefore for the purposes of this study the English General Capabilities Literacy [EGCL] as outlined by the Australian Curriculum and Reporting Authority [ACARA, 2008] will be the classification engaged in this project. The EGCL, as defined by ACARA are categorised into five domains – Reading, Writing, Listening, Speaking and Viewing and therefore, this study will explore and describe the mentoring experiences of preservice teachers in relation to these domains. A social ontological position provides the platform through which this study is conducted. The construction and transmission of knowledge between mentor and preservice teacher relies on social interaction and as such, Vygotsky’s (1978) Social Development Theory offers a theoretical framework for this study. To form a robust picture of preservice teachers’ mentoring of literacy across both primary and secondary settings, an exploratory, sequential mixed methods approach will be utilised. Surveys will be used in the first instance and this data will inform subsequent interviews to highlight the perceptions of the preservice teacher and expose the extent to which the EGCL are addressed during professional experience and shared by the mentor.

Notes:
Mahmudur Rahman Confirmation of the presence of 2S albumin type napin genes in the Brassica rapa genome

PhD Candidate, Southern Cross Plant Science

Background: Oilseed rape or mustard oilseeds are the second most cultivated oilseed crop due to their high seed oil content. Once the oil is extracted, the leftover by-product meal has low value despite its high protein-content. This is due to the presence of high amounts of indigestible 2S-albumin-napin (20-30%) which is resistant to pepsin and trypsin digestion and remains intact in the human digestive-tract where it can act as a major allergen. So far, several Brassica napin-genes have been identified in Sinapsis alba, Brassica juncea, B. napus and B. nigra and five isoforms in model plant Arabidopsis thaliana. However, a comprehensive analysis of this gene-family is lacking. Therefore, the aim of this study is to identify and characterize the family of napin-genes in B. rapa genome.

Materials and Method: To identify the candidate napin-genes in B. rapa, 2S-napin-gene of A. thaliana was used to search sequence homology using BLAST-tool against the B. rapa (Chiifu-401, v1.5) and the mutant line r-o-18 (v1.2) genomes. Multiple sequence alignment using clustalw was used to identify the structural and evolutionary relationship of napin-genes in several closely related species.

Results: Three candidate B. rapa (chifu) genes and four candidate B. rapa (r-o-18) genes were identified that showed significant BLAST sequence similarity. Several other varying length genes with high BLAST scores were also found in both the species, indicating additional napin-gene candidates as well as expanded napin-gene family in B. rapa. Multiple sequence alignment also revealed strong conservation among the candidate genes.

Conclusion: Identification of the napin-gene family in B. rapa will open the possibility for targeted genome editing and/or knock-out of specific napin-genes. Understanding the effects of manipulation of seed storage protein amount on levels of other storage proteins including cruciferin as well as on oil content is essential for developing low-napin lines for human consumption.

Notes:
Emily Wolfinger Welfare debate in the comments section: Online user perceptions of sole mother poverty and welfare in Australia
PhD Candidate, School of Arts & Social Sciences

At a time of increasing online communication, this research explores online news comments about sole mother poverty and welfare in Australia within a theoretical framework of feminist perspectives and Foucauldian ideas. More specifically, it draws on online responses to Australian news stories published during the announcement and implementation of the Gillard government’s sole parent welfare amendments (May 2012-January 2013) – a period of intense debate about sole mother poverty and welfare.

In the last several decades, neoliberal discourse has dramatically reshaped welfare policy in the Western industrialised world through its emphasis on economic participation, self-reliance and personal accountability. Literature shows that institutional discourses about sole mothers shifted during this period toward concerns over welfare dependency and reduced responsibility. However, less is known about the role of neoliberal ideology in shaping people’s perceptions of sole mother poverty and welfare.

This research takes a cautious approach to the ethical challenges of qualitative Internet research. As such, it will draw on the anonymous comments of online news readers. The method involves a qualitative content analysis that will be conducted to reveal emerging themes in the data. This will be followed by more in-depth analysis, guided by Caroline Bacchi’s ‘What’s the Problem Represented to be?’ (WPR) approach to policy analysis. This study will make an empirical contribution to literature that explores discourses about sole mothers, poverty and welfare through its use of online data. This information will provide insights into the relationship between neoliberal discourse and perceptions of sole mother poverty and welfare in Australia.

Notes:
Eslam Ibrahim  
Novel Bioinformatic Approaches to Unravel the Epigenetic Basis of Crop Plasticity

PhD Candidate, Southern Cross Plant Science

Understanding the role of epigenetic mechanisms in crop plasticity can enhance our ability to develop climate resilient crop varieties, as well as increasing food production. Crop plasticity is the ability of the crop to produce different phenotypes in response to changes in environmental conditions. Epigenetics reflect the heritable changes in gene expression that do not involve modification of the paired DNA sequence. Recently, an association between epigenetic and phenotypic variation has been recognized.

In plants, DNA methylation, histone modification and small non-coding RNAs are the main epigenetic mechanisms that can regulate gene transcription. DNA methylation plays an important role in gene silencing in eukaryotes. DNA in chromatin is wound around histone proteins to make units called nucleosomes, where histone tail modifications regulate the chromatin structure and gene accessibility to transcriptional machinery. The non-coding RNAs (ncRNAs) can regulate gene expression by interacting with histone modifying complexes or DNA methyltransferases.

Brassica species have complex and highly replicated genomes and contain various important crop plants that are closely related to the model plant Arabidopsis thaliana. This project aims to develop novel bioinformatics algorithms to help unravel and understand the relationship between physiochemical properties of chromatin and the epigenetic basis of plasticity. The first part of this project is to understand how intron length polymorphism (ILP) within and between Brassica genomes may be under evolutionary selection at the level of chromatin structure by systematically comparing paralogous and homoeologous groups of genes. Establishing a systematic classification of ILPs, will provide a framework to test a series of hypotheses in relation to dynamic relationships between patterns of DNA methylation, nucleosome positioning and DNA physiochemical properties that are likely to be associated with epigenetic mechanisms underpinning phenotypic plasticity.

Notes:

The SCPA wishes to acknowledge that the abstract content remains in its original form as supplied by the presenters.
Eliot Hanrio Effects of ocean warming and acidification on growth and defence of the sea urchin
Tripneustes gratilla
Masters (Coursework), School of Environment, Science & Engineering

Anthropogenic carbon dioxide emissions are driving global climate change leading to ocean warming and acidification. Calcifying invertebrates are extremely sensitive to these two stressors, and their growth and defence mechanisms might be altered by near-future ocean warming and acidification scenarios. The present study examined the effects of these two stressors on the growth and efficiency of a defence mechanism specific to echinoderms, pedicellariae. Individuals were reared in a flow-through system in all combinations of three temperature and pH treatments. The treatments reflected the projected near-future ocean conditions for South-East Australia, which is a hot spot for ocean acidification and warming. Growth was not stimulated by a +2°C difference from control water, but was inhibited in +4°C treatments. Concomitantly, growth was inhibited in both acidifying treatments (-0.2 and -0.7 pH units). The number of pedicellariae released did not vary between the control and the +2°C treatments, but was significantly reduced in the +4°C treatment. There was no difference of the number of pedicellariae released in the control and the -0.2 pH units treatments, but it was significantly reduced in the -0.4 pH units treatment. However, the size of these pedicellariae was only affected by temperature, in such a way that it was reduced only in the +4°C treatment. There was no interaction between temperature and pH on the measured factors. This study of the effects of ocean warming and acidification on a T. gratilla growth and ability to defend itself from predators shows that in future climate conditions, these urchins will likely see some population structure changes.

Notes:
Denis Richards

Vitalism and Value: My Project From Start to Finish, With Assistance from Raphael

PhD Candidate, School of Health & Human Sciences

This poster uses the structural hierarchy evident in the composition of Raphael’s 1509 fresco ‘La Disputa’ to illustrate the hierarchical and processional flow of this research project from conceptual ideation, through physical data collection and analysis, then finally to conclusions and recommendations.

This sequential process begins with and includes the metaphysical, intellectual and theoretical aspects of an ontology of vitalism; an epistemology of constructivism; a mixed methodology of qualitative and quantitative components; an exploratory sequential mixed methods design; and a research stance of descriptive phenomenology.

These are then followed by the physical and practical aspects of the project. These are research methods composed of data collection via semi-structured interviews and an online survey; data analysis methods; reporting of results; and drawing of conclusions and recommendations.

Notes:
Nadine Boulotte

Coral species-specific changes in Symbiodinium communities throughout two bleaching events

PhD Candidate, School of Environment, Science & Engineering

Global climate change drives a number of changes in the marine environment, including periods of higher than usual seawater temperature. Mass coral bleaching induced by thermal stress and high irradiance represents one of the most serious threats to coral reef survival; however, the adaptive capacity of corals to climate warming is not well understood. One of the corals’ adaptive responses involves changes in the community composition of the Symbiodinium spp. symbionts. Detailed understanding of this mechanism has been hampered by genotyping methodologies with low sensitivity and a lack of temporal field based studies encompassing pre- and post bleaching data. Here, we combined next-generation sequencing analysis with a time series sample set spanning two severe bleaching events, to investigate the temporal dynamics of prevalent and rare Symbiodinium types within four dominant coral species at Lord Howe Island (LHI), eastern Australia. First, our results reveal that, as opposed to recent findings, not all LHI coral-Symbiodinium association responded equally to one of the most extensive and severe bleaching events. For instance, changes in symbiont community structure did not occur after each of the annual bleaching events in all four species. We observed a species-specific pattern where, in some coral species, the Symbiodinium community structure was dynamic and responsive to environmental stochasticity; while being mostly stable and persistent over time in another. Particularly, our results show that symbiont shuffling and switching within the Symbiodinium rare biosphere were more common than changes in dominant types. Given that most of these minor changes within the Symbiodinium community structure occurred during bleaching episodes, we can suggest that the Symbiodinium rare biosphere acted as a reservoir ready to respond during or following coral bleaching and may putatively support specific acclimatisation mechanisms. Although our results provide some insights on the Symbiodinium rare biosphere dynamics following consecutive bleaching events, further investigation is needed to elucidate their putative ecological role within reef-building corals acclimatisation mechanisms.

Notes:

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**Liliana Andres** Knowledge Representation and Database Integration to facilitate Genetic Analysis and Development of Underutilised Crop Plants

PhD Candidate, Southern Cross Plant Science

Researches around the world have generated a massive amount of genetic, trait and experimental data across many crops over past decades. In order to facilitate access and sharing of data and knowledge for plant traits and phenotypes, the scientific community have emphasized the necessity to adopt controlled vocabularies [1]. However, this requires information to be transformed into systematic and structured terms, which are designed to classify large quantities of information. Computational biologists have proposed solutions to this problem by developing “ontologies”, which is represent shared and structured vocabularies within specific domains, enabling an explicit representation of their properties and the relations between them [2].

It is critical nowadays to establish ontology databases for a wide range of crops, in order to improve the outcomes from accumulated research not only for major crops, but also emerging or underutilized crops. For example, Bambara groundnut (Vigna subterranea) is a drought and rainfall tolerant crop, and an important source of protein and nutrition for a large sub-Saharan African population [3, 4, 5, 6]. For this reason it is important to improve data sharing that may contribute to improvement of Bambara and other underutilized crops, and particularly for data related to phenotypic traits in order to provide relevant information to breeders.

The main objective of my project is to organize information related to underutilized crops e.g. Bambara groundnut, focusing on seed nutrient composition. In order to maximize the impact, a specific focus of my project is to integrate cross-species trait ontologies to provide controlled vocabularies more generally of benefit for legumes or other underutilized crops. I plan to develop this vocabulary using the Open Biomedical Ontologies (OBO) tool, an open resource used to develop ontologies based on relations [7]. This tool offers sophisticated filtering, editing and error-checking capabilities to provide appropriate tools for ontology construction.

**Notes:**

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**Jemma Peisker**  The human need for Art

PhD Candidate, School of Education

In Australia and globally there is an interest in positive education to focus on the exploration of human wellness and optimal functioning to help students expand their potential. For example, recently, some Australian schools have sought to implement Positive Psychology Interventions. As wellbeing holds a significant place in Australian educational policy as a factor for academic and social development, it is essential to explore ways in which this agenda can be effectively supported in academic contexts, including Visual Arts. Through an A/r/tographic study it is explored how the primacy of material engagement in the secondary Visual Arts classroom may be able to enhance wellbeing by eliciting a flow state in students. The ultimate objective of exploring the relationship between Arts material engagement and wellbeing factors, such as flow, interrogates research which suggests Arts making promotes the wellbeing of individuals due to the human adaptationist origins of Arts making. As such, this study is framed by Material Engagement Theory, a cross-disciplinary creative integration of archaeology, anthropology and neuroscience; and flow theory, which is an informative and instructive theory for educators. Grounded in these theories, the study engages students in Artmaking tasks with each task involving differing material engagements. The tasks will determine whether the material characteristics of the task were able to induce a flow state. Using an instrument to gauge flow results, as well as student and researcher creative reflective responses to the tasks to gather further information (data), the A/r/tographic study provides insights into students’ perceptions of material engagement in Visual Arts contexts and the association of such engagements to wellbeing. In considering the information gathered in this study, educational stakeholders may be informed by this research when seeking to implement Positive Psychology Interventions within schools to increase wellbeing in students.

**Notes:**
Katie Hotko Teaching the Arts during the NAPLAN years from the perspective of primary school leaders and teachers.
PhD Candidate, School of Education

An extensive review of the literature demonstrates the social, academic and economic benefits of the Arts. Yet, despite overwhelming evidence of the benefits of the Arts, the literature suggests that policies such as NAPLAN and the My School website are reducing time spent on the Arts in the classroom. Seven primary school teachers participated in this study, which was framed by the research methodology of A/r/tography. What better way to advocate for the Arts in the classroom, than to use the unique ways of thinking and problem solving that the Arts offers? A visual journal was used as a research instrument to explore the interconnected themes that emerged through an ongoing process of art making, thinking and researching. These themes highlight a number of barriers that teachers face in providing quality Arts teaching, including a crowded curriculum, teaching to the test, lack of professional development opportunities and low self-efficacy. Facilitators to quality Arts education included effective Arts integration across the curriculum and a personal interest in the Arts. Unfortunately a significant finding of this study was that the pressure of preparing for NAPLAN is severely impacting the effective integration of the Arts across the curriculum.

Notes:
Mary Egbuta Investigating cotton gin trash (CGT) for valuable chemical products
PhD Candidate, School of Environment, Science & Engineering

The continuous increase in cultivation and processing of cotton generates large quantities of waste products from the industry, which can be divided into CGT and PHT. In previous years, these waste products have been disposed in various ways, such as incineration and land filling. Also, in some cases, they are used as nutritional supplements in feeds for animals and composting in agriculture. In recent times, the rate of disposal of waste products from the cotton industry has been met with challenges as a result of strict government restrictions. To tackle this challenge of cotton waste disposal, this study aims to investigate the different valuable volatile compounds present in the waste product derived from cotton ginning, cotton gin trash (CGT). Extraction of chemical compounds from CGT samples was done at large scale and small scale using steam distillation and solvent extraction respectively. Volatile compounds present in the extracts were identified using GCMS technique. Results from the experiment show a variation of compounds in both large scale and small scale extracts. CGT extracts from steam distillation contained mostly sesquiterpenes and a few monoterpenes whereas extracts from solvent extraction contained mostly sesquiterpenes. This therefore is indicative that some chemical compounds of biological importance can be obtained from cotton gin trash, which will help reduce the problem of cotton waste disposal.

Notes:
Kirsty Langdon Unravelling the genetics of macadamia: integration of linkage and genome maps

PhD Candidate, School of Environment, Science & Engineering

Background and Aims:
Macadamia is endemic to the lowland subtropical rainforest regions of north east NSW and south east Queensland, Australia. The macadamia industry is based on cultivars from two species M. integrifolia and M. tetraphylla. In 2016, a draft genome for Macadamia integrifolia was published. This draft provides access to most macadamia genes but is highly fragmented. In order to anchor chromosomal scale sequence a high density linkage map is required. This project aims to use genome wide single nucleotide polymorphism (SNP) markers to construct a SNP saturated genetic linkage map for M. integrifolia.

Methods:
Mapping populations with over 400 individuals were developed including open pollinated, bi-parental and self pollinated progeny. Total genomic DNA was extracted from individuals in these mapping populations and SNP markers were identified based on a combined process of complexity reduction and next generation sequencing.

Results and conclusions:
Over 3000 SNP markers have been identified and are currently being used to construct maternal, paternal and composite linkage maps. Preliminary results indicate that sufficient data will be generated to construct a high-density composite linkage map. This will improve genome assembly as well as facilitating gene discovery and marker assisted selection in macadamia breeding. The latest results on the development of genetic linkage maps and progress towards anchoring the genome will be presented.

Funding Source:
Horticulture Innovation Australia, Australian Macadamia Society and Southern Cross University.

Notes:
Amanda Barry An Ethical Affair
Honours Student, School of Law & Justice

Last financial year, the Office of the Legal Services Commissioner in NSW took 7,328 telephone enquiries and investigated 2,505 official written complaints made against solicitors in legal practice. Not one of those complaints was classified as being in association with the development of a sexual relationship between a solicitor and their client… But that’s not to say they don’t occur.

Complaints of this nature may have been squeezed through the gaps of less conspicuous categories such as ‘ethical matters’ or ‘conflicts of interest’ or the infamous ‘other’ brand of record keeping which continually baffles researchers and the general public alike. Legal experts and Psychologists say it is ‘not uncommon’ for a solicitor to become involved in a sexual relationship with their client … in fact; it goes on a lot more than we’d care to imagine. So what happens to these ‘common’ relationships between consenting adults, and why are they allowed to occur at all? Popular opinion suggests that most lawyers label this type of conduct as unethical, unacceptable, and strongly discouraged.

According to these statistics, no client has ever complained about this type of relationship going sour … clearly the happy couple just ride off into the sunset together and rejoice in telling stories to their friends about how they met during a routine legal encounter. Or do they? Is there a law against solicitors entering into a sexual relationship with their clients? and if not, WHY NOT?

Compare and contrast with the Codes of Conduct in the Medical Profession, and consider the invisible ethical barrier that prevents solicitors from becoming involved with their clients. Is folklore a sufficient deterrent, or is strict prohibition the only way to prevent a sexual relationship from developing across the desk, under the blanket of a retainer?

Notes:
Shae Brown  A Patterns-based metacognitive system.
PhD Candidate, School of Arts & Social Sciences

This research project centers on developing, implementing and evaluating a patterns-based design as a metacognitive system. Using complexity and Indigenist principles the design is a way to engage with, think about and organise information and dynamic processes, particularly in times of change. As a general meta-cognitive system, the design is developed to be relevant in a range of situations. These include mapping and tracking flows of information and dynamic processes, such as personal change and holistic development, and/or planning and managing a project or event, a group situation such as a team or enterprise. The design is developed to contribute to coherence and generativity within the focus of engagement. As the design is based in complexity and Indigenist principles it will assist in knowledge building as a living and relational experience (Sheehan, 2003).

Design using shapes and patterns has been used to organise and engage with information, knowledge and dynamic processes throughout human history (Bell, 2012). This project investigates the use of a particular patterns-based design as a metacognitive system, for engaging with and organising information and processes in modern contexts.

Notes:
Peter Sun Wong Living with Autism: Employee Retention in Competitive Employment
PhD Candidate, School of Health & Human Sciences

High levels of economic marginalisation are experienced by people with a disability in Australia, in comparison with other OECD countries (Taleporos, 2014). Employment is viewed as an entitlement (Jacob et al., 2015) however, only 1% of all autism research in Australia is currently focused on post-school results (Autism CRC, 2015). Employee retention is a critical area that is currently under-researched and poorly addressed. This research investigates how management-based models, policies and procedures impact on employee retention for people with autism in competitive employment.

Research Questions:
1. What are the workplace factors critical to improving employee retention?
2. How can employee retention for people with autism in competitive employment be improved?

Sequential Mixed-Methods: Employee-retention factors were identified in an auto-ethnographic study. This first-hand account of the researcher’s career trajectory, spanning over 40 years, has led to the identification of systematic patterns of workplace operations likely to contribute to employee-turnover and employee-retention which can be directly related to the defining features of autism identified in the DSM-5. In-depth ethnographic interviews with key informants are also being used to identify features of workplace culture in the periods described in the researcher’s autobiographic data. Phase-one findings will be used in phase-two survey study of stakeholders in a variety of organisations to develop an implementation model of inclusive workplace practices that would contribute to the retention of employees with autism.

Result: A promising management model to promote employee retention of people with autism has emerged, based on Drucker’s model of knowledge-worker productivity (Wong, 2012; Wong, Neck & Yu, 2013).

Significance: Understanding and addressing the organisational and structural mechanisms underpinning barriers to participation should assist in addressing efforts to redress social and health inequity through social action (Schofield, 2015). It enhances our theoretical conceptualisation of disability and what it means to experience autism.

Notes:
Ken Lim The role savouring pleasure as a mediating factor between proximal and distal stressors on adult resilience

Honours Student, School of Health & Human Sciences

Resilience is broadly defined as an ever-changing process where individuals thrive after a significant crisis or experience. It provides some level of immunity to psychopathology and is thus important for the maintenance of good mental health and wellbeing. As society becomes more fast-paced, people are finding it increasingly difficult to cope especially when there is an additional load on individuals’ mental resources. Thus, being highly resilient is becoming more important today. More studies in this area could allow clinicians to detect “at-risk” individuals with poor resistance and intervention programmes could be put in place to prepare them for future crises. Current research into resilience is mainly focused on the traits and qualities possessed by individuals that relate to resilience. Connor and Davidson developed the Connor-Davidson Resilience Scale (CD-RISC), a self-report questionnaire consisting of 25 items, rated using a 5-point Likert Scale. These 25 questions concern the internal traits individuals possess that contribute to their resilience. Some of the items in the CD-RISC pertain to positive emotions, which are recognized as being key elements of resilience. Consistent with the broaden-and-build theory, positive emotions facilitate more broad-minded thinking in individuals, allowing for more resilient traits to develop. There have also been some studies that considered external factors that may influence an individual’s level of resilience. The mechanisms underlying how one’s level of adversity in his or her life relates to resilience is unclear. For instance, an individual low on resilience and another individual who experiences copious levels of crises would develop poor resilience. Thus, the aim of this research is to examine the relationship between: distal stressors and proximal stressors with current levels of resilience and the ability to savour pleasure as a mediating factor between them.

Notes:
Matthew Bennett  Digital Device Somatosensory (DDS) feedback delivery.
Masters (Coursework), School of Business & Tourism

Through the use of digital device sensors, sensory mapping of topographic stimulation of sensory surfaces such as skin and the somatosensory mapping of the primary motor cortex responses which allows for the neuronal computation and feedback through digital sensory delivery. Through the use of device calibrations using electrophysiological mapping of touch sensation reaction signal patterns to receptors could allow for a more immersive use of interactive platforms in both the medical and gaming industries.

This paper proposes that through the same use of phasic intracortical micro-stimulation restoring touch to a prosthetic hand the same technology principals can be adapted for somatosensory cortex feedback that can be made through a modified biomimetic sensory technology installed within smart wearable technologies to deliver more targeted sensory manipulation for medically therapeutic or gaming usage.

Notes:
In the chiropractic profession there is an historical and continuing discussion around the philosophical school of thought known as vitalism. Yet there has been little research to determine the essence of this discussion, and what value chiropractors think vitalism might offer in their thinking and work activities. Accordingly, my research question asks what do chiropractors mean when they talk about vitalism, and what value do they think it might offer in addressing the major health problems facing the world today.

All activities in a PhD project, from conception to conclusion, should be directed towards answering its research question. Such activities begin with seeking to identify and justify the ontological and epistemological bases for the project, and progress from there by attempting to produce and follow procedures which are congruent with those bases.

Accordingly, this presentation sets forth the ontological and epistemological bases for this research project, and details its methodology, research design, research stance, research methods, data collection and analysis. These involve an ontology of vitalism; an epistemology of constructivism; a mixed methodology of qualitative and quantitative components; an exploratory sequential mixed methods design; a research stance of descriptive phenomenology; and research methods composed of data collection via semi-structured interviews and an online survey. Data analysis methods will be explained.

How all these processes stem from and are congruent with the projects ontological and epistemological bases will also be reviewed.

Notes:
**Meaghan Vosz**

**Participation is not enough: tracing the impact of marginalised children and young people on policy making in Australia**

PhD Candidate, School of Arts & Social Sciences

Article 12 of the UN Convention on the Rights of the Child requires Australia to ‘give due weight’ to children and young people’s views, both in decision making about their individual situations and at systemic policy levels. ‘Participation is not enough’ investigates the obligations of policy makers to do more than consult or engage with kids, and traces how the views of young people with lived experience of out of home care were given due weight in the Senate Community Affairs References Committee inquiry of 2014-2015.

This literature research was conducted over six weeks during the 2017 Parliamentary Library Summer Scholar program, in the first year of PhD study. The scholarship provided an opportunity to investigate and refine the conceptual framework of the broader PhD investigating the impact of first-person stories of marginalisation on systemic social policy in Australia, and ready access to parliamentary social policy researchers.

The research involved developing a targeted literature search strategy; analysing national and international literature to identify the possible ‘breadcrumbs’ or traces of impact on the policy process; conceptualising lived experience as expert knowledge in the complex, stakeholder driven process of policy making; and analysis of the Senate inquiry as a case study. The presentation will propose a tentative framework for measuring policy impact of marginalised citizens, and point to some of the ways that policy makers are involving kids as co-creators of social systems using design thinking, co-design and deliberative democracy.

**Notes:**
Peter Sun Wong Employee retention for people with autism in competitive employment
PhD Candidate, School of Health & Human Sciences

Summary: High levels of economic marginalisation are experienced by people with a disability in Australia, in comparison with other OECD countries (Taleporos, 2014). Employment is viewed as an entitlement (Jacob et al., 2015) however, only 1% of all autism research in Australia is currently focused on post-school results (Autism CRC, 2015). Employee retention is a critical area that is currently under-researched and poorly addressed. This research investigates how management-based models, policies and procedures impact on employee retention for people with autism in competitive employment.

Research Questions:
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Sequential Mixed-Methods: Employee-retention factors were identified in an auto-ethnographic study. This first-hand account of the researcher’s career trajectory, spanning over 40 years, has led to the identification of systematic patterns of workplace operations likely to contribute to employee-turnover and employee-retention which can be directly related to the defining features of autism identified in the DSM-5. In-depth ethnographic interviews with key informants are also being used to identify features of workplace culture in the periods described in the researcher’s autobiographic data. Phase-one findings will be used in phase-two survey study of stakeholders in a variety of organisations to develop an implementation model of inclusive workplace practices that would contribute to the retention of employees with autism.

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Significance: Understanding and addressing the organisational and structural mechanisms underpinning barriers to participation should assist in addressing efforts to redress social and health inequity through social action (Schofield, 2015). It enhances our theoretical conceptualisation of disability and what it means to experience autism.

Notes:
Narissa Phelps Convict to Settler: An analysis of the transition of the female convicts of the Second Fleet vessel Neptune from the status of convict to settler. What role did they play in the process of the colonisation of Australia and what impact did settler colonialism have on them as “reluctant” or “forced” settlers.

Masters Research, School of Arts & Social Science

When the second fleet vessel Neptune arrived in Port Jackson on 28th June 1790, those aboard were part of a British colonisation drive aimed at the forced migration of prisoners. This research is based on a sample of the sixty-one women with convict links who survived the Neptune’s voyage and, through an analysis of their lives in the fledgling colony over a fifty-year period, looks at how they responded to their new environment given their role as “reluctant” settlers. To what extent were the women mere pawns in settler colonisation and to what extent agents? This research will examine female convicts as part of the settlement “plan”, looking at the impact transportation had on their lives particularly in the areas of home-making, work and relationships, where they contributed to the colonial project. In analysing the role of women as settlers and the challenges the women faced we can learn much about the transitional process from convict to settler and determine the extent to which women convicts were both the victims and agents of settler colonialism.

This research argues that settler colonialism cannot be cemented without the creation of homes and families and that the role of women is very much at the centre of this process. To what extent did the Neptunians adjust to the very different life in their new home given their role as convicts and unwilling transportees and what indicators do we have that they contributed to the development of the colony and the colonisation process?

Through a deeply personal analysis of the women’s lives and the historical and archaeological evidence we are better able to understand these women and the vital role they played in the settlement of New South Wales, Norfolk Island and Van Diemen’s Land. We are also able to consider the impact of settler colonialism on the reluctant settler, complementing the extensive body of research undertaken on the impact of setter colonialism on the indigenous population of Australia.

Notes:
She She She Shelley Barlow lley Barlow lley Barlow lley Barlow

**Exploring the lived experiences of physiotherapists in their encounters with people with chronic pain, the explicit use of Phenomenological reduction**

PhD Candidate, School of Health & Human Sciences

Physiotherapists routinely encounter people with chronic pain in their clinical practice. People with chronic pain often exhibit difficult and intense responses within these encounters. These encounters can be both challenging and rewarding for the physiotherapists. However, the actual lived experience of physiotherapists working closely and intimately with people with chronic pain has not been fully elucidated. This research uses phenomenology to uncover and explicate the essence of lived experience within real world encounters.

Using a methodology drawing upon principles explicated by Husserl, phenomenological inquiry, draws on bracketing and horizontalisation explicitly within the interview process. The use of bracketing within the role of insider practitioner/clinical researcher offers significant challenges. To allow the lived experience of the physiotherapists to emerge from their experience required particular attention to what is bracketed within the interview process. The process of bracketing, a foundation skill of phenomenological research, will be discussed as a discipline used throughout the data collection and explication phase of this research.

In this presentation I will discuss how focusing on my own awareness and directing my conscious use of; questioning, inquiry and attention has become a theme in its own right. The interviews themselves became a co-creation of shared meanings about the nature of the relationship between people with chronic pain and physiotherapists and between myself as research practitioner and the physiotherapists. The “how to” of interviewing to elicit the lived experiences in a way that discovers the essence of the physiotherapists experiences has implications for understanding the dynamics of relating between physiotherapists and people with chronic pain.

**Notes:**
Linda Voase Two as one.

Honours Student, School of Arts & Social Sciences

Linda Voase, reveals the focus of her twelve year, auto-ethnographic research into screen culture, the online virtual reality gaming communities of the massively multiplayer online role playing game World of Warcraft. From a practice-led artistic research viewpoint, Linda sees the act of creating an Avatar, a game character, as an artistic practice comparable to collage or assemblage, and the playing of the character, as performance art. She captures the live action with Fraps, a computer program which records the real-time action and converts it into movie sequences, which Linda then edits and creates Machinima from. Screenshots and third party programs which feature Lilorean, are duplicated as ready-made objects that are considered artifacts, providing evidence of the existence of Lilorean’s online life. Linda uses her p6330a Hewlett-Packard personal computer and Windows Live Movie Maker, to emphasis the point that any nonprofessional can become an author of their own story and to capture the authenticity of her practice. Working directly with technology in this way has opened dialog regarding the direction in which artistic creation is developing. Within virtual community’s users become creators, and art imagery is varied and specialised for niche desires, readily available for mass consumption. Thus, taking net. Art out of the grasp of Art critics, Historians and Galleries and allowing it to evolve outside conventional mainstream contemporary art ideologies.

Through the practice of engagement with the encoded game narratives, and being involved with the World of Warcraft Community Linda has developed a cyborg symbiosis with her Avatar, Lilorean, that questions Linda’s sense of identity, ontology and otherness. The line of the research has directed the artist to investigate the meshing of biological and technological embodiment, through attempting to recreate the technological other’s body inhabitable by two, as one.

Notes:
Matthew Snow  The National Disability Insurance Scheme: Effects on Australian Carers of Individuals with Autism Spectrum Disorder
PhD Candidate, School of Health & Human Sciences

This repeated measures study controlled for levels of positive and negative state affect while measuring the personal well-being and quality of life of those caring for an individual with an Autism spectrum disorder. It investigated the difference between those caring for an NDIS participant (NDIS carers) and those caring for a Non-NDIS participant (Non-NDIS carers). NDIS Carers reported significantly lower levels of personal well-being compared to Non-NDIS carers after controlling for dysphoric mood. No significant effect of carer type was found on quality of life. Time spent in the NDIS, 12 months, did not increase NDIS carers levels of personal wellbeing however there was a trend for NDIS carers to report increasing quality of life. These findings are considered in terms of the need for carer respite under the NDIS. Possible strategies to identify the psychological dynamics and support needs of this high-risk group under the NDIS are discussed.

Notes:
Fran Larkey  

The implementation of a relationship-centred model of residential aged care: implications for care recipient wellbeing.

PhD Research, School of Arts & Social Sciences

Residential aged care service providers in Australia today are facing increasing demand from clients and families with expectations of a more individualised approach to their care needs. Wellbeing has emerged as a focus for the broader community and should be no less important when we age. The proposed research will explore the implementation of a relationship-centred model of care that has the potential to impact the wellbeing of residents in aged care services and articulate methods for positive culture change. A scoping review identified a number of gaps in the literature: a lack of strong empirical evidence of the Eden Alternative as a model of relationship-centred care and the influence this model has on wellbeing outcomes for residential aged care residents. The recognition of the need for further research was repeatedly emphasised.

The objectives of this proposed study are: to develop a relationship-centred model informed by Appreciative Inquiry, to understand the influence this model may have on care recipient wellbeing and to add to the knowledge of relationship-centred care in the older population.

The proposed study will involve two residential aged care communities and has two components: A qualitative phase using Appreciative Inquiry as the means by which the Eden Alternative model of relationship-centred care is implemented at an intervention site recruiting residents, families and staff.

Notes:

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The SCPA wishes to acknowledge that the abstract content remains in its original form as supplied by the presenters.
**Donald McDowall** Examining the ‘thrust’ in translation of the chiropractic principle of tone
PhD Candidate, School of Health & Human Sciences

Tone commonly implies a context of health. This is regularly used to express health condition of the human body e.g. skin tone, muscle tone, stomach tone. The expression indicates harmony, resonance, balance, and functioning capacity. A change to tone can, therefore can be said to be an expression of ill-health which can lead to disease. This conceptualization gave birth to the discipline of Chiropractic, tone provided the underpinning for all aspects for all chiropractic practice. Today, chiropractic’s footprint crosses international borders and provides a much needed health service for people with various ailments. However, during the evolution of this discipline, somehow the emphasis on tone began losing visibility. Today, it would appear that the concept of tone is lost or diminished to a simple impression of health through the removal of back pain and dysfunction. It is fair to say, then that tone, as an expression health and disease is in danger of being lost. The question begs: “Is chiropractic losing its tone?”

The aim of this study therefore, is to investigate the loss of tone as a concept within the discipline of chiropractic. A historiographic methodology will be used to source secondary and tertiary data to lead to primary data sources of tone. These primary sources will be reviewed for any relevance in any context to help define tone as a concept and to trace its level of emphasis across time within the profession. It is hoped that the results can inform the discipline and profession; re-establish a firm knowledge base for its continued growth and existence alongside other leading health professional groups, nationally and internationally.

**Notes:**
Mitchell Kirby Choices and Challenges in Environmental Choice Experiments

PhD Candidate, School of Environment, Science & Engineering

Lancaster’s theory of consumer choice states that people recognise the utility of a good from the composition of attributes that make up that good, less the good itself. Therefore, by asking a group of people to choose between two items we can reveal information about their preferences for the attributes—this is what Choice Experiments (CE) do. Most commonly used in marketing and transport economics, CE have more recently been applied in environmental research, but for the most, have investigated people’s willingness to pay (WTP) to improve environmental conditions, not their willingness to accept (WTA). While designing a choice experiment to investigate landholders’ willingness to participate (i.e. WTA) in environmental programs across NSW, some interesting observations have been made about the difficulties associated with the process. Considering the length of time invested in this design process, to improve future design efforts, we think it valuable to reflect and share these observations. This presentation will discuss: the ontological differences between WTP and WTA and how this influences the design approach of a CE; the constraints associated with spatial and respondent variation; and, the challenges associated with selecting the appropriate attributes, thus creating the appropriate balance between landholder trade-offs and incentives across different targeted environmental benefits.

Notes:
Andrew Woods Exploring the impact of a Community of Practice on the social construction of nurse educator identity and practice through critical participatory action research
PhD Candidate, School of Health & Human Sciences

Introduction/background:

International research has reported that nurses struggle to transition to educator roles. Nurse educators experience feelings of isolation, lack mentorship and role transition support as well as time to engage in education scholarship or academic collaboration. Associated with these issues, an absence of identity has been linked to educators being unable to authenticate their professional status or clearly establish roles as teachers.

Aim/objectives:

This research aimed to explore the impact of a professional community of practice on the social construction of nurse educator identities and practice.

Methods

Twenty two (n=22) nurse educators participated in action research cycles associated with the formation of a new community of practice. A critical participatory action research approach utilising mixed methods was used including interviews, surveys, recordings of action meetings and reflective journals.

Results:

It was found that engagement with the community of practice activities was associated with shifting identities (nurse to educator) and enhanced educator capabilities.

Conclusions:

For this group of health educators, participating in a professional community of practice resulted in meaningful and purposeful change. This research builds on existing socio-constructionist theory by linking Vygotsky’s critique of Piaget with a critical emancipatory paradigm.

Notes:
Huang An Lin The effect of ocean warming and acidification on growth, covering and righting behaviours of the sea urchin

Masters (Coursework), School of Environment, Science & Engineering

Climate change is one of the most important environmental issues facing the world. The IPCC predicts that increases in atmospheric CO2 will result in the mean global seawater temperature rising by 2.6 °C to 4.8 °C by 2100. Most of the CO2 we are putting in the atmosphere is dissolving in the oceans, decreasing their pH in a process called ocean acidification (OA). There is some evidence that ocean warming (OW) and acidification can effect the behaviour of marine fish and molluscs. However, to date, there is no evidence that those stressors singly or in combination effect the behaviour of sea urchins. This study examined the effect acidification and warming on the behaviour of the tropical sea urchin, Tripneustes gratilla. Specifically I asked does OA and OW: 1) effect the growth of the urchin?; 2) change the sea urchin’s righting ability, an important defence behaviour?; 3) change the covering behaviour used to protect from UV light exposure? We used a fully factorial design combining three pH (8.1, 7.85 and 7.65) and three temperature (25 °C, 27 °C, and 29 °C) levels. Urchins grew slower in both acidic (pH: 8.1 > 7.9 = 7.7) and warming treatments (25 °C = 27 °C > 29 °C). Urchins righted themselves more slowly in acidic condition (pH: 8.05 < 7.85 = 7.65) but faster in warm water (25 °C = 27 °C > 29 °C). Urchins exhibit less covering in acidic treatments (pH: 8.05 > 7.85 = 7.65) and more covering at warm water (25 °C = 27 °C < 27 °C = 29 °C). These results reveal the effect of OA and OW varied in respect to growth rate and behaviour of the urchins. Both acidification and warming cause a negative effect on growth rate of T. gratilla. Interestingly, the negative effect of acidification on both righting and covering behaviour appear to be mitigated by the effect of warming. These results highlight that multiple stressors need to be assessed together to determine the impact of climate change on biological systems.

Notes:
This presentation aims to give voice to some of the many children, who have died while they were in state care, at least those during the past two years. This action research project, undertaken by the not for profit organisation, Jakob’s Voice, highlights the situation of hundreds of children across Australia who have suicided, or been seriously neglected, and needlessly died while in care. The research has been undertaken by a young mother whose son was tragically found dead while in care in Queensland. While dealing with her own grief, she has, since then, worked to empower other families to prevent the systemic and sometimes hidden abuse that often confronts children taken into care. Foster care and the politics of child care are some of the issues that will be discussed to highlight the stigma facing families of origin in attempting to keep their children safe within the system. The presentation explores the methods and strategies that have been implemented to successfully bring these issues to public attention. Methods include the creation of supportive networks and effective communication strategies including news media campaigns, social media and even a horse riding campaign in an attempt to reduce the number of needless deaths of children in care. The influence of strength based networks, based on commitment to bring about positive change to those whose lives have been changed forever, due to child deaths in care, will be highlighted.

Notes:
**Matt Nimbs** Biogeography of heterobranch (Mollusca: Gastropoda) sea slugs in south-eastern Australia.

PhD Candidate, School of Environment, Science & Engineering

Heterobranch sea slugs, whilst rare in space and time, are found in most marine habitats from the tropics to the poles and, as with most biota, exhibit attenuation of species diversity with increasing latitude. Although the marine fauna of some areas of the east Australian coast are well known, particularly near major population centres, a comprehensive biogeographic study of sea slug distribution in New South Wales and southern Queensland has not been undertaken. As a recognised climate change hot-spot, it is important to develop a clear understanding of the present distribution of these taxa so that future changes in distribution can be identified.

With the objective of evaluating latitudinal gradients, current patterns of diversity and spatial gaps in knowledge, this study examined the distribution of 589 nominal species collated from 42 data sets spanning 12 degrees of latitude from Noosa, QLD to Eden, NSW. These lists were supplemented with additional field observations at key sites. As predicted, species richness declined with increasing latitude, however this was not monotonic. Rather, areas with high diversity were found at the Sunshine Coast, the Solitary Islands, Port Stephens and Sydney. Southern range extensions to Port Stephens were identified for twelve species which also had a particularly high aplysiid diversity.

**Notes:**

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Warren Lake Real-time point of contact feedback
PhD candidate, School of Environment, Science & Engineering

The major aim of the project was to activate higher order learning within a higher education learning environment by applying the principles of timely and meaningful feedback to assist a diverse range of students to learn new ideas. Furthermore, the aim was to provide real-time point of contact feedback that delivers ideas and concepts to enhance student learning outcomes and through this process, foster a productive teacher-student relationship. The model will serve as a contribution to the scholarship of teaching and learning, providing a method for collecting data as a means to improve teacher quality through the enhancing of the learning environment, while simultaneously contributing to student learning. Furthermore, the project has helped facilitate the development of a method to enhance teacher practice and student learning through the scholarship of teaching and learning (SoTL) process.

The project has trialled and evaluated a real-time point of contact feedback that informs both teachers/researchers and students simultaneously and immediately to enhance their approach to learning. A series of case studies in a variety of different contexts in order to test the effectiveness of the developed model have been tested with modified versions of the feedback model used to reflect outcomes from each case study where appropriate.

Notes:
Jeffrey Hodgins  Dual citizenship makes Australia a healthier, happier and wealthier society
PhD Candidate, School of Health & Human Sciences

A sense of belonging is argued to underpin individual wellbeing, social cohesion and social capital of a nation. As a multicultural society economically sustained through long term migration, it is important that all people in Australia feel they belong, irrespective of their cultural background. However, for the 27% of Australia’s population who are born overseas, and an estimated 4 million dual citizens, the importance of accepting an Australian identity and the contribution this makes to their belongingness is unknown. Hence the aim of this research was to investigate how important acceptance of an Australian identity was for migrants in Australia, and whether acceptance of an Australian identity contributed to their sense of belonging. Drawing from belongingness theory (Anant, 1966) and social identity theory (Tajfel & Turner, 2010), four research studies were conducted. Belonging as a psychological concept was understood cross-culturally and acceptance of and in an identity was found as a primary characteristic of a sense of belonging. Two forms of acceptance were found to underpin Australian identity, self-acceptance and acceptance from others. Acceptance from others was defined as the positive interpersonal feedback received from others and results were consistent across diverse cultural groups. Self-acceptance was defined as a person’s positive intrapersonal relationship with their Australian identity and primarily influencer of acceptance of Australian identity and its contribution to their belongingness in residents who identified as bicultural or dual citizens. Self-acceptance of Australian identity by dual citizens indicates that migrants hold a subjective sense of being a citizen, described as ‘psychological citizenship’ (Sindic, 2011), through their sense of sharing an Australian national identity. Acceptance from others results suggest that, for migrants, Australia is a welcoming society. Acceptance of an Australian identity through dual citizenship increases migrant belonging, and in turn strengthens psychological wellbeing, improves social cohesion and develops greater social capital for Australia.

Notes:
Sadaf Naz Unlocking the potential of trait phenotyping data in CropStoreDB database
Masters (Research), School of Environment, Science & Engineering

A wide range of public domain databases has been generated to manage data relating to different aspects of plant characteristics, taxonomy, biology, genetics, and genomics. These are of varying quality and connectivity. For crop plants, the ultimate end use of genetics data is to underpin breeding of new cultivars and may be used by those engaged in genetic resource conservation and exploration, gene discovery, breeding, pre-breeding and associated experimental research. Shortage of precise phenotypic data analysis tools is a key limiting step in rapid crop improvement that makes use of all available germplasm. A parsimonious but comprehensive data structure with a rich trait phenotypic content along with easy and open access to datasets and interactive tools is desirable to encourage interaction between researchers and breeders. Moreover, informed access to integrated datasets will help develop a deeper understanding of phenotypic characteristics.

The objective of the research project is to develop an analytical tool interface to a generic crop genetics data schema, where statistical tools will be refined and deployed in an interactive manner. The interface will enhance dataset selection and comparison and is intended to serve as a flexible blueprint for future flexible interfaces which will be developed as part of CropStoreDB (www.cropstoredb.org). Open source software is being used for the development of interactive workflows for plant trait and phenotypic data. This will help enhance data navigation and offer real-time analysis tools. The interactive analysis toolkit will enable crop plant breeders to understand how existing varieties compare with available variation in the underlying gene pool and contribute to the efficient breeding of new varieties with improved quality and adaptation to growing environment.

Notes:
Phillip Davis Evaluating effects of self-managed and monitored healthcare on health and cost outcomes
PhD Candidate, School of Health & Human Sciences

As healthcare providers are well aware, chronic conditions can be complex in nature, so care models also need to be comprehensive and multifaceted. Various influencing factors must be considered, such as motivation, prevention, treatment adherence and collaboration between the patient and, at times, multiple healthcare providers. It is unclear to what extent these factors are currently taken into account. Decision making is also another important factor in self-management. Various researchers have attempted to quantify the effects of decision making tools used to assist in the self-management and decision making process, but agree that there is much work to be done (Elwyn et al., 2006) (“Patient Decision Aids – Ottawa Hospital Research Institute,” 2015);(The International Patient Decision Aid Standards (IPDAS) Collaboration, 2013)

The question arises as to why there is a reluctance to follow provided advice, even when patients sought professional input in the first place? Finding ways to more effectively engage patients in their own care so that they become better consumers of primary care and adopt a self-monitoring, self-management perspective may be part of the solution. Jordan & Osborne (2007) report that patient engagement is a key component for an improved, cost-effective, health outcome.

We aim to evaluate current practice and establish structured concepts for effective, consistent implementation of patient-focussed care and self-management. This research will test a new model of self-management in the treatment of chronic illnesses that include lifestyle, medication adherence components, patient understanding of their health plan and health care provider attitudes around patient self-management.

References

Notes:
Iman Izadgoshasb  
**Piezoelectric energy harvesting from human walking motion using multi-impact energy scavenger**  
PhD Candidate, School of Environment, Science & Engineering

Piezoelectric materials are capable of converting energy from mechanical vibration to electrical energy. Piezoelectricity is generated when dielectric materials that have developed a polarization are subjected to mechanical strain deformation. Conversely, when a piezoelectric material is subjected to an electric field, it will cause a mechanical deformation within its structure.

Harvesting mechanical energy from human motion is an attractive approach for obtaining clean and sustainable electric energy to power wearable sensors, which are widely used for health monitoring, activity recognition, gait analysis and so on.

This research studies the capability of piezoelectric energy harvester in converting mechanical energy of human motions to electricity. The harvester exploits walking swing and shock excitations and could be embedded to the shoe. Series of magnets can amplify the foot acceleration in swing phase. The harvester contains a cantilever beam that can vibrate based on foot acceleration and magnetic excitation.

The MFC piezoelectric material is attached to the cantilever beam in this study. The maximum voltage of 60V AC and continuous average voltage of 25V AC can be generated at resonance frequency. It could be converted to DC using a bridge circuit to save in the capacitors or batteries. Experimental results from human walking and shaker show an agreement with theoretical modeling. Results show that using frequency up-conversion mechanism the amount of acceleration and voltage are increased and harvester is able to scavenge energy continuously during human walking.

**Notes:**