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University of Melbourne geologist awarded Royal Society fellowship

A University of Melbourne geology professor has joined the ranks of the world’s finest scientists, having been awarded a prestigious Royal Society Fellowship.

Emeritus Professor Roger Powell, of the School of Earth Sciences, pioneered models to make fundamental advances in our understanding of metamorphic and igneous processes across a wide range of environmental conditions from the crust to deep mantle.

His papers are among the most highly cited in the geosciences. The Fellowship of the Royal Society is made up of the most eminent scientists, engineers and technologists from or living and working in the UK and the Commonwealth. Past Fellows and Foreign Members have included Newton, Darwin, Einstein and Hawking.

Professor Powell said he was “wrapped” to receive the honour.

“This is a great result for me, for my discipline of metamorphic geology, for the School of Earth Sciences, and indeed for the University of Melbourne,” he said.

“I would like to thank the School for their support, and all my research collaborators from Australia, and from over a dozen countries around the world, without whom I would not have been able to achieve what I have.”

Sir Paul Nurse, President of the Royal Society, has welcomed its new Fellows and Foreign Members for 2015. He said this group join the world’s finest scientists who work to make our lives easier and to solve humanity’s biggest quandaries.

“From treating infectious diseases, to building safe bridges and tunnels, searching out life on other planets and even vacuuming our living rooms, science helps us understand ourselves better and it makes life better,” Sir Paul said.

“Without scientific knowledge, we might not be able to solve some of the greatest challenges of our time: food shortages, climate change and tackling diseases.

“The scientists elected to the Fellowship of the Royal Society this year are leaders in their fields and have contributed much to the scientific endeavour. We are delighted to welcome them alongside the likes of great British scientist such as Newton, Boyle and Darwin.”

Prof Powell joins 47 outstanding scientists, including pioneers in climate modelling, the treatment of infectious diseases and plant genetics, who received Fellowships this year.

—— Jane Gardiner

MUP Publications

This month’s featured MUP Publication is Mothermorphosis: Australian storytellers write about becoming mothers, Edited by Monica Dux.

About Mothermorphosis

Good Mother. Bad Mother. Guilty Mother. Modern motherhood is riddled with contradictions and myths. So writes Monica Dux In Mothermorphosis, a collection in which some of Australia’s most talented writers and storytellers share their own experiences of motherhood. In telling their stories they articulate the complex internal conflicts, the exhilaration and the absurdity of the transformation that takes place when we become mothers.

We read about the yearning for a child, the private and public expressions of maternal love, the questioning, uncertainty and unexpected delight, as well as unfathomable loss.

So writes Monica Dux In Mothermorphosis reveals that there is no ‘right’ version of this epic experience and no single tale that could ever speak for all mothers. Yet it is in reading about other women’s experiences – the hard bits, the joyous bits and even the ridiculous bits – that we can become more compassionate, not just to other mothers but hopefully to ourselves.

Mothermorphosis includes writing from: Kate Holden, Kathy Lette, Lorelei Vashti, Rebecca Huntley, George McIntyre, Fatima Measham, Jo Case, Hilary Harper, Cordelia Fine, Jane Caro, Hannah Robert, Susan Carland, Kerri Sackville, Catherine Deveny, Lee Kofman and Dee Madigan.

About the author

Monica Dux is a columnist with The Age, a social commentator and author of Things I Would Expect (when I was expecting), and co-author of The Great Feminist Denial, both published by Melbourne University Press. She can be heard regularly on ABC radio and 3RRR, and has published widely, especially on women’s issues.

Lisa Mamone explores a research project that seeks to establish an evidence-based data set to support health planning for Indigenous children from conception to age two … the first 1000 days.

International research shows that early intervention programs during pregnancy and in the early months and years of a child’s life have great positive impact on later health. However, for some Indigenous Australians, early intervention support for mother and baby is not always possible, and the child can be subject to poorer health and cognitive development than non-Indigenous infants.

Professor Kerry Arabena, Chair of Indigenous Health from the University of Melbourne’s School of Population and Global Health, and Director of Onemda VicHealth Koori Health Service (a group committed to community-driven research and partnerships to improve Indigenous health outcomes), is co-ordinating a comprehensive approach for Indigenous infants and their parents.

Professor Arabena has called on healthcare workers, community organisations and all levels of government from over 30 institutions to address the growing gap in infant and parental health in Indigenous communities.

In a recent national symposium hosted by the Indigenous Health Equity Unit at the University of Melbourne, researchers focused on designing studies that will produce a measurable index on the impact of First Thousand Days intervention programs during pregnancy and the infant’s life.

The First Thousand Days is a global move-ment addressing child development in the first 1000 days of life from conception to age two. “This is the inception point for the next step in collaboration towards equity,” Professor Arabena says. “We are here to design key elements of scientific committees to drive further discussion and strategy.”

Key areas of concern include the increasing number of children being placed in out-of-home care; the high instance of incarceration rates and high propensity of being victims or perpetrators of violence and abuse across the community.

“The statistics for out-of-home care is dire with a 42 per cent increase of Koori children removed from their immediate family, or 63 in 1000 in a two-year timeframe according to the 2015 Commonwealth Report on Government Services,” Professor Arabena says.

“The disenfranchisement of Indigenous chil-dren from their families and communities can limit their capacity to develop neurologically and impact on their early years at school, meaning they are forever playing catch-up in a world not willing to wait for them, leading ultimately to a self-perpetuating cycle of intergenerational disadvantage.”

Dr John Boffa, from the Central Australian Aboriginal Congress, described the trial of the seven-week program designed to increase attendance and engagement at school using the Abecedarian Approach of learning games, conversational reading and enriched care-giving. “Attention at this preschool age of three to four years old is critical as 90 per cent of the brain is developed by age four and it is often not possible to repair certain behavioural traits when they appear in adolescence,” Dr Boffa says.

“There are many programs around Australia that show how individualised care and support for Indigenous infants and their families can produce results and have valuable lessons for wider populations.”

The Apunipima Cape York Health Council’s Baby Basket Program was established to ensure expectant mothers from remote Queensland were equipped with basic needs when travelling to Cairns for check-ups. The program gives baskets to new mothers to provide essential products and educational information at various stages of pregnancy and the infant’s life.

“Evidence shows this program empowers parents and encourages more frequent contact with health care workers,” Dr Boffa says.

The program improved the iron levels of expectant mothers and the rate of return visits at crucial stages of their babies’ development, and fostered relationships between healthcare workers, parents and babies.

Professor Arabena says what became apparent from all contributors at the symposium is that early stage access to help and information is absolutely crucial to making a significant impact on future health. “Addressing key social problems facing a disproportionate number of Indigenous adults such as violence, high incarceration rates, and drug and alcohol use, are crucial first steps to reducing the instance of out-of-home care and providing safe nurturing environments for children.”

Good nutrition for parents and baby, family and community care and support, and raising the visibility and role of fathers, all contribute to healthy and happy children.

“What parents and children need for happy and healthy development is not necessarily new, however the failure of the current disjointed support system means that the information, resources and care do not always reach those who need it most,” Professor Arabena says. “Indigenous leadership programs, such as those being implemented by the Poche Centres for Indigenous Health across Australia are another initiative designed to drive systemic change from within Indigenous communities.

The symposium was the first part of a longer conversation aimed at developing a clear evidence-based strategy to support vulnerable parents and their children for all Australians.
Paradigm shift: now targeting dormant as well as growing cancer cells

New discoveries in the activity of stem cells and proteins in bowel cancer herald major advances in treatments. By Christina Tait.

The key to controlling stem cell behaviour that is responsible for the spread of bowel cancer has been discovered by an international team of investigators led by researchers at The University of Melbourne. Imminent anti-cancer treatments currently being trialled as a result of these findings will benefit patients with a range of cancers including bowel cancer.

This innovative approach will help to arrest cancers in patients by targeting both growing and dormant cancer cells. Targeting dormant cells will be a major advance as conventional therapies and treatments primarily target only growing cancer cells.

“The problem with bowel cancer is that when someone presents the cancer is usually advanced and will already have spread to other parts of the body, most commonly the liver. The cancer cells in these ‘secondary’ sites can sit dormant for years before starting new cancer growth,” says Melbourne cancer researcher Elizabeth Vincan.

The approach of this research was to identify a molecule that is expressed on both actively growing and dormant cancer cells in order to target the primary tumour in the bowel and dormant cancer cells in secondary organs.

“I think of laboratories around the world each searching for different pieces of the puzzle, and it was like finding a piece of that puzzle,” Professor Vincan says.

“We knew from previous research that a gut stem cell known as Lgr5 is involved in initiation. Neuroscientists have shown that this gene is usually advanced and will already have spread to other parts of the body, most commonly the liver. The cancer cells in these ‘secondary’ sites can sit dormant for years before starting new cancer growth,” says Melbourne cancer researcher Elizabeth Vincan.

This discovery has made it possible to target the primary tumour in the bowel and dormant cancer cells in secondary organs.

“I think of laboratories around the world each searching for different pieces of the puzzle, and it was like finding a piece of that puzzle,” Professor Vincan says.

“We knew that Lgr5+ stem cells need Wnt to build and sustain the gut lining or epithelium after it is damaged. Proteins such as the one known as Wnt control cell function by binding to a cell surface receptor. These receptors are known as Frizzled,” Professor Vincan says.

“We knew that Lgr5+ stem cells need Wnt to build and sustain the gut lining or epithelium after it is damaged. Proteins such as the one known as Wnt control cell function by binding to a cell surface receptor. These receptors are known as Frizzled,” Professor Vincan says.

“Wnt is the one that is important in Lgr5+ stem cells and is the one to target in cancer,” she added.

These findings, published in the journal Stem Cell Reports identify the ‘key’, Frizzled 7, to controlling stem cell behaviour that results in the spread of cancer.

“What we found was if you knocked out Frizzled 7 FRIZZLED 7 while the cells were in a dormant state they weren’t able to restart the tumour growth. The aim is to try to get those cells while they are sitting there and not growing.”

Most people don’t die of primary bowel cancer. Conventional therapies and treatments have poor outcomes for bowel cancer patients because by the time they are diagnosed, the cancer cells have spread to secondary organs and can sit there, undetected, until something triggers them to form a cancer again, and that is what people die of,” Professor Vincan says.

Bowel cancer is the second most common cancer in Australia (Cancer Council of Australia). Globally there were 1.4 million new cases and 694,000 deaths from bowel cancer in 2012 alone (World Health Organization).

“The next piece of the puzzle is how to target Frizzled 7 and develop anti-Frizzled 7 antibody treatments that can be used in combination with other current therapies. We are collaborating with scientists internationally who are currently trialling imminent antibody treatments.”

Professor Vincan has a long-standing interest in Wnt signalling and was the convener of the first international meeting on it and the first EMBO workshop held in Australia in 2014. EMBO is an organisation of leading researchers which promotes excellence in the life sciences.

“Professor Hans Clevers, who also collaborated on this research, delivered the EMBO keynote speech. He spoke about his discovery of Lgr5 as a stem cell marker and the advances this discovery has made to regenerative medicine and anti-cancer treatment,” Professor Vincan says.

An exciting consequence of this EMBO Wnt meeting is that Professor Clevers will be in Melbourne on sabbatical later this year.

Professor Elizabeth Vincan is Head of the Cancer Biology Laboratory in the Department of Anatomy and Neuroscience, University of Melbourne and Victorian Infectious Diseases Reference Laboratory at the Doherty Institute.

www.mdhs.unimelb.edu.au

Art-science collaboration explores the secret life of coral

Daryl Holland reports on a new illustrated children’s book that tells the dramatic story of the complex animal-microbial relationships that sustain coral reefs, and what happens when the weather gets too hot.

W e’ve all heard about coral bleaching, but how many of us know what that means, and why it occurs?

Zobi and the Zoox is a new illustrated book for children that explores coral bleaching from the perspective of the microscopic organisms that build and sustain coral reefs.

The book was produced by a group of artists and scientists, including wastewater biologist Wili Wild, microbiologist Dr Gregory Crockett, University of Melbourne student and artist Aviva Reed, and with University of Melbourne physics researcher Bronnie Barr in the role of artistic director.

The story takes place in and on Darian, a tiny, coral reef-building animal called a polyp. Even though Darian is tiny, inside him lives an entire ecosystem of other organisms that are crucial to his survival, like the zooxanthellae algae (known as Zoox) that give Darian his colour and an ability to harvest sunlight to provide a steady supply of food to support him.

The hero of the story is Zobi, a rhizobia bacterium that lives in Darian’s gut. She takes nitrogen from the water and turns it into a form that Darian and his friends can use to make amino acids and proteins.

Darian, Zobi and the Zoox survive through mutual assistance, at the beneficial end of the symbiosis spectrum. They all work together in harmony — that is until the water heats up. The Zoox can’t handle the heat and they start to leave, and it’s up to Zobi to save the day.

This is the group’s second book, after the reptile book that the team worked on last year, the story of the symbiosis between the Hawaiian Bobtail squid and the bacterium it lives in. Zobi is their third book.

“Zobi is passionate about using storytelling and art to inform and educate people about complex ecological processes, and motivate children about the need to act on pressing environmental issues,” the book’s artist, Aviva Reed, who is studying for a Master of Environment at the University of Melbourne, says even though the book takes place almost entirely in and around one coral polyp, the story is “really epic.”

“I think it’s phenomenal what Alisa did, in terms of breaking down this complex scientific idea from the viewpoint of a bacterium, and then creating the idea that the hero of the story is this rhizobium that keeps the coral alive long enough for it to be reimbathed by a new group (known technically as a clade) of zooxanthellae,” she says.

Ms Reed is passionate about using storytelling and art to inform and educate people about complex ecological processes, and motivate children about the need to act on pressing environmental issues.

“You can read a science paper, but you’re not necessarily going to make an emotional connection,” she says.

But it is nerve-wracking that the coral will be bleached forever. It’s huge.”

The book launched in March at ArtPlay, a children’s art space beside the Yarra River in Birrarung Marr. The event involved art activities for children and a panel discussion featuring scientists, artists, educators and a primary school student, Bodhi Harper.

At the event, Bodhi said she felt a real connection with the characters in the book.

“I really felt like I was a part of it,” she said.

Zobi and the Zoox is ultimately a story of survival, but it wasn’t always that way.

Artistic Producer Bronnie Barr says the working title for the book was The End of the Rainbows.

“One of the approaches we thought might work would be to make it a tragedy. Zobi and everyone living with Darian would die, and so would the rest of the coral and the community,” says Ms Barr, who is an honorary fellow in the School of Physics at the University of Melbourne.

After workshoping the story with a group of school children, the group chose a more upbeat ending and a title to match.

“Zobi and the Zoox is the second book in the small friends series produced by the Scale Free Network, with funding from Arts Victoria, and through the crowdsourcing website Pozible. www.smallfriendsbooks.com
Call for ingredient disclosure in everyday cleaners

Anne Steinemann is Professor of Civil Engineering and the Chair of Sustainable Cities at the University of Melbourne. Download Professor Steinemann’s report on pollutants and product labelling at: http://people.eng.unimelb.edu.au/asteinemann/steinemann-2015.pdf

Listen to Anne Steinemann talk about the dangers of unregulated household product ingredients in the latest episode of UpClose.

www.upclose.unimelb.edu.au

She is very familiar with cases where office workers have become critically unwell in their office environments due to fragranced products, and she has also encountered people who have become ill after using common household products, with symptoms ranging from breathing difficulties to headaches or rashes.

“Sick Building Syndrome became mainstream in the 1980s and can be due to a combination of air conditioning ventilation systems, molds, gases from building materials, office machinery, carpets, furniture, fabrics, paints, and of course fumes from products we bring into the building,” she says.

“Some ‘green’ buildings may have good energy ratings or low carbon footprints but if they are sealed environments, which can concentrate pollutants, they can have poor indoor air quality.

“Having poor indoor air quality actually doesn’t make economic sense, as the cost to human health and productivity can be a tremendous cost to an employer,” Professor Steinemann says.

We all have different levels of immune system response to indoor irritants but the individuals who have become especially sensitive to fragrances and consumer products are often referred to as having ‘environmental illness’.

Professor Steinemann suggests we need to listen to them.

“People with environmental illness are like human canaries. They can tell us when our environment is sick.”

In her most recent research paper Professor Steinemann investigated a range of common consumer products including cleaning and laundry supplies, air fresheners and personal care products, including those called ‘green’ and ‘organic’, as well as fragranced and fragrance-free products.

The analysis of 37 common consumer products, including 17 that claim to be ‘green’, ‘organic’ or ‘non-toxic’, emitted more than 150 different volatile organic compounds (VOCs) of which 42 were classified as toxic or hazardous under US laws.

So some ‘green’ products tested contained similar hazardous volatile compounds to those in regular products. These products were commonly used in the home, schools, hospitals, workplaces, hotels, and other indoor environments.

“Surprisingly, fewer than three per cent of ingredients were disclosed on the product label or safety data sheet,” Professor Steinemann says, “largely because Australian law does not require makers of consumer products to list all their ingredients.

“Given the lack of information, consumers may turn to products such as ‘green’, ‘natural’ or ‘organic’ but those are often just unregulated and untested marketing claims. For example, when people see descriptions of ingredients on detergents like ‘biodegradable surfactants’ they think that sounds benign. But the problem is what’s not said; the companies don’t list everything else in the detergent,” Professor Steinemann says.

Call for ingredient disclosure in everyday cleaners

Andi Horvath speaks with researcher Anne Steinemann about the pollutants we encounter from everyday products.

FEATURE

Since the smoke stacks of the industrial revolution, pollution has affected our health and environment.

In Australia, organisations like the Environmental Protection Authority (EPA) thankfully regulate our air quality, by monitoring and enforcing industry compliance related to a range of environmental pollutants.

Yes, outdoors, we can breathe easy but this isn’t the case once we go indoors.

Anne Steinemann is a University of Melbourne expert in environmental pollutants who warns more than 90 per cent of exposure to pollutants that affect human health occurs indoors.

“The primary sources of indoor pollutants are building materials and consumer products. They often contain certain volatile organic compounds (VOCs), including known carcinogens and neurotoxins which can trigger ill health.”

Professor Steinemann has encountered children who have had seizures and asthma attacks when people see descriptions of ingredients on detergents like ‘biodegradable surfactants’ they think that sounds benign. But the problem is what’s not said; the companies don’t list everything else in the detergent,” Professor Steinemann says.

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Chris Weaver reports on a gift to the Arts Faculty to fund a Chair in Classics.

**Campaign update**

There is a common root in many knowledge fields – the influence of Ancient Greece and Rome. Celebrating the critical importance of these civilisations will be a key goal of the newly established Elizabeth and James Tatoulis Chair in Classics, based in the Faculty of Arts. Melbourne alumni Elizabeth and James Tatoulis provided support that was instrumental in establishing the Chair.

“The richness of our lives is enhanced by what we have inherited from ancient civilisation,” Mrs Tatoulis says.

“The Ancient Greek and Roman worlds influence our society in philosophy, politics, law, literature, language, culture, architecture, engineering, science and medicine – in short, they form the basis of western civilisation.”

Mrs Tatoulis is the eldest of five children of a Greek migrant father and a mother whose parents emigrated from Greece in the early 1900s. Born in Ballarat, her early life centred on the goldfields city where she went to school in the 1900s. Born in Ballarat, her early life centred on the goldfields city where she went to school in the 1900s. Her husband James was born in Greece – near ancient Olympia – and migrated with his parents to Australia in 1954.

He was educated at inner Melbourne primary schools and University High School, and completed his medical degrees in 1972. He became a cardiac surgeon in 1980 and continued postgraduate studies in the USA. He is currently Professor of Cardiothoracic Surgery at the University of Melbourne and Director of Cardiothoracic Surgery at the Royal Melbourne Hospital.

Professor Tatoulis is a strong believer in the importance of a well-rounded education – one that values emotional as well as vocational knowledge. “A general, humanist education encompasses much of what it is to be human,” Professor Tatoulis says.

“We want to support and encourage interest and scholarship in the humanities generally, but many of those lessons and much of the richness of our lives today is a consequence of the ancient world.”

Professor and Mrs Tatoulis find the recent resurgence in Classics heartening, with donors such as Believe – the Campaign for the University of Melbourne Chairman Allan Myers AO QC and Maria Myers AO being particular champions of the discipline.

The couple believe the support currently provided to the Classics sends a strong message to students that this is a progressive area of study encouraging students to develop a well-rounded, critical mindset that will be advantageous in their vocational endeavours.

Mrs Tatoulis is also a strong advocate for the education of women and encourages giving to educational bodies. She notes how much women can learn from Greek theatre, where gender relations were a common theme. “Lysistrata is about women standing up for independence and it is a lesson that still resonates today,” she says.

Both acknowledge that they have benefited greatly from the fine education Australia provides and give back accordingly. Mrs Tatoulis is a volunteer teacher, while Professor Tatoulis teaches medical students and trains young heart surgeons.

Education is an odyssey – a journey the couple are driven to provide for the next generation of budding scholars. As with the Classics, they look to the past to provide a compass for the future. In their personal instance, there is also the motivation to honour their parents.

“Our parents were not formally educated and had no knowledge of how far we might go, but they were always incredibly supportive of us pursuing the careers we wanted,” Professor Tatoulis says.

“We are continuing the opportunities they worked hard to provide by encouraging young people to be well educated, well read and have diverse interests.”

“This is the dream of a better life, incorporating travel, scholarship and a well-rounded personality. In short – a rich life.

“Our lives today are enriched in large part because of scholars who have documented and expanded upon the achievements of the ancient world,” Professor Tatoulis says.

“Now we have the opportunity to expand on that legacy.”

www.campaign.unimelb.edu.au

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**Classics Chair to provide students with a personal odyssey**

Classics Chair to provide students with a personal odyssey.

Chair in Classics.

Chris Weaver with a personal odyssey. Classics Chair to provide students with a personal odyssey.

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Know your foods!

Andi Horvath explores the various categories of plant foods, including legumes, nuts, fruits and flowers. Did you know a pumpkin is really a fruit, and a peanut is a legume? Researchers working in food safety care a lot, and explain why correct classification is important to inform decision-making for food storage and transportation.

A ccording to science, the tomato is a fruit and so are pumpkins and cucumbers. In other words, fruits are the fleshy things with seeds. The botanical definition of a fruit is an organ that contains seeds, protecting the seeds as they develop and often aiding in the seed dispersal.

Flowering and fruiting is part of the plant’s reproductive cycle and once the flower gets pollinated it develops the seed, which is the next generation of plants.

“Generally the fruit is the maturing ovary that develop-ops around the seed,” Dr Darbyshire, a researcher in the Faculty of Veterinary and Agricultural Science explains.

“Fruits tend to be the fleshy parts housing the seeds and the fact that they are delicious is part of the plan for seed dispersal. Humans like many animals like to eat fruits and we ‘release’ the seeds and therefore disperse the plants into new locations. For example, this is why you see the odd apple tree along the Hume Highway.

“There are variations on a theme when it comes to the fruiting body of plants. For example botanists refer to the strawberry as an accessory fruit because the fleshy part is formed from tissue other than the ovary.

“Also, the brownish or whitish specks on the straw-berry which are usually thought to be the seeds, are in fact the true fruits, called achenes, and each of them surrounds a tiny seed,” Dr Darbyshire says.

Edible vegetables are other parts of the plant; carrots being roots, celery the stems, and broccoli are the flow-ering heads. When broccoli turns a little yellow it’s the tiny flowers in bloom.

Other misunderstood botanical label are nuts and legumes.

Tree nuts are really just fruits with a hard shell, while peanuts are not really nuts at all, they are in fact legumes, which include plants like beans and lentils. Similarly coffee beans are not actual beans but are tech-nically seeds from inside berries.

Dr Darbyshire says the way to separate the wheat from the chaff, or in this case, the nuts from the fruits, is that a nut is actually a non-fleshy fruit with a hard shell with usually one seed.

“Nuts like almonds and walnuts grow on trees. The edible part of the nut is actually the seed. In botany, a further constraint to being classified as a nut is that the shell does not open to release the seed when it ripens. “Think of macadamias, which have a very hard shell, which we have to crack to get inside. Legumes are dif-ferent from nuts in that they contain multiple seeds and they open naturally.”

Dr Darbyshire researches the impacts of climate change on fruit trees such as apples, pears, and cherries with an aim to inform future adaptation strategies for the fruit tree industry so they can make the most of their crops.

One example is to erect shade netting. With the increase in extreme weather conditions, early season apples like the Gala variety that ripen in January and February are at greater risk of being burnt. Shade net use is becoming more commonplace in the fruit industry with greater uptake likely to combat extreme heat damage.

Dr Darbyshire’s team is also comparing flowering timing in response to different temperature conditions in Tasmania, Victoria, Queensland and Western Australia, allowing for information on regional differences to be captured. Her work feeds into creating action strategies for fruit tree crops.

“Recently I have been examining apple trees after they lose their leaves and enter a dormancy process,” she says. “We want to know how the trees know when winter begins and when it has past, meaning it is safe to flower. The question is, will it be cold enough in future for trees to continue to flower and hence fruit normally?

“The project is a collaborative effort with the University of Melbourne working with several partners including the Department of Economic Development, Jobs, Transport and Resources. www.fvas.unimelb.edu.au

Over the course of her studies Jessica Freame made a virtual journey – from the far south-eastern suburbs of Melbourne where she grew up, to Hollywood, and on to the centre of Victorian government. Proof positive that an arts degree can take you places, not least to the job of your dreams. By Gabrielle Murphy.

Hollywood to the rescue

For the PhD which she was awarded in 2004, Jessica Freame studied Hollywood film stars and the American homefront during World War II. The six actors she re-searched in detail were Cary Grant, Bette Davis, Katharine Hepburn, James Stewart, Humphrey Bogart and Ingrid Bergman.

Some ten years on, Dr Freame is Director of Relief and Recovery at Emergency Management Victoria, having worked her way up in the Victorian public service.

Starting as a graduate entrant in the Education Department, she had stints in health and as a resource strategist writing the policy behind budget bids, before moving back to the Department as an executive adviser.

“This was fascinating work,” Dr Freame says. “Being an adviser is a great way to get exposure to senior management, and I learnt a lot.”

It was at this time, after the 2009 Victorian bushfires, that Dr Freame moved into emergency management when her boss in the Education Department was asked by the then Premier to set up the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA).

“I was literally working on education policy on the ninth of February, and advising the first CEO of VBRRA on the tenth,” Dr Freame says.

“Do be so closely involved in the recovery effort following the unprecedented devastation of the Black Saturday fires provided me invaluable experience.”

Following the closure of VBRRA at the end of June 2011, and before taking up her current role as Director of Relief and Recovery with Emergency Management Victoria, Dr Freame established and managed the fire Recovery Unit in Regional Development Victoria. She has since worked on recovery efforts for emergen-cies such as the 2010–11 and 2012 floods, the 2013–14 fires, and the Hazelwood Mine Fire in 2014.

“It has not been until recently that Dr Freame consciously considered the importance of her PhD studies and their relevance to the work she does as a senior bureaucrat in emergency management.

“I’ve come to realise that I’ve always been interested in how people and communities function in times of crisis, and that this interest has been a consistent feature threading through my undergraduate degree studies, to my thesis, and throughout my career.”

Dr Freame’s experience puts paid to the sometimes-expressed belief that generalist degrees, particularly in the humanities, don’t lead directly to career outcomes. They can, and they do.

“In my undergraduate studies, I majored in English and cultural studies, and history,” Dr Freame says. “I particularly liked 20th century history, and focused on the impact of big events on society and people.

“As a humanities student, I needed to be well versed in the subject matter I was exploring, but I also needed to be an open and effective communicator and writer.”

These qualities, in combination with empathy and under-standing of how people respond during and after times of crisis, have earned Dr Freame praise and recognition from stakeholders and colleagues alike.

“Jess has so much experience to bring to the role of Director of Relief and Recovery,” says Lisa Gibs, the Deputy Director in the Jack Brockhoff Child Health and Wellbeing Program in the University of Melbourne’s School of Population and Global Health.

“She understands the complexity of the issues, values the contribution of research to decision-making, is highly competent and, most importantly, is sensitive to the issues being experienced by communities and community members post-disaster.”

Dr Freame argues that what students learn in the pursuit of a humanities degree can open up a range of job opportunities.

“I loved doing my PhD in history, and it is a huge part of who I am today and my success at work.”

shps.unimelb.edu.au
beyondbushfires.org.au
emvict.gov.au
Commemorating a vital part of the Anzac story

A new book by Melbourne alumnus Dr Joshua Funder (LLB(Hons) 1994, BSc(Hons) 1995) examines and humanises one of Australia’s most enduring national stories – the successful evacuation of more than 20,000 troops from Gallipoli in December 1915. By Chris Weaver.

Dr Joshua Funder is a Rhodes Scholar with a varied career. He has spent 20 years in biotechnology research, management and venture investment, highlighted by work with the Clinton Foundation’s HIV/AIDS Initiative that successfully negotiated reduced anti-retroviral drug prices in Africa.

He retains links to the University through his chairmanship of Per Capita (an independent Australian progressive policy think tank that collaborates with universities and industry) and ongoing mentoring of Science and Business Economics students. His family includes noted Melbourne alumnus Anna Funder (sister and noted author) and Professor John Funder (father and a distinguished professor in medicine).

In a new book, he explains the Gallipoli evacuation story through the eyes of his great-grandfather, Stan Watson (1887-1985), an Adelaide engineer responsible for building the pier at Anzac Cove. Dr Watson was considered the second last Australian to leave Gallipoli and rarely spoke with his family about his wartime experiences formed much of the motivation to write a new book by Melbourne alumnus Watson’s Pier (by Horace Moore-Jones, 1915). Collection of the Australian War Memorial.

I had to imagine what it would have been like for the Gallipoli evacuation. Dr Funder says he was spellbound by his great-grandfather’s story. “When I was six or seven years old, I sat at my great-grandfather’s feet and listened to his story of the war,” he says.

“Brother was recording the story for a school project, but it turned out the recorder failed and didn’t record,” Dr Funder thankfully remembered many details. He later read Mr Watson’s written account of the evacuation – Gallipoli: Sapper Signum, at university, and travelled extensively through Turkey and Egypt. Those experiences formed much of the motivation to write Watson’s Pier.

“When I first heard my great-grandfather’s story, I was left with starting and unforgettable images,” he says. “But to truly understand Watson’s experience I had to imagine what it would have been like for him during the course of the Great War.”

Dr Funder subsequently chose the fiction format for his book, as it allowed him to provide a first-person narrative. Using Stan Watson’s voice allowed Dr Funder to examine the Australians’ stresses.

“Fiction is a way to share my understanding of the Great War and to empathise with the characters, in the hope that readers can reimage their own view of our history,” he says.

“Writing a novel also gave me a greater insight into my great-grandfather’s remarkable strengths, as well as his failings.”

One of the many untold aspects of the Gallipoli evacuation was the pier’s construction. A defused Turkish shell was used as a pile driver, ensuring the resultant jetty had stable foundations. Utilising the shell was an astonishingly dangerous process, particularly considering the presence of Turkish gunfire.

Watson found an unexploded shell on the beach, which was the best thing he could find for a pile driver,” Dr Funder says.

One of the most chilling moments of the war for him involved going out under direct shelling, unscrewing and pulling out the explosive charge, and then filling the shell with shrapnel to give it weight as a pile driver.

The jetty was completed on 18 June and named “Watson’s Pier” in honour of the construction engineer. Following the disastrous Gallipoli campaign, Mr Watson received responsibility in mid-December to cover signals for the Anzac withdrawal on the nights of 18 and 19 December. Mr Watson sent a message of the evacuation’s completion early on 20 December, while leaving with the last ship.

Large-scale casualties were feared during the evacuation, however most men were saved. Dr Funder says Mr Watson and his soldiers were calm, but under severe pressure – stresses that emerged only later.

“The ability to suppress your fear, and protect yourself and those around you, is essential for survival but comes at a personal cost once the moment has passed.”

Dr Funder wants to portray his characters in the round, explaining the First World War’s impact on Australia – a young nation unused to war.

“I wanted an alternative, single character narrative, that would allow readers an understanding of what Australia was like before the Great War, and the impact it had on this particular person and his nation,” he says.

“This book traces all facets of the war, including the hopes and setbacks, disease, boredom and bureaucracy inherent in warfare, and their impact on an individual. It is not just about battle and defeat, or the landing at Gallipoli.”

www.campaign.unimelb.edu.au

The evolutionary purpose of adolescence

Katherine Smith speaks with youth mental health researcher Louise Hayes about the processes of adolescence.

As an adult you were asked to make a major career choice about your sexuality, spend your working days somewhere unfamiliar, create a new group of social relationships, find a life partner, become financially literate – and you were asked to do that in the next three years – how would you feel about it?

Probably overwhelmed, tentative, nervous. And you’d probably make some of those choices questionably at best, possibly badly.

But that’s what we as a society ask of adolescents as they approach the end of their school years and enter tertiary education.

For that reason, a Melbourne clinical psychologist and expert in the development of young people, who with colleagues has just completed a book called The Thriving Adolescent, says helping young people acquire emotional and social wisdom is equally as important as helping them thrive academically.

“The two forces of culture and biology significantly influence the way researchers think about adolescence,” says Dr Louise Hayes, who is also a researcher at Djceng, the National Centre of Excellence in Violence and Mental Health located at the University of Melbourne.

“We now consider adolescence as lasting from ages 12-24, covering the period that young people grow from childhood to full social and financial independence,” Dr Hayes says.

“The amount of time people now spend in post-secondary education, coupled with the fact most of them live in the family home through that period, has lengthened the span of adolescence.

“Likewise, developments in brain science have created new understandings,” she says. “The brain is plastic for all our life, and people are able to adapt and learn new things, but research conducted by Lawrence Steinberg in the US has identified two remarkable windows of opportunity for fast-paced development.

“One is infancy and early childhood, and the other adolescence.”

“Dr Hayes says given the tasks society is requiring an individual to perform during the period – that is, to grow, mature and leave the nest – it makes sense evolutionally that such a window of opportunity in brain plasticity should open up.

Interestingly, studies in animals have shown they share with human animals a period of adolescence in which four distinct behavioural traits are apparent: they are very sensitive to rewards, show a tendency to risk-taking, are sensation-seeking, and have a love of novelty.

“From an evolutionary perspective we conclude the purpose of these behaviours is to compel the animal to leave the nest and find a mate.

“The human corollary is a drive to find independence. There’s an evolutionary component of adolescent development that we can’t deny, and in fact need to address in the way activities for adolescents are conceived and structured, particularly school.

“We should be able to capture and harness that energy for the reward we see in young people, and in fact use these behavioural drives to nurture their development.”

“Dr Hayes says it’s crucial we’re not tempted to see adolescents as deficient in any way, but accept their apparent overwhelm or instability is in fact part of the process of moving through adolescence.

“From a social perspective, we need to think about students not as being unable to make decisions, but help them meet the need they have to test themselves by taking risks and seeking new experiences in a way that’s adaptive,” she says, “such as making some decisions about how they wish their school community to be run, or working for their community. When we don’t offer opportunities to take adaptive risks, we’re much more likely to see maladaptive behaviours like drinking too much or getting stoned. They need to be able to take charge of some things, and practise being adult.

Dr Hayes says even though their adolescents may appear to be pushing them away, it’s important for parents to remember and be reassured that they still play a crucial role in young people’s lives.

“Be the stable influence for the big decisions in life, and find ways to allow adolescents to practise, to try something, make mistakes, try again. Knowing where your kids are, what relationships they’re engaged in, these are important things, and it’s probably worth allowing them to make their own decisions about clothes or hairstyle, however much they may differ from your own.”

She says parents should also try to be aware that adolescence is now a long time, and they need to be keen about seeing their child mature and develop, to be able to manage their emotions in a stable fashion.

“We’re all social creatures,” she says, “and need to be attached to people who love us. In that context, if parents can let go of the need to be in control and learn a new way of interacting with their adolescent children, everyone will flourish.”

Keeping young people company on the journey through finishing school is one way of doing this, by attending course information sessions together for instance, and discussing, planning and evaluating further education options or career pathways.

Focus On Melbourne course information website with the last update May to 11 June.

www.futurestudents.unimelb.edu.au
Catriona May reviews a new exhibition at the University’s Grainger Museum which explores the role of music in World War 1.

From the lowest point of view, a few drums and fifes in a battalion are worth five extra miles on a route-march—quite apart from the fact that they swing the battalion back to quarters composed and happy in its mind no matter how wet and tired its body may be.

The soul of a battalion speech, Rudyard Kipling, 27 January 1915.

“Everyone is looking at the war one way or another this year,” says exhibitions coordinator at the Grainger Museum, Brian Allison. “But there aren’t many institutions focusing on music and the war—and particularly Australian music and the war.”

Pack up your troubles: Music in the Great War, running at the Grainger Museum at the University of Melbourne until the end of the year, explores the role of music in the Australian experience of WW1. At a time when gramophones were increasingly accessible and sheet music was more affordable than ever, music was a central part of society in the early twentieth century.

While music as a form of entertainment was an important part of the war effort on the home front, less well-known is how important it was on the frontlines of battle.

The army valued it so highly it employed bandsmen, whose music galvanised troops into battle, marked solemn occasions like burials and offered entertainment during downtimes.

“Initially, the bandsmen also acted as stretcher carriers,” Mr Allison explains. “But this was a very vulnerable position—they were highly susceptible to gunfire. So from 1916 after the battle of Pozieres, High Command decided to take them off these duties and for bandsmen to focus solely on playing for the troops.”

The exhibition includes items that tell the story of Herbert Alfred Godber (1892–1980), and which had been lovingly preserved in family archives. An orchardist from Diamond Creek, Godber volunteered to join a band while at the training camp established at the Showgrounds in Melbourne. The band played at recruiting drives, church gatherings and at concerts for wounded soldiers. Once deployed in Europe he became a member of the 21st Battalion Band, considered among the Australian army’s best.

Godber undertook frontline duties and also served as a full-time bandsman entertaining troops at rest, accompanying funerals, sports meetings and medal presentation ceremonies, and providing impetus to troops on extended route marches. He saw the war through to its end and ultimately returned home to Australia.

But it wasn’t just the bandsmen that made music on the frontline. It is known that pianos and gramophones found muddy homes in the trenches themselves, and the exhibition also includes a phonofiddle, an instrument fashioned by soldiers from an old car horn, table leg and pieces from a gramophone, to provide entertainment during rare moments of respite.

On the homefront popular music flourished. It was produced quickly, performed on the popular stage, and made its way into homes via relatively cheap sheet music, where it was sung by family and friends around the piano.

Many of these songs, like Heroes of the Dardanelles, by Reginald Stonham, most likely fuelled a patriotic fervor and a loyalty to Empire that can seem difficult to relate to in twenty-first century Australia. But it is unlikely they were intended to deceive, explains Jennifer Hill, who co-curated the exhibition.

“They’re not state-sanctioned propaganda,” Dr Hill says. “They reflect, in part, the naivety of the time, and a keenness to rush to the aid of the ‘motherland’. And surely, if there was misreporting of, for example, troop casualties in the Australian press, then the writers of these songs were responding to misinformation.”

The exhibition includes musical artefacts from the University’s collections and borrowed items from institutions like the Australian War Memorial, the Performing Arts Collection and Federation University, as well as from a number of family archives. According to Grainger Museum curator Astrid Krautschneider, together they offer a fascinating lens through which the Australian experience of WW1 can be considered.

“The poignant and sometimes hugely personal stories attached to each of these items add life and meaning to what we are presenting here,” she says. Visitors can borrow iPods at the exhibition to listen to a wide variety of popular music from the time. Eleven new recordings of songs were commissioned especially for the exhibition from Melbourne musicians Kiran Rajasingam (bantone) and Andrea Katz (piano).

Pack up your troubles: Music in the Great War, is running at the Grainger Museum until December 20.
L’Oréal Rising Talent advances genomics and patient outcomes

Lisa Mamone reports on a MDHS researcher who is this year’s L’Oréal Rising Talent award winner, and whose research covers drug-resistant bugs in hospitals.

University of Melbourne computational biologist Dr Kathryn Holt has been named one of 15 L’Oréal For Women in Science International Rising Talents for 2015. The L’Oréal For Women in Science program was established by the Foundation L’Oréal in partnership with UNESCO to showcase talented women who are committed to the advancement of science.

Dr Holt is recognised for her work in genomics where she researched resistant bacteria and infectious disease across various global health concerns from typhoid and dysentery, to hospital-acquired infection. Her lab at the University’s Department of Biochemistry and Molecular Biology, based at the Biod2 Institute, investigates the structure and evolution of bacterial strains that are becoming resistant to antibiotic medicine as well as bacteria which colonise the body.

“The microbial world is endlessly fascinating - microbes are everywhere and affect just about every system, and they evolve really quickly so their genomes are constantly changing and we are struggling to keep up,” Dr Holt says.

“The problem of antibiotic resistance is right up there,” she says. “We are starting to see infections that have no cure. This is a huge problem for modern medicine because a lot of our treatments rely on having effective antibiotics to keep infections at bay. Without this, things like surgery and chemotherapy become much less safe.”

With the emergence of resistant strains of bacteria, the importance of identifying risk and understanding the mechanics of a resistant gene will become more and more crucial in hospital care, infection control and public health policy.

“For the future of our field we need sequencing to keep getting faster and cheaper,” Dr Holt says.

“We are now putting DNA sequencers into diagnostic labs in hospitals and public health facilities (like the CDC in the US, or the Microbiological Diagnostic Unit here in Melbourne), where they are being used to investigate local outbreaks in real time.”

Having immediate sequencing and analysis available in hospital settings is at the crux of the future of science and patient care. It will allow hospital workers to directly intervene in the care of affected or at-risk patients and successfully contain an outbreak to an isolated and manageable area.

One of the biggest challenges facing Dr Holt is how to make sense of large volumes of data. With so much data available, it is becoming more and more important for researchers to have a deep understanding of computing and statistics to be able to complete the cycle of analysis and interpretation.

Being named one of L’Oréal International Rising Talents is important for Dr Holt as recognition of the role of science in improving patient outcomes from laboratory research to practice.

Dr Holt is establishing a new Centre for Systems Genomics at the University where she proposes to do just that. By emphasising the importance of working across disciplines, the new centre is an interdisciplinary initiative incorporating science, mathematics, engineering and medicine where she hopes to be able to turn data into practical biological knowledge and, in turn, better outcomes for patients.

www.mdhs.unimelb.edu.au

Architecture students create vital infrastructure in remote communities

As this year’s Bower Studio returns from the Northern Territory, Louisa Deacey reports on an initiative from the Faculty of Architecture, Building and Planning that has seen a wide range of facilities designed and built in remote Indigenous communities.

With support from the MacDonnell Regional Council, 12 University of Melbourne students have travelled to the remote Indigenous communities of Areyonga and Amoonguna in the Northern Territory to build much-needed facilities, as part of the Bower Studio program, a subject offered through the Masters of Architecture, at the University of Melbourne.

The project is led by senior lecturer David O’Brien, and sees the students working alongside members of the local communities.

Every year since 2008, Bower Studio participants have built facilities in remote Australia, Papua New Guinea or Thailand that have contributed to community health and wellbeing. A wide range of facilities are constructed, but with one common thread: they are built in consultation and collaboration with local communities.

Students participating in the Bower Studio named after ‘bower shelter’, a structure traditionally used by Indigenous Australians meeting together to shelter from sun, rain or wind – have constructed a bus stop and taxi shelter, a multi-functional shade structure, and furniture including benches and seats in Areyonga and Amoonguna in the most recent project, Bower 15.

The Bower Studio creates environmentally sustainable and culturally relevant community and housing infrastructure, it’s not just a quick fix. Dr O’Brien stresses the long-term goal of the program is to create something communities can replicate on their own.

“The aim of these studios is to develop systems and training for local communities that other building teams can replicate, providing a benefit to the community that continues long after we’re left,” Dr O’Brien says.

Last year’s project (Bower 14) resulted in the construction of an essential neo-natal unit and composting toilet facility in the remote Papua New Guinea community of Suanum. The composting toilet was similar to those constructed by the Bower Studio at the Spiaia community in 2012.

Perinatal complications are the leading form of mortality in Papua New Guinea and are responsible for greater numbers of deaths than pneumonia and malaria, and like all coastal communities in PNG, Suanum is at risk from rising sea levels. The low lying community is under threat and the traditional pit toilets flood during high tides, spreading human waste throughout the community, causing disease.

The four-bed neonatal centre has a room for storing medication and a new ablutions facility which provides a healthier place for infants and mothers at the most vulnerable time of their lives.

Bower 1.3 in the Northern Territory’s Beluken community involved the construction of a sheltered outdoor living area and kitchen for an Indigenous family from the HomesPLUS range of ‘Add Ons’.

Masters of Architecture students at the University of Melbourne vie for a space in the Bower Studio. Dr O’Brien says the program offers students a rare opportunity to work in a hands-on manner with local community members and hone their consultative skills to facilitate lasting change.

Lyndon Ormond-Parker, who was born in Darwin, is of Alyawarren descent from the Barkly Tablelands in the Northern Territory. An Indigenous cultural expert of over 15 years’ standing, Mr Ormond-Parker is an Australian Research Council Fellow in the Indigenous Studies Unit of the University of Melbourne’s School of Population and Global Health. He is undertaking PhD studies under the co-supervision of leading academic and Indigenous spokesperson Marcia Langton and renowned conservation expert Robyn Sloggett, Director of the University’s Centre for Cultural Materials Conservation.

His thesis, titled ‘Aboriginal Cultural Heritage the Economics of Knowledge’, examines the ways in which Indigenous communities are utilising and managing their cultural heritage resources and local knowledge in the digital era. As such, Mr Ormond-Parker is positioning himself as a virtual bridge: using his own culture and knowledge, in an exploration of the world’s oldest cultures, overlaid by a matrix of modern technological advances.

“The appointment of Lyndon Ormond-Parker to the Heritage Council of Australia is a significant addition to the expertise of the Council,” Associate Professor Sloggett says. “His impressive track record in research and management of Australian Indigenous cultural material, and his knowledge of the needs of remote communities with regard to cultural heritage management and protection, is a significant addition to the expertise of the Council.”

Professor Langton agrees. “I’m very pleased that the Australian Heritage Council will now have at its disposal the experience and expertise of a scholar of Lyndon Ormond-Parker’s standing,” she says.

“Lyndon’s work in cultural heritage management over the past 15 years has been effective within government and research organisations. His strong critical grasp of the needs of the cultural heritage sector, particularly as it relates to Australian Indigenous communities will, I believe, be crucial to what the AHC is able to effect in the coming years.”

Further, Professor Langton believes Mr Ormond-Parker’s scholarship and practice of communicating Indigenous cultural heritage management locally and globally via digital technology exemplifies the achievement of a new voice of Indigenous experts working at the cutting-edge of their cultural, geographic and disciplinary fields.

“Information technology and communication is now a major industry in Indigenous communities across Australia,” Professor Langton says. “Pleaseing, Lyndon Ormond-Parker’s appointment to the board of the Australian Heritage Council indicates an understanding by the board of the importance of enabling Indigenous culture and heritage to be positioned in the new cyberspace.”

In his current research, Mr Ormond-Parker is investigating the cultural, social and technological environments at three sites. His aim is to ascertain the issues involved in the sustainability and continued use of significant, endangered audiovisual archival material, and how they might be most effectively and appropriately preserved and made accessible to future generations.

“Cultural information is held in many forms in Aboriginal communities,” Mr Ormond-Parker says. “It is in collections of objects and documents, digital libraries and archives, art collections, oral history, family and community photographs and films, and significant collections of audiovisual recordings of ceremonies, songs and dances, languages, local ecological knowledge and cultural landscapes.”

According to Mr Ormond-Parker, cultural work in remote area communities has involved a substantial uptake of new technologies and the use of audiovisual aids since the 1960s.

“The oral and performance aspects of these cultures have been recorded on video, cassette and other magnetic tapes, and more recently captured digitally,” he says.

“These archives are often stored and located not only in specific community archives but on computers in the offices of the local Aboriginal land council, schools, language and art centres. 

“These archives are not just repositories of material but social hubs – or knowledge centres – where the elders and interpreters of highly endangered cultures sustain and transmit the cultural repertoires necessary for the transmission to future generations.”

Mr Ormond-Parker believes a better understanding of what’s contained in material of this kind will contribute to a more subtle understanding of Australian cultural identity.

“The material highlights the contribution of Indigenous Australia to Australia’s historical record and cultural identity,” he says.

“The outcomes of our research will, directly via my position on the board of the Australian Heritage Council, inform government policy and assist decision-making at a time when Australia is on the verge of an information revolution through the NBN.”
A claim by researchers that vinegar should not be used to treat box jellyfish stings is being hotly disputed within the scientific community, with some experts cautioning that public safety guidelines should not be changed despite the new findings.

Ken Winkel, the director of the Australian Venom Research Unit at the University of Melbourne, says there was not enough evidence to support a claim by Queensland researchers that using vinegar on stings actually caused more venom to enter the body.

Applying vinegar has been the recommend- ed first aid treatment for box jellyfish stings for decades, but the researchers from James Cook University and the Cairns Base Hospital, including Associate Professor Jamie Seymour, concluded that it was harmful and that the practice should be dropped.

But Dr Winkel says the data was “a long way” from establishing that vinegar was harmful. He says the researchers’ method “looked at the toxicity of a box jellyfish tentacle in a laboratory and did not necessarily reflect what happens in the case of a sting to humans.”

Both the Australian Resuscitation Council (ARC), which reviews research and develops guidelines for resuscitation, and the Austin Hospital’s Poisons Information Centre have also been reluctant to accept the findings.

Both groups said they were sticking with their long-standing advice that vinegar be used for the immediate treatment of stings.

Council member James Tibballs says the ARC was not prepared to condemn or support Professor Seymour’s research but “the feeling generally amongst the executive members of the ARC is that it’s not good evidence.”

Professor Tibballs says: “The real life situation has not been well mimicked by the model that Jamie Seymour and his colleagues have used.”

Jeff Robinson, of the Victorian Poisons Information Centre, says: “For there to be any change of practice there would need to be good evidence in people who are actually stung by box jellyfish.”

He added: “It’s interesting what’s been found in the laboratory research but it is purely that. It is purely laboratory research.”

The Queensland researchers found that applying vinegar to the jellyfish tentacles that had already released venom actually prompted the release of more venom, by as much as 69 per cent.

“This, in turn, raises concern that vinegar may have the potential to do harm by exacerbating envenomation . . . Further investigations are required to elucidate the mechanism(s) of this secondary release of toxin and to identify first aid measures which will reduce both pain and the risk of cardiac arrest,” the researchers noted in their paper published in the journal Diving and Hyperbaric Medicine.

The finding challenges decades of understanding as, of the hospital records of 300 sting victims examined by the researchers showed that those who had vinegar poured over their stings had more pain relief.

However, both Dr Winkel and Professor Tibballs said more work should be done to be sure to assess the risk and benefits of vinegar. Dr Winkel said some media coverage of the research risked undermining decades of teaching in first aid training across many organisations. “It is very easy to confuse the public and that is when you can have a really detrimental effect when they do not know what to do and they end up doing nothing or something wrong,” he says.

But Professor Seymour backed the team’s findings, saying: “I would suggest that Ken (Winkel) should produce some data to show that the application of vinegar is not harmful and then we can probably have a discussion. Until then, he really doesn’t have a leg to stand on.”

He said the ARC was “incredibly conservative” and could take years to revise its guidelines. It had taken the ARC two years to take on board earlier peer review loops, which recom- mended stopping the use of pressure bandages on jellyfish stings.

The jellyfish, which is found in the tropical waters of northern Australia, is the most venomous animal on the planet. Sixty-four Australians are known to have died from stings in the past 130 years.

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Alister of Music (Opera Performance)

Mr Dreyfus shared this view in the lead-up to the Abbot Government’s attack on Gillian Triggs, President of the Human Rights Commission (AHRC), earlier this year was an unfortunate incident that should never have occurred, according to Member for Isaacs and Melbourne MP.”

Mr Petruccelli, who was first introduced to opera at an early age through his Italian grandparents (Pavarotti’s Best Of was a regular feature at family functions), thinks it’s important for children to be introduced to opera for more than reasons of entertainment.

“Opera’s elements of music, dance, acting, costumes and sets stimulate the majority of our senses and inspire creativity in a world filled with technology and screens,” Mr Petruccelli says. “Learning to appreciate opera was a slow process for me but one that came quite naturally since I was exposed to it as a young person, and this exposure is the key. If children are more exposed to opera from an early age, both at school and at home, they are more open to the harmonic language and the musical aesthetic of the opera repertoire.”

For Emma Muir-Smith, who played classical piano and jazz trumpet at school (and found out only recently that her great-grandparents and a couple of her great-aunts were opera singers), her introduction to opera was quite different. She’d never given the art form a thought until she was 18.

“I was given a good role in the year 11 music lesson, and I thought ‘I am so not going to tell you, Mr teachers.’ So I didn’t do those lessons so I didn’t embarrass myself,” Ms Muir-Smith says.

“I turned out the teacher at my school was an opera singer. I heard her practising before a lesson one day and was blown away by the power of the sound. I asked if she could teach me to sing like that, and it sort of went from there.”

Mr Petruccelli is passionate about breaking down the social stigma associated with the art form and believes education programs are key to achieving this.

“Opera is still regarded by some as an elitist art form. I think offering diverse education programs, like Victorian Opera does, definitely contests that view. Many other opera companies here and around the world are also building educational programs for children and young adults.”

From the point-of-view of longevity of the artform, Ms Muir-Smith agrees that exposing children to opera is very important.

“When we perform to children, it’s so great to see them genuinely enjoying what is presented. They don’t have any preconceived notions of what opera should be, or who it is for,” she says.

“Opera often gets a bad rap for being ‘unrealistic’, but kids have such wonderful imaginations. It doesn’t matter if it’s not in English because they understand body language. I rarely see such honest reactions from audiences, and it’s an absolute joy to perform for children in that sense.”

Both students feel fortunate to be part of this collaboration between the Melbourne Conservatorium of Music and Victorian Opera which is preparing them for life as professional opera singers.

“We have access to top-class coaches, directors, language experts and conductors, and we learn through genuine hands-on experience. The work we do is the real work we’ll be doing for the rest of our careers, it’s not a watered-down version,” Ms Muir-Smith says.

For Mr Petruccelli, the experience of working with Victorian Opera is the most valuable thing of all.

“I am learning about the inner workings of a professional opera company, how to prepare music and roles, how to control my nerves before walking on stage, how to work with an orchestra and how to follow a conductor, what I need to do if I need to sing if I am sick, and how to be open-minded and adaptable.”

The two masters students will take this newfound knowledge to help build musical memories for the next generation of opera singers, continuing this centuries-old art form.


Alice’s Adventures in Operaland introduces young audiences to a whole new world

Andy Walsh speaks with Law alumni, former Attorney General and politician Mark Dreyfus about his views on Australia on the international stage.

The Abbot Government’s attack on Gilligan Triggs, President of the Australian Human Rights Commission (AHRC), earlier this year was an unfortunate incident that should never have occurred, according to Member for Isaacs and Melbourne Law School alumnus Mark Dreyfus QC.

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From the point-of-view of longevity of the artform, Ms Muir-Smith agrees that exposing children to opera is very important.

“When we perform to children, it’s so great to see them genuinely enjoying what is presented. They don’t have any preconceived notions of what opera should be, or who it is for,” she says.

“Opera often gets a bad rap for being ‘unrealistic’, but kids have such wonderful imaginations. It doesn’t matter if it’s not in English because they understand body language. I rarely see such honest reactions from audiences, and it’s an absolute joy to perform for children in that sense.”

Both students feel fortunate to be part of this collaboration between the Melbourne Conservatorium of Music and Victorian Opera which is preparing them for life as professional opera singers.

“We have access to top-class coaches, directors, language experts and conductors, and we learn through genuine hands-on experience. The work we do is the real work we’ll be doing for the rest of our careers, it’s not a watered-down version,” Ms Muir-Smith says.

For Mr Petruccelli, the experience of working with Victorian Opera is the most valuable thing of all.

“I am learning about the inner workings of a professional opera company, how to prepare music and roles, how to control my nerves before walking on stage, how to work with an orchestra and how to follow a conductor, what I need to do if I need to sing if I am sick, and how to be open-minded and adaptable.”

The two masters students will take this newfound knowledge to help build musical memories for the next generation of opera singers, continuing this centuries-old art form.


Alice’s Adventures in Operaland shows at the Arts Centre Melbourne, Playhouse, 23 May, 11.30am, 2.00pm & 5.30pm.

Bookings 1300 182 183 or via victorianopera.com.au

Alix Bromley speaks to two VCA students about their involvement with a new collaborative program with Victorian Opera at the Melbourne Arts Centre designed to introduce opera to new audiences.

“I regard it as an extremely unfortunate incident that should never have occurred, according to Member for Isaacs and Melbourne MP.”

Mr Petruccelli, who was first introduced to opera at an early age through his Italian grandparents (Pavarotti’s Best Of was a regular feature at family functions), thinks it’s important for children to be introduced to opera for more than reasons of entertainment.

“Opera’s elements of music, dance, acting, costumes and sets stimulate the majority of our senses and inspire creativity in a world filled with technology and screens,” Mr Petruccelli says. “Learning to appreciate opera was a slow process for me but one that came quite naturally since I was exposed to it as a young person, and this exposure is the key. If children are more exposed to opera from an early age, both at school and at home, they are more open to the harmonic language and the musical aesthetic of the opera repertoire.”

For Emma Muir-Smith, who played classical piano and jazz trumpet at school (and found out only recently that her great-grandparents and a couple of her great-aunts were opera singers), her introduction to opera was quite different. She’d never given the art form a thought until she was 18.

“I was given a good role in the year 11 music lesson, and I thought ‘I am so not going to tell you, Mr teachers.’ So I didn’t do those lessons so I didn’t embarrass myself,” Ms Muir-Smith says.

“I turned out the teacher at my school was an opera singer. I heard her practising before a lesson one day and was blown away by the power of the sound. I asked if she could teach me to sing like that, and it sort of went from there.”

Mr Petruccelli is passionate about breaking down the social stigma associated with the art form and believes education programs are key to achieving this.

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May Timetable

The not-so-great indoors: Linking household and personal care products with poor indoor air quality
Civil and environmental engineer Professor Anne Steinemann outlines the causes and consequences of poor indoor air quality, and in particular the potentially hazardous fumes generated by home cleaning and personal care products. Presented by Dr Ani Honath. Anne Steinemann is Professor of Civil Engineering and the Chair of Sustainable Cities in the Department of Infrastructure and Engineering at the University of Melbourne.

Online now.

The dynamics of scandal: On facilitating, denying and covering up institutional child sexual abuse
Sociologist Professor Chris Greer explores the often murky agendas of organisations, mainstream and social media, and individuals in the facilitation, denial and cover-up of institutional child sexual abuse. Presented by Lynne Haultain. Chris Greer is the Head of the Sociology Department and Co-Director, Centre for Law, Justice and Accountability at City University London.

Online 22 May.

Feed your intellect with a University of Melbourne Public Lecture. With local experts as well as those from across the globe you’ll find there’s always something new to discover. You don’t need to be an enrolled student and most lectures are free!

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MONDAY 11 MAY 6:15PM
Economic Policy for the 21st Century by Professor John Quiggin (University of Queensland). Business and Economics. Freebairn Lecture in Public Policy
Bookings: alumni.online.unimelb.edu.au
Enquiries: s.stichbury@unimelb.edu.au, 9035 4765

TUESDAY 12 MAY 6PM
Thought,AB-14: Baby it’s hot outside!
Discussion on alternative futures by Professor Ruth Fischer AM and Professor David Kandiy (University of Melbourne). Mr Chris Krishna-Pitay (Science communicator and performer), Mr Tony Lloyd (Artist), Ms Lara Olsen (CityPower and Powercorp), Carlton Connect Initiative Lecture
Enquiries: jackson@unimelb.edu.au, 8344 1521

TUESDAY 12 MAY 6:30PM
“The Shoulders of Giants”: Shifting sands in the field of assessment by Professor Patrick Griff (University of Melbourne). Education Lecture
Bookings: bit.ly/18FCCv
Enquiries: education.unimelb.edu.au/news and activities/events, education-events@unimelb.edu.au, 8344 4155
THEATRETTA Q230, LEVEL 2, MELBOURNE GRADUATE SCHOOL OF EDUCATION, 234 QUEENSBERRY STREET, CARLTON

TUESDAY 12 MAY 6:30PM
Is childhood mild traumatic brain injury related to adult problems? by Dr Audrey McKinlay (University of Melbourne). Psychological Sciences Lecture
Enquiries: m.c.mckinlay@unimelb.edu.au, 9035 4765
HERCUS LECTURE THEATRE, PHYSICS BUILDING SOUTH, SPENCER ROAD, PARKVILLE

WEDNESDAY 13 MAY 6:30PM
Is childhood mild traumatic brain injury related to adult problems? by Dr Audrey McKinlay (University of Melbourne). Psychological Sciences Lecture
Enquiries: m.c.mckinlay@unimelb.edu.au, 9035 4765
HERCUS LECTURE THEATRE, PHYSICS BUILDING SOUTH, SPENCER ROAD, PARKVILLE

TUESDAY 2 JUNE 11:30AM
Dealing with mushrooms - the art and science of painting fungi by Dr Tim May (Royal Botanic Gardens Melbourne)
Bookings: library.unimelb.edu.au/botanicalart
Enquiries: t.kyle@unimelb.edu.au, 8344 7617
LEIGH SCOTT ROOM, LEVEL ONE, BAILLIEU LIBRARY

TUESDAY 2 JUNE 1PM
India - Open for Business by Mr Murali Nathan (Management and Sustainability Project Advisor), Australia India Institute Tiffn Talk
Bookings: asi.india.unimelb.edu.au/events
Enquiries: aii-rsvp@unimelb.edu.au, 9035 7538
SEMINAR ROOM, AUSTRALIA INDIA INSTITUTE, 147-149 BARRY STREET, CARLTON

THURSDAY 14 MAY 6PM
Compulsory Mental Health Treatment in the Community: Are Community Treatment Orders justified? by Associate Professor Stefan Syvalin (UniTed University, Sweden), Professor Barnadette McSherry (University of Melbourne).

TUESDAY 27 MAY 6:30PM
Indigenous ANZACs by Dr Vincent Alessi (Ian Potter Museum of Art), Mr Brook Andrew (Artist), Professor Marcia Langton (University of Melbourne), Ms Maxine McKew (University of Melbourne). ANZAC Centenary Lecture
Bookings: indigenousanzacs.eventbrite.com.au
Enquiries: unimelb-events@unimelb.edu.au, 8344 7637
YASUKO HIRAGA MYER ROOM, LEVEL 1, SIDNEY MYER ASIA CENTRE, SWANSTON STREET, PARKVILLE

TUESDAY 12 MAY 6PM
“On the Shoulders of Giants”: Shifting sands in the field of assessment by Professor Patrick Griff (University of Melbourne). Education Lecture
Bookings: bit.ly/18FCCv
Enquiries: education.unimelb.edu.au/news and activities/events, education-events@unimelb.edu.au, 8344 4155
THEATRETTA Q230, LEVEL 2, MELBOURNE GRADUATE SCHOOL OF EDUCATION, 234 QUEENSBERRY STREET, CARLTON

TUESDAY 12 MAY 6:30PM
The Medical War by Professor Kate Darian-Smith, Professor Peter Doherty, Professor Doug Hilton, Professor Sharon Lowny & Mr Warren Crossley (University of Melbourne), ANZAC Centenary Lecture
Bookings: medicalwar.eventbrite.com.au
Enquiries: unimelb-events@unimelb.edu.au, 8344 7637
AUDITORIUM, MELBOURNE BRAIN CENTRE, KENNETH MYER BUILDING, 30 ROYAL PARADE, PARKVILLE

TUESDAY 13 MAY 6:30PM
“On the Shoulders of Giants”: Shifting sands in the field of assessment by Professor Patrick Griff (University of Melbourne). Education Lecture
Bookings: bit.ly/18FCCv
Enquiries: education.unimelb.edu.au/news and activities/events, education-events@unimelb.edu.au, 8344 4155
THEATRETTA Q230, LEVEL 2, MELBOURNE GRADUATE SCHOOL OF EDUCATION, 234 QUEENSBERRY STREET, CARLTON

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SEMINAR ROOM, AUSTRALIA INDIA INSTITUTE, 147-149 BARRY STREET, CARLTON

THURSDAY 14 MAY 6PM
Compulsory Mental Health Treatment in the Community: Are Community Treatment Orders justified? by Associate Professor Stefan Syvalin (UniTed University, Sweden), Professor Barnadette McSherry (University of Melbourne), Melbourne Social Equity Institute Lecture
Bookings: bit.ly/msei-ctos
Enquiries: gary.dillons@unimelb.edu.au, 9035 4251
234 THEATRE, LEVEL 2, MELBOURNE GRADUATE SCHOOL OF EDUCATION, 234 QUEENSBERRY STREET, CARLTON

TUESDAY 19 MAY 11:30AM
University of Melbourne Herbarium past and present by Dr Gillian Brown (University of Melbourne)
Bookings: library.unimelb.edu.au/botanicalart
Enquiries: t.kyle@unimelb.edu.au, 8344 7617
LEIGH SCOTT ROOM, LEVEL ONE, BAILLIEU LIBRARY

TUESDAY 2 JUNE 11:30AM
Dealing with mushrooms - the art and science of painting fungi by Dr Tim May (Royal Botanic Gardens Melbourne)
Student makes a splash in and out of the pool

Rod Warnecke speaks with elite athlete program participant Hayley Baker about teaming study with hours spent in the pool training for the Kazan FINA World Swimming Championships.

August 7, 2015. This is the day that arts student Hayley Baker has been dreaming about all her life. This is the day that Hayley Baker will represent Australia in the 200m Backstroke at the FINA World Swimming Championships in Kazan, Russia.

A second year arts student and an Elite Athlete Program High Performance scholar at the University of Melbourne, Hayley had the swim of her life in early April to qualify for her first senior Australian swimming team.

Having previously placed fourth in the 50m Backstroke and third in the 100m event, she had come astonishingly close to earning national selection: the first two place-getters who swim predetermined qualifying times get the nod to wear the green and gold.

Ultimately, the nerves rattled as she slid into the water for the start of the 200m Backstroke and waited for the starter’s instructions.

“I’d swam well in both the 50 and 100, swimming new personal bests, and just wanted to bust out another,” Hayley says.

Two hundred metres, and just over two minutes and eight seconds later, and after a fierce battle with Queenslanders Emily Seebohm and Madison Wilson (the gold and silver medalists in both the two shorter distance events who had both already qualified for Kazan) and Hayley had swum her way on to the national team – with another personal best.

“I was absolutely stunned,” she says, as she recalls looking up at the Sydney Olympic Park scoreboard and realising she had qualified for the World Championships (her second place and time of 2.08.21 minutes having easily bettered the qualifying time of 2.09.84 minutes).

“I didn’t really expect that to happen. I was shocked, and very excited.”

Having completed Year 12 at Caulfield Grammar, the Victorian Institute of Sport scholar was well aware of the University of Melbourne’s world-class ranking and wanted to ensure she was well qualified to embark on a career once her time in the pool had ended.

“The University is the best place for me to be when it comes to earning a degree that will set me up for life after swimming. I’m planning to major in politics at this stage, so we’ll see where that takes me.”

Though her eyes are on a bigger prize, Hayley represented the University at 2014’s Australian University Games. She swam in the remarkable six events and won an incredible six gold medals, and also broke the Games’ records for the 50m, 100m and 200m Backstroke events along the way. In her first year at the University, she was named its Female Athlete of the Year.

“Representing the University was great,” Hayley says of her University Games experiences. “The event was pretty relaxed, and I made a lot of new friends on the team.”

Juggling hours of weekly training and the rigors of studies is no easy feat. It takes a well organised and focused individual to plan for success in both an elite sporting and academic environment. How does she do it?

“It’s good to have two things (swimming and study) to take your mind off one or the other when you’re getting a bit stressed. And having the University’s help to balance both has been really important,” she says.

“Being part of the Elite Athlete Program allows for some assignment deadlines to be pushed back, and I can manage my class attendance (where training or competitions have clashed). The FINA World Championships begin on 25 July. Hayley Baker’s dream becomes a reality some 13 days later when she makes her first representative splash for the Australian Dolphins. Pretty sure it won’t be her last.

www.sport.unimelb.edu.au

Medical paraphernalia tells the stories of World War 1

Laura Soderlind reports on a new exhibition in the University’s Medical History Museum that presents artefacts that tell the often forgotten medical history of World War 1.

Medical artefacts and paraphernalia from the First World War – including a travelling dentistry chair, original medicine bottles and soldier cartoons – are on display at the University of Melbourne’s Medical History Museum.

Museum Curator Jacky Healy says many of the key medical innovations and stones forged on World War 1 battlefields are highlighted in the exhibition, Compassion and Courage: Australian Doctors and Dentists in the Great War.

“World War 1 brought with it new types of military conflict never known before, from machine gun and poisonous gas attacks to trench warfare.

“This created new medical challenges, including infectious diseases, treatment of wounds, psychological trauma and hygiene.

“One of the interesting stories told by the exhibition is the often overlooked but incredibly important role of dentists,” Dr Healy says.

In the first three months of the Gallipoli campaign over 600 soldiers were evacuated, to the base hospitals in Egypt to get dental treatment. To stem this inefficient system and deal with these often serious health problems, there was a call for dentally trained soldiers to step forward to fill this vacuum. Three Gallipoli soldiers volunteered and created the Australian Army’s first dental unit.

“We know of a dental officer being struck in the leg by Turkish shrapnel while extracting a tooth from a fellow soldier,” Dr Healy says.

The dental team at Gallipoli performed 180 fillings, 327 extractions and 60 denture repairs from November until the December evacuation. There were 188 army dental units by the end of the war.

Alumni from the University of Melbourne were among those who went to war and suffered numerous casualties as soldiers and medical professionals. The exhibition pays homage to these alumni and the shared history of our partner organisations.

The first director appointed to the Walter and Eliza Hall Institute, Gordon Clunes Mathieson, was killed at Gallipoli before he was able to take up his post, and his story is represented in the exhibition.

The Victorian Medical Insurance Agency Limited is the exhibition sponsor.

The exhibition showcases, among other things:

- A sketch of Captain Doctor Arthur Poole Lawrence dressed as a dugger wearing a slouch hat. Dr Poole was awarded a Military Cross for treating the wounded under fire.
- One of over one-and-a-half million medals – known as the death penny medals – that were distributed in the British Empire to bereaved families. The medallion was presented to the family of Melville Rule Hughes, WW1 surgeon.
- Artefacts from field hospitals where pathology laboratories led by Charles Martin were established to deal with the infectious diseases that killed as many soldiers as war wounds.
- Watercolour paintings of war wounds by Darryl Lindsay which portray the work of surgeons and dentists who pioneered facial reconstruction at the Queen’s Hospital Sidcup in London.

The exhibition is on show in the Medical History Museum until 16 April 2016.

www.museum.medicine.unimelb.edu.au

Watch a video of Curator Dr Jacky Healy talking about the exhibition at: www.youtube.com/watch?v=hB0qdzx_v3Q
**Events and Courses**

at the University of Melbourne

**CONCERTS**
- New Music Demystified: Cellist, Friedrich Gauwerky
  - Monday 11 May, 6.30pm
  - Where: Melba Hall, Royal Parade, Parkville
  - Admission: Free
- Alumni Series: Art Rock and Beyond - Stuart Fisher, Guitar
  - Friday 15 May, 7.30pm
  - Where: Melba Hall, Royal Parade, Parkville
  - Admission: Free
- Bach Cantata BWV 71 – Gott ist mein König
  - Sunday 31 May, 9.00am
  - Where: St John’s Lutheran Church, 20 City Road, Southbank
  - Admission: Free

**Series at Bennetts Lane**
- Admission: Free
- Where: Bennetts Lane Jazz Club, 25 18 & 19 May, 8pm
- Parkville
  - Where: Melba Hall, Royal Parade, Tuesdays 12 & 19 May, 9 June, 7.30pm
  - Admission: Free
  - Stuart Fisher, Guitar
  - Friday 15 May, 7.30pm
  - Friedrich Gauwerky
  - Monday 11 May, 6.30pm

**THEATRE PERFORMANCES**
- Contemporary Plays
  - 15 – 21 May
  - Cloudstreet
    - Directed by Julián Fuentes Reta
    - Where: Space 28, 28 Dods St, Southbank
    - Admission: Free
  - The Chapel Perilous
    - Where: Studio 45, 45 Sturt St, Southbank
    - Admission: $20 Full / $15 Concession

**EXHIBITIONS**
- Margaret Lawrence Gallery
  - 40 Dods St, Southbank
  - Opening hours: Tuesday – Saturday, 12pm – 5pm
  - Admission: Free
  - Enquiries: 03 9035 9400 or ml-gallery@unimelb.edu.au
- Hany Armanious, Nick Dory, Fischli/Weiss, Susan Jacobs, Sterling Ruby
  - 22 May to 20 June
  - Opening: Thursday 21 May, 5.30 – 7.30pm
  - Curator: Mark Feary
  - Student Gallery
    - Tuesday – Friday, 10am – 4.30pm
  - New weekly installations of student works throughout the semester
  - Where: Gate 4, Dods St, Southbank
  - Admission: Free
  - Enquiries: vcamcm-er@unimelb.edu.au

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- **Focus on Arts**
  - Wed 20 May
- **Focus on Agriculture**
  - Thurs 21 May
- **Focus on Commerce**
  - Tues 26 May
- **Focus on Environments**
  - Wed 27 May
- **Focus on Science**
  - Tues 2 June
- **Focus on Law**
  - Thurs 4 June
- **Focus on Engineering**
  - Thurs 11 June

**Focus on IT**
- Thurs 11 June
**Focus on Music**
- Wed 24 June
**Focus on Fine Arts**
- Thurs 25 June

**futurestudents.unimelb.edu.au**