

radius



THE UNIVERSITY OF
SYDNEY

Rural health champions

Students meet a
community need and
gain valuable rural
experience 04

A low-angle photograph of the Lismore Base Hospital building, showing its modern architecture with multiple stories, large windows, and a mix of white, orange, and grey panels. The name 'LISMORE BASE HOSPITAL' is prominently displayed in large, white, 3D letters on the lower part of the building. The sky is clear and blue.

LISMORE BASE HOSPITAL

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doctors first
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of the flu vaccine
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Cover: Lismore Base Hospital
Photographer: Louise Cooper



Welcome to the Autumn issue of *Radius*

As many *Radius* readers are aware, Sydney Medical School will undergo significant changes during 2018, including the establishment of a new Faculty of Medicine and Health, unifying Medicine with Dentistry, Nursing and Midwifery, and Pharmacy. We will later be joined by the Faculty of Health Sciences, bringing the allied health professions into the union.

The formation of the new faculty is occurring at a time of great strength for Medicine. Our international rankings are consistently high, and our research productivity outstanding, not only in quantitative terms, but also in assessments of quality through the Excellence in Research for Australia process.

Impact can be gauged from the significance of our recent discoveries, and the extent of research translation into health care and policy.

Australia-wide in 2017, we ranked second overall among Australian medical schools for success in National Health and

Medical Research Council grant awards, and we led the nation by a wide margin in the value of grants awarded for clinical research and health services research.

Our education and research training programs are also flourishing. I am delighted to see the burgeoning of our master's coursework programs, which may foreshadow the future of postgraduate and vocational medical training more broadly (see page 16).

Notable examples include programs in critical care, internal medicine, breast surgery, metabolic health and clinical neurophysiology. We are working on a Master of General Practice degree to commence in 2019.

Student numbers remain very strong. The first cohort of 286 students from our Doctor of Medicine program graduated in December 2017 (page 10). We are also attracting large numbers of higher-degree research students. As at October 2017, 1129 students were undertaking PhD research in our faculty and affiliated institutes and schools.

For all these reasons, I believe we can be optimistic that we have the capability to support the formation of a new organisational structure, and to benefit from the development of strengthened relationships with our colleagues in the other health schools.

Organisational change will be gradual. Our new Executive Dean, Professor Robyn Ward AM, will take up her appointment in July 2018. Meanwhile, recruitment of deputy executive deans and senior professional staff is in progress. While the new structure will operate from April 2018, the changes required to support full functioning of the new faculty will be implemented in 2019 and 2020.

Our faculty is primed to make the most of the exciting opportunities offered by these changes. We enter the new era in excellent shape and in fine form.

Professor Arthur Conigrave
BSc(Med) '79 MBBS '82 MSc '83
PhD '92 MD '08
Dean of Sydney Medical School

Awards season

Exceptional work by our staff and students is being honoured and supported by a range of awards and funding.



Professor Georgina Long accepting the NSW Premier's Award

AMP Tomorrow Makers Award

The AMP Tomorrow Fund supports inspirational Australians who are working to create a better tomorrow for everyone.

Biomedical scholar Dr Kristina Cook received one of 2017's AMP Tomorrow Makers Awards. The Sydney Medical School and Charles Perkins Centre researcher is among 45 community champions, social innovators, scientists and educators to receive the award this year.

In 2016, after completing her PhD in cancer drug development, Dr Cook's perspective on medical research changed forever when doctors found a rare carcinoid tumour in her appendix.

She underwent major surgery in the same month she received a fellowship to set up a lab at the Charles Perkins Centre. The many weeks in hospital strengthened her resolve to change our understanding of cancer and decrease mortality rates.

Now back to full health, she is using her grant to conduct research into the effect of low oxygen (hypoxia) on tumour growth.

She hopes "to not only improve cancer treatment, but also inspire other young women to pursue careers in STEM."

University Medal

In December, three students in the new Applied Medical Science Honours program at Westmead received a University Medal. This annual award acknowledges outstanding academic performance by our honours students.

The three Westmead-based awardees achieved a SciWAM (science weighted average mark) above 80% and an honours mark of more than 90%. The recipients and their research projects were:

Sing-Young Chen

HIF1a and the response of high fat diet-fed beta-TRAP mice to glucose challenge.

Amanda Chen

Investigating the role of the DNA damage response in regulating telomerase recruitment to telomeres.

Orion Tong

Characterising the role of plasmacytoid dendritic cells in initial HIV infection – a double edged sword?

The students are among the first cohort to complete their honours degree through the new program delivered at Westmead, one of the world's largest health and medical research precincts.

NSW Premier's Award

Sydney cancer researchers received two prestigious Premier's awards and \$1.25 million in funding from the Cancer Institute NSW last year. The annual awards honour the achievements of the individuals and teams working to lessen the impact of cancer for the people of NSW.

Professor Richard Scolyer and Professor Georgina Long received the NSW Premier's Award for Excellence in Translational Cancer Research.

In collaboration with the Melanoma Institute of Australia (MIA), they are leading developments in melanoma prevention, diagnosis and treatment.

"The depth and breadth of research undertaken at the Melanoma Institute ensures we are key players on the world stage of melanoma research", said MIA's Conjoint Medical Director, Professor Richard Scolyer.

Fellow MIA Conjoint Medical Director Professor Georgina Long adds, "It is an honour to lead this organisation and I am delighted that our people are being recognised for their tremendous efforts. Our ultimate goal is to find a cure and end melanoma for future generations."

Rural health champion transforms lives

The University Centre for Rural Health is making inroads into combating some of Australia’s greatest health challenges and delivering enormous benefits to both communities and medical students.

Written by Bronwyn Bruce

The University Centre for Rural Health (UCRH) covers a vast area from Grafton to the New South Wales/Queensland border. With coordinators based at Lismore, Murwillumbah and Grafton, it provides a multidisciplinary capacity to educate students for clinical practice in rural health.

UCRH’s role is broad, growing from the original emphasis of training medical students to supporting students from 16 health disciplines.

It has been coordinating student placements for more than 10 years. By the end of 2018, it will have supported more than 6500 weeks of placements across the NSW North Coast by more than 1300 students from 21 universities.

Growth in allied health training

UCRH’s allied health training program expanded in 2017, mainly due to innovative placement models developed at aged care facilities and schools. These placements are delivering positive outcomes for students and their placement organisations. UCRH’s long-term goal is for students to return and practise in local areas once they finish their training.

In 2017, the allied health program placed occupational therapy and speech pathology students in preschools and primary schools in Casino, Coraki, Woodburn and Kyogle. These towns are more disadvantaged than average, with families experiencing poverty, unemployment and high rates of trauma. The placements are continuous, with pairs of third- or final-year students working in the schools for eight- to 10-week blocks.

Leanne McLaughlin, Assistant Principal and Learning Support Teacher at Kyogle Public School, says the student placements have provided great benefits to the school community, particularly in occupational therapy (OT) and speech pathology. Kyogle children do not have access to OT and only limited access to speech pathology through community health.

“The placement program is a win-win,” she says. “The students get feedback from us about working with the children, and with so many socioeconomically disadvantaged kids, they get to witness and work with some severe behavioural issues. We work as part of a team – they provide advice about OT and speech pathology and we provide backup to help them work successfully with difficult children.”

OT, speech pathology and physiotherapy students are also placed in residential aged care facilities. The students work in schools or aged care facilities four days a week and on Wednesdays they come to the UCRH in Lismore for an education day, where they learn and inform each other.

“We have a clinical reasoning session in the morning, talk about challenges in their placements and share some of the projects they are doing,” says Frances Barraclough, an academic at the centre.

“We also provide them with motivational interviewing and cognitive behavioural therapy techniques they can use in their practice.”



Lismore Mayor, Isaac Smith (left) and UCRH Professor of Mental Health, James Bennett-Levy (right) at the project launch

Research of local importance

UCRH conducts research relevant to the health needs of rural communities situated within the Northern Rivers region of NSW and elsewhere.

Flooding is a fact of life in the Northern Rivers of NSW, with more than 30 flood declarations in the decade 2004-2014. In late March 2017, the remains of Tropical Cyclone Debbie delivered extreme rainfall to Lismore and other northern NSW towns, including Murwillumbah and Chinderah.

Following the devastating flood, researchers embarked on a major study exploring how the community was affected by the disaster, including the effects on mental health and wellbeing.

Such disasters can have long-lasting effects on community and individual wellbeing, particularly for the disadvantaged. Although flooding occurs regularly, little is known about underlying risk and effects on mental health of communities within the Northern Rivers region.

This groundbreaking research and UCRH’s innovative placement programs are positioning it as a national leader in rural health, and providing life-changing models that other regions can replicate, to make inroads into their own challenges.

UCRH is collaborating with local health, community and business organisations, and state and local government, and are assessing community experience and outcomes six months after the 2017 flood. The aim is to identify factors that may improve resilience and ability to recover from such events.

A survey was designed in conjunction with the project’s community advisory group and experts in disaster and mental health research, including staff of Sydney University’s Institute of Planetary Health.

The survey collected data on flood experience, mental health and wellbeing and social factors that may improve resilience and ability to recover from such

events. More than 2500 local residents provided their stories via the survey.

Initial analysis of the survey is in progress. Ongoing engagement with local agencies and councils will ensure that findings address already-identified community priorities and will feed directly into mental health disaster preparedness and response policies and local service development. Key findings from initial analyses will be presented at public forums early in 2018.

In the context of climate change, weather disasters in the region are likely to become more intense and unpredictable, with the potential for correspondingly severe effects on mental health.

UCRH, together with the Institute of Planetary Health, university partners (Western Sydney University, the University of Wollongong and Southern Cross University, as well as the University of Sydney), and the community, aims to establish long-term collaborative research with a view to trialling interventions that build community cohesion and resilience.

These further studies will help describe the intensity and duration of disaster-related mental health effects and effective adaptation strategies for vulnerable communities in the region and elsewhere.

Medical students in the common room





Supported by several community organisations, and state and local government, this study aims to help communities improve their preparedness for, response to and recovery from future disasters.

This groundbreaking research and UCRH’s innovative placement programs are positioning it as a national leader in rural health, and providing life-changing models that other regions can replicate, to make inroads into their own challenges.

Other research projects

Other major research projects conducted within UCRH this year have included:

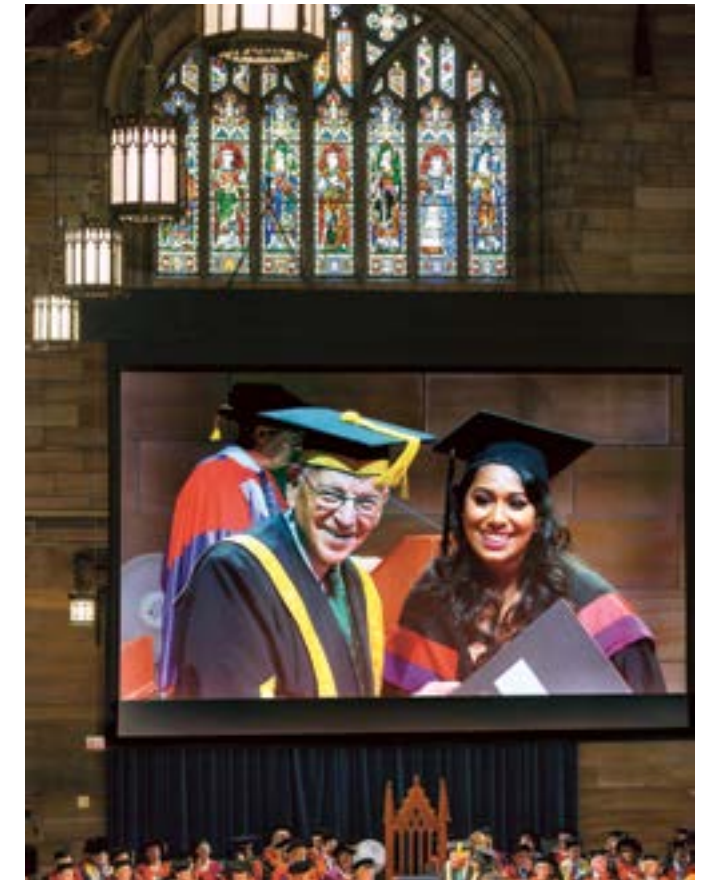
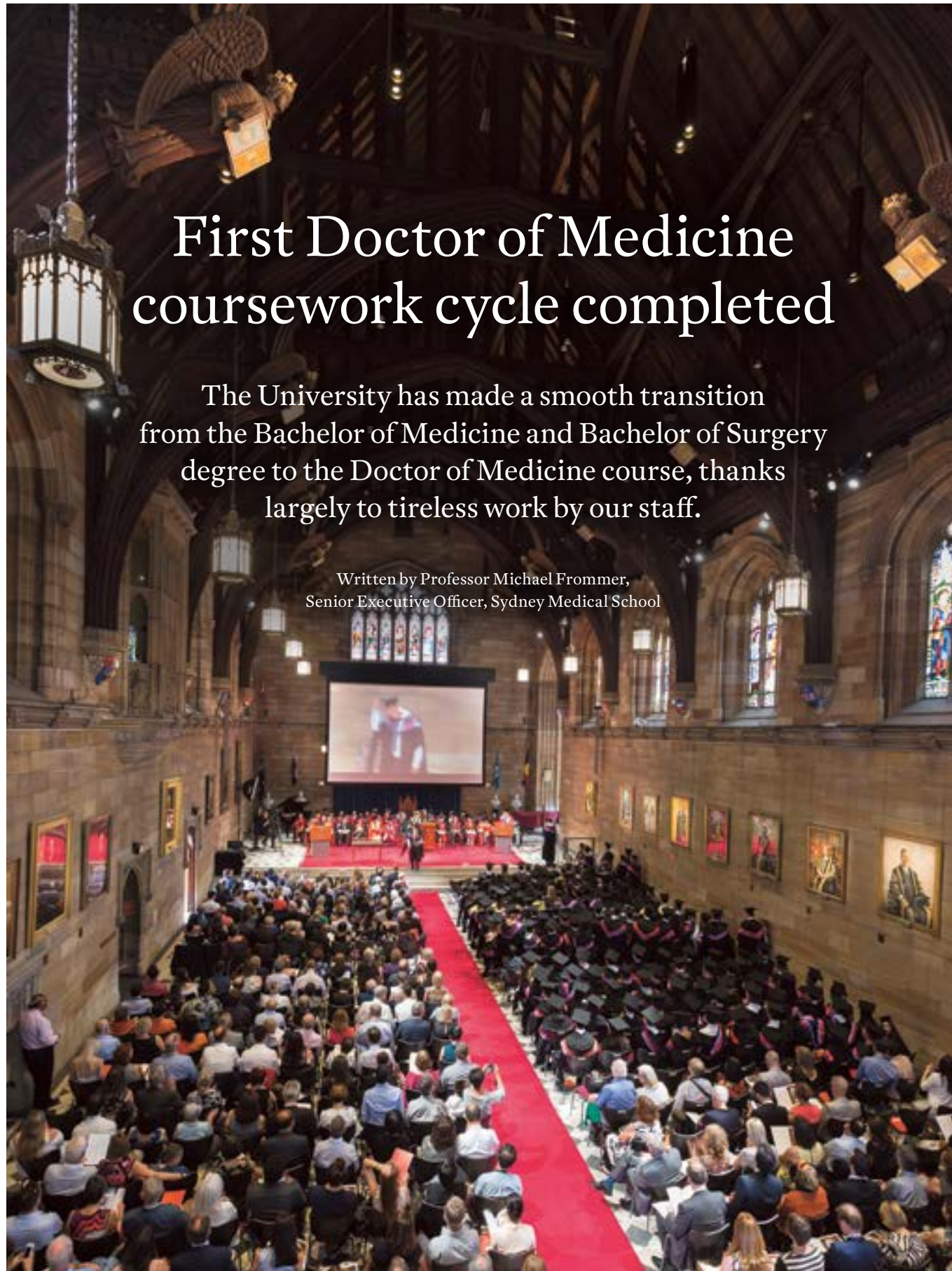
- leadership of the Centre of Research Excellence in Integrated Quality Improvement, a national project aimed to improve Aboriginal and Torres Strait Islander primary healthcare
- participation in a collaboration conducting research on the effects of air pollution on health
- a major study on potentially preventable hospital admissions for chronic conditions, aimed at improving health system performance and reducing preventable hospital admissions
- training health professionals to use e-mental health technologies and group therapy to improve Aboriginal and Torres Strait Islander mental health and suicide prevention.



First Doctor of Medicine coursework cycle completed

The University has made a smooth transition from the Bachelor of Medicine and Bachelor of Surgery degree to the Doctor of Medicine course, thanks largely to tireless work by our staff.

Written by Professor Michael Frommer,
Senior Executive Officer, Sydney Medical School



On 7 December 2017, the first cohort of Doctor of Medicine (MD) students were awarded their degrees in a ceremony in the Great Hall. This was a major milestone in the history of medical education at the University.

The four-year MD Program was introduced in 2014 to replace the Bachelor of Medicine and Bachelor of Surgery (MBBS) degree that had served as the University's primary medical qualification since the 19th century. No new students have enrolled in Year 1 of the MBBS since 2013, and the last MBBS graduates are expected to complete the Medical Program by the end of 2019.

Most Australian universities with graduate-entry medical courses now offer an MD instead of a bachelor's degree. The reasons for the change are threefold.

First, the MD is more clearly recognisable internationally than an MBBS (or similar) degree as a primary medical qualification.

Second, a bachelor's degree is a prerequisite for entry, so post-bachelor's nomenclature makes more sense than a further bachelor's degree.

Third, the increasing importance of basic research skills for all fields of medical practice has given impetus to the inclusion of a significant research component in medical programs. The MD more appropriately reflects the inclusion of research.

All Australian award qualifications are classified according to the 10-level Australian Qualifications Framework. The MBBS is a Level 7 degree while the MD is Level 9. The Level 9 criteria require the inclusion of research training and

specify that students must demonstrate competence in carrying out a significant investigative project. At the University of Sydney, this is known as the 'MD Project'.

The provision of suitable MD Projects for all students each year has been the most challenging aspect of the MD transition.

The Sydney MD was introduced only one year after the Australian Government announced its approval for Commonwealth-supported (subsidised) university places previously allocated for the MBBS to be used for MD students. This meant little time was available for the medical course to be changed to accommodate the MD Project. As a result, the overall structure of the Sydney Medical Program was largely retained and the Level 9 research requirement was superimposed on it.



Panels of expert adjudicators awarded prizes to the students who gave the best oral and poster presentations. The standard of the research and the presentations was outstanding.

Students begin their MD Projects towards the end of Year 1 and submit a final report at the end of Year 3. The stipulated equivalent of eight weeks' full-time work is thereby spread over more than two years.

At any one time, three cohorts (totalling about 900 students) are developing their MD Projects, gathering data, analysing the findings or writing their reports.

The enormous task of monitoring and supporting 900 students' individual MD Projects and managing their assessment has fallen to two sub-deans – Associate Professors David Bowen and Rebekah Jenkin – and their academic colleagues, Dr Jonathan Hakim and Dr Eszter Kalman.

The provision of projects, supervision of research activity and assessment of MD Project reports has mainly been done by Clinical School academic staff and affiliates. Much of the organisational work has been done by Clinical School professional staff.

Sydney Medical School owes great gratitude to Professors Bowen and Jenkin and all the other staff and affiliates who work tirelessly to maintain the momentum.

The collective value of the MD Projects became very evident in September last year, when all Year 4 students participated in the first MD Research Symposium. A total of 48 students presented their work to their entire cohort and staff, either orally or as posters.



Panels of expert adjudicators awarded prizes to the students who gave the best oral and poster presentations. The standard of the research and the presentations was outstanding, and enthusiastically endorsed by fellow students and staff.

The contents of many MD Project reports were successfully submitted for publication in peer-reviewed journals. The list of prizewinners and the titles of their projects illustrate the depth and scope of the first MD Project cycle (see over page).



Prizewinners and their MD projects:
MD Research Symposium, September 2017

Dean’s Prize (Best Oral)

Joshua Lee: Biologics and cardiovascular events in inflammatory arthritis: a prospective cohort study from the Australian Rheumatology Association Database (ARAD)

Dean’s Prize (Best Poster)

Michael Tierney: Cardiovascular outcomes of continuous positive airway pressure versus mandibular advancement device for the treatment of obstructive sleep apnoea

Central Clinical School (Best Oral)

Emily Bek: Routine measurement of percentage body fat in newborns – an analysis of clinical utility

Central Clinical School (Joint Runner-up Oral)

Catalina Palma: The use of transient elastography (Fibroscan) in the assessment and management of chronic hepatitis B patients

Central Clinical School (Joint Runner-up Oral)

Alexander McCarthy: Functional outcomes following sacrectomy

Central Clinical School (Best Poster)

Abraham Rizkalla: Quantifying regional thoracic aortic wall stress in genetic aortopathies: a novel approach

Concord Clinical School (Best Oral)

Stuart Jackson: Effects of a negative pressure wound therapy extended dressing change interval

Concord Clinical School (Runner-up Oral)

Matthew Behan: The quality of evidence on the timing of renal replacement therapy in acute kidney injury: a systematic review

Concord Clinical School (Best Poster)

Wallace Chow: A comparison of image quality using radial vs femoral approaches in patients undergoing diagnostic coronary angiography

Northern Clinical School (Best Oral)

Adam Carroll: A targeted gene sequencing panel for prognostication in haematopoietic stem cell engraftment potential

Northern Clinical School (Runner-up Oral)

Michael O’Donnell: Two year outcomes in type 2 odontoid fractures

Northern Clinical School (Best Poster)

Tom Huang: *In vivo* morphologic comparison of saphenous vein grafts and native coronary arteries following acute coronary syndromes

Nepean Clinical School (Best Oral)

James Toft: Imaging modalities in the diagnosis of pancreatic adenocarcinoma: a systematic review and meta-analysis of sensitivity, specificity and diagnostic accuracy

Nepean Clinical School (Best Poster)

Alexandra Ricci: Blunt abdominal trauma in pregnancy: associations between mode of injury and maternal and foetal outcomes (a systematic review and meta-analysis)

School of Rural Health (Best Oral)

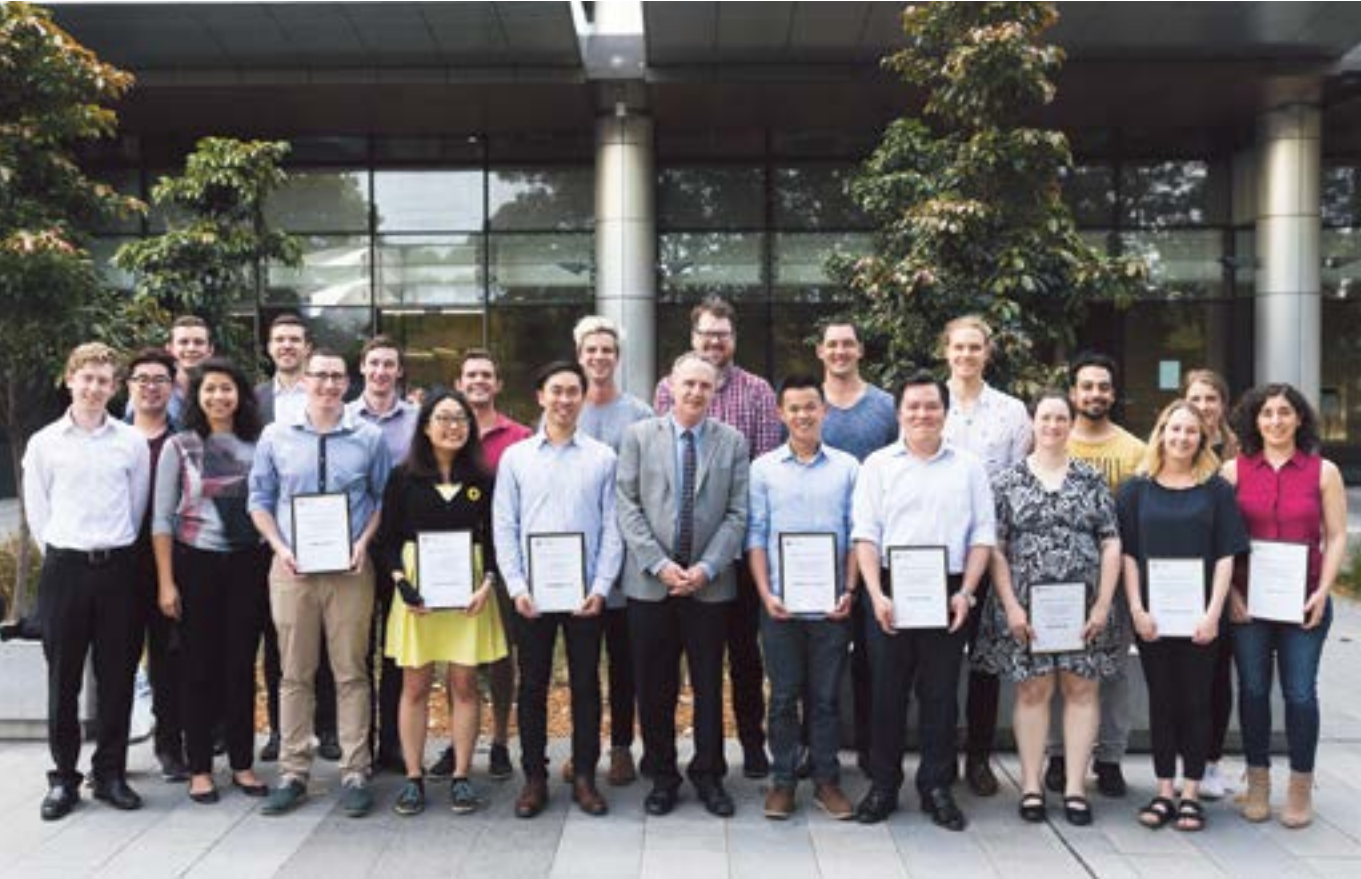
Samuel Skidmore: Weight perception and depressive symptoms in rural Australian adolescents

School of Rural Health (Best Poster)

Sarah Vaccari: The association between sleep duration and obesity in rural Australian adolescents

Sydney Adventist Hospital Clinical School (Best Oral)

Nicole Nahm: Efficacy of management strategies for aromatase inhibitor induced arthralgia in breast cancer patients: A systematic review



Professor Arthur Conigrave (centre) with the MD Project prizewinners

Joint Sydney Adventist Hospital/Children’s Hospital Westmead Clinical School (Runner-up Oral)

Jack Luxford: Neonatal Ebstein anomaly: a thirty-year institutional review

Westmead Clinical School (Best Oral)

Kevin Phan: Differences in activated clotting time among warfarin and novel oral anticoagulants during periprocedural period of atrial fibrillation ablation

Westmead Clinical School (Runner-up Oral)

John Paul O’Shea: Rituximab inducible fas-mediated apoptosis of T-cell for car T-cell therapy

Westmead Clinical School (Best Poster)

Min Young Park: Prevention of venous thromboembolism through the implementation of a risk assessment tool: a comparative study in medical and surgical patients

Children’s Hospital Westmead (Best Oral)

Daniel Hirsch: Biochemical markers in children with obstructive sleep apnoea and cardiac dysfunction in response to exercise

Children’s Hospital Westmead Clinical School (Best Poster)

Caitlyn Swinney: Severity of cerebral palsy and the likelihood of adverse events following botulinum toxin An Injections

Putting young doctors first

The various educational systems to support doctors at different times in their careers exist in significant isolation from each other. Bridging these gaps is essential to progress.

Written by Associate Professor Annette Katelaris,
Director of Professional Medical Education, Sydney Medical School

It is more difficult than ever to be a young doctor. Graduates are older; there is intense competition for training positions; community expectations have grown; and the demands of advanced training have increased.

The nature of training after graduation from medical school is evolving. While colleges have invested time and effort in developing training curricula for medical graduates, learning on the job is often impossible, and the delivery of training is often inconsistent.

The major obstacles revolve around workload and poorly organised teaching programs. The primary focus of work in hospitals is service delivery rather than learning and teaching. Hospitals lack educational resources and trainees have difficulty accessing training sessions, especially when they have demanding rosters or are deployed on rotations to peripheral hospitals.

Assessment also varies. Most colleges have an entry or ‘primary’ exam. Some have an exit examination, while others do not. Gaining entrance to a training program imposes considerable stress upon graduates, in time, effort and cost. Pass rates of primary examinations vary between about 50 and 90%. It is therefore unsurprising that students look to universities to help them prepare.

In response to demand from the community and doctors-in-training, the colleges and their constituent societies recognise the need to improve the standardisation and assessment of advanced training. The University of Sydney, with its track record of expertise in content development, delivery and assessment, can make an important contribution.

Responding to approaches from clinicians, colleges and societies, Sydney Medical School has developed several accredited postgraduate and vocational degrees and short courses. These include master’s degrees in critical care, breast surgery, psychiatry, metabolic health, internal medicine and clinical neurophysiology.

The programs have a similar structure. Coursework is developed in conjunction with clinicians and sometimes the relevant professional body, and content is based on curriculum developed by the relevant college. Content is delivered online – usually supplemented with online case-based tutorials and webinars – and by intensive face-to-face workshops. In this way, barriers imposed by workload, locality, trainer availability, and family responsibilities are minimised, ensuring that all students have access to high quality learning. Assessment is also online.

Most programs have compulsory, capstone, and stream-specific subjects. This means core knowledge is delivered for all students, who are then able to choose additional subjects to develop their interests. Similarly, technical and specialty subjects can be combined with non-technical subjects including communication, teaching and research units, in a program tailored to the individual’s stage of training, such as preparing for a primary examination or a ‘second part’ or fellowship examination.

Collaborations of this kind – between colleges, with responsibility for selection, technical training and credentialing, and the University of Sydney – is a practical way to overcome current barriers to the training of young doctors and maintain the highest possible standards of competency and proficiency.



Professor Jacob George, Helen Breckbeldt (close friend of Robert Storr and executor of his estate) and researchers at the Storr Liver Centre, Westmead.

Gift transforms liver disease treatment

We're celebrating the 25th anniversary of a bequest that has led to groundbreaking advances in the prevention and treatment of liver disease.

Written by Kobi Print

When Robert Storr died of liver cancer in 1992, his wish was to donate to medical research to help others with liver disease.

His donation of \$8.3 million to the University established the Storr Liver Centre at the Westmead Institute for Medical Research, and subsequently funded decades of medical research. With careful investment, the gift has grown substantially throughout the years, and may now fund the centre in perpetuity.

The world-renowned centre investigates the molecular and cellular basis of liver disease, including liver cancer. Its work

spans the breadth of liver disease from bench to bedside, including clinical and basic laboratory studies. It has a large translational research program that aims to provide better treatments for patients with liver diseases.

In Australia, rates of liver cancer have trebled over the past 25 years, and liver cancer is the most rapidly rising cause of cancer death.

In 2017, the centre identified the specific protein that causes liver disease – an important discovery that could lead to new targeted treatments.

The Storr Liver Centre is currently tackling the rising rate of liver cancer in NSW through a large-scale project that combines surveillance, epidemiology, better treatment and the creation of a tissue bank for basic science research.

The bequest also enabled the establishment of the Robert W Storr Professor of Hepatic Medicine, currently held by Professor Jacob George.

“The Storr bequest, without a doubt, has been the biggest philanthropic gift for liver research in Australia,” says Professor George, who was appointed to the position in 2006.

“It has established the Storr Liver Centre as an internationally acknowledged centre of excellence for research on viral hepatitis, fatty liver disease, genetics, gene regulation, liver cancer and other aspects of liver pathobiology.”

Dr Michael Spence AC, Vice-Chancellor and Principal of the University of Sydney, says “We are so grateful for the ongoing benefit the University derives from bequests such as this and their power to do good in the field of medical research.”

“Thanks to Robert Storr’s generous gift, the Storr Liver Centre is leading the charge in translational research and achieving life-changing outcomes for people with liver disease.”

Between 1996 and 2017, Robert Storr’s donation generated more than \$8.6 million to fund medical research.

Helen Breckveldt, a close friend of Robert Storr and executor of his estate, says her ongoing goal is to continue pursuing Robert’s dream of improving the health of Australians through medical research.

“I always hope that a great breakthrough will come out of Robert’s major bequest,” Helen says.

How can we get more people to vaccinate?

People may say they never get the flu so they do not need the vaccine, but the virus can be transmitted by individuals who are unaware they have it.

Written by Associate Professor Julie Leask and Samantha Carlson (Sydney Nursing School)



Some people are not particularly worried about the flu (influenza), and many myths surround its prevention and the vaccine.

Most people experience the flu as a mild disease, and many do not recognise that they may have had it.

Each year, the flu is estimated to cause the deaths of at least 3000 Australians aged over 50 years alone. Between 2005 and 2014, the flu was responsible for more childhood deaths than any other vaccine-preventable disease in Australia. It is also the most common vaccine-preventable cause of hospitalisation of Australian children.

Australian studies have shown that flu vaccine can usually reduce the risk of flu in those who are immunised, by 40–50% for adults and 50–60% for children. However, early indications show that the effectiveness of last year's flu vaccine was lower. A better vaccine is needed, but even a more effective vaccine will not address all the barriers to uptake.

Who is most in need of the vaccine?

Annual flu vaccination is recommended for anyone six months of age or older who wishes to reduce the likelihood of becoming ill with flu. It is free for groups at higher risk of the severe effects of the disease, including:

- people over 65 years of age (of whom 20% are not currently vaccinated)
- Aboriginal and Torres Strait Islander infants and children aged from six months to five years (88% not vaccinated)
- Indigenous people over 15 years of age (66% not vaccinated)
- pregnant women (55% not vaccinated)
- people aged six months and over with medical conditions such as severe asthma, lung and heart disease, diabetes, or decreased immunity (42% of adults and 73% of children not vaccinated).

Why do people not vaccinate?

Research reveals common themes: health professionals are not recommending vaccination strongly enough, people are not aware they need it, are not sufficiently motivated, or do not have easy access. These themes appear in studies with parents of young children, pregnant women, Aboriginal and Torres Strait Islander children, adults with other concurrent diseases, and people over 65 years of age.

Our NHMRC funded research with the National Centre for Immunisation Research and Surveillance is now investigating the children who are hospitalised with severe flu. We are studying the barriers to flu vaccination and the factors affecting vaccine efficacy.

We have heard that not only are health care workers not recommending vaccination strongly enough, but some doctors are even recommending against it for individual children whom they do not believe to be at risk. Yet, more than half of the children hospitalised by the flu did not have medical risk factors.

Many parents are unaware their children can receive flu vaccine if they are over the age of six months.

Busy lives can mean making time to go to the clinic for a vaccination falls down the list of priorities.

Some of the children in our study were not theoretically at high risk of flu and so not in the group eligible for free vaccine at that time. This was a major barrier, as it has been in other studies of children and adults. Parents report that their children are up to date with their scheduled vaccines, but annual flu vaccination is not on the schedule.

The challenge with flu vaccine is the need for annual administration. In the United Kingdom, vaccination is recommended and funded for all children of primary school age using a school-based delivery program; coverage is currently 53–58%.

When this proportion of children is vaccinated, indirect protection of others who are not vaccinated may occur, because person-to-person spread is inhibited.

Myths and misconceptions

Misconceptions about flu vaccine are also a barrier: that it causes flu, is not effective and is not needed. Symptoms can be mild or not noticed, and people who are not aware that they have flu can pass it on to other, vulnerable people. Some believe that contracting flu 'naturally' may confer greater immunity.

Some parents also have concerns about the safety of the flu vaccine. In 2010, flu vaccine usage was temporarily suspended for children under five years of age after reports of an increase in the occurrence of convulsions. The one vaccine found to be the cause (BioCSL/Sequiris Fluvax™) is no longer approved for use in children younger than five years; other seasonal flu vaccines are available instead. But public and professional confidence is yet to recover, despite reassuring safety data.

Western Australia has had a free child vaccine program for many years, with relatively good coverage, but coverage declined markedly after 2010, and is currently around 15%.

How can we improve uptake?

To improve uptake, timely and accurate coverage and data are needed. The Australian Immunisation Register can now generate coverage estimates, but data are not yet available.

Misconceptions about flu vaccination must be addressed more effectively. The vaccine must be recommended more often, available more readily, free, and recommended as part of the immunisation schedule. Western Australia has funded influenza vaccination for children aged 6 months to 5 years since 2008, and it has recently been announced that New South Wales, Queensland, Victoria and the Australian Capital Territory will be funding the vaccine for this age group in 2018.

Health care workers must be motivated and supported to implement the recommendations. Measures could include automated reminders, incentives and performance indicators. Easy access to vaccination is essential. This will involve general practitioners, other health clinics, specialist clinics, antenatal care clinics, and Aboriginal and Torres Strait Islander health workers.

Community pharmacists can now also administer influenza vaccines to adults in all Australian states and territories.

Although the flu vaccine is not perfect, it is far better than no protection at all.

A version of this article was first published in *The Conversation*.



New web resource on Fetal Alcohol Spectrum Disorder

The Australian Government has funded a new web resource developed by the University of Sydney to assist prevention and response to Fetal Alcohol Spectrum Disorder (FASD).

Written by Dan Gaffney

Known as the National FASD Hub, the web resource is a comprehensive source of materials, resources, directories and training and support networks to assist parents, carers, health professionals, researchers and policymakers.

Research has shown that between 60 and 80 percent of pregnant women in Australia report drinking alcohol at some time during their pregnancy.¹

It has also been noted that doctors vary in their attitudes to alcohol consumption in pregnancy,² with some advising against a single sip and others saying that one glass once a week or on a special occasion will not cause harm.

“We have a very tolerant attitude to alcohol use in Australia, including at risky levels, and that includes in pregnant women,” says Dr Elizabeth Elliott AM, Professor of Paediatrics and Child Health at the University of Sydney, who developed the National FASD Hub.

FASD is a diagnostic term for severe neurodevelopmental impairments resulting from brain damage caused by alcohol exposure before birth.

“The effects of prenatal alcohol exposure are lifelong and may not be seen at birth. Problems include brain damage leading to delayed development and social, behavioural and learning problems,” Professor Elliott says.

“These can have secondary effects such as poor school performance, unemployment, substance abuse, mental health problems and early engagement with the justice system.

“Children with FASD have a range of problems with learning, development and behaviour and do best with early diagnosis and treatment.

“Up to 50 percent of pregnancies are unplanned, so exposure to alcohol is often inadvertent,” Professor Elliott says.

To find out more, visit www.fasdhub.org.au

1. One drink during pregnancy won't hurt, will it? *Sydney Morning Herald*, 8 September 2017, accessed online 18 January 2018

2. The bump, point & counterpoint: drinking alcohol during pregnancy – is a little okay? accessed 18 January 2018 at www.thebump.com/a/drinking-alcohol-during-pregnancy

Premature birth more likely after caesarean late in labour

Caesarean section delivery at full cervical dilation may raise the risk of premature birth in a subsequent pregnancy.

Written by Dan Gaffney

This finding by clinicians and researchers from the Royal Prince Alfred Hospital and the University of Sydney was reported in the *Australian and New Zealand Journal of Obstetrics and Gynaecology*.¹

The authors recommended that women who have had a caesarean section at full dilatation should be considered for referral to a high-risk obstetric or preterm birth clinic in subsequent pregnancies.

The retrospective cohort study of 2672 women who had an emergency caesarean section (defined as a caesarean section after the start of labour) was done over a 25-year period (1989–2015). Eighty percent had a caesarean section during the first stage of labour and 20 percent at full dilation of the cervix.

The study found that, compared to caesarean section in the first stage of labour, caesarean section at full dilation:

- more than doubled the risk of a spontaneous preterm birth in a subsequent pregnancy
- more than tripled the risk of a spontaneous preterm birth before 34 weeks in a subsequent pregnancy
- increased the risk of spontaneous preterm birth in a subsequent pregnancy by 1.4 times at any time from 20 weeks to full term.



“Preterm birth is a public health concern, and many risk factors are still unknown,” says study co-author Dr Joanne Ludlow, an obstetrician and gynaecologist at Royal Prince Alfred Hospital and Clinical Senior Lecturer in the University’s Discipline of Obstetrics, Gynaecology and Neonatology.

Caesarean section performed at full dilatation is also associated with a higher risk of postpartum haemorrhage, operative morbidity, visceral injury and prolonged hospital stay.

“Cervical trauma leading to premature shortening of the cervix in a subsequent pregnancy is thought to be one factor leading to spontaneous preterm birth and is more common following a caesarean section performed at full dilatation,” Dr Ludlow says.

“Thus, counselling women after they have had a caesarean section in the second stage of labour should include the need for closer monitoring of the cervix and measures to prevent spontaneous preterm birth in a subsequent pregnancy.”

1. Cong, A, de Vries, B and Ludlow, J. 2017. Does previous caesarean section at full dilatation increase the likelihood of subsequent spontaneous preterm birth?, *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 28 September 2017, accessed 19 January 2018 at <http://onlinelibrary.wiley.com/doi/10.1111/ajo.12713/full>



Pharmaceutical production coming in-house

The University of Sydney has received \$500,000 funding to support the establishment of a specialist pharmaceutical manufacturing facility that will boost research and clinical trials.

Written by Elliot Richardson

The University received the funding from the MTPConnect Project Fund Program. It will need to obtain a further \$1.5 million from other sources to develop the facility, Ab initio Pharma. The facility will be established by a consortium comprising the University, Sydney Local Health District and the Association of Regulatory and Clinical Scientists (ARCS) Australia.

The University's proposed pharmaceutical manufacturing facility will produce pharmaceuticals for small-to-medium enterprises, academics, clinicians, and large pharmaceutical companies, for early phase clinical trials in Australia.

The project leader is Professor Paul Young, from Sydney Medical School and the Woolcock Institute for Medical Research.

Professor Young says the facility will assist in translating early discoveries into clinical trials and ultimately commercial pharmaceutical products.

"Our work will give researchers a platform for rapidly translating benchtop discoveries into clinical trials and tangible pharmaceutical products," he says. "Our consortium is committed to innovation, and this initiative will enhance Australia's international standing in the pharmaceutical sector."

Ab initio Pharma will also provide support to the industry and manufacture short runs of commercial products when there are local shortages.

The company supports high-quality education and will provide internship programs for students at the new facility.

The facility will be established in 2018 and is expected to be fully operational by 2020 and fully sustainable by 2021.

MTPConnect (Medical Technologies and Pharmaceuticals Industry Growth Centre) Project Fund Program is a competitive funding program that aims to improve the capacity and productivity of Australia's medical technology, biotechnology and pharmaceutical sectors.

MTPConnect is supported by the Australian Government's Industry Growth Centres Initiative. Under the Project Fund Program, financial support is provided on a minimum dollar-for-dollar matching basis.

The University has also received funding grants from MTPConnect for other projects including:

- \$700,000 for ClinTrial Refer Australia, which provides a smartphone app and website connecting doctors and patients to recruitment for clinical trials across research networks. The funding will support new initiatives that include a combined database, establishment of electronic referrals and a national approach to recruitment of clinical trial participants.
- \$250,000 for the Australian Microscopy and Microanalysis Research Facility Technical Voucher Fund, which will support discounted access to microscopy services for small-to-medium enterprises
- \$1,000,000 for a national consortium, Accelerating Australia (matched by funding from other sources), to facilitate translation of biomedical research. Its programs include experiential courses in entrepreneurship, and brokerage and early-stage commercialisation support services.

The not-so-sweet side of sugary drinks

New research on sugar-sweetened beverages reveals that one in seven adolescents is drinking more than 500ml a day. They are two to three times more likely to have oral health problems than those who do not drink these beverages.

Written by Michelle Blowes



The University of Sydney study, published in the *Australian and New Zealand Journal of Public Health*¹ (November 2017), reported on 3671 Year 6, 8 and 10 students' daily consumption of sugar-sweetened beverages.

It shows that energy drinks are the most popular sweetened beverage, with 20 percent of adolescents consuming at least 250ml (one cup) a day.

The lead study author is Dr Louise Hardy, Senior Research Fellow in the University of Sydney School of Public Health and the Charles Perkins Centre.

"The study highlights the significant and often overlooked effects of sugar-sweetened beverages on oral health," Dr Hardy says.

"Consuming 500ml a day is roughly equal to 11 teaspoons of sugar. This is well in excess of the World Health Organization guidelines for sugar intake.

"We need strategies to reduce adolescents' consumption of sugar-sweetened beverages, not only because of the weight implications, but also because of oral health.

"Bad teeth can have significant and lasting social and health effects. It can cause considerable pain and suffering and, by changing what people eat, alter their quality of life."

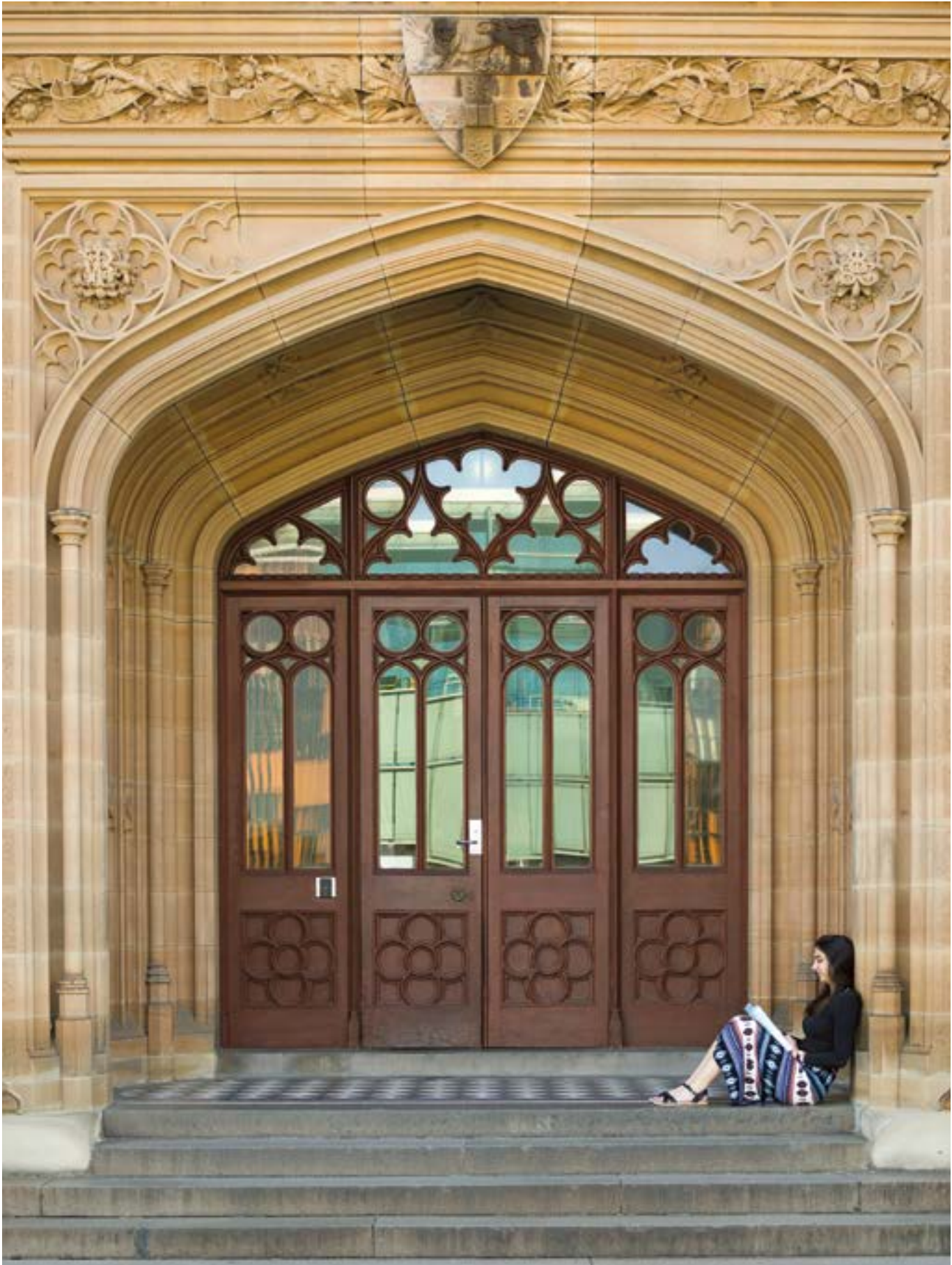
The research is based on data from the NSW Schools Physical Activity and Nutrition Survey, a cross-sectional representative survey of NSW primary and high school students.

The study reports associations between different types of sugar-sweetened beverages and oral health. It shows that all beverages, with the exception of fruit juice, are associated with frequent toothache or food avoidance.

Surprisingly, however, the odds of oral health problems are highest among adolescents who consume diet soft drinks. The authors suggest further research is needed to explore whether this could be explained by associations with other eating behaviours in this group (for example consumption of confectionery) or an effect of artificial sweeteners.

1. Hardy, L, Bell, J, Bauman, A and Mhrshahi, S. 2017. Association between adolescents' consumption of total and different types of sugar-sweetened beverages with oral health impacts and weight status, *Australian and New Zealand Journal of Public Health*, 22 November 2017, accessed 19 January 2018 at <http://onlinelibrary.wiley.com/doi/10.1111/1753-6405.12749/full>

Image: iStock.com/OcusFocus



Sydney Medical School

Upcoming reunions

Date	Class of	Milestone	Key organisers	Venue	Time
2018					
Friday 6 April – Sunday 8 April	1973	45 years	Dr Phillip Cocks Dr Anthony Moynham Dr Stephen Clarke Dr Lyndall Murray	Pepper’s Craigieburn, Bowral	2pm Friday 6 April – 11am Sunday 8 April
Saturday 28 April	1955	63 years	Dr David Jeremy	Royal Sydney Golf Club	11.30–3pm
Saturday 9 June	1988	30 years	Dr Barry Dixon Dr Martin Hocknell Dr Joyce Leong Dr Mark Nicholls Dr James Milross	The Great Hall	6.30–11pm
Saturday 21 September	1978	40 years	Dr Philip Hung Dr Carolyn Lechowicz Dr Christopher Ingall OAM Dr David Mawter Dr Grace Bryant OAM Professor Lynette March AM Dr Matthew Swann Dr Roger Boyd Dr Stephen Allwright	The Refectory, Holme Building	5–11pm
Saturday 22 September	1961	57 years	Dr Ruth McMahon Dr Robert McGuinness	Women’s College	12–3pm
2019					
Saturday 9 March	1969	50 years	Associate Professor Arabella Smith Professor Susan Pond AM	The Great Hall	Lunch

Enquiries and further information
alumni.medicine@sydney.edu.au
02 8627 1905
02 9351 0467
sydney.edu.au/medicine/alumni

Reunion recaps

Catching up with classmates



Class of 1955



Class of 1960

Class of 1955 62-year reunion

Dr David Jeremy (MBBS '55)

This was a splendid reunion for the graduates of 1955. It was wonderful to see how many attended this occasion, which marked 62 years since graduation. In 1955, there were 200 graduates, but since then we have sadly lost 97 of them. To see 32 people attend was remarkable. It seemed nothing stood in their way – distance, infirmity, nor handicap – and in great spirits and with good cheer they came and contributed to a bright and entertaining reunion event.

The organisation was impeccable, thanks to the University of Sydney's Division of Alumni and Development. The catering and service from the Royal Sydney Golf Club were splendid as usual.

The alumni voted to meet again in 2018. The organising group (Vera Gallagher, John Wright and David Jeremy) is working with the alumni office to organise the next reunion luncheon, which is planned for Saturday 28 April 2018. Mark the date and join us again for another enjoyable reunion of the Medical School graduates of 1955!

Class of 1960 57-year reunion

Dr Richard O'Reilly (MBBS '60)

On Friday 10 November 2017, 43 of us, with a few family members as guests, had lunch at the Cullen Room at the Sydney University Union, to celebrate our graduation 57 years earlier.

It was lovely to go back to where it all began, and reassuring to find that Science Road and the Union were exactly the same as when we started in the early 1950s.

Brian Kearney had done an excellent job in organising the day, and the University staff were very helpful in the months beforehand and on the day itself. Their presence, helpfulness and friendliness made the day a very pleasant one.

A highlight was a tour of the Anderson Stuart Building, with an excellent guide from the Department of Anatomy, Dr Marcus Robinson. It really brought back memories, as our first year had been basic science, anatomy and physiology. Our introduction to medicine had only begun in second year.

Sydney University played a big part in our lives, and it was great to have our reunion there and be reminded of how fortunate we were to have a life in medicine. It was a very enjoyable day and we look forward to meeting again in 2020, 60 years since graduation.



Class of 1977

Class of 1977 40-year reunion

Dr Anthony Joseph FACEM (MBBS '77)

The 40th Reunion of the Year of '77 was held on 21 October at the Holme Building, a good-sized venue for the almost 160 attendees, including 102 graduates from the year. At the welcome drinks everyone was very pleased to catch up with those we had not seen for a long time, and the atmosphere was relaxed and vibrant.

Classmates from the Year of '77 seemed to appreciate hearing what different members had been up to for the last 40 years, and they were provided with a great diversity of experiences.

Milana Votrubic described the warmth of the Cuban people and the shortcomings of their health system; Tony Chung gave an inspiring talk about his life as an academic professor in obstetrics and gynaecology in Hong Kong; Denis Smith told us about his life as a medical administrator and advised us to start thinking about our retirement; Robyn Napier offered her perceptions on medical training then and now; Colin Martin related his life as a rural GP and cattle farmer; Philip Mitchell informed us about the exciting developments in academic psychiatry; and Philip Emdar entertained us with some amusing stories of his practice as a community paediatrician.

We had the usual University songs, led by Ernie Somerville, with a skilful cameo appearance on piano by Bill Brooks. We also acknowledged those 17 members of the year who are no longer with us, but are still in our thoughts.

My thanks to the organising committee, which included: George Quittner, Milana Votrubic, Ernie and Helen Somerville, Helen Mackie, Mike Edye (also responsible for excellent '70s music) and Jean-Pierre Halpern.

The Division of Alumni and Development was very helpful in putting this event together. Our thanks to Colette, Nichole and Linda for their assistance, as it would have been much more difficult to organise without their help.

There was enthusiasm for another reunion in five years. Offers to join the Organising Committee were gladly accepted, so watch this space.



Class of 1987



Class of 2008

Class of 1987
30-year reunion
Dr Anne Horsley (MBBS '87)

The same team of Leena Gupta, Michelle Crockett and Anne Horsley, with the wonderful assistance of Colette Slaviero from the alumni office, managed a great night at the new TAG Family Foundation Grandstand for the 30-year medical reunion.

The theme of the night was happy and shared memories. We celebrated the fact that as a cohort we respect our year, and look to them to treat our children, our parents and our patients.

Kerwin Shannon was an excellent MC. The wave of speakers (Meredith Sheil, Scott Fortey, Julie Schatz, and Peter Harradine) provided many laughs. We were privileged to have been educated when there were no fees, at the top university for medicine, and are looking forward to further get-togethers.

Class of 2008
10-year reunion
Dr Christopher Andersen (MBBS '08)

In late spring, the Class of 2008 spent a great weekend celebrating 10 years since completing our studies. During the two-day event, we were blessed with lovely Sydney weather.

On the Saturday night, we had a three-course dinner at Mezzanino Ristorante in Waterloo, enjoying seasonal Italian food and some great music in a relaxed environment. We spent the evening with a lot of great conversation about the challenges of postgraduate training and the many unexpected turns that classmates' lives have taken.

On Sunday, we gathered for a free family BBQ (thanks to some kind sponsors) in the beautiful gardens of Botany Lawn next to the Quadrangle Building. It was wonderful for everyone to come along, many with their rapidly growing families. The children all took great delight in the face painting and balloon twisting (despite some less-than-robust balloons!). Everyone seemed to enjoy the gelato cart, which helped people to stay cool in the warm temperatures.

We will be looking forward to seeing everyone and their families again in another 10 years!

The 2008 Reunion Committee was Lauren Kite, Jacqueline Engelandar and Christopher Andersen.

Where are they now?

In every edition we profile University of Sydney Medical School graduates to see where their studies have taken them. This time, we spoke to Rob Pearlman (MBBS '14), who has used smart phone technology to improve the working lives of junior doctors.



In 2014, as a junior doctor, graduate Dr Rob Pearlman started MedApps, an app designed to help support health professionals in the workplace to feel more capable, confident and efficient in their work. Today, MedApps is being used in one third of New South Wales Local Health Districts by more than 1000 junior doctors.

“Four years ago, as an intern, I started developing mobile apps to solve the problems I was facing as a junior doctor,” Rob says. “My original aim was to have a passive income source. I am now running MedApps with six employees, and continuing to practise medicine when possible.

“We are currently developing solutions to problems regarding efficiency, as well as supporting the well-publicised mental health issues that my colleagues face in medicine.”

Rob graduated from the University of Sydney with undergraduate and postgraduate degrees in commerce, science, medicine and surgery.

“When I started university, I had no idea where I wanted to end up, only that I wanted to explore my interests. There are many supports for the modern-day entrepreneur, from accelerator and incubator programs to co-working spaces and on-demand markets for white collar expertise such as Expert360. But I believe the one thing that remains essential is a good framework of knowledge in a variety of fields.”

Rob adds that the University’s new undergraduate curriculum – the Sydney Undergraduate Experience – would have been a “perfect fit for me, and would appear to be well suited to the diverse range of skills that today’s world requires”.

Rob was drawn to surgery because he loves both working with his hands and engineering, “probably from growing up on a farm taking machinery apart with my dad. So surgery is the medical translation of that.

“A day in theatres goes by so quickly and I am so involved in what I am doing that I can’t imagine doing anything else. And if you enjoy what you’re doing, you’re not really working.”

Don't be a stranger.

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welcomes a lifelong
connection with our alumni.

If you have moved or changed
email address, please update
your details online so we can
stay in touch.

**[alumni.sydney.edu.au/
updatedetails](https://alumni.sydney.edu.au/updatedetails)**

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