big ideas
UOW BIG IDEAS FESTIVAL
Where UOW’s new Professors come together to share their bold ideas and research that could change the world.

WEDNESDAY 8 MAY 2013 | 4-8PM
iC CENTRAL | INNOVATION CAMPUS

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PROGRAM

4.00pm Welcome and Acknowledgement to Country
   UOW Global Challenges Director, Prof. Chris Gibson

4.05pm Big Ideas session one introduction
   UOW Vice-Chancellor, Prof. Paul Wellings

4.20pm Police management of psychiatric crisis incidents
   Prof. Stuart Thomas

4.30pm An Eiffel Tower in suburbia
   Prof. Catherine Cole

4.40pm Addressing ‘gut’ reactions
   Prof. Gordon Waitt

4.50pm Washed Away? Implications of sea level rise
   Prof. Clive Schofield

5.00pm Does ‘people power’ really hold the key to our future?
   Prof. Ian Buchanan

5.10pm Thought policing or protection of youth?
   Prof. Mark McLelland

5.20pm Question time

5.30pm Refreshment break
   With interactive research stalls and entertainment by Circus Monoxide

6.00pm Big Ideas session two introduction
   Minister for Higher Education and Skills, The Hon Sharon Bird MP

6.10pm Quantum computing with coloured crayons
   Prof. Aidan Sims

6.20pm How to build a free-radical-catching-machine!
   Prof. Stephen Blanksby

6.30pm Designing the cars of the future
   Prof. Zaiping Guo

6.40pm Making accounting accountable
   Prof. Ed Arrington

6.50pm Digital innovations for regional liveability
   Prof. Kartheinz Kautz

7.00pm ‘Standing up’ for children’s wellbeing
   Prof. Tony Okely

7.10pm Question time & closing remarks
   Prof. Judy Raper, Deputy Vice-Chancellor (Research)

7.20pm Networking drinks
   With interactive research stalls, entertainment by Circus Monoxide, Strung Secrets and Wollongong Science Centre & Planetarium
POLICE MANAGEMENT OF PSYCHIATRIC CRISIS INCIDENTS

Police frequently come into contact with people experiencing mental illness; from those with substance abuse problems to those with conditions such as schizophrenia. Almost half of those taken into custody have previously been engaged with the public mental health service and one fifth of those have been engaged since childhood. They’re often first on the scene of a psychiatric crisis incident, but do police have the training to manage these potentially volatile situations?

Prof. Stuart Thomas spent six years working with Victoria Police to help understand police decision-making around resolving psychiatric crisis incidents and why a disproportionate number of people that have been fatally wounded by police were found to have had a major mental illness. He will propose a whole of government approach to address this national problem.

Prof. Stuart Thomas a forensic mental health researcher with UOW’s Legal Intersections Research Centre. His research expertise is in police encounters with vulnerable populations, police use of force and outcome measurement.
When Prof. Catherine Cole was a child, one of her school teachers said: "aren't we lucky children that Captain Phillip arrived in Sydney before La Perouse. If he hadn't you'd all be speaking French."

The statement has troubled her ever since. What would have happened if the French had reached our shores first? Prof. Cole has pursued an active research interest in France for the past 20 years and her new research project about the doomed La Perouse, will offer insights into the explorer's life, the place in Sydney named after him and just what might have happened if the quirks of history had favoured the French.
What makes your stomach churn? The smell of sweaty bodies at a music concert? Maybe it’s the thought of consuming an animal from our coat of arms. As a human geographer, Prof. Gordon Waitt is fascinated by what mobilises people to make particular choices. He argues that bodily judgements or ‘gut reactions’ play more of a role in our daily decision making process than you might think. Embedded in social and spatial relations, they can cause us to feel pride, disgust, shame or joy with just one look, touch, sniff or taste and in turn, cause us to make irrational decisions.
Australia is fundamentally a land girt by sea. With much more ocean than land under national jurisdiction, if the sea level increases by up to one metre this century as predicted, what will this mean for our island nation? What will happen to our maritime claims and industries they sustain, from fisheries and tourism to shipping? Prof. Clive Schofield says Australia’s maritime claims are dependent on the location of ‘baselines’ which are consistent with the low-water line along our enormously long coast. Changes in the position of these baselines as a result of sea level rise can have significant ‘knock on’ effects on the extent of maritime claims. Prof. Schofield will explore these challenges and suggests innovative policy options to address them.
DOES ‘PEOPLE POWER’ REALLY HOLD THE KEY TO OUR FUTURE?

Occupy Wall St movement, the Arab Spring, the Green Revolution, the Orange Revolution, the Velvet Revolution and the anti-WTO all wanted to change the world – not by toppling governments (necessarily, though that did happen), but by asserting the collective right of citizens to question not only the nature of the present, but of the future too. If these events resonated across the globe it is because they called on everyone to recognise that the future is ultimately in the hands of the people not the politicians, if only they choose to exercise their will and their imagination. They also call on us to question whether the status quo of ‘things as they are’ is really how we want things to be. Does the place we live in reflect our own values and ideas about what it means to live well? Is the future planners map out for us really the future we want for ourselves and our families? To ask these questions and to put them on the collective agenda is to exercise a ‘right to the city’.

Prof. Ian Buchanan is the Director of the Institute for Social Transformation Research. He is the author of the Oxford Dictionary of Critical Theory.
THOUGHT POLICING OR PROTECTION OF YOUTH?

From 2010-2012 the Australian government entertained the idea of installing an internet filter to stop Australians from accessing inappropriate material, particularly sexualised representations of minors. But is blocking content the best way? Recent research, suggests that self-regulation of online communities might be the most effective way to deal with contentious online content. Prof. Mark McLelland is currently researching young Japanese manga (comic books) and anime (animation) fans that both produce and consume potentially problematic representations of fictional child characters. He says, in Australia some of this material falls foul of local legislation and the law ends up criminalising the very people it aims to protect (under-age ‘prod-users’ of this material). Drawing on the voices of young fans themselves, Prof. McLelland asks what exactly is it that we are trying to protect young people from by prohibiting their engagement with online fictional characters?

Content in this talk may offend some viewers. Not suitable for viewers under 18 years.
Technology is forever playing catch up with maths. Mathematicians came up with the Boolean algebra that powers today’s computers in the 1840s, about 90 years before the first functional computer was built. And 50 years after operator algebras predicted the existence of the Higgs boson (the “God particle”), CERN experiments, which we only now have the technology to conduct, confirmed it. So what will mathematicians come up with next? Prof. Aidan Sims hopes his work on operator algebras will underlie a whole new era of ultra-high speed computing: quantum computing.

Aidan Sims is a Professor at UOW’s Institute for Mathematics and Its Applications. He is an ARC Future Fellow specialising in operator algebras.
Ever wondered why we are bombarded with adverts spruiking the health benefits of anti-oxidants? Ever wondered why that plastic clothes peg crumbled in your fingers when you went to hang out the washing? Strangely, the two are related as both our bodies and the humble clothes peg are constantly exposed to a class of highly reactive molecules known as ‘free radicals’. Free radicals are all around us, they cause us to ‘age’, they can make us sick, they cause the things we buy (from paint on our cars to clothes pegs) to deteriorate and fail. Designing new strategies and anti-oxidants to control free radical damage to our bodies and our ‘stuff’ requires a better understanding of the molecules themselves; and here lies the challenge. Like some rare and exotic wild animals, we can usually see where they’ve been and what they’ve done, but many free radicals are hard to detect. In this presentation, Prof. Stephen Blanksby will introduce some exciting new ways to catch free radicals in the act using his free-radical-catching-machine!
DESIGNING THE CARS OF THE FUTURE

Ditching petrol for a clean-tech electric car sounds like an earth-saving move in theory. But if your charge is going to run out halfway through your journey, it’s not very practical to make the switch. Nano-engineer Professor Zaiping Guo is working on improving lithium-ion (Li-ion) batteries for use in electric vehicles, as well as portable devices like mobile phones. In fact, her team has recently had a breakthrough. They have developed a new Germanium-based material which means 5 times more energy storage and the potential to go at least 2 times farther on a charge than current electric vehicles, plus much faster charging at the end of the day.

PROF. ZAIPING GUO
6.30PM

Zaiping Guo is a Professor in the school of Mechanical, Materials, and Mechatronic Engineering at UOW and is an ARC QEII Fellow. Her research focuses on the design and application of nanomaterials for energy storage and conversion, including rechargeable batteries, hydrogen storage, and fuel cells.
MAKING ACCOUNTING ACCOUNTABLE

What counts more: that doctors heal or that the healthcare industry pays? That schoolchildren imagine and invent possibilities for living differently or that they test well enough for their schools to get money? That scholars take chances and create new ways of knowing or that they secure grants and count the profits from their work? Prof. Ed Arrington believes economic accountability, as written through accounting, may have become the most dominant aspect of both our identity and our culture. Questions of what we do, why we do it, how well we do it, and whether we should or should not continue to do it, are all addressed and answered by one thing: the financial cost. Cynical? Maybe. But he has good news. Accounting can still be made accountable.

Prof. Ed Arrington
6.40PM

Ed Arrington is Professor of Accounting in the Faculty of Commerce. His research focuses on accounting as a discursive and social practice, a practice that has more to do with constructing the conditions of economic life than with reporting on economic facts.
What will Wollongong look like in 2050? How can we utilise information technology to support urban development and increase liveability in the local area? Prof. Karlheinz Kautz is involved in developing digital innovations for local Illawarra businesses and government and he believes that a systemic approach to support regional development in the local area, and regional centres all over Australia, is needed.

Karlheinz Kautz is Professor in IT Management & Innovation at the School of Information Systems and Technology. He is an expert in the management, development and design of information systems and their role in business, societal and digital innovation.
‘STANDING UP’ FOR CHILDREN’S WELLBEING

Are young children as active as they should be? Preschool aged children spend a large amount of their day at childcare sitting, which may not be good for their physical, social, emotional, and cognitive development. Early childhood learning expert, Prof. Tony Okely, believes if we can adopt more ways to encourage standing, like replacing chairs with standing desks and allowing children to move more freely during and between activities, it will enhance their school readiness and higher levels of school readiness mean greater educational and economic outcomes later in life.

Prof. Tony Okely
7.00PM

Prof. Tony Okely is a National Heart Foundation of Australia Career Development Fellow and Director of the Interdisciplinary Educational Research Institute at UOW. He is an expert in the areas of physical activity, motor skill development, and sedentary behaviour in early childhood.