



University of Newcastle, NeWSpace
Cnr Auckland & King St, Rooms X101, 202, 205



This event, organised by the Centre for the Study of Research Training & Innovation, presents an opportunity to discuss doctoral education, higher order learning and its impacts, informed by the research and insights of leading scholars in the field. The sessions will be of interest to those involved in educating and developing researchers and building capacity for research in university and in professional life.

PROGRAM DAY 1

[CLICK THESE TITLE TO REGISTER FOR EACH SESSION](#) (*registration is not mandatory*)

9.45	Welcome & Acknowledgement of Country	
THEME 1: SCIENCE DOCTORATES		
10.00 - 10.35	KEYNOTE ADDRESS The butler didn't do it: Looking beyond the usual suspects in understanding doctoral success	Prof David Feldon Utah State University
10.35 - 11.00	Discussion	Chair: Allyson Holbrook
11.00 - 11.30	FEATURED RESEARCH The conceptual component of research dissertation examination: Towards a synthesis of patterns of post-formal thinking	Dr Mitch O'Toole SORTI University of Newcastle
11.30 - 12.10	BREAK	
INVITED CANDIDATE PAPERS: 'CONSTRUCTING' THE RESEARCH ENVIRONMENT FOR ECRS		
12.10 - 12.50	Improving perceptions of self-agency of graduate research students by enhancing their input into governance decision-making Personal risk taking in the Higher Education environment	Rebecca Johnson University of Sydney Fiona Jayne Carruthers University of Newcastle
THEME 2: BEYOND THE DEGREE		
1.00 - 1.35	KEYNOTE ADDRESS Could the PhD play a role in addressing global challenges? If so, how might we do it?	Prof Lynn McAlpine Oxford University UK
1.35 - 2.15	Discussion	Chair: Kylie Shaw
2.15 - 3.00	BREAK	
THEME 3: EMOTION		
3.00 - 3.50	PANEL PRESENTATION The doctoral brain: recent theories on emotion and their implications for managing doctoral learning	Dr Jill Scevak Dr Kath Grushka SORTI University of Newcastle
3.50 - 4.30	Discussion	
BREAK		
5.00 - 7.00	SOCIAL FUNCTION	Venue to be announced



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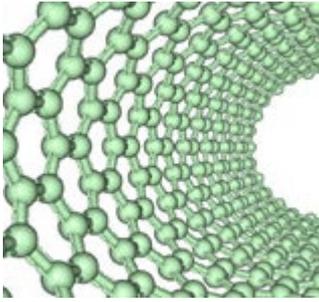


PROGRAM DAY 2

[CLICK THEME TITLE TO REGISTER FOR EACH SESSION](#) (*registration is not mandatory*)

9.45 -10.00	Welcome	
<u>THEME 4: INDIVIDUAL DIFFERENCES</u>		
10.00 -10.35	KEYNOTE ADDRESS Supporting doctoral student learning: An exploration of key factors underpinning the development of excellent researchers	A/Prof Kylie Shaw SORTI University of Newcastle
10.35 – 11.00	Discussion	
11.00 -11.20	BREAK	
<u>THEME 5: ENTREPRENEURIAL CAPACITY</u>		
11.20 – 11.30	FEATURED RESEARCH What can be learned from elite policy entrepreneurs: Creating innovation in the 21st Century	Simon Watts
11.30 -12.00	Discussion	Hugh Chilton & Caitlin Munday
<u>THEME 6: EXAMINATION FEEDBACK</u>		
12.00 – 12.40	KEYNOTE ADDRESS Who makes the decisions about thesis revisions?	Dr Kerry Dally SORTI University of Newcastle
12.40 - 1.10	Discussion	
1.10 – 2.00	BREAK	
2.00 - 2.30	THE SORTI PROGRAM: PAST PRESENT & FUTURE	Prof Allyson Holbrook SORTI University of Newcastle
2.30 – 3.00	Discussion	

We would like to *acknowledge UoN Graduate Research; the Faculty of Education and Arts and School of Education for their support for this event.*



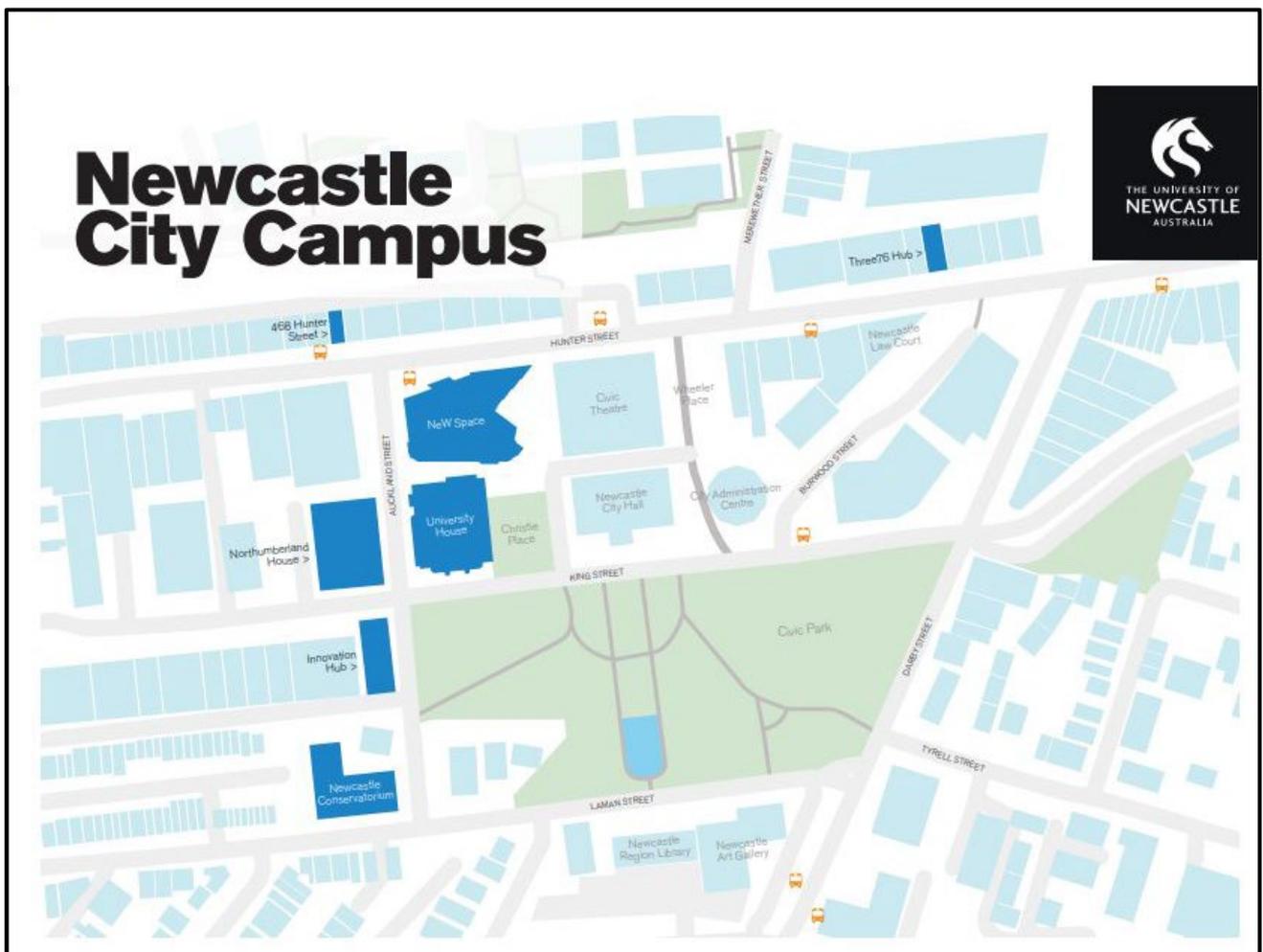
ABOUT SORTI

<https://www.newcastle.edu.au/research-and-innovation/centre/sorti/about-us>



ABOUT NEWCASTLE CITY CAMPUS

<https://www.newcastle.edu.au/about-uon/our-environments/our-campus-and-locations/newcastle-city-precinct>



KEYNOTE ADDRESS

THEME 1: SCIENCE DOCTORATES



PROFESSOR DAVID FELDON

The butler didn't do it: Looking beyond the usual suspects in understanding doctoral success

Dr. David Feldon is a Professor of Instructional Technology and Learning Sciences at Utah State University and Director of Graduate Program Assessment and Development in the College of Education and Human Services. His scholarship identifies mechanisms of postsecondary learning and instruction that facilitate the equitable development of expertise—specifically in STEM disciplines. His research attempts to build bridges from a deep understanding of motivation and cognition to broader cultural and structural influences that shape divergent pathways to expertise and modes of professional success.

Abstract

Doctoral education is a crucial, but understudied, component of postsecondary education. It represents not only the highest level of academic attainment, but also the fundamental gatekeeping mechanism for access to the professoriate. As such, efforts to prepare and diversify faculty, as well as the broader research-focused workforce, must engage evidence-based practices that leverage both sociological and psychological mechanisms informed by research. In graduate education, we have constructed very stable narratives about the factors that influence students' success. However, careful analysis of empirical studies tells a more nuanced story. This talk examines the support or lack thereof for five major premises common across three foci of the graduate education literature: socialization as a mechanism, cumulative advantage, and faculty mentorship. Drawing on quantitative and qualitative evidence from longitudinal studies of STEM graduate students' research skill development, scholarly productivity, and training environments in the United States, findings are presented that offer a framework for evidence-based practices that may support graduate student development.

FEATURED RESEARCH

THEME 1: SCIENCE DOCTORATES



ASSOCIATE PROFESSOR MITCH O'TOOLE

The conceptual component of research dissertation examination: Towards a synthesis of patterns of Post-Formal Thinking

Mitch O'Toole has long been involved in the preparation and evaluation of curriculum and classroom materials for science teachers who have become conscious of the language components of the subject they teach. His research output includes work on curriculum, pedagogy, English for Specific Purposes, assessment, and the history and nature of science. He has supervised over twenty RHD projects to successful completion, at a variety of levels and across a range of topics. Mitch's involvement in SORTI and doctoral research is a natural extension of his interest in science learners and their assessment.

Abstract

Recent decades have seen the convergence of regional practices in PhD supervision and a desire to clarify the examination process. This has led to interest in the standards that examiners apply and, in turn, to the levels of candidate reasoning that they expect. This paper draws on work on human reasoning to synthesise a model of graduate reasoning that may help to make supervision and examination more consistent and expose differences in academic community expectations. The paper draws on work associated with Piaget, Perry, Commons and others. Comparison with thesis outcomes, and examiner and candidate text could fruitfully challenge the model suggested here.

INVITED CANDIDATE PAPERS: 'CONSTRUCTING' THE RESEARCH ENVIRONMENT FOR ECRS

REBECCA JOHNSON

PhD Candidate, The University of Sydney

Improving perceptions of self-agency of graduate research students by enhancing their input into governance decision-making

Many universities are moving away from the student-as-consumer approach toward the student-as-partner framework (SaP) that encourages students to co-produce their environment and experience. Much of our understanding of SaP addresses pedagogic applications rather than any relationships between students and governance. In 2017, we tested the idea that student perceptions of self-agency would be improved by linking their voice directly to their major university-level governance committee in an organisational loop-learning model. The model that was tested gave students a greater degree of partnership in the governance decisions that directly impacted their environment.

The feedback loops developed specifically for this research were structured on organisational learning models of communication, specifically double- and triple-loop learning. Lower order loops consisted of the University governance committee identifying a significant issue that would directly impact the HDR experience and required an impending decision. The issue was then taken to the HDR participants for their feedback which was then reported back to the committee for consideration in their decision-making process. In all four loops, the committee altered their course of direction in response to the student voice. The outcome, and how the student voice had impacted the committee's decision, was then reported back to the HDR. The types of impending decisions the participants were asked to comment on included proposed changes to a major grant scheme for HDRs, and policy changes to HDR requirements such as coursework, graduate qualities, and internships. This paper reports some key findings from the research.

FIONA JAYNE CARRUTHERS

PhD Candidate The University of Newcastle

Personal risk taking in the Higher Education environment

This paper is overview of personal risk taking, in relation to researchers and academics within the Higher Education environment, and the potential moderating effects of psychological safety.

The Higher Education environment, as in many organisational environments, is experiencing the impact of change. As an outcome, academics and researchers are being called to let go of past practices and be innovative in all aspects of their work. Organisational research has shown that this atmosphere can create anxiety and stress in individuals and the collective alike. When an individual experiences these subjective feelings they can potentially become uncomfortable, feel at risk and psychologically unsafe. The experience of this unsettling cognitive state can impact on an individual's ability to engage, learn and develop. That is, actively participate in the change management process.

Psychological safety is a unique, intrapsychic state. It is a phenomenon emerging from the theories of organisational change where its significance as a team dynamic, referred to as 'team psychological safety', has received attention with regards to organisational learning and team building. Increasingly, though, psychological safety is the subject of research, across a variety of disciplines, as a multi-level phenomenon. That is, psychological safety is being considered not only as a team or group dynamic, but as an individual and whole of organisation dynamic. Currently though, there is very little narrative regarding psychological safety across these three levels in the Higher Education environment. To contribute to addressing this gap, my research will work towards constructing, positive narrative on psychological safety in the Higher Education environment and specifically the research environment.

KEYNOTE ADDRESS

THEME 2: BEYOND THE DEGREE



PROFESSOR LYNN MCALPINE

Could the PhD play a role in addressing global challenges? If so, how might we do it?

Professor Lynn McAlpine is internationally recognised for her research, conducted in the UK, Europe and Canada, into PhD and post-PhD career trajectories both in and outside the academy. She has been at the forefront of promoting research into Doctoral education and early career researcher development, including playing presidential roles in special interest groups in the American Educational Research Association (AERA), and European Association for Research in Learning and Instruction (EARLI) that focus on postgraduate students. Lynn spends her time between Oxford University in England and McGill University in Canada.

Abstract

Refugee migration, climate change, online data regulation and protection: These are just three of the global challenges facing society today that will impact all our futures. If we hope to address such problems, we need collaboration across civil society and academia to bring together different kinds of knowledge in creative ways. For those of us invested in doctoral education, this could mean helping to create highly skilled and motivated knowledge workers ready to conduct research that addresses such challenges. How might we do it? What might this mean in practice? Who are our potential collaborators? Taking up these questions, I will explore some of the possibilities and challenges.

FEATURED PANELLISTS

THEME 3: EMOTION



DR JILL SCEVAK & DR KATH GRUSHKA

The doctoral brain: recent theories on emotion and their implications for managing doctoral learning

Dr Scevak has been CI on two ARC Discovery projects on Doctoral metacognition. She is a practicing Psychologist and member of the Australian Psychological Society and registered with APHRA. She brings a perspective on learning across all levels of education and is currently engaged in the study of doctoral well-being and emotional intensity linked to learning tasks.

Abstract

Dr Jill Scevak's research primarily focuses on applying learning theory to the postgraduate context including doctoral research and the cognitive development that needs to occur in the course of a doctoral degree. She is particularly interested in the learning challenges associated with doctoral study; the place of affect in epistemic metacognition and the role of the supervisor as instructor in this context. In this presentation, she focuses on the nature of doctoral work and how the emotions stimulated by higher level tasks are managed. She explores the problems students face in acknowledging and managing emotions especially when they may not have previously imagined feeling intensely about studying and draws on an increasing body of data about the relatively high levels of anxiety and depression in the doctoral population. She poses the question 'how attuned are supervisors to the struggles students experience with their affect'.

Dr Kathryn Grushka is currently a Senior Lecturer at the University of Newcastle's School of Education. Kathryn is a nationally recognised Visual Arts & Design Educator, Visual Arts Education researcher, curriculum writer and artist. Kathryn is known especially for her work on the performative role of artmaking, imaginative becoming, reflective practice, visual learning, adaptive knowledge and transformative learning. In teaching and learning, Kathryn's research is centred on ensuring the most explicit links between research insights into enactive cognition, embodied visual knowing and subjectivity insights. Her research links the fields of visual art, design, visual digital technologies, visual learning, critical and performative pedagogies, knowledge as visual representations. She has been the recipient of the NSW Institute for Educational Research, Doctoral Award.

Abstract

Feeling, thinking and curiosity drive learning and comes before words. When did we stop being curious and using our intuition? When did we give value to the fixedness of words and systems over the fleeting fascination of the imagination? When did we narrow our attention away from things that are different to focus on ideas that have solidity, represent a model or validity to lock ideas into patterns in pursuit

of stability in truths? Did we give up our love of play, our curious mind and the excitement of ambiguity and metaphor in order to survive our education? This presentation seeks to delve into the work of Iain Mc Gilchrist in order to stimulate a discussion around the brain, attention, affect and imagination. Why the brain needs these skills and why we need to focus on our perceptual and intuiting capacities in order to apprehend and sustain curiosity. These skills are essential for doctoral learners, yet they are sidelined and often silenced by the logic and linear processing of the left hemisphere, the underlying structure of the doctoral machine. We may indeed be suppressing the very skills needed to release novel and innovative thought so desperately sought after in the doctorate and research.

KEYNOTE ADDRESS

THEME 4: INDIVIDUAL DIFFERENCES



ASSOCIATE PROFESSOR KYLIE SHAW

Supporting doctoral student learning: An exploration of key factors underpinning the development of excellent researchers

Kylie's work on doctoral journey tracking has been presented at prestigious international conferences and has been used and adapted by international scholars in the UK, New Zealand and Canada. She began her interest in research learning in her doctoral thesis and in that work developed a socio-cognitive construct of 'research preparedness'. Work as CI on a global Innovative Teaching & Learning (ITL) Research Project funded by the NSW Department of Education and Training (NSWDEC) and Microsoft Australia ultimately led to other projects and consultancies with schools and school leaders, including a current project on thought leadership. Kylie is currently acting as University of Newcastle Dean of Graduate Research.

Abstract

Higher research degrees present a range of inherently difficult and complex tasks as candidates are supported to both make significant contributions to their field of study and develop as research learners. This presentation draws on both conceptual and theoretical advances in understanding individual differences in research learning, drawing on ongoing exploration of doctoral learner profiles. The model of epistemic metacognition by Cantwell et al. (2015), provides the theoretical basis of the study that investigates candidate differences in affective, intellectual and contingency responses to candidature through the use of self-report measures. It has been found that candidates present with different profiles of learning characteristics that cluster in three groups: *Constructively Engaged*, *Struggling to Engage* and *Disengaged* (Cantwell et al, 2015). An online learning tool targeting individual differences in these three groups of research students to improve learning outcomes, and determine the effect of the student having better knowledge of their learning profile, is the focus of this paper. The learning tool, DocLearn™, is comprised of a Self-Directed Doctoral Learning (SDLP) program and Journey Tracking (JT) that aim to elucidate the individualised nature of research learning that PhD candidates undertake when engaging in the doctoral task. A total of 763 respondents across 16 Australian universities are participating in the project, comprised of PhD students across the following discipline areas: Science (29%); Arts, Humanities & Social Sciences (22%); Business & Law (16%); Engineering (15%); Health & Medicine (11%) and Education (7%). This paper presents early findings from the project, presenting cases of the ways that students with specific learning profiles are engaging with the learning tool, drawing on learning analytics data.

FEATURED RESEARCH

THEME 5: ENTREPRENEURIAL CAPACITY



SIMON WATTS

What can be learned from elite policy entrepreneurs: Creating innovation in the 21st century

Simon Watts has 30 years of experience as a policy entrepreneur in social policy and human services across all levels of government in Australia. Simon has also led a social purpose organisation with large human service delivery responsibility and has governed multiple organisations as a director. His current focus is planning for the social and cultural future of a large inner Sydney council.

Abstract

Since 2007, the complex challenges increasingly born of globalisation and economic turbulence have provided new policy innovation opportunities for policy entrepreneurship. Policy entrepreneurs are those who develop and implement policy innovations to engage the opportunities of the 21st Century. This paper presents research that explores the working journey of nine elite policy entrepreneurs who engage with learning for innovation. Elite policy entrepreneurs are actors whose policy work is critical in forming the innovations required in the social and economic lives of nations. The paper explores the manner that these entrepreneurs combine cognitive, affective and behavioural elements, and reveal the methods they use to combine their cognition and experience in creating policy innovation. What is needed is a curriculum for teaching policy entrepreneurship. Findings from this approach will build toward curriculum for teaching more focussed entrepreneur cognition and effectual innovation in policy for aspiring and proficient policy entrepreneurs alike. This work in turn highlights possibilities for working with research students to recognise synergies between the skills they develop during higher degree research and future entrepreneurial activity.

KEYNOTE ADDRESS

THEME 6: EXAMINATION FEEDBACK



DR KERRY DALLY

Who makes the decisions about thesis revisions?

Kerry has an educational psychology background and has conducted research on the association between academic learning and student self-efficacy and wellbeing at both the school and tertiary levels of education. Kerry worked with the SORTI team on the first ARC Discovery project on PhD examination and standards, with a particular focus on Fine Art doctorates. Her current work investigates the ways in which examiner feedback is received and interpreted by university committees, doctoral supervisors and candidates.

Abstract

In the UK and Europe, the *viva voce* is an integral part of the doctoral examination process. The *viva voce* allows the candidate to engage in verbal dialogue with the examiners of their thesis to clarify any misunderstandings or answer questions or concerns about the work that has been completed. The *viva voce* is largely absent from the Australian doctoral examination process and in this country, candidates receive a recommended grade and feedback via a written report from two or more internationally renowned experts in the field under study. In all almost all Australian universities, before a candidate receives the examiner reports, a university committee or an assigned delegate considers the reports and makes a decision about the outcome. The outcomes range from accept without any revisions to fail, and typically neither supervisors nor candidates are consulted or shown the reports until the outcome has been determined. The outcome for the majority of candidates is for the thesis to be accepted with either minor or major revisions and in some universities the committee also dictates the revisions that are required. Candidates typically complete a 'Response to examiners' form with guidance from their supervisor. In this presentation, we question whether these current processes could be improved to allow candidates greater responsibility for making decisions about the nature and extent of revisions in a way that could replicate the same level of engagement, autonomy and independence that is required in a *viva voce*.

THE SORTI PROGRAM: PAST PRESENT & FUTURE



PROFESSOR ALLYSON HOLBROOK

Allyson established her credentials as a pioneering researcher in doctoral education in 1995. She co-edited the first book on supervision of Education PhDs then moved on to carve out a new domain of research in doctoral studies focussed on examination that was very early described by peers as 'world first and world class'. Allyson has been Director of SORTI - the University Centre for the Study of Research Training and Impact (now Innovation) since 2001. In that time the Centre has been awarded six ARCDP grants to study Doctoral examination and doctoral learning. The team's program of work was recently highlighted in Nature (2016).

The Australian Research Council Discovery Grants awarded to SORTI members have formed the following sequence with the working titles

- 1. Nature of PhD examination and standards*
- 2. Quality of PhD and Masters theses*
- 3. Doctoral metacognition*
- 4. Comparison of examination models with and without a viva in three countries*
- 5. Metacognitive profiling of research learners*
- 6. End stage of examination and response to examiner feedback*

Over the course of these studies the team has amassed an archive of thousands of examination cases. In addition, through their work on metacognition, they have developed the DocLearn™ website. Both these resources offer a foundation for future studies.

Promising future directions in which the SORTI cross-disciplinary team have already made headway are further studies of higher order operations; metacognition and critical thinking; epistemic cognition and creativity; emotions; risk-taking; motivation and problem finding; research in other than first language; research ethics; leadership in research and entrepreneurial activity; the nature and effectiveness of feedback during candidature; and equity issues impacting candidates, candidature and outcomes.

SORTI's cutting-edge work is well-known in the sector. SORTI personnel have made submissions to and been cited in reports of parliamentary committees and government and independent reviews of research training including the ACOLA report (2016). Apart from government supported units such as Vitae in the United Kingdom, SORTI is rare in its strong focus on research learners and their assessment. Where researchers are engaged in such programs, DEAL offers a major conduit for their activities.