

radius



THE UNIVERSITY OF
SYDNEY



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Health, Dubbo and
Orange: developing
the rural medical
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Welcome to the Spring issue of *Radius*

In the previous issue, I wrote of the establishment of the new Faculty of Medicine and Health, which unites Medicine with Dentistry, Nursing and Pharmacy. The new faculty came into existence on 30 April 2018, and Professor Robyn Ward AM, FAHMS took up her appointment as the new faculty's Executive Dean on 9 July.

The Faculty of Medicine and Health will be strengthened by the inclusion of several allied health disciplines, including Physiotherapy, Occupational Therapy and Speech Pathology from the Faculty of Health Sciences, upon their transfer from Cumberland to Camperdown in the next two to three years.

The formation of the Faculty of Medicine and Health has led to a re-examination of our disciplinary structure. At present 25 disciplines are represented in Sydney Medical School. Some are large and contain sub-disciplines – obvious examples are Medicine and Surgery. Other disciplines are relatively small and more specialised, such as Ophthalmology and Dermatology.

Some bring together experts with shared methods and data management approaches – for example, Imaging and Genomic Medicine. Others unite experts from diverse fields who care for patients with universal problems, as typified by the Discipline of Pain Medicine.

This heterogeneity causes organisational challenges and indeed makes the very definition of 'discipline' quite challenging. For our purposes, it is helpful to consider the following as defining characteristics of a discipline:

- A group of clinicians and/or scientists who identify with a common area of practice and expertise
- Academic leadership of a discrete field that is widely recognised by other health professionals
- Recognition by accrediting agencies, for example by the formation of colleges
- Responsibility for teaching a coherent program in the Doctor of Medicine degree or postgraduate program.

At the time of writing, the University is considering the organisational and space requirements of its medical sciences disciplines and how best to align them with clinical medicine, and with cognate disciplines in the faculties of Science, and Engineering and Information Technologies.

Within Sydney Medical School, the intent is to strengthen the disciplines and support their capacity to develop and deliver modern curricula in medicine and biomedical sciences, and contribute strongly to new pathways of research.

We hope that, going forward, the disciplines will also underpin key academic linkages between Sydney Medical School and the clinical schools. In this way, I expect they will be essential functional units of medicine in the new Faculty of Medicine and Health.

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

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Developing the rural medical workforce

Important changes and exciting opportunities are facing the School of Rural Health in Dubbo and Orange.

Written by Professor Michael Frommer AM

In the 2018 federal budget, the Australian Government announced funding for several major initiatives to support the development of the rural health workforce. Most significantly, funds have been allocated to establish a multi-university Murray-Darling Medical Schools Network, with the intent of giving students the option of doing their entire medical training in a rural location.

The Murray-Darling Medical Schools Network will include standalone rural medical schools that train students from their entry into medicine to graduation. These schools will be located in regional centres throughout the Murray-Darling Basin: Dubbo, Orange and Wagga Wagga in NSW, and Mildura, Bendigo, Shepparton and Wodonga in Victoria.

Seven universities are involved: the University of Sydney, Charles Sturt University, Western Sydney University, the University of New South Wales, the University of Melbourne, Monash University and La Trobe University.

The University of Sydney School of Rural Health in Dubbo is expected to expand into a Graduate Rural School of Medicine that will deliver all four years of the Sydney Doctor of Medicine program. It will be the only rural school in NSW that offers a graduate-entry program.

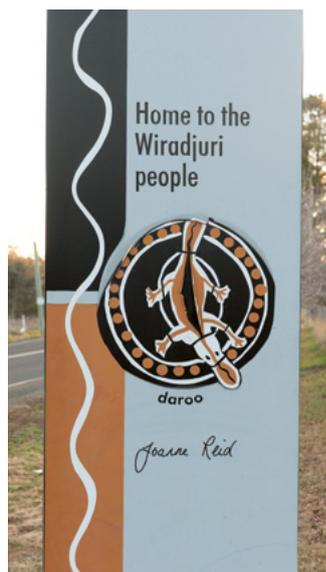
The University of Sydney Medical School (now part of the new Faculty of Medicine and Health) has had a presence in central western NSW for decades. Clinical staff and affiliates have provided visiting specialist services in Dubbo, Orange and other regional towns, and have supported the training of junior doctors.

The University's involvement intensified in 2003-04, when the School of Rural Health opened its clinical teaching campuses. Up to 64 Sydney medical students now undertake an extended (40-week) placement in Dubbo or Orange in their third or fourth year. When the Dubbo Graduate Rural School of Medicine has its first intake of students – optimistically in 2021 – it will wind down its capacity to take students on these extended placements and concentrate on training students from initial entry into medicine through to graduation.

The School of Rural Health campus in Orange will be retained in its present form, enabling Sydney MD students to continue taking rural placements, which will also be available at the Lismore University Centre for Rural Health and the Broken Hill University Department of Rural Health.

Both Dubbo and Orange have outstanding healthcare facilities. A new base hospital was opened in Orange in 2011 and a 240-bed acute hospital will soon open in Dubbo. Both provide most of the specialist services available in metropolitan areas. The challenge is to attract and retain well-trained specialists and generalists for regional centres – a challenge that needs to be met throughout Australia.

The Head of the School of Rural Health, Associate Professor Mark Arnold, is a rheumatologist who was

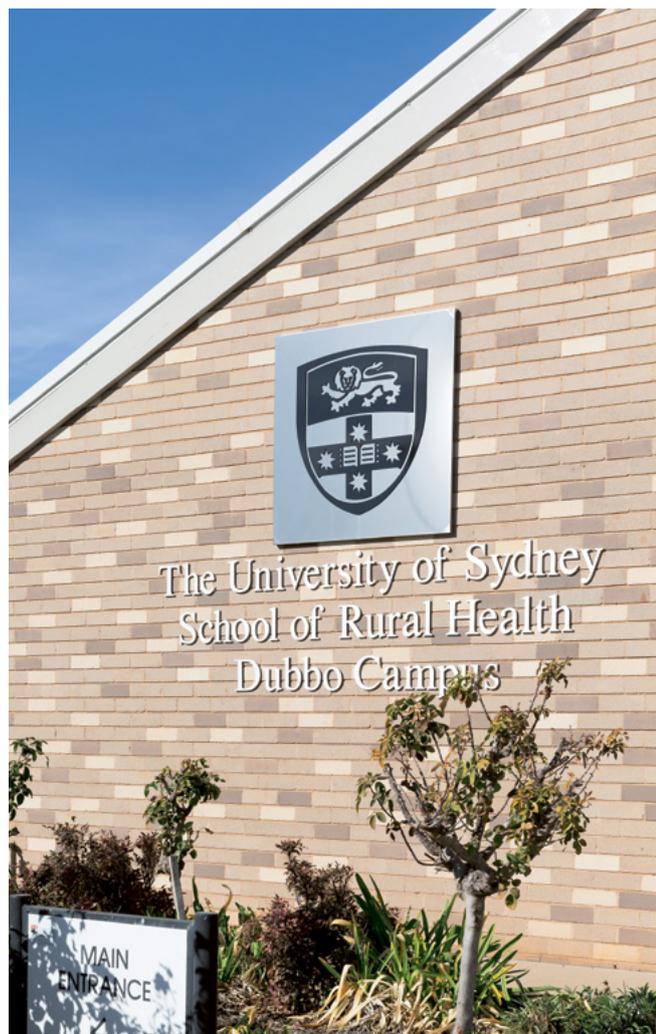


We acknowledge the tradition of custodianship and law of the Country on which the University of Sydney campuses stand. We pay our respects to those who have cared and continue to care for Country.

previously a consultant at Royal North Shore Hospital in Sydney. He moved to Dubbo in 2013, and now practises in Dubbo, Orange and Gloucester.

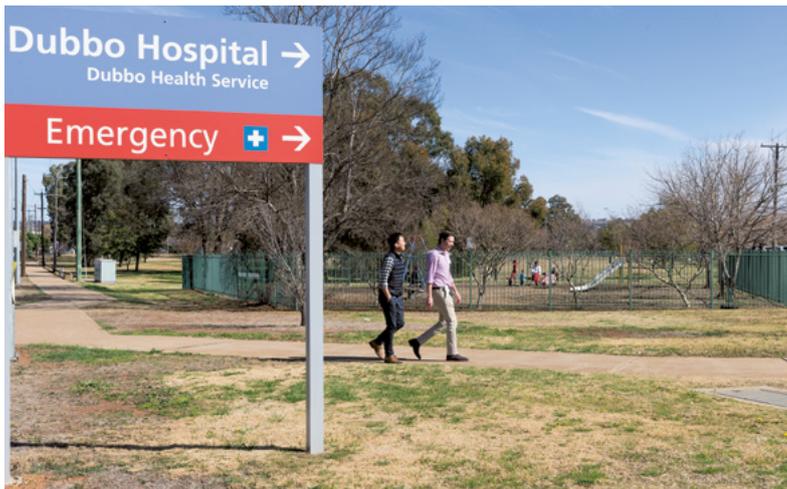
“My colleagues in the School of Rural Health and I are delighted with the plan to establish what’s become known as an ‘end-to-end’ medical school in Dubbo,” says Associate Professor Arnold. “We hope this will be the beginning of a program that stretches from medical school to fellowship in a specialist college.

“The School of Rural Health has been very successful in giving Sydney students a rural health experience and enticing them to be rural



doctors. A significant proportion of the almost 1000 students who have taken extended placements in Dubbo and Orange over the past 15 years have returned to rural locations as interns, residents, registrars, general practitioners and consultants.

“The students get a feel for rural life. They see that the healthcare facilities are first class, they experience the highly collegial atmosphere that prevails in a rural centre, and they recognise it’s a great career destination. Practising in Dubbo, Orange and Gloucester makes me very focused on what medicine is all about – assessing people in need of care for potentially disabling conditions,



“A significant proportion of the almost 1000 students who have taken extended placements ... have returned to rural locations as interns, residents, registrars, general practitioners and consultants.”

Associate Professor Mark Arnold
Head of the School of Rural Health

understanding what matters in their lives, and helping them practically to manage their health and illness, faced with the challenges of life and the environment in rural Australia.”

Alice Marsh, a student in the School of Rural Health, is originally from the country.

“As someone who is from a rural area, having the opportunity to gain a strong foundation of knowledge at an institution like the University of Sydney and then apply that knowledge in a place like Orange has shown me that I can have the career I want without sacrificing the rural lifestyle I know and love,” she says.

With the increasing sophistication of the regional centres, the nature of rural and remote health care is changing. Doctors no longer face the isolation they experienced in previous years, because of the increasing availability of specialists working in the regional centres and better access to information and communication technology, even in remote sites. Regional centres are connected to tertiary and quaternary hospitals in the big cities, and remote sites are connected to the regional centres.

For example, in the more remote towns, emergency departments in small hospitals have advanced telemedicine equipment, and

emergency care expertise is available via telemedicine from Dubbo 24 hours a day, seven days a week. Arrangements are also in place for rapid and efficient retrieval of seriously ill or injured patients, often involving the Royal Flying Doctor Service from its Dubbo base.

School of Rural Health placements are very popular with students, and each year there are more applications than places, so students are selected by ballot.

Associate Professor Catherine Hawke, Deputy Head of the School of Rural Health and Head of the Orange Clinical School,



Pictured above: Students Alice Marsh, Laura Bennett and Associate Professor Catherine Hawke, Deputy Head of the School of Rural Health.

explains the life-changing effect of a rural placement: “Students from metropolitan areas change their focus as a result of being on a rural placement, and become committed to working in rural areas in the future.”

Kiril Williams, a student in the School of Rural Health, says that having the opportunity to study in Orange has been the most enriching year of his university life.

“From the moment you are welcomed by the School of Rural Health staff, you can settle in and plant your roots a little deeper than you ever could in Sydney,” he says. “In Orange, I’ve been able to form closer relationships with my tutors and colleagues, and received more one-on-one teaching.

“I’ve also gained a lot from being part of the local community through sport and recreation. The support from the School of Rural Health staff has been both persistent and warming, making every step of the journey through our course – assessments, teaching sessions, and life-balancing advice – that much easier to work through.”

Since 2017, the School of Rural Health has also received funding from the Australian Government for

an Integrated Rural Training Hub to support basic and advanced specialist training in Dubbo and Orange.

The intent is to form a complete training ‘pipeline’ that enables medical students who return as interns to pursue their specialist training in a rural setting.

“The Integrated Rural Training Hub will obviate the need for junior doctors to return to metropolitan hospitals for specialist training, and thereby help to retain them in the rural environment. If they have to go back to the cities for specialist training, they tend to stay there, and we lose them,” explained Associate Professor Arnold.

Associate Professor Hawke reiterates the importance of attracting students to rural internships and then providing specialist training so they can stay on in the rural community. “Medical staff in Orange are very engaged with the Integrated Rural Training Hub, and they are really enthusiastic to support and supervise the trainees in their specialties,” she explains.

Alice Marsh looks forward to continuing her training in Orange. “My time here has been so academically and personally enjoyable that I applied to stay on for my internship

and residency years, as did many of my colleagues.

“It’s a true success of the program that it achieves such great retention rates. I only hope that specialty training programs continue to become more flexible and allow more accredited time in places like Orange so more young doctors can experience what rural medicine has to offer.”

In establishing the Murray-Darling Medical Schools Network, Sydney Medical School will work closely with its neighbouring medical schools. In partnership with Western Sydney University, Charles Sturt University will establish an undergraduate medical school alongside the University of Sydney Orange Clinical School.

Further south, the University of New South Wales will develop its existing clinical school in Wagga Wagga into an ‘end-to-end’ medical school. The Dubbo, Orange and Wagga Wagga schools will be quite small. Dubbo will enrol 24 students in each entry cohort, so collaboration will be of great value. Discussions on this collaboration, and on the practical meaning of a medical schools network, are already in progress.

Introducing our new Executive Dean

After an extensive international search, the University appointed Professor Robyn Ward AM, FAHMS as Executive Dean of the new Faculty of Medicine and Health.

Written by Dan Gaffney

Professor Ward, who joined the University in July 2018, will lead the faculty's educational, research and engagement objectives. She is a distinguished medical oncologist, an academic researcher in cancer medicine, and a major contributor to the development of health policy and health services at national and international levels.

Before joining the University of Sydney, Professor Ward was Deputy Vice-Chancellor (Research) and Acting Executive Dean of Medicine at the University of Queensland. She also held a clinical appointment as a medical oncologist at the Princess Alexandra Hospital in Brisbane. She has a strong research track record with a particular interest in bowel cancer genetics.

Professor Ward graduated with an MBBS (Hons) from the UNSW in 1984, became a Fellow of the Royal Australasian College of Physicians in 1991, and gained her PhD from UNSW in 1994. Before moving to Queensland in 2014, she was a Professor of Medicine at UNSW, Clinical Associate Dean at the Prince of Wales Clinical School, Head of the Adult Cancer Program



at the Lowy Cancer Research Centre, and Director of the Prince of Wales Hospital's Nelune Comprehensive Cancer Centre.

She served on the Pharmaceutical Benefits Advisory Committee, and is currently Chair of the Medical Services Advisory Committee. In 2013 she was made a Member of the Order of Australia for her contributions to oncology and cancer research.

Describing the new faculty, which was formed in April 2018, the

Vice-Chancellor and Principal of the University of Sydney, Dr Michael Spence AC, highlighted contemporary developments in health and health services.

"Health care, both in Australia and overseas, is undergoing significant change," says Dr Spence. "As part of the University's 2016–20 strategic plan, we are changing our medicine and health faculties to ensure they are positioned to address the important challenges that the 21st century is bringing.

"Key to this is the establishment of a single, integrated Faculty of Medicine and Health, which will combine the current areas of Dentistry, Medicine, Medical Sciences, Nursing, Pharmacy and Public Health and, in due course, Health Sciences.

"Professor Ward's understanding of the challenges facing health disciplines and health provision in the 21st century, combined with her significant experience in management and policy advice at a national level, position her exceptionally well for this complex and exciting role."

Westmead Clinical School opens its doors to mark 40 years

Westmead Hospital has been a leader in embedding research and education into clinical care for four decades.

Written by Amanda Burke

In 1978, the University of Sydney established the Westmead Clinical School and the Sydney Dental School in Westmead Hospital, newly built as a major tertiary referral centre for Western Sydney.

Forty years on, the Westmead precinct has grown into Australia's largest concentration of health facilities, including research and teaching. The precinct incorporates the former Royal Alexandra Hospital for Children, now known as the Children's Hospital at Westmead, as well as the Children's Medical Research Institute and the Westmead Institute for Medical Research.

The University is investing in the next major development stage for Westmead, with a new acute services building due to open in 2020. The new hospital building will provide services for both Westmead Hospital and the Children's Hospital at Westmead, and the University will occupy a central space over two floors.

The design and planning for Westmead Hospital began in 1968. The late Professor John Read, a Professor of Medicine, and the late Professor John Loewenthal, then Dean of the Faculty of Medicine, provided the impetus for the creation of the Westmead Clinical School,

and promoted the concept of a major referral centre providing excellent clinical care while also supporting research and teaching.

Other University of Sydney staff were extensively involved in the planning of Westmead Hospital from the outset, and they too projected extensive research and teaching requirements. The hospital admitted its first patient on 10 November 1978. The first students from the (then) Faculty of Medicine arrived in small numbers in 1979, and were attached initially to Community Medicine, Paediatrics, and Obstetrics and Gynaecology. Westmead Clinical School now has more than 1500 alumni.

Professor Louise Baur AM, FAHMS is the current Head of the Clinical School in the Children's Hospital at Westmead Clinical School – adjacent to the (adult) Westmead Hospital.

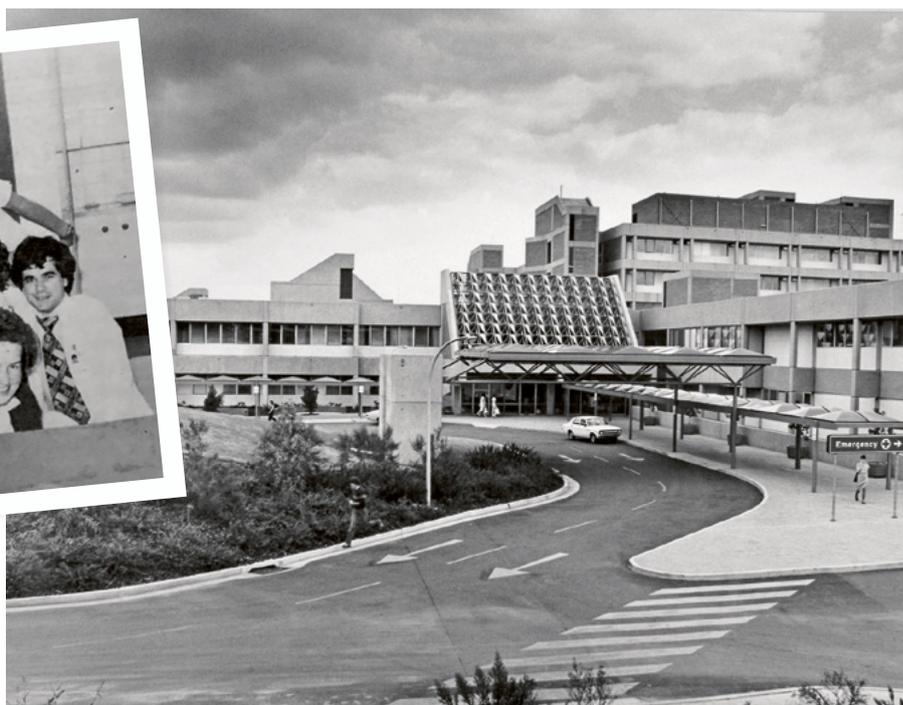
“I was in the first group of students to come to Westmead Hospital from Concord Hospital, in 1979,” she says. “We came to Westmead to do our obstetrics and gynaecology term. It was a wonderful experience. We lived in at the hospital – the first students to do so. The midwives and obstetricians looked after us beautifully. At the time, there were no midwifery students at the



Artist's impression of the Central Acute Services Building at Westmead



Above: Professor Louise Baur (second from left) with fellow Sydney Medical School students (Class of 1981)
 Right: Westmead Hospital in the late 1970s.



hospital, but more and more babies were being born each week. So we had lots of hands-on experience delivering babies and seeing women in antenatal and postnatal clinics and wards. I so enjoyed the experience, I decided to come back to Westmead as an intern in 1981.”

The University has had a strong continuing academic commitment to Westmead, emphasising the integration of clinical care, teaching and research. In 1980, Professor (now Emeritus Professor) Miles Little AM was appointed as the first Sub-Dean of the Clinical School. Professor Little had also been appointed Foundation Professor of Surgery at Westmead in 1978. Professor James Gibson, a Professor of Obstetrics and Gynaecology, served as the first and only Warden of the Clinical School from 1986 to 1991.

Professor Gibson’s role was later filled by others who saw the enormous importance of teaching and

“We came to Westmead to do our obstetrics and gynaecology term [in 1979]. It was a wonderful experience. We lived in at the hospital – the first students to do so.”

Professor Louise Baur

encouraged students in the clinical environment. Professor David Harris, a renal physician, was one of these.

“Since I first joined Westmead as a registrar in 1982, I have enjoyed watching the Clinical School mature and the privilege of being involved,” he says. “It’s wonderful to see the school taking advantage of the exciting new opportunities that abound for its students.”

The present Head of the Westmead Clinical School, Professor Tania Sorrell AM, arrived in Westmead in August 1979 to establish the first Infectious Diseases Unit within an internal medicine unit in Australia.

“This was an exciting and daunting challenge for a relatively recent

postdoctoral clinical researcher, made easier by the support and mentorship of the late Professor Peter Castaldi AO, the foundation Professor of Medicine at Westmead,” says Professor Sorrell. “The Westmead community was like a new and optimistic family, which subscribed to the vision of embedding research and education in clinical care.”

To mark its 40-year milestone, the Westmead Clinical School will host an open house on Thursday 8 November. Current and former students will join key members of the school to welcome hospital visitors and provide an insider’s view of clinical training. Everyone is welcome. For details, visit:

– sydney.edu.au/medicine-health/events



On the brink of a revolution in bowel cancer treatment

A \$6.4 million gift from Bowel Cancer Australia has established a new chair of bowel cancer research.

Professor Mark Molloy, the University of Sydney's newly appointed Lawrence Penn Chair of Bowel Cancer Research, believes cancer treatment is on the brink of a revolution. The biochemist is the inaugural appointee to the role, based at the Kolling Institute at Royal North Shore Hospital. The chair was established thanks to \$6.4 million in funding from Bowel Cancer Australia, plus an additional \$4 million in support from the University.

Professor Molloy's focus is on molecular analysis, which can improve understanding of tumour biology and help clinicians make decisions about treatment. It is an area of research that could have major benefits for the care of cancer patients. "There is no doubt that technology is driving a big revolution in clinical care," he says.

One example of this technological transformation is the use of mass spectrometers – sophisticated weighing devices that allow researchers to determine the molecular make-up of various substances.

With the help of two new mass spectrometers soon to be installed at the Kolling Institute, Professor Molloy and his team will be able to analyse the molecular features of proteins and metabolites in individual tumours, allowing them to tailor treatment pathways to patients' needs.

"When combined with genomic analysis, this gives us a more complete molecular picture of bowel cancer and polyps, which is essential to better understand prevention and treatment strategies," explains Professor Molloy.



Left and above: Professor Mark Molloy, Penn Chair of Bowel Cancer Research and a mass spectrometer.
Right: Lawrence Penn, one of Australia's oldest bowel cancer survivors, with his son Richard Penn, Patron of Bowel Cancer Australia.



Mass spectrometry could also be used to monitor medication levels in a patient's system, allowing clinicians to deliver a dose precisely calibrated to suit the individual. "At the moment, those decisions are generally based on body mass index," explains Professor Molloy. "But people metabolise drugs differently based on genetics. By applying molecular analysis techniques to blood samples, the oncologist could potentially adjust the medication levels in a more precise and personalised way."

The goal is to find ways of integrating molecular analysis into everyday patient care. Professor Molloy envisages that within the next five years, clinical teams working with bowel cancer patients will include a molecular scientist.

"Currently these multidisciplinary teams discuss imaging, surgery, approaches to chemotherapy and so on," he says. "I'd like to see clinicians also asking how molecular analysis could add to the fuller picture."

More than 4000 Australians die from bowel cancer every year, making it the second-biggest cause of death from cancer. But 90 percent of cases can be treated successfully when detected early.

The Lawrence Penn Chair of Bowel Cancer Research is named after one of Australia's oldest bowel cancer survivors, former air force pilot and Qantas captain Lawrence Penn.

Now aged 95, Mr Penn was diagnosed with the disease when he was in his 60s. It was detected and treated early, allowing him to enjoy an active, healthy retirement. His son, Richard Penn, is the patron of Bowel Cancer Australia and has provided great support towards establishing the chair.

Despite bowel cancer's prevalence in Australia, the disease struggles to attract the same level of funding as other common cancers. Julien Wiggins, the CEO and Executive Director of Bowel Cancer Australia, says this is partly because people find it a difficult disease to discuss. "It's a conversation killer," he says.

Bowel Cancer Australia hopes its support of a chair at the University will drive crucial research as well as raise awareness about the disease.

"The establishment of this chair demonstrates our commitment to funding research, raising the profile of bowel cancer nationally and making real change happen for those affected by the disease," says Mr Wiggins.

A chorus of doctors

Written by Dr Shamistha de Soysa

Medical students and practitioners are being sought to form a NSW doctors' choir to perform from early 2019. The choir, to be called DocsVox, already has more than one hundred interested potential singers, from students to retired doctors.

One of these singers is Dr Liane Papantoniou, a graduate of the University's double degree in music and medicine. Dr Papantoniou currently sings with the Sydney Chamber Choir, and perceives some similarities between music and clinical practice.

"They both require hard work, focus and dedication," she says. "You have to listen carefully and you need to be empathic and patient. If you're slightly off pitch, you have to make adjustments in the same way that a doctor tweaks medication or tries something different to get the best result for a patient."

The combination of music and medicine has proven health benefits for patients, including physiological stimulus to the lungs, exercise for the brain and enhancement of memory.

The choir will accompany two established orchestras: the Australian Doctors Orchestra and the NSW Doctors Orchestra. Both perform several times a year and have been doing so since 1993 and 2004 respectively.

For many who were immersed in music during their school years, entry into demanding medical studies meant that musical activities were

reluctantly reduced or surrendered altogether during years of career building. Yet the many benefits and pleasures of collegial music making are well recognised, and doctors in particular seem to have a high level of engagement with music.

Dr Nick Barry, a junior doctor at Nepean Hospital who nominates Mozart's *Requiem* as his favourite piece of music, started singing while at prep school and continued through high school. Once at university, he found a slightly different outlet: theatrical productions. He wrote, directed and sang in *Stayin' Alive* in the 2014 Med Revue.

"It was great fun, cathartic and relaxing and a creative outlet for me," he says. "But since 2015, I haven't really been part of anything musical due to a lack of time. I have missed it."

Professor Fran Boyle AM has also been singing since childhood. An oncologist and PhD graduate of the University of Sydney, she has been an avid participant in church choirs and musicals. One of the few women who sings tenor, she now performs with two Sydney choirs. "I sang soprano as a child and gradually slid," she explains. "If I have plenty of red wine on a Saturday night, I might even manage singing baritone on Sunday morning!"

She points to the importance of teamwork in both choral singing and oncology. "We work in a multidisciplinary setting. We have to blend, so that if you were listening, you would hear a whole sound. Each member of the team might say things in a different way, but they combine to make the patient feel safe.

"There isn't a jarring clash of voices and different perspectives. You want to keep that difference but make it blend, and that's really what a choir is all about – it's not about having the greatest solo voice, it's about having people who can fit in and work together.

"Wednesday-night practice and Sunday-morning singing have been my therapy group for 20 years. It gives me something to look forward to in the middle of the week and helps me get through my long clinic on a Wednesday," she says.

The combination of music and medicine also has proven health benefits for patients, including physiological stimulus to the lungs, exercise for the brain and enhancement of memory. "It is postulated that endorphins are released and cortisol reduced. All these things would support a feeling of wellbeing when one sings," says Emeritus Professor Michael Field AM, a renal physician and himself a flautist.

Professor Field has taught the range of connections between medicine and music – not just as therapy but as a factor in the health of doctors. "The role of music both in relaxation and professional bonding is important ... There is no doubt about the benefit to doctors of participating in music as a collegial activity. As a gathering around a common interest which is not professional but recreational, it seems to give a great deal of satisfaction," he says.

Interested? Register at

- surveymonkey.com/r/PBB2PCK
- facebook.com/DocsVox

Ancient origins of viruses discovered

A recent study transforms our understanding of the origins and evolution of viruses.

Written by Kobi Print

A recent study published in *Nature* has found that many of the viruses infecting us today have ancient evolutionary histories that date back to the first vertebrates – and perhaps the first animals in existence.

The study, a collaboration between the University of Sydney, the China Center for Disease Control and Prevention, and the Shanghai Public Health Clinical Center, looked for RNA viruses in 186 vertebrate species previously ignored when it came to viral infections.

The researchers discovered 214 novel RNA viruses (where the genetic material is RNA rather than DNA) in apparently healthy reptiles, amphibians, lungfish, ray-finned fish, cartilaginous fish and jawless fish.

“This study reveals some groups of viruses have been in existence for the entire evolutionary history of the vertebrates – it transforms our understanding of virus evolution,” says Professor Eddie Holmes of the Marie Bashir Institute for Infectious Diseases and Biosecurity, Charles Perkins Centre and the School of Life and Environmental Sciences at the University of Sydney.

“For the first time we can definitely show that RNA viruses are many millions of years old and have been in existence since the first vertebrates existed.

“Fish, in particular, carry an amazing diversity of viruses, and virtually every type of virus family detected in mammals is now found in fish. We even found relatives of both Ebola and influenza viruses in fish.”

However, Professor Holmes was also quick to emphasise that these fish viruses do not pose a risk to human health and should be viewed as a natural part of virus biodiversity.

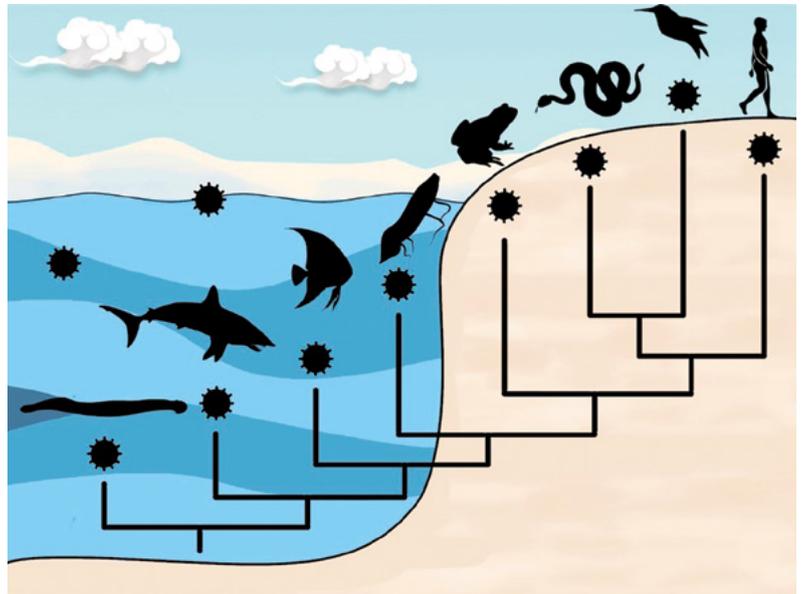
“This study emphasises just how big the universe of viruses – the virosphere – really is. Viruses are everywhere.

“It is clear there are millions more viruses still to be discovered,” he says.

The newly discovered viruses represented every family and genus of RNA virus associated with vertebrate infection, including those containing human pathogens such as the influenza virus.

Because the evolutionary histories of the viruses generally matched those of vertebrates, the researchers were able to conclude that these viruses had long evolutionary histories.

Reference: The evolutionary history of vertebrate RNA viruses. *Nature*, 2018; 556: 197-202



A new study suggests that viruses date back to the first vertebrates.

Brain training reduces gait freezing in Parkinson's patients

A breakthrough offers improved treatment of this common symptom.

Written by Dan Gaffney

In a world first, clinicians have reduced 'gait freezing' in Parkinson's patients using brain training exercises, in a trial led by Brain and Mind Centre scholars at the University of Sydney.

The study, published in *npj Parkinson's Disease*, reported significant reduction in the severity and duration of freezing of gait, improved cognitive processing speed and reduced daytime sleepiness.

Freezing of gait is a disabling symptom of Parkinson's disease. It is well known to lead to falls and lower quality of life, making it an important target for treatment. Research has also linked gait freezing to aspects of attention and cognitive control, a link supported by neuroimaging evidence, revealing impairments in the fronto-parietal and fronto-striatal areas of the brain.

Patients with Parkinson's disease who self-reported gait freezing, and who were free from dementia, were randomly allocated to receive either a cognitive training intervention or an active control intervention. Sixty-five patients entered the study, including 20 patients randomly assigned to the cognitive training intervention and 18 randomised to the active control group. Both groups were assessed twice-weekly for seven weeks. The primary outcome was the percentage of time spent frozen



during a 'Timed Up and Go' task, assessed while patients were both on and off dopaminergic medications. Secondary outcomes included multiple neuropsychological and psychosocial measures, including assessments of mood, wellbeing, and length and quality of sleep.

The researchers reported that patients in the cognitive training group showed a large and statistically significant reduction in gait freezing severity while on dopaminergic medication compared to participants in the active control group also on dopaminergic medication.

Patients who received cognitive training also showed improved cognitive processing speed and reduced daytime sleepiness

compared to those in the active control group while taking dopaminergic medication. There was no difference between groups when they were tested without their regular dopaminergic medication.

"The feedback we've had from participants and family members involved in this study was overwhelmingly positive," says study leader Dr Simon Lewis, a professor of cognitive neuroscience at the University of Sydney's Brain and Mind Centre and Royal Prince Alfred Hospital in Australia.

"The results of this pilot study highlight positive trends, and the importance of nonpharmacological trials involving cognitive training has become increasingly clear."

"While more research is needed to better understand and establish these findings, it's likely that participants in the off-dopaminergic state were too impaired to benefit from any of the potential changes initiated through cognitive training," says Dr Courtney Walton, lead study author formerly at the University of Sydney and now at the University of Queensland.

The researchers say more studies with larger numbers of patients are needed to investigate the impact of cognitive training on freezing of gait.

Reference: *npj Parkinson's Disease*, 2018; article no. 15

Walking faster could make you live longer



Increased walking pace has been associated with reduced mortality risk.

Written by Rachel Fergus

Researchers are calling for walking pace to be emphasised in public health messages, as an analysis of more than 50,000 walkers has found that a faster pace is associated with lower risk of cardiovascular disease and all-cause mortality.

The collaborative study involving University of Sydney researchers found that, when compared with walking at a slow pace, walking at an average pace was associated with a 20 percent risk reduction for all-cause mortality. Walking at a brisk or fast pace was associated with a risk reduction of 24 percent.

A similar result was found for risk of cardiovascular disease mortality, with a reduction of 24 percent when walking at an average pace and 21 percent at a brisk or fast pace, compared to a slow pace.

The protective effects of walking pace were also found to be more pronounced in older age groups. Average-pace walkers aged 60 years or above experienced a 46 percent reduction in risk of death from cardiovascular causes, and fast-pace walkers a 53 percent reduction.

The findings appear in a special issue of the *British Journal of Sports Medicine* dedicated to walking and health, edited by lead author Professor Emmanuel Stamatakis from the University of Sydney's Charles Perkins Centre and School of Public Health.

“A fast pace is generally five to six kilometres per hour, but it really depends on a walker’s fitness levels. An alternative indicator is to walk at a pace that makes you slightly out of breath or sweaty.”

Professor Stamatakis

In the collaboration between the Charles Perkins Centre and the Faculty of Medicine and Health at the University of Sydney, the University of Cambridge, the University of Edinburgh, the University of Limerick and Ulster University, the research team explored the associations between walking pace and cancer mortality and cardiovascular disease.

Linking mortality records with the results of 11 surveys in England and Scotland between 1994 and 2008 (in which participants self-reported their walking pace) the researchers adjusted for factors such as the total amount and intensity of all physical activity taken, age, sex and body mass index.

“Walking pace is associated with all-cause mortality risk, but its specific role – independent from the total physical activity a person undertakes – has received little attention until now,” Professor Stamatakis says.

“While sex and body mass index did not appear to influence outcomes,

walking at an average or fast pace was associated with a significantly reduced risk of all-cause mortality and cardiovascular disease. However, there was no evidence to suggest pace had a significant influence on cancer mortality.

“Separating the effect of one specific aspect of physical activity and understanding its potentially causal association with risk of premature death is complex,” Professor Stamatakis says.

“Assuming our results reflect cause and effect, these analyses suggest that increasing walking pace may be a straightforward way for people to improve heart health and lower risk for premature mortality – providing a simple message for public health campaigns to promote.

“Especially in situations when walking more isn’t possible, due to time pressures or environment, walking faster may be a good option to get the heart rate up – one that most people can easily incorporate into their lives,” he says.

Professor Stamatakis explains that “a fast pace is generally five to six kilometres per hour, but it really depends on a walker’s fitness levels. An alternative indicator is to walk at a pace that makes you slightly out of breath or sweaty.”

Reference: Self-rated walking pace and all-cause cardiovascular disease and cancer mortality. *British Journal of Sports Medicine*, 2018; 52(12): 761-768



Climate change a health risk, not just an environmental issue

Governments should accelerate the response to climate change, experts say.

Written by Dan Gaffney

Doctors should be telling patients that climate change is an immediate health risk, not just an environmental problem, say University of Sydney scholars and a sustainable healthcare expert visiting from the United Kingdom, Dr David Pencheon.

“The healthcare system has an important opportunity and a responsibility to demonstrate that climate change is not just an environmental problem but an immediate health risk – to patients and [the] public,” says Dr Pencheon.

“The UK’s National Health Service now has 10 years of experience in this area. It has shown that risks can be reduced, money saved, health improved, and a lot of resources diverted from wasteful and unsafe



practices to direct beneficial and sustainable healthcare.”

Dr Pencheon and University of Sydney scholars are working with government, clinicians and healthcare leaders to track and reduce the Australian healthcare system’s contribution to the nation’s carbon footprint, which currently accounts for 7 percent of national emissions. These lessons are outlined in a recent special edition of *The Medical Journal of Australia*.

“We hope to raise awareness of health issues related to climate change among Australian medical professionals, who play a key role in reducing their risks,” says Professor Tony Capon, who leads the University of Sydney Planetary Health Platform,

and who was appointed by the University in 2016 as the world’s first professor of planetary health.

Australia’s climate makes it especially vulnerable to the effects of global warming, and experts warn there will be an escalation in heatwaves, droughts, fires and storms. Between 1844 and 2010, heat claimed at least 5332 lives in Australia.

“Heat exposure is more lethal than any other natural disaster and represents Australia’s greatest current climate-related health burden,” says Dr Elizabeth Hanna from the Australian National University and Associate Professor Lachlan McIver of Médecins Sans Frontières, writing in *The Medical Journal of Australia*.

The multidisciplinary field of planetary health is founded on the interconnectedness of human and natural systems. It recognises that human advancement and economic development impose heavy burdens on natural systems, and that global patterns of human production and consumption are unsustainable.

As a result, the degradation of air, water and land, together with global warming and associated climate change, have led to a loss of biodiversity, declining topsoil and arable land, reduced food security and a host of extreme weather events that are predicted to worsen.

Through research, education, policy change, alternative investment approaches and programs such as the Planetary Health Alliance, planetary health advocates are

seeking to influence national and international approaches to economic production and development.

The Medical Journal of Australia report also highlights Australia’s involvement in the Lancet Countdown report on health and climate change, first published in October 2017. This report tracks progress on climate change and its effect on health across 40 indicators in five categories: climate change effects, exposures and vulnerability; adaptation planning and resilience for health; mitigation actions and health co-benefits; economics and finance; and public and political engagement.

“The inaugural Australian report is planned for release in late 2018 and is expected to be updated annually,” Professor Capon says.

“We hope to raise awareness of health issues related to climate change among Australian medical professionals, who play a key role in reducing their risks. The Australian Countdown is also envisioned as a timely endeavour that will accelerate the government response to climate change and its recognition of the health benefits of urgent climate action.

“As we enter the era of sustainable development, with all countries having signed up to the 17 United Nations sustainable development goals last year, I am hopeful that the new field of planetary health will help us collectively navigate a pathway to a sustainable future,” he says.

Reference: Developing a sustainable health care system: the United Kingdom experience. *The Medical Journal of Australia*, 2018; 208(7)

Reunion recaps



Class of 1952

Class of 1952 66-year reunion

Dr Monica Bullen (MBBS '52 DipClinPath '75)

Twenty 1952 medical graduates celebrated 66 years of medical practice with a lunch in the Cullen Room of the Holme Building on 11 May 2018. Pam Donnelly (Hawke) came from Queensland and John Connolly, Ken Doust and John Minogue from country NSW. We were joined by several invited guests.

Just on 20 other graduates sent their kindest regards and apologies, including John Duke from Norfolk Island and John Cordingley, who wrote from Milton, Banbury, North Oxfordshire, where he keeps busy in retirement. He remembers “great parties in Frenchs Forest.” Who else does? What would John think of the Forest now?!

There were no tours or invited speakers, as we wanted to reminisce over lunch. Despite crumbling bones and stiff joints, we were all mentally fairly intact, so memories of student days and items of life lived since then were recalled and related with mutual interest.

Our younger members were aged 89, the rest of us 90 plus.

We were organised and looked after by staff from the Division of Alumni and Development, coordinated by Colette Slaviero. As always, they were exceedingly kind and caring. We are most grateful to everyone, including the chef who was involved with the reunion, and his team.



Class of 1955

Class of 1955 63-year reunion

Dr David Jeremy (BSc(Med) '53 MBBS '55)

The last time we met was in August 2017 – a little out of sync with our usual routine. For this reunion we timed it right and met again at Royal Sydney Golf Club in April.

The reunion marked 63 years since our graduation year and we had 36 attending (28 graduates of 1955 and eight guests) – more than last time. This was a very good roll-up considering there were only about 130 graduates way back then in 1955. We sadly missed some whom we had lost since last year.

Not surprisingly, the years have taken a toll on us in some ways, but it did not seem to matter. Some needed mobility help, but that was no problem. Some even came just for the day, from places at some distance such as Canberra and Newcastle. All were bright and cheerful and the day was marked by great good humour and very pleasant camaraderie.

Special thanks to John Wright and Vera Gallagher who, with me, comprised the liaison group. As ever, the University of Sydney's Alumni and Development team provided us with support in the lead-up to the event, and Colette Slaviero was there on the day to provide assistance. There is a lot of good fellowship and friendship in this group and we hope even more of our graduate friends will come next time. Our next reunion lunch will again be at the Royal Sydney Golf Club, on Saturday 27 April 2019. Mark your calendar now!



Class of 1958

Class of 1958 **60-year reunion**

Dr Brian Parker (MBBS '58)

On Saturday 10 February 2018, we gathered at the Australian Club on Macquarie Street in Sydney for lunch. We all thanked Stuart and Jann Porges (members) for inviting us there to celebrate 60 years of being doctors. It was wonderful to have a group of 60 people present to celebrate the milestone.

Stories were told about dear Mrs Nic and Rusty Pardoe's posting in Antarctica. Graeme Clark, inventor of the cochlear ear implant, showed us a video of his work.

The Australian Club has been on the corner of Macquarie Street and Bent Street since 1838, in various buildings on that site, and has a marvellous collection of art on its walls, lit by chandeliers. It is entered through old wooden doors just off Macquarie Street. The staff were wonderful and really looked after us all.

We say a big, big thank you to Stuart and Jann, Colette Slaviero, the University of Sydney Alumni and Development team, Graeme and the Club for a wonderful reunion.



Class of 1968

Class of 1968 **50-year reunion**

Dr Peter Duffy (MBBS '68 DipDiagnostRadiology '72)

On the clear fine evening of Saturday 10 March, 150 graduates and guests met for dinner at The Refectory of the Sydney University Union, a place well known to us all. Multiple catch-up chats were had before, during and after dinner.

We were the first 'quota' year, and 50 years later, a lot of us have retired. However, many are still working, so we had a continuing professional development occasion for us as senior doctors in transition. Overall, it is clear that as the first "quota" year, we have generally and specifically made a significant contribution to health care and medical practice in our communities – so congratulations to all!

Preliminary tours of the Charles Perkins Centre and the Anderson Stuart Building were undertaken, together with a recovery meeting at Rose Bay the next morning. Many came from far away – interstate and overseas – and all were welcome.

An updated yearbook was projected during the dinner and was shared with the year group as a keepsake. Bob Brown proposed the University toast and Richard Walsh reminded us in detail of how things were back in the sixties, both in clinical and preclinical years. There were some rueful reminiscences of our very extended RMO working hours. Craig Mellis and Judy Black brought us up to date on the replacement of the MBBS by the new MD and on the amalgamation of the health schools into a super-faculty.



Class of 1973 members John Riley, Ross Wilson and Stephen Clarke

Class of 1973 45-year reunion

Dr Philip Cocks (MBBS '73)

Was it the setting, with Bowral at its best? Was it the golf? Was it the food? Was it the diversity of short presentations on Saturday morning? Was it Cate Storey's historical memoirs, so ably presented over dinner on Saturday evening?

Could it have been the personalised champagne visit to Ben Quilty's studio, where we were surprisingly entertained by Joe and Olivia and then given a new perspective on Santa Claus by the renowned artist?

Or was it just the regular, inclusive group of good friends determined to relax and enjoy themselves?

Whatever it was, feedback from the 83 participants confirms that it was one of the best reunions ever.

The bar has been set high. Our next one will be the big 50th, already booked at the Great Hall on Saturday 1 April 2023, with a two-night option at a nearby city hotel and a similar weekend format. Keep the date free. More importantly, keep healthy to ensure your presence. The only acceptable apology for not attending will be the one that none of us is planning to make.

Class of 1978 40-year reunion

Dr Andrew Byrne (MBBS '78)

Our anniversary dinner was held in MacLaurin Hall on Saturday 20 January 2018. Starting with cocktails and canapés on the Quad lawns, 135 alumni and partners enjoyed a perfect Sydney summer evening of chat and renewed acquaintance. Steve Jurd gave an inspiring address in which he highlighted the achievements of our cohort in parallel with ever-changing aspects of daily living. He reminded us of our unique privilege to graduate in medicine and to practise our skills in an era of peace and prosperity. Thereafter, the room became a chat session with people table-hopping, all keen to catch up with as many old colleagues as possible. Even as 11pm approached, many were still mingling at the end of a long and pleasant evening.

Past reunions have included those at the InterContinental Hotel (20-year), Taronga Park Zoo (25-year), Roseville Golf Club (27-year), Killara Golf Club (28-year), MacLaurin Hall (30-year), Roseville Golf Club (35-year – remember the massive storm?) and this present return to our exam site for our 40th reunion. I read out a list of 14 departed souls, all remembered fondly by year members. Everyone came with a smiling face to this reunion, keen to relive some of our happy times past.



Class of 1978



Class of 1988

Class of 1988 30-year reunion

Dr Mark Nicholls (MBBS '88)

The reunion was held at the Refectory in the Holme Building at Sydney University. Almost 100 graduates and partners attended.

It was a great night. It was 30 years ago that we shared great camaraderie and friendship on the University campus. It was also 30 years ago that we moved on to different paths, different directions and different experiences. But as soon as the evening started, those 30 years disappeared.

The evening was a sit-down dinner with music. Martin, the MC, kept speeches to a minimum and only embarrassed a few. We did feel for the musicians from Ensemble Apex, who at times could not be heard over people chatting.

The photo booth with dress-ups proved very popular and hopefully there will be more material for future reunions. There were calls for a reunion in five years that includes graduates who started in 1983.

Joyce Leong, Barry Dixon, Jim Milross, Martin Hocknell and I would like to thank the University Alumni Relations team for all their assistance.



Class of 1998

Class of 1998 20-year reunion

Dr Kar-Soon Lim (MBBS '98 GradDipMed(ClinEpid) '03)

The 20-year reunion of the class of 1998 was held on a fine, balmy night at the Holme Building. More than 100 alumni and partners attended – many from Sydney, but also from interstate and overseas, coming from as far away as Sri Lanka and the United Kingdom.

Memories came flooding back with the arrival of each familiar face. A 1990s quiz by MC Raj Puranik reminded us of how much we had forgotten, and a slideshow of photos from university days collated by Rasa Venclovas made us both cringe and laugh – thankfully fashion and hairstyles have moved on in the past 20 years! Alfred Hing gave a moving speech to remember John Corish, who sadly passed away in 2017.

The end of the function arrived much too quickly, with many lingering to continue to chat. It was a lovely evening.

The University of Sydney School of Medicine – Upcoming reunions

Date	Class of	Milestone	Key organisers	Venue	Time
2018					
Saturday 13 October 2018	1983	35 years	Dr Peter Brown Dr Andrew Egan	The Grandstand Function Centre	6.30–10.30pm
2019					
Saturday 9 March 2019	1969	50 years	Associate Professor Arabella Smith Professor Susan Pond AM	The Refectory, Holme Building	12–4pm
Saturday 27 April 2019	1955	64 years	Dr David Jeremy Dr Vera Gallagher	The Royal Sydney Golf Club	11.30am–3pm
Saturday 9 November 2019	1999	20 years	Dr Paul Nicolarakis Dr Loren Rose Dr Pradnya Dugal	The Anderson Stuart Building Courtyard	6–11pm

Enquiries and further information

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Where are they now?

In every edition, we profile Sydney Medical School graduates to see where their studies have taken them.

This time, we report on Dr Samriti Sood and Alison Szekely.

Dr Samriti Sood

Master of Surgery, Graduate Certificate in Surgery (Breast Surgery)

Dr Sood is a specialist breast oncoplastic and general surgeon who now teaches in the University of Sydney breast surgery program.

At age 15, she volunteered at Westmead Hospital for a week during her school holidays. She was scared of doctors as a child, and the idea of cancer terrified her, but this fear also served as a driver for her to understand and learn more. “I watched an operation and was totally gobsmacked by the skill and agility of the surgeons,” she says. “By the end of that week I had decided that I wanted to work in the exact field that scared me the most.

“My parents always dreamed big for me. They migrated to Australia from India with very little when I was eight years old. Even though my dad had a law degree, he took a job at a supermarket, and my mother did a paper run.”

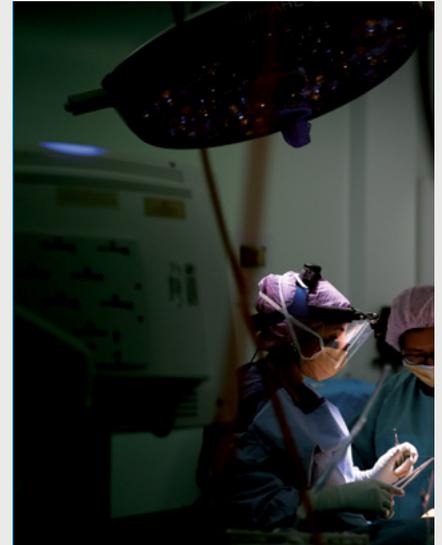
Dr Sood’s parents were able to send her to a good high school, where she saw competition not as a threat but as a challenge. “If I saw someone doing well academically, I really

looked up to them and wanted to replicate that for myself,” she recalls. “I’m so lucky to have been given many opportunities and a great education.” It was this attitude that helped her to get into medicine at university and study surgery.

Dr Sood’s grandparents were refugees in India, fleeing Pakistan during the India-Pakistan Partition. Her grandmother was only allowed to go to school until she was 12. “She would always say to me, ‘Knowledge is power, and without knowledge, you are empty’, which has served as a mantra to me throughout my life.”

After completing specialist training and the Graduate Certificate in Breast Surgery, Dr Sood now specialises as a breast oncoplastic surgeon. “Breast cancer affects all ages, from older women to young women who are, like me, really just starting out in their lives,” she says.

“I treated a young patient recently, a teacher in her early 30s with metastatic breast cancer. She was newly engaged and planning her life – a life that had never factored



having to go through aggressive chemotherapy. I was able to walk her through a very challenging and vulnerable time.

“To me, medicine is about looking at people as a whole, giving them quality of life and, in the case of breast surgery, reconstructing them.

“As a student, and still today, every time I have the opportunity to be in an operating theatre I feel like a bird soaring in the sky. It is an absolute privilege to be a surgeon.”

Ms Alison Szekely Master of Science in Medicine (Clinical Neurophysiology)

Alison Szekely was fortunate (or unfortunate) enough to come across clinical neurophysiology as a patient. In her first year of a Bachelor of Medical Science, majoring in anatomy and physiology, she suffered a number of episodes of convulsive syncope (fainting) and underwent an array of diagnostic procedures. The electroencephalograph (EEG) was the most memorable for Alison; her curiosity and passion for the field was instantaneous.

Since graduating in 2007, Ms Szekely has worked across various neurophysiology and research roles. Today, she is a senior neurophysiologist and manages a rapidly developing diagnostic department part time. She also works in private practice, performing both EEGs and nerve conduction studies.

In 2015, she returned to the Sydney Medical School clinical neurophysiology program, this time as a course developer, lead clinical scientist and lecturer. The variety of these three roles keeps her mentally stimulated and intensely passionate about neurophysiology.

“Correct diagnosis and appropriate management of neurological disorders can improve the immediate health of the patient, and are also important in psychological

wellbeing and managing expectations – not only through identifying the correct treatment but also aiding in identification of various support and rehabilitation options available.”

Ms Szekely highlights the importance of neurophysiology. Her department “offers primarily diagnostic services which are pivotal in diagnosing and managing a range of neurological disorders such as epilepsy and multiple sclerosis,” and uses “nerve conduction studies and electromyography to diagnose a range of disorders, including carpal tunnel syndrome, Guillain-Barré syndrome, motor neuron disease and other disorders of the peripheral nerves.”

Her field of expertise also covers monitoring the spinal cord, brain and cranial nerves during high-risk surgical procedures. “Identification of a change in signals during the surgical procedure can prevent catastrophic permanent neurological injury,” she explains.

Ms Szekely believes that Australian tertiary medical education is creating a highly effective healthcare system, but she states that “learning should be lifelong, and a greater focus should be placed on continuing professional development in all fields.”



She also believes there should be more emphasis on patient education and patient engagement with healthcare professionals: “It is pivotal in reaching better health outcomes.”

“Patients should feel like unique individuals and not just another number in the system. Far too often I see patients who have not been fully informed about their disorder and the appropriate support has not been offered,” she says.

In her opinion, the healthcare system could be improved by an increase of “specialised supportive personnel who are available for patients outside their consultations.”

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