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JANUARY 15 – 27

DAVID BYRNE & ST. VINCENT
LOVE THIS GIANT
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 Cover photo by Brian McInerney
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→ SYDNEY MEDICAL SCHOOL ALUMNI AWARDS

We are once again calling for nominations for our alumni award program following the very inspiring inauguration last year. We would like to see many more nominations made this year as we know that graduates and postgraduates of the school are making extraordinary contributions to the University, their local communities and on the international stage on a daily basis. Sydney Medical School would like to honour these contributions with your help. Please nominate in the following four categories.

→ Community
→ Professional
→ International
→ Young alumni

Nominations close at the end of March, 2013

Information about the Sydney Medical School Alumni Awards can be found on the Medical Alumni Association website: sydney.edu.au/medicine/alumni
DEAN’S MESSAGE

Anyone visiting faculty offices in Edward Ford Building during August and September would have noticed groups of mostly young people waiting for their admission interviews, many looking more than a little apprehensive.

Each year, seeing students waiting for their MMIs brings back uncomfortable memories of important interviews and exams past, where the consequences of making a mistake were considerable. It is impossible not to empathise with them and the pressure they are under. In this terribly competitive era, with required GAMSAT scores so high, I always speculate how many of us from other generations would have secured a place in medicine if we were applying now.

But the other sense I have when I meet and talk to applicants is overwhelmingly positive: that so many bright enthusiastic young people are prepared to invest so much into becoming doctors is encouraging for the future of health care. But it also reinforces that we have a responsibility to these talented young people, as well as to the community, to ensure that our admission processes are fair, and that our philosophy and the criteria we use are sound.

Determining admission to the medical program, clearly, is one of the most fundamental decisions we make as a medical school. Every year within faculty, there is much discussion and debate about the degree to which our admission criteria assess the qualities we look for, and whether the process is efficient and equitable.

This year, I’m delighted that we have been able to add weight to our admissions committee with Professor David Cook bringing his considerable analytical skills to the task. Over recent years, we have amassed a great deal of data about both admissions and about how students perform in different aspects of the program. One of David’s objectives is to assess information we have, plus any that we might need, and make sure that decisions are soundly based.

Admission is always a complex subject. Places in medical schools are competitive and as a school, we are required to comply with a number of specific quotas. The number of government funded places is capped, with each medical school allocated a number by the Commonwealth. We have 228 Commonwealth supported places for each year of the program with approximately 25% of those “bonded” places. We are also required by the government to have 25% of places reserved for students with a rural background, which is defined as having spent some of their school years in the country. On top of that, we have 70 and 75 international students in each year.

This year we had more than 1600 applications for the available places. Inevitably, that means many very good applicants who would make wonderful doctors, miss out.

We also know that the criteria we use in selecting from the large number of applicants is important in determining the composition of the future medical workforce. The number of students who drop out of our program is tiny - less than 3% of students who enrol in first year do not complete the four year course and go on to internships and medical practice.

The more fundamental question is whether we are recruiting young people who will be excellent physicians, surgeons, general practitioners of the future – and on that, the answers are more difficult.

To begin, we need to be aware of the changes taking place – ageing population, rising expectations of patients and the burden of chronic disease are all key drivers – and look at the skills required in such an environment. Mark Cormack, chief executive of Health Workforce Australia, recently spoke at a forum on campus on the future health workforce. His message is that change is essential.

My own thoughts are that although there are inevitably changes ahead, those absolutely fundamental components of good medical practice – good clinical skills, ability to listen and communicate, to take a patient history, to evaluate information and diagnose – will always be required. Qualities of compassion, honesty and ethics, similarly, will always be essential. What will be challenging will be the requirement to sort through increasingly large amounts of information, to keep up to date with increasingly rapid technological advances, and to work more as part of multi-professional teams. So although there is much that will change, there is also much that will not.

I believe that faculty generally supports our current admissions process but we would be happy to hear from any alumni who would like to contribute their views on this subject.
The Chancellor, Her Excellency Marie Bashir, will step down at the end of the year. She has been an iconic leader, universally loved and will be sadly missed. Her passion for the University comes through in many ways and she will be a difficult act to follow. Despite her many other duties, particularly as Governor of NSW, she has given an extraordinary amount of time to the University.

The process to select her replacement has begun and the Nominations Committee of Senate would welcome suggestions.

It is interesting to look back at the Chancellors during our time associated with the University.

My generation remembers Sir Charles Bickerton Blackburn who served as Chancellor for 23 years (1941 - 1964) and was father of Professor Ruthven Blackburn who taught many of us. He was succeeded by another physician, Sir Charles MacDonald (1964 - 1969), part of a strong medical family.

Sir Herman Black was Chancellor for 20 years, from 1970 until his death in 1990. He was briefly succeeded by Air Marshal Sir James Rowland (1990 - 1991) before Professor Dame Leonie Kramer (1991 - 2001), a very strong and controversial leader. I well remember her once entertaining fools. I well remember her once entertaining us with her views on the academic historical skills of then PM Gough Whitlam.

Kim Santow followed Dame Leonie and was Chancellor for six years (2001 - 2007). Kim sadly died shortly after stepping down as Chancellor, to be succeeded by Marie Bashir, the third medical alumnus to be Chancellor out of the seven I have referred to.

Recently, the Shanghai Jiao Tong University (ARWU) world university rankings were released. While there is criticism of league tables and their methodology, they are important for student and academic recruitment. Lovely photos of the sandstone quadrangle are no longer enough to carry the day.

Everyone focuses on the top 100 worldwide and, in this sense, Australia does very well with Melbourne [57], ANU [64], UQ [90], Sydney [93], and UWA [96] in the top 100. UQ appears in the top 100 for the second time going from 101 in 2010 to 87 last year. UWA is the stand out performer going from 150 to 96 this year. Based on the number of universities in the top 100, Australia is the third best country after the US and UK.

Sydney and Melbourne have improved three places, but Melbourne has moved up 22 places in five years. Monash, Griffith, Swinburne and Wollongong all have improved significantly.

In this marketplace, with universities like UQ and UWA competing aggressively, it is worrying that we could easily be pushed out of the top 100 if we are complacent. Universities can no longer rely on their reputation to attract students and funds. Strong leadership is essential to compete in this new era.

I have just returned from the Alumni meeting in the USA (Sydney University Graduates of North America). There are over 3000 graduates of Sydney resident in North America and they hold an annual three-day conference. This year’s was at Boston University; next year the meeting will be in Charlotte, North Carolina in October. Any alumni who will be in that part of the world are welcome. The meeting is being organised by Derek Raghavan, a leading oncopologist in the US who will be known to some.

Barry CATCHLOVE

FROM THE SENATE

STITCHED UP

After an introduction on suturing materials, needle types and wound closure, our medical students had the opportunity to practise their skills in a wet lab environment under a supervising tutor. The suturing workshop, conducted by 14 tutors from the Sydney University Surgical Society, was attended by over 80 medical students from stages 1 & 2 in July. Funding was provided by the Royal Prince Alfred Hospital, Division of Surgery.

Earlier in the year, the Surgical Society opened its first dedicated skills facility. Located within the Blackburn Building at the Camperdown campus, the facility provides the opportunity for interested students to learn and develop technical surgical skills. This new facility was established by students Arridh Shashank and Tim Duong, with funding provided by the University of Sydney Discipline of Surgery.

Equipped with a wide range of surgical instruments, the facility has already proven to be a highly valuable resource for Surgical Society members to develop their skills. Most recently, three groups of students, 24 in total and mostly from stage 1, attended sessions held at the new facility over two days where they learnt the one-handed knot tying technique and developed further suturing skills.

Students and potential tutors interested in attending or teaching at skills workshops should contact Kilian Brown from the Surgical Society.

Further information and contact details are available via the website www.surgsoc.org.au

Students at suturing workshop in July

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Students at suturing workshop in July
→ HEALTH WORKFORCE AUSTRALIA 2025

The current approaches to meeting the projected health workforce demand are not sustainable, according to Health Workforce Australia’s chief executive Mark Cormack.

Cormack was speaking at a public forum at the University of Sydney in August on the challenges of ensuring a sustainable health workforce, able to meet the growing demands on healthcare as a result of an aging population, growth in chronic disease and increased community expectations.

HWA released its first major report, Health Workforce 2025, earlier this year, providing national workforce planning projections for doctors, nurses and midwives over the next decade.

Key findings from the report include: there will be insufficient training places for projected medical graduates by 2016; and an ongoing dependence on immigration for doctors and nurses creates an ongoing risk. The report noted that the alignment of health, higher education and training, immigration and workplace objectives is poor.

“If Health Workforce Australia can help reduce the disconnections between the training of the health workforce and health workforce needs, it will make a major contribution to improving healthcare in this community,” said Professor Bruce Robinson, Dean, Sydney Medical School.

“Universities play a critical role in training health professionals but the numbers trained and the type of education provided is not necessarily well connected to the country’s health needs. With rising numbers of health and medical graduates in Australia, a major issue is whether they will have opportunities to work in areas which interest them or for which their courses have prepared them,” said Robinson.

Associate Professor Tony Joseph, Senior Staff Specialist in Emergency Medicine and Director of Trauma (Emergency), Royal North Shore Hospital, said: “The current piecemeal approach is not working and is unnecessarily expensive. In 2009-10 there were more temporary visas issued to overseas doctors (3190) than medical graduates from Australian universities (2380). With long lead times in bringing about the necessary changes, it is essential that new policy settings are developed now.”

The lecture was followed by a panel discussion including Dr Teresa Anderson, Chief Executive, Sydney Local Health District; Associate Professor Tony Joseph; the Deans of the faculties of Health Science, Dentistry, Pharmacy and Nursing; and Professor Glenn Salkeld, Head of the School of Public Health. The MC and facilitator for the event was Professor John Horvath, the Australian Government CMO from 2003-2009 and a current adviser to the Department of Health and Ageing, and Sydney Medical School.

→ SELBY & MUSIC MEDICINE FRIENDS

Renowned Sydney pianist, Kathryn Selby, will join forces with her music-medicine friends and perform in the Microsearch concert on Sunday November 4, 3.30 – 5.30pm in the Great Hall.

The concert will showcase the talent of our music-medicine students; a world-first degree linking music with medicine. Students who are gifted academically and musically apply for a scholarship entry to a combined degree, and go through an interview and audition. The program starts with a three year bachelor of music studies at the Conservatorium in their chosen instrument, and leads straight into the four-year Sydney Medical Program.

Selby will be joined for the finale by violinist Kirsten Williams, Associate Concertmaster with the Sydney Symphony, and cellist Julian Smiles with the Australia Ensemble.

Music and Medicine have been strongly associated with Microsearch. One of the world’s pioneers in microsurgery, Earl Owen, who founded Microsearch many years ago, had an important success in repairing the leg of maestro Vladimir Ashkenazy’s son Dimitri, following a serious motor boat accident. Dimitri went on to regain full use of his leg, and is now a celebrated clarinettist. Concerts have featured strongly in the history of Microsearch, and the tradition is maintained with this year’s concert - the third since the Microsearch Foundation moved to the University of Sydney in 2006 following Owen’s retirement as director. The Foundation continues to support microsurgery research and the training of young microsurgeons.

→ CONNECT WITH STUDENTS

Our final year students (in fact all our students) would like the opportunity to contact current specialists to seek advice as they head out into the big wide world of internships and specialisation. Please register to be an online mentor at Alumni Online - you can choose who can contact you from various fields and also whom you would like to reply to. This is an urgent call from our students. Please go to the URL below and follow the links to Alumni Online. Alternatively please go to the alumni website which can be accessed from the main university page.

alumni.sydney.edu.au/
After a decade in the position, Professor Ben Freedman has stepped down as deputy dean of Sydney Medical School on June 30.

“Ben has made an enormous contribution to the faculty in the role of deputy,” said Bruce Robinson. “He has led the faculty in many areas, not the least in promoting and developing rural programs and sites. That we have achieved such considerable success with high quality programs and sites in Dubbo, Orange, Lismore and Broken Hill, is in no small part due to his dedication and perseverance.

“Aside from that, he has been a great person to work with and his thoughtful and astute advice has been invaluable across many areas.”

Three new deputy deans have been appointed:

Professor Tania Sorrell has been with The University of Sydney since she returned from the US in 1979 where she had been training in infectious diseases. As well as being appointed a senior lecturer in medicine, Sorrell was given the role of setting up the Infectious Diseases unit at Westmead – the first infectious diseases unit within a department of medicine in an Australian hospital.

Sorrell’s other research interest is in fungal infections, particularly fungal pathogenesis in the lungs and central nervous system, as well as new diagnostics for invasive fungal infections and looking for new anti-fungal drugs.

She is the Director of the Sydney Institute for Emerging and Infectious Diseases and Biosecurity. The goal of the Institute is to help prevent and contain emerging infectious diseases, especially in the Asia-Pacific region. It’s a virtual centre which brings together health, veterinary and biological sciences with the arts and humanities. Sorrell claims the multi-disciplinary approach is valuable because dealing with disease has more than a medical component; there’s the matter of communicating information to people and influencing behaviour.

This is particularly important in one of the main areas covered by the Institute: large outbreaks or epidemics which are often caused by viral infections. Of these, around 65% arise from close human to animal contact. For example, avian influenza is a major problem in Indonesia where people are tending sick birds reared in their backyards or at the wild bird markets. Another such disease is Hendra virus, which may occur where fruit is grown near horse paddocks.

In her capacity as Deputy Dean, Sorrell is very interested in international education and capacity building in developed and developing countries.

She also takes a role in promoting translational research, flowing into clinical practice and health service delivery.

Professor Cheryl Jones is a paediatric infectious diseases specialist at the Children’s Hospital at Westmead. She has been an academic with the University of Sydney since 2005, holding key leadership roles in research and postgraduate education. She is joint leader of the Faculty’s Reproductive Maternal and Child Health research theme, and heads the Centre for Perinatal Infection Research located at the Kids’ Research Institute.

Jones is particularly interested in mother to child transmission of infections. One key area she’s been looking at is cytomegalovirus (CMV) which is an important cause of deafness and cerebral palsy. As well as disease transmission in utero, Jones is concerned with infections caused around the time of birth, such as the herpes simplex virus contracted via the birth canal from mothers who have had a recent genital herpes infection, or even blood transmission at birth.

Emerging infectious diseases in infants and children is another of her research areas. She is a founding member of the Sydney Emerging Infectious Diseases and Biosecurity Institute and leads a national study of new and emerging brain infections in children. “Around the world it’s been shown that when new infections arise, the original source before it has entered the human population is often an animal.”

Jones has been appointed Deputy Dean (clinical) for Sydney Medical School. In this role, she hopes to facilitate translation of the University and Faculty’s world leading strategic initiatives in research and education from the research hubs through to the clinical settings and the community.

Professor David Cook has returned to Sydney Medical School to take up the position of deputy dean after 18 months as academic director of the Centre for Obesity Diabetes and Cardiovascular Disease, now called the Charles Perkins Centre. In that role, he worked to develop the Centre’s research, academic and teaching direction, and bring together the cross-disciplinary research and researchers which are essential if solutions are to be found to problems of obesity, diabetes and cardiovascular disease.

His roles in SMS include responsibility for medical admissions and chair of a review of postgraduate education.
Students promoting healthy living

Health and medical students from the University of Sydney on placement, photos taken in August in Broken Hill and Wilcannia.

The next issue of Radius will feature a new community program in which students can play a role helping communities: Healthy Connexions, recently piloted in Wilcannia.

Photos: Rural Health Workforce Australia [Tony Wells]
STUDY 2013

Lifelong learning is a fact of life for anyone working in health. New discoveries are being made on a daily basis which change and improve knowledge of the way diseases can be prevented, diagnosed and treated. Sydney Medical School provides a wide range of postgraduate programs, from short courses to specialist masters degrees and big public health courses, which enable health professionals to stay up to date and work at a high level in their chosen field.

Here are some of the major programs:

**Public Health:**
This is Sydney Medical School's largest postgraduate course, with students coming from a wide range of backgrounds. The course offers many options — flexibility to put together a program to suit interests as well as five specialist study pathways including disease prevention and health promotion in communicable diseases, injuries or chronic disease, public health research or health economics/health policy. Available face-to-face, online or a combination of both.

**International Public Health:**
Sydney's program is the most established of its kind in Australia, offering students a wide range of options from the prevention and control of disease to practical programs such as management of humanitarian emergencies. Taught face-to-face, but with a growing number of units available online or in short intensive blocks.

**Clinical Epidemiology:**
For clinicians and other professionals, this is a course which teaches how to apply the best available research evidence to patient care. Available face-to-face, online or a combination of both.

**Brain and Mind Sciences:**
Provides a strong emphasis on the link between latest laboratory research, with clinical principles and interventions. The program has been developed and is taught by the Brain and Mind Research Institute.

**HIV, STIs and Sexual Health:**
The only course of its type in Australia, the program, which is based at Westmead, is run in streams – clinical medicine, laboratory, counselling, nursing and public health.

**Surgery:**
Sydney Medical School is home to one of the largest academic surgical departments in Australasia, and the surgery program offers a wide choice of streams. The program has been developed to complement the practical experience obtained through RACS training, and will augment research, leadership and communication skills.

**Paediatrics:**
The course has been developed by the highly regarded clinical, education and research staff in the discipline of paediatric medicine, based at the Children’s Hospital at Westmead. Available online.

**Ophthalmology:**
The ophthalmology programs have been developed and are taught by the clinical, education and research staff at Save Sight Institute, the leaders in the field in NSW. Available online.

See the website sydney.edu.au/medicine for full list of courses.
Applications close for 2013 on October 31, although many courses will accept late applications.
A key component of Sydney Medical School’s mission is research. The aim, clearly, is not just to increase the sum of health and medical knowledge but to use that knowledge to improve human health.

As well as talking to peers in academia and to doctors practising in the field, we believe it is also important to communicate research directly with the community at large. In August this year, we held the inaugural series of talks - 21st century medicine: today’s research, tomorrow’s healthcare.

Aimed at students and healthcare professionals, as well as individuals and families, what brought the audiences in each case was a desire to hear about the latest research by Sydney’s global experts on subjects of major importance.

What is the latest research telling us about the way to identify and treat teenagers with depression? Why should we be incredibly wary of jobs where we sit at desks for 11 hours a day? How can we hold at bay the ageing process to live longer healthier lives? What is the state-of-play in global cancer research?

Attendance at the evening talks was excellent and increased as the series progressed. We hope that over the coming years, 21st century medicine will be a flagship event for the Sydney Medical School and an eagerly anticipated forum of knowledge and ideas on the Sydney calendar.
**21ST C MEDICINE**

**DRINKING FOR TWO**

Professor Elizabeth Elliott makes no bones about it: Alcohol is a toxin which damages the developing fetus. The more often a pregnant woman drinks, the more likely she is to cause damage to her baby.

Elizabeth Elliott AM is Professor of Paediatrics and Child Health, The Children’s Hospital at Westmead.

Elliot began work in the area of Fetal Alcohol Syndrome (FAS) 12 years ago, starting with a national surveillance study to establish how widespread the syndrome was. “When we saw the results we thought there was under-reporting, so we surveyed health professionals and asked them what they knew about FAS and what they advised about alcohol use in pregnancy,” says Elliott.

She discovered two alarming things. Firstly, doctors don’t ask about alcohol use in pregnancy – less than 50% did – because they think it will upset the mother. This means they are unlikely to identify women who need help or to diagnose a newborn with FAS because they aren’t even aware if alcohol consumption featured in the pregnancy. Secondly, even when they think a baby has FAS, doctors are reluctant to diagnose it for fear of stigmatising the child and the family.

That’s a worry because failure to make a diagnosis has many negative consequences. “We are dealing with a permanent brain injury here,” says Elliott. “But the young brain is malleable and early diagnosis and health and educational interventions will maximise the potential of these children.”

Another reason for pursuing a diagnosis is that the child may be eligible for assistance in the classroom, carers entitled to an allowance and the child may qualify for a disability allowance.

“Parents and carers also say a diagnosis is helpful because it explains their child’s behaviours and allows them to have realistic expectations of the child. It means that they can meet up with other parents and support groups. For foster carers, and our study showed that 60% of children with FAS are in care, it can alleviate a sense of guilt that the child’s problems are a result of their poor parenting.”

The Fetal Alcohol Spectrum Disorders (FASD) include FAS, but cover a range of problems from mild behavioural to severe intellectual impairment, learning and memory problems, mood disorders and ADHD. There is a significant overlap with problems associated with other developmental disorders, making diagnosis difficult if a doctor is unaware of the mother’s alcohol use in pregnancy or if the child does not exhibit any of the physical features associated with FAS.

Elliott describes the FASD like a triangle, with the tip representing those with full-blown FAS. These children have very distinctive appearances. They grow poorly before and after birth; they have narrow eye openings and thin upper lips; they have an indistinct philtrum (the area between the base of the nose and upper lip); and they may have small heads because their brain has not grown properly.

“When we surveyed paediatricians, only 18% knew the diagnostic features of even the severe end of the spectrum. So, doctors are not only failing to ask mothers if they are drinking, they can’t spot FAS when they see an affected child.”

The ramifications of failure to diagnose extend beyond outcomes for the child and parents. The potential tragedy is that the mother’s drinking habit will not be addressed and her subsequent children will be impaired.

“Our study showed that about 40% of children with FAS had an affected sibling. That says we had missed the opportunity of stopping this harm in a family.

FASD are particularly pernicious because a woman may be drinking heavily before she is even aware that she is pregnant. By the time she knows, damage may already be done. Drinking in the first three months of pregnancy can lead to birth defects and the distinctive facial features. Of course, drinking is harmful throughout pregnancy; and even in the second and third trimester, the brain is still rapidly growing and can be damaged. And it’s not just regular drinking which is the problem; even one binge at a critical time in the fetus’s growth could cause damage. Elliott would suggest that the safest bet is to avoid alcohol altogether during pregnancy and also if you are planning to get pregnant. We know a lot is bad, but we don’t know what the safe limit is.

Elliott says that women want to have the best possible outcome for their baby. They are cautious about what they eat, avoiding foods which they know to be a risk and trying to have a healthier than usual diet.

Women need to know they shouldn’t be drinking in pregnancy so they can avoid alcohol. And yet, as Elliott discovered, doctors are reluctant to talk to them about alcohol, which is far more harmful than smoking and other foodstuffs to the growing fetus. Having a doctor tell her she shouldn’t consume alcohol, might also provide the ‘authority’ a woman feels she needs to resist the social pressures to drink. “Our national survey of women shows they want to be given a clear message. Over 95% said they wanted their health professionals to advise them not to drink.”

In the US, up to 1% of children are thought to have one of the FASD and the figure could be the same for Australia. Although FASD occur throughout the population, a disturbing statistic is that 60% of children with FAS are Indigenous.

“Alcohol abuse in Indigenous communities is due to historical reasons. These people have been colonised, dispossessed of their land, undervalued for their language and culture, thrust together to live with different language groups, and suffer high unemployment and poor access to services.”

Elliott refers to her work with the Lililwan project* in the remote Fitzroy Valley Aboriginal communities in WA where 50% of women drank during pregnancy. Almost all (93%) of those who did drink, were doing so at risky levels. That might mean10 or more standard drinks every day.

“Unfortunately, education doesn’t necessarily change drinking behaviour. The best way is to restrict access, through taxation, minimum pricing of drinks and limited opening hours. Why do you need over 20 liquor outlets in somewhere like Alice Springs, some open all night, and alcohol freely available on supermarket shelves?”

Aboriginal communities are leading the way in the fight against alcohol. Having had to struggle with alcohol for 40 years, and all the attendant problems of domestic violence, car accidents and early death, the women in Fitzroy Valley have lobbied to stop the local availability of ‘take-away’ alcohol, except low strength beer. People can travel great distances to pubs to drink but they can’t purchase a cache of alcohol to take back to their communities.

Those measures led to an immediate reduction in alcohol consumption, and it gave women a breathing space to turn their attention to their kids. They wanted to know why their children were having learning problems. They invited University of Sydney academics and students to work collaboratively with them on a strategy they had developed to reduce drinking in pregnancy and to diagnose, treat and prevent FASD.

“The Fitzroy restrictions and the strategy to address FASD have been successful because they were prioritised and introduced by the Aboriginal community.”

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*Chief Investigators on the Lililwan project are Professor Elizabeth Elliott, Associate Professor Jane Latimer and Dr James Fitzpatrick from the George Institute, and Aboriginal leaders June Oscar (Marninwarntikura Women’s Resource Centre) and Maureen Carter (Nindilingarri Cultural Health Centre) from Fitzroy Crossing. Students working on the project include Barbara Lucas (PhD), Emily Fitzpatrick (MPH), Robyn Doney (PhD), Elizabeth Peadon (PhD) and Marmingee Hand (Masters).
DON’T JUST SIT THERE

If you are serious about losing weight, don’t take up a gym membership: stand up more often.

Adrian Bauman is Sesquicentenary Professor of Public Health, School of Public Health, Sydney Medical School
Sitting contributes more to weight gain than missed exercise classes, according to Adrian Bauman, Sesquicentenary Professor of Public Health.

“We often inappropriately think that a single session of exercise will help us fight obesity, but it’s what we do with the other 23 and a half hours in our day that also counts. The two sides of the equation are energy intake and energy expenditure. You won’t expend much energy in terms of weight control if you are in a seat most of the day, even if you did your recommended 30 minutes of physical activity.”

Bauman concedes that those more intense bursts of energy expenditure do have real health benefits, it’s just that ‘fat busting’ is not one of them. “Physical activity is important to ward off heart disease, diabetes and stroke. It reduces the risk of breast and colon cancer. It also reduces the risk of falls, which is important for older people, as is the reduction in risk of Alzheimer’s and some forms of dementia. Physical activity is also beneficial for mental health.

“We’ve known for 15 years that we need to be active at a level of ‘moderate intensity’ for about half an hour a day. Just under half the adult Australian population is managing that. On the other hand, not sitting is important for weight control and reducing the risk of diabetes. The risks of prolonged sitting and physical inactivity are partly independent, so you need to do both,” says Bauman.

For Bauman, sitting may be a potential cause of a new wave of chronic diseases across the world. But there are significant challenges in getting people to change long-standing behaviour. “As we develop knowledge, we realise that things might not be as we have always believed. Fifty years ago, we didn’t know about the harms of tobacco and high cholesterol. Now we realise that we need to have a prudent diet and not smoke if we want to have a healthy long life.”

Bauman points to the reduction in smoking rates as one of the great public health success stories. But then, it has been easier to draw the dots between smoking and lung cancer, and hence to make the case for quitting more compelling.

“The simple act of standing - not even walking - is beneficial.”

“We don’t make changes to single risk-factors in isolation, so it is difficult to say how much of an improved health effect is attributable to one change in lifestyle. For example, heart disease can be affected by a whole range of things, from diet and physical activity to smoking and controlling high blood pressure. The exception to that rule is lung cancer, where we know that 85-90% of the risk of the disease is from smoking. “The other problem is the long lag-time between developing chronic diseases and the risk factors that precede them. A person can be indulging in a bad diet for 30 years before we see signs of heart disease.”

Rather than sit around waiting to discover if Bauman’s predictions prove right some decades down the track, there’s a very easy way to hedge your bets without too much effort: get up on your feet. The simple act of standing - not even walking - is beneficial.

“When you are sitting or lying, all your muscles are at rest. When you are standing, your large thigh muscles are electrically activated, pushing blood sugar into muscle so that you have lower blood sugar than those sitting down. Prolonged high circulating blood sugar levels are one pathway for developing diabetes.

“In the past three decades, we have moved into occupations which are increasingly sedentary. We are sitting down all the time. There are fewer manual occupations than ever before. Security guards who used to walk around, now sit in front of monitoring screens; labourers who unloaded ships, now use cranes; and farmers are threshing wheat sitting on tractors. Jobs which involved expending energy are disappearing in all but the poorest countries where active occupations are still common. “Sitting is pervasive at work and at home, as well as in the cars we drive to and fro. In transitional countries, such as China, where people are working hard and for long hours, we see that a retired 65-year-old sits much less than an employed 55-year-old. The young adults in China and other rapidly developing countries, have changed their morning active commute by bicycle or walking, and now ride motorcycles or cars. This engineers activity out of their lives. “We need to build activity into our day by using the stairs, walking for short trips, or visiting the office next door to talk to a colleague, rather than emailing them. Students can stand around the sides of lecture theatres rather than sit, and we could conduct standing meetings - there’s no real need to be on a seat during these gatherings.”

As Bauman likes to point out: “There’s nothing biologically or environmentally adaptive about sitting.”

When obliged to sit, would it help to flex your muscles with a bit of fidgeting? He thinks it would be useful but might end up annoying others. For his own part, Bauman has a sit/stand desk, holds some standing meetings, stands during teleconferences, and dictates standing up. “I have done so for years,” he says.
For young people, there are three critical pathways to depression. Understanding them opens the door on early diagnosis and intervention.

Ian Hickie AM is Professor of Psychiatry, Sydney Medical School and Director of the Brain & Mind Research Institute.
Clinical Depression is a life-threatening illness. However, unlike other high-profile diseases, there is no co-ordinated national campaign aimed at early intervention or prevention.

Professor Ian Hickie, Director of the Brain & Mind Research Institute, likes to draw the analogy with the pathways to heart disease. We know that smoking, lack of exercise and high blood fats are risk factors for heart disease, so we attempt to modify those risks in the hope of preventing premature death or heart failure 30 years down the track. We don’t wait for a first heart attack to happen before providing effective interventions.

He believes that a similar tack needs to be taken with clinical depression. But to do so, it’s necessary to identify the earlier forms of depression that may lead to premature death or disability. Consequently, he has shifted his focus from looking at those middle-aged people with chronic illnesses who frequently present to specialist mood disorder clinics. That’s just too late for early intervention or prevention.

“Traditionally, we have used the experiences of 30- to 50-year-olds to characterise our diagnostic tools for depression. The area is dominated by this model and there is a great deal of frustration in the way these patients with chronic disorders often respond poorly to psychological or pharmacological therapies,” says Hickie.

People come to clinical depression in mid-life by many different roads. There are two major onset times for depression, adolescence and old age, and both have very different causes. The latter affects those over 70 years of age and is caused by changes in the brain due to small vessel vascular disease. Genetics and the environment are far less relevant to late-onset depression. By contrast, teenage depression typically begins after puberty and continues to become more common into the early 30s.

Hickie believes that the years between 11 and 15 are critical for first diagnosing depressive tendencies. That’s because the years after puberty see the transition from childhood anxiety and other developmental risks to more adult-like depressive disorders. The brain drives puberty and the hormones that are released feedback on the brain and behaviour. Other critical changes, like those related to the sleep-wake cycle, also happen during this period.

So what are the pathways to depression which are identifiable in childhood or adolescence and what are their complications? Hickie says there are three critical pathways:

**DEVELOPMENTAL PROBLEMS**

Children with learning difficulties and high impulsivity, such as boys with ADHD, or children who have experienced problems with brain development, are at increased risk of psychiatric disorders, including depression. They lose opportunities at school and in employment, and may even end up in juvenile justice institutions.

**CHILDHOOD ANXIETY**

This is the most common route to clinical depression. More than 50% of depressed teenagers have had childhood anxiety. As anxiety in children is a general phenomenon, that’s perhaps not surprising. The brain becomes over-sensitive to environmental threats and the child becomes fearful and unable to deal with their situation, leading to an anxious type of depression. In teenagers and adults, social anxiety becomes quickly associated with alcohol and substance abuse, particularly in boys. Added to depression, there is the increased risk of premature death from heart disease.

“More than 50% of depressed teenagers have had childhood anxiety...”

**CIRCADIAN-BASED DISORDERS**

There are strong links between circadian (i.e. the 24 hour sleep-wake cycle) disturbance and some of the characteristic symptoms of depression, including delayed sleep onset, oversleeping, overeating and daytime fatigue. The childhood precursors to depression based on circadian disorders may overlap with ADHD symptoms or other developmental problems. These children are often natural night-owls and have poor sleep patterns. They can be up all night on the internet and they get little physical activity.

The circadian-disorder pathway to adolescent depression is less well-known, but it is here that Hickie believes successful prevention and early intervention are most likely to be achieved.

“Restoration of normal sleep-wake cycles is increasingly thought to be a marker of effectiveness for antidepressant treatments. Failure to restore normal rhythms is highly predictive of ongoing symptoms or early relapse,” says Hickie.

Interestingly, drug treatments for major depression have often worked on increasing serotonin, having the effect of disrupting slow-wave and REM sleep which is at odds with normalising circadian rhythms. Instead, new behavioural or drug regimes focus on re-synchronising circadian rhythms. The natural sleep hormone melatonin is already widely used in the community and new antidepressants have been developed based on this principle.

Hickie describes the circadian-based systems in humans as an example of ‘unintelligent design’.

“‘There are different clocks in the body – they are all running to different times! We rely on the master clock in the brain to get us back into synchrony and feeling energetic and well. The timing of the master clock is set by light exposure and physical activity. If it is working well, it controls all the other clocks in the body so you can feel well and function properly. However, the clocks are clearly dysfunctional in people with major mood disorders.”

“We have a whole lot more objective tests, particularly for circadian rhythm, and Sydney University has real strength in these areas. The Woolcock Institute has led the nation in sleep and circadian research. Working with the George Institute, we’ve discovered that if your child sleeps short, they are more at risk of onset of depression as a teenager, so developing good sleep/wake patterns in childhood is important. When the circadian cycle is off, you are more likely to get fat and suffer from diabetes,” says Hickie.

Ironically, ensuring we get good sleep is all about what we do during the day. We have to maximise physical activity and sunlight exposure, and the best time to do that is in the morning. Melatonin is turned off in the morning and the critical timing of the circadian rhythm is then set for the day. So having children in classrooms all day working at computer screens is not helping the problem.

“The way the school day is structured is important. We should be running the academic component later in the day. The preoccupation of schools is with academic outcomes, but if you want brighter students, they need to be outside exercising. It’s a nonsense idea sitting in a library or classroom all day.”

While young children go to bed early and rise early, in normal development there is typically a shift so that teenagers start going to bed later and getting up later. In the US, some schools have adapted to take account of this, starting classes later and allowing students to get a good sleep. Not so in Australia, where the school timetable is more rigid and additional classes are often scheduled before the normal school day begins.

Hickie believes we can potentially prevent the onset of adolescent depression if we treat the causes in context, providing the right type of intervention at the right point in time.

“Twin studies have shown us that the risk of depression is 30-40% genetic, and 50-60% environmental. In other words, the environment is twice as important as genes in determining whether a child will become depressed. That means we have considerable opportunity to reduce the burden of depression through early intervention and prevention.”

This optimism is particularly important in light of the consistent and unexplained trend over the past 50 years of an increase in depression in younger people.

Hickie believes that changes in our social structures which have resulted in less supportive families and communities might be part of the problem. “We have to provide new ways to support our young people. We are not going back to the 1950s and relying simply on community, church and youth groups, or women staying at home.”

He thinks that technology might provide a solution through the internet. “We have to come up with smarter ways collectively to make sure that happens, especially for those at greatest risk.”
There is a great altruistic element to immunisation: we get immunised to protect not only ourselves, but others from disease. It’s what Professor Robert Booy refers to as ‘the chain of protection’.

Robert Booy is Professor Paediatrics and Child Health, The Children’s Hospital at Westmead and Head of the Clinical Research team at the National Centre for Immunisation Research and Surveillance.
“W

ith some diseases, we are only worried about 5-10% of the population succumbing to the illness. In other diseases, those at serious risk are less than 1%. But we rely on herd immunity to protect the group,” says Booy, Head of the Clinical Research team at the National Centre for Immunisation Research and Surveillance (NCIRS).

That’s why vaccines have to be offered universally. “The minute you fall below 90% coverage, you are heading towards a likely outbreak of the diseases in a few years’ time as susceptibility in the population builds up.”

While the history of vaccination has seen the elimination of a number of deadly diseases, almost every medical breakthrough has had its attendant scare. Most recently, the measles, mumps and rubella vaccine (MMR) became the subject of enormous controversy.

“We got into trouble because a zealot doctor inappropriately claimed MMR was causing autism. He has since been discredited and had his registration to practise taken away, but thousands of people still ask their GPs if MMR will cause autism.

“That doctor became an evangelist for his own idea. In medicine, you might have 10 ideas and then find that the evidence shows you need to reject nine of them, but he kept on pursuing his flawed notion.”

“We are still feeling the backlash, more so in the UK which is where he was based. Vaccine scares tend to be country-specific and the biggest impact is felt in the country of origin. In Australia, we lost maybe 3% MMR coverage across the population, but that has since been restored. In the UK and Ireland, they lost 15% coverage, resulting in several deaths and others ending up with permanent brain damage.

“There are still mad people like that doctor. Unfortunately, they get a big audience even though they are talking claptrap.”

Booy thinks that there is a psychological element to why vaccines attract such scare-mongering. “It’s because you are doing something directly to the person, rather than failing to provide a health treatment. Interventions are felt to be worse than omissions.

“Then there are those people who are suspicious of conventional western medicine who claim that diseases are good for toughening up your immune system - provided you survive, of course!”

Understandably, there is reason to be cautious about vaccines because a foreign material is being introduced into your body by a needle and it may give you a mild case of the disease. Very rarely, it can give you a severe case.

“There is a long history of vaccine scares. In the UK there were smallpox vaccine riots during the 1850s when the vaccine was made compulsory. Back then, the smallpox vaccine was much more rudimentary and much less safe, and in some examples, 3% of the vaccine recipients died. Still, the earlier versions were effective against a disease with about 30% mortality. The vaccine was refined to a point in the 20th century where we were able to eradicate a disease for the first time in history, and by that I mean that it’s been scraped from the surface of the earth.

“The safety of vaccines must remain paramount…”

“The next virus to be almost eliminated is polio, with only three countries to go. India is the latest country to declare itself polio free,” says Booy.

But as with smallpox, the journey to controlling polio also had its scares.

“In the 1950s, there was the Cutter incident in the US where 10 children died because the polio vaccine they received was inadequately inactivated and live virus was still in the vaccine. Two hundred children were paralysed and 4,000 got polio soon after the vaccine was introduced.

“You have to continually do a cost/benefit analysis with vaccines and, where it is shown that people have been harmed, they should be given appropriate compensation.”

With MMR, the real harm was caused by people being persuaded not to give the vaccine to their children, rather than as a result of adverse patient reactions or compromised vaccines. And yet, the good news is that measles have been eliminated from the Americas and congenital rubella has been eliminated from Australia and many other countries.

Australia had its own recent scare following the flu pandemic of 2009, when vaccination was recommended for all children aged over six months. In April 2010, nearly one in every 100 young children developed febrile convulsions after vaccination with the Australian-made fluvax product. The vaccination program in children was stopped for several months to investigate the problem. Eventually, overseas-made flu vaccines were deemed safe and vaccination recommenced in July. (The home-made product was recently found to have a different manufacturing process that failed to attenuate the reactogenicity of the flu viruses used in the vaccine.) “The safety of vaccines must remain paramount and the prompt action taken in this case was absolutely appropriate,” says Booy.

“I did my own doctorate on a major cause of severe bacterial meningitis called Haemophilus influenzae type b, or Hib. In the past 20 years we have seen the introduction of vaccines against Hib and the two other major causes of bacterial meningitis, pneumococcus and meningococcus. We’ve almost conquered the disease. Even with the Hib vaccine there were scares along the way. In Finland, there was concern that the Hib vaccine might cause kids to get diabetes. Finland has a very efficient public health system and, apart from the US, they were the first to introduce this vaccine. The scare proved unfounded and Finland has controlled Hib disease now for 25 years.

“There is increasing hope for an HIV vaccine and the Gates Foundation has provided a large tranche of funding. There is terrific new work going on in HIV,” says Booy.

But while people may think that such a vaccine need only be given to at risk individuals, such as injecting drug users and those with multiple sex partners, Booy points out that you never know who might find themselves falling prey to the disease through even one reckless, unplanned sexual liaison or IV drug use.

Should such a vaccine be developed, he reiterates the importance of making it available to all. Apart from maintaining herd immunity, “there are some people who don’t respond well to vaccines because they have suppressed immune systems. They can’t be treated individually but rely on ‘a circle of friends’ for their protection.”

*See chainofprotection.org
OLDER BUT WISER: THE SCIENCE OF HEALTHY AGEING

David Le Couteur is Professor Geriatric Medicine at the University of Sydney, and Director of the Centre for Education and Research on Ageing

Stephen Simpson is an Australian Research Council Laureate Fellow in the School of Biological Sciences and Director of the Charles Perkins Centre
There is a basic assumption about ageing that restricting calorie intake prolongs life. That’s the ‘big idea’ in gerontology and I suspect that it’s too simplistic and perhaps even wrong,” says Professor Stephen Simpson, Academic Director of the Charles Perkins Centre. Simpson, who spoke with Professor David Le Couteur, has been studying the nutritional influence on ageing since he met Le Couteur at a neighbour’s party in 2005 when first arriving in Sydney from Oxford as an ARC Federation Fellow.

“It was serendipity. David was organising an ANZAC colloquium on ageing and he needed a plenary speaker, so he asked me and I agreed,” says Simpson.

Claiming that he didn’t know anything about ageing at the time, Simpson wondered the next morning if he’d accepted the invitation a little too hastily.

“I decided to sit down and look at ageing using what I knew about nutrition. It seemed that the starting point in studies on the mechanisms of ageing was the idea that modest caloric restrictions are related to living longer in all organisms, spanning yeast to humans.

“I felt that there was insufficient data to ascribe this pattern to calories and I challenged the veracity of the dogma.”

Simpson became interested in undertaking a different sort of dietary experiment, one that looked not at total calorie intake but what comprised it: the macro-nutrient balance in the diet. First off, he studied flies, and then with David Le Couteur he did a massive mammalian-model study in mice.

What they have discovered is that a high ratio of protein to carbohydrates is a bad thing for longevity. And that may come as a surprise to people who have adopted a protein-rich diet in their early adult years, and continue with it as they age in the belief that it will help them live longer.

“A higher protein diet is good for reproduction and muscle growth, so it is quite successful if you are pregnant or a body builder, but if flies and mice are anything to go by, it does come with a downside and that is the cost to longevity.”

He believes that there is an optimal diet for the different stages of the life cycle. A diet rich in protein may be necessary for growth and reproduction, but perhaps we should not prolong that dietary regime into old age, unless we are making strenuous efforts to maintain muscle mass. The good news is that a person can enhance their developmental and reproductive life by appropriate eating, without significantly compromising their chances of a long life.

“The evidence in insects is that current diet has a prospective effect, but once that diet is stopped it has very little effect. So, what you are eating now has the greatest impact, not what you ate in the past – again, if we are like flies.

“In the Concord Health and Ageing in Men Project (CHAMP), we are working with Professor Bob Cumming to look at diet related to health prospects and addressing this issue in the elderly. What we do know is that the metabolic signals on the pathways to ageing are driven by a high protein to carbohydrate diet.”

It would seem an easy enough equation: lots of protein when you are young; less protein when you are older. However, reproduction and growth are not the only times when it’s valuable for us to increase our protein intake. If we are struggling with excess kilos, a higher protein diet will support weight loss and aid in weight loss maintenance. And it can be when we are older and less mobile that we find ourselves carrying too much weight.

“Protein is good if we need to lose weight, but again, those benefits will come at a cost to longevity. It will depend on how severely the weight is compromising the person’s health to see which dietary course should be pursued.

“The typical human diet consists of about 15-20% protein, and that’s about right for managing the requirements for being healthy and living a healthy lifespan. After that, I think it matters less where the rest of our calories come from, provided that we get an appropriate balance of essential lipids and amino acids in protein. People who demonise one or other source, such as sugars or fats, are missing an important point. It’s about getting the balance of calories right, rather than focusing on any one source,” says Simpson.

Professor David Le Couteur’s pragmatic advice to people who want to live long and healthy lives is very simple: don’t smoke, exercise regularly and see your GP for routine checkups and standard preventative medicine.

Equally simple is the answer to what doesn’t work and, unfortunately, “that’s what everyone seems to be trying in an attempt to stay young,” says Le Couteur, Professor of Geriatric Medicine at the Centre for Education and Research on Ageing (CERA), Concord Clinical School.

He’s referring to anti-oxidants, hormone therapies and whatever is the latest fad in a long history of humans trying to fight off ageing with a ‘magic bullet’. Apart from the fact that most of these therapies just don’t work, Le Couteur cautions that many may cause harm and even increase the risk of death: bizarre when you consider that their promoted purpose is actually to extend life.

“I’m interested in research which investigates whether by delaying ageing we might delay all age-related disease. What we have at the moment are researchers focussing on individual diseases and we are ending up with multiple treatments for multiple ailments in older people.

“The next phase in medical research has to be about dealing with the underlying cause of age-related diseases so that we can prevent or delay many age-related diseases with one intervention.

“A few hundred years ago, three quarters of the population died under the age of five. The reason they died was infection and malnutrition, but the underlying cause was unclean water and inadequate food production. Now, three quarters of people who die are over the age of 75 years. So we should be focussing on the ageing process because it is the underlying cause for most disease and death in the modern world,” says Le Couteur.

Much of what we know about extending lifespan is still restricted to the laboratory and to experimental animals. There are three main interventions to delay ageing that have been demonstrated in the lab.

“We can manipulate genes, in particular those which modulate the responses to changes in nutrition and the genes which look after and repair our DNA. We can also manipulate the diets of animals by restricting food intake or altering the balance of macronutrients. And recently it has been shown that we can intervene with chemicals and medications to delay ageing.

“There are two medications which delay ageing in the lab by acting on the cellular pathways that respond to changes in nutritional intake. This influences ageing without actually changing the nutritional intake. These drugs are resveratrol and rapamycin,” says Le Couteur. The first is a readily available dietary supplement which has now been shown to have benefits for blood pressure and cholesterol in humans. The second is a potent immunosuppressant, used by transplant and cancer patients, and is expensive and harmful to otherwise healthy people. Le Couteur is not suggesting anyone run out and purchase either with a view to improving their longevity.

“It’s important to emphasise that none of the compounds currently under investigation has been shown to effectively delay ageing or age-related diseases in humans.”

So back to the earlier injunction from Le Couteur to quit smoking and exercise: the research here really does prove his point.

“Stopping smoking at the age of 30 has a significant effect on life expectancy, increasing it by 10 years, and there is a significant benefit in quitting even in later years. Exercise also has beneficial effects, with studies suggesting that regular exercise can result in a four-year increase in life expectancy as well as delaying age-related conditions such as dementia.”

Moderate wine consumption in men has also been shown to increase life expectancy by about five years, but this means drinking less than half a glass a day, and the main benefit is probably derived from the polyphenols, including resveratrol, rather than the alcohol.

“It’s ironic that people are sitting immobile at their computers and smoking, on one hand, yet on the other hand they are trawling the internet to find drugs to prevent ageing when we know that these don’t work and can be harmful.”
21ST C MEDICINE
CURING CANCER
ARE WE THERE YET?

Why is curing cancer such a difficult problem?
Why is it taking so long and requiring so many resources?

Roger Reddell is the Sir Lorimer Dodds Professor in Medicine, and Director of the Children’s Medical Research Institute.
According to Professor Roger Reddel, Director of Children’s Medical Research Institute and a cancer researcher, “It’s fundamentally because cancers arise from our own cells. That’s why it’s harder, for example, than killing bacteria which we’ve done successfully for many decades now. We can kill cancers in laboratory cell culture dishes, but killing them in a patient and leaving the normal cells alone is much more difficult.”

Still, he thinks we shouldn’t be too gloomy because significant progress has been made. “We tend to forget that surgery can often cure cancer. If a tumour can be removed in toto before it has spread to other sites in the body, surgery can be curative.

“For the many cancers which can be cured with the surgeon’s knife, early detection is important. Here, it is not so much our increased understanding of tumour biology that has led to successful outcomes for patients, but advances in imaging technology. Using fibre optics, a gastro-enterologist can examine the entire colon with a ‘scope and remove malignant and premalignant growths. This is one example of a whole area of improvement in cancer treatment and prevention.

“We’ve also had a few spectacular successes with less common cancers, such as testicular cancer, which can be cured with chemotherapy, even where it is already widespread in the body at the time of diagnosis. Childhood leukaemia used to be lethal, but we now have a cure rate of 85%. This can come at considerable cost to the patient: side-effects are not trivial and may last a lifetime, but the huge improvement in outcome so far gives real grounds for hope.

“Progress is steady but less impressive perhaps for many of the more common cancers. For example, breast cancer has seen steady improvements in cure rates through a combination of early detection, better treatments and better targeting of treatments, but widely disseminated breast cancer is still rarely curable.”

Reddel says that when people ask if we are making progress with curing cancer, they are mostly thinking of the cancers which have spread – the ones we are not yet very good at treating. Our understanding of cancer biology has increased enormously, but we still need to find the most effective molecular targets for new treatments. He cites two examples where some of these molecular targets have been discovered.

“In chronic myeloid leukaemia, a specific genetic change was identified through research carried out over many decades. Fifty years ago, a characteristic chromosomal abnormality was found in most of these leukaemias, but at that time it was essentially only a curiosity. Over the subsequent decades, there was a succession of groundbreaking discoveries that led to an understanding of the molecular consequences of this chromosomal change, and eventually drugs were developed that reverse these consequences. Now we have a tailored and very effective treatment for chronic myeloid leukaemia, although it is often not curative.

“Of the malignant melanomas, about half exhibit a particular molecular change for which there are now specifically tailored treatments. Sometimes these cause the melanoma to melt away quite spectacularly, but unfortunately this effect is usually not permanent and the cancer often returns because it finds a way to counteract the treatment. But the fact that we have had this important success gives us hope that more durable treatments will be developed.”

At the other end of the cancer-research spectrum to developing ‘bespoke’ treatments for specific cancers, lies the area Reddel is most interested in pursuing in his own research. He is looking at some of the changes which are common to all cancers, with the aim of developing a treatment which could target all of them: it would be the cancer equivalent of a broad spectrum antibiotic.

He suspects that a combination of both the tailored and the broad spectrum treatments may be required for successful cures. Those cancers which can already be successfully treated once they have spread, like testicular cancer and childhood leukaemia, rely on a combination of drugs.

How far are we away from a broad spectrum cancer treatment? “It depends on how lucky we are,” says Reddel.

“First, we have to find something that works in the test tube. Then we have to do pre-clinical testing before moving on to patients. The process of producing a treatment that is safe to use in patients takes a long time. There are lots of regulatory hurdles to jump, and rightly so. But if we are really lucky, there will be an existing drug which has already been tested for safety in humans for some other purpose and turns out to be a successful cancer treatment. On the other hand, if we have to develop the drugs from scratch, it could take several decades.

“A lot of great work is being done across the board. There is a huge amount of resources being thrown into cancer, and researchers are working on many aspects of cancer at once. You need a very wide funnel of high quality basic research in order to ensure that we will finally have the successful outcomes we want for all cancer patients.

“When we eventually have the answers, we’ll look back and be wise after the event. There have been lots of surprises along the way to finding cancer cures already, and lots of areas of biology that we didn’t even know existed. And I’m sure there will be many more big surprises to come.”

“We shouldn’t underestimate the number of lives these measures are saving.”

Reddel says that when people ask if we are making progress with curing cancer, they are mostly thinking of the cancers which have spread – the ones we are not yet very good at treating. Our understanding of cancer biology has increased enormously, but we still need to find the most effective molecular targets for new treatments. He cites two examples where some of these molecular targets have been discovered.

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“The discovery that tobacco was a major cause of human cancer was a huge advance and one of the most important insights in cancer research in the 20th century. This is being addressed through government policy and work in the public health sphere to encourage people to quit smoking, including initiatives like making cigarettes more expensive, educating people about the dangers, and making it socially unacceptable to smoke. We shouldn’t underestimate the number of lives these measures are saving.”

Around the world, 20% of cancers are caused by viruses. The most common of these globally is liver cancer, although this is not very common in Australia. Chronic hepatitis virus infection is the main cause and vaccination against Hepatitis B, for example, will save a lot of lives that would otherwise be lost to liver cancer. Similarly, the recent development of vaccines for the papillomaviruses that cause cervical cancer, and in which Australia has played a major role, has been very exciting.
Advocacy is an everyday experience in the life of many doctors. Those who express concern about the cancellation of elective surgery, or about smoking in cars, or about the need for IV drug harm minimisation among incarcerated men and women; they are all engaged in advocacy. Most of us operate at this, what we might call, micro level and there are many voluntary organisations that benefit immensely from medical input in their advocacy for social justice – among refugees, Indigenous groups, the homeless, those caught in starvation and chaos in war zones in Africa. But we can draw inspiration for our efforts also from the heroic few who fly high and engage in advocacy that tilts the world a little toward a healthier axis.

When the delegates assembled for the High-Level meeting of the United Nations in September last year to consider what to do about the rising tide of non-communicable disease (NCD) in the world, Sir George Alleyne from Barbados must have felt great satisfaction. Alleyne is a physician who graduated with the gold medal from the University of the West Indies in 1957. After study in the UK and the US, he became professor of medicine and then chancellor of the University of West Indies since 2003. After eight years as director of the Pan American Health Organisation of the WHO he became its director emeritus. He was special envoy for HIV/AIDS in the Caribbean. In the past decade he has taken up the cause of NCDs that he sees as an unhappy consequence of ‘global urbanisation’.

I have met George Alleyne several times and have found him always to be a delightful, warm, relaxed, highly intelligent and personable man with considerable diplomatic skill and a self-deprecating sense of humour. He has a touch of Desmond Tutu about him. He visited the University of Sydney in September 2011 to speak about non-communicable diseases as a worthy topic to add to the development agenda*. The USyd web site records that “Sir George proposed that public health must figure in any consideration of sustainable development and that … NCDs pose a major threat to health and therefore sustainable development. There has to be a road connecting the September 2011 United Nations High Level Meeting in New York, that will chart the action plan for the global strategy for the prevention and control of NCDs, [to] the UN Conference on Sustainable Development planned for Rio+20 in 2012.”

Rio+20 has been and gone and sustainable health was a major theme and a successful outcome. This is high-level advocacy for you.

In so far as any individual can be singled out, many people concerned with NCDs credit Alleyne with a lot of the success in getting them onto the UN agenda and for the subsequent similar success at Rio+20. He exemplifies the best in what a doctor who has the necessary talent and vision can achieve through advocacy.

If you are to advocate for another, then three prerequisites must be considered. First, you need to hear what the person to whose voice you are adding has to say. The communication may be non-verbal as when illness or the disempowerment of tyranny or poverty has rendered the other silent, and exceptional discernment is required to be sure that their ‘voice’ is not simply a delusional projection of your own ideas about what is needed. Advocacy can run aground when it slips into paternalism. The best advocacy starts from a position of informed humility. This goes beyond simply being sure that you are accurately relaying and amplifying the voice of the one on whose behalf you are advocating to include openness to...
Advocacy, wisely and selflessly applied, can be one of the glories of high-quality professional behaviour as a doctor.

Second, you need to reflect on the power that you bring to the advocacy, where it comes from (your white coat?), and ensure that its use is ethically congruent with the rules of professionalism. Contamination of the message with hubris distorts it dreadfully. I met recently a man who claimed that when he advocated with politicians to support his proposal on behalf of colleagues in the IT arena, he always seriously overpromised. Maybe this partly explains why we are in such a mess in relation to the electronic medical record in Australia.

I work in the world of health policy which is riddled with political flux and storm. Evidence used in making policy comes from multiple sources. In the case of health, metrics derived from clinical and public health science are important, but cannot be assumed to trump evidence derived from experience and from politics. A policy proposal that sinks the minister politically will not succeed, no matter how strong the underlying bioscience. It is in relation to the metrics of medicine and public health that most of us have the professional knowledge and authority to advocate. There are ways of advancing those metrics that have a higher chance of success than others. These ways can be learned and indeed, in public health, my colleague Simon Chapman has pioneered an academic understanding of advocacy. He offers courses that may interest you. But whatever adulation we wish to afford to evidence-based everything, our evidence is only one sort of evidence – so take it easy.

Medical opinion may feature in advocacy, although often enough the voicing of an opinion is more a contribution to democratic chatter (essential vitamin for the health of democracy, as John Ralston Saul has argued cogently), than it is to winning a policy debate immediately or influencing a course of action.

What I have said may sound genteel and remote. Battle-scarred advocates may well argue that advocacy is more akin to being in a rugby scrum than having a chat over dinner. And indeed there are examples of physicians who have gone to war (or vociferously abstained from war) where the line between professional competence and the social concern about which they are advocating has been well and truly crossed.

I first met the eminent Boston cardiologist, Bernard Lown, in the mid 1960s when he came to Royal North Shore Hospital describing his coronary care unit that was to become normative for the care of heart attack patients. He had invented the defibrillator. I encountered him again in 2004 at a conference at Yale University where he was waxing strong on behalf of the practice of humane, universally-available health care – not bad for 83!

Besides being an advocate for coronary care, Lithuanian-born Lown helped found Physicians for Social Responsibility and the International Physicians for the Prevention of Nuclear War in the 1960s, in which Australian physician Ian Maddocks was chairman. “Medicine is the art of engagement with the human condition,” he wrote, “rather than with the disease.” Maddocks would agree with that, I think: his advocacy extended to the development of palliative care services of a high order in South Australia.

Tastes vary: colleagues of mine loathe the concept of advocacy with a vengeance. They see it as unethical. “Our job is to publish the science and make it available to those who wish to use it.” For decades, Sir Richard Doll took that view, leaving the tobacco wars to others. Amartya Sen, the economics Nobel Laureate of such felicitous and compelling writing about development, the relief of poverty and the value of development, seeks not to get embroiled in advocacy much beyond writing and talking. It takes all sorts.

A recent essay on public health in the BMJ (2012;345:e5466) calls for advocacy built on a sensitive appreciation of ecology and its critical importance for human health. Public health success is as much about imagination as evidence:

Public health must regain the capacity and will to address complexity and dare to confront power. This demands a new mix of intervent[ions and actions [including advocacy] to alter and ameliorate the determinants of health; the better framing of public and private choices to achieve sustainable planetary, economic, societal, and human health; and the active participation of movements to that end … to enable good health to flourish.

Advocacy, wisely and selflessly applied, can be one of the glories of high-quality professional behaviour as a doctor. Even at the micro level, ensuring that hospital wards are clean or that patients are kept safe from hospital infections, there is much that any one of us can do as an advocate. A little piece of advocacy from me: Every hospital patient – private or public – needs an advocate who will keep an eye on things 24/7 on their behalf and speak up when needs arise. Do you agree? More bedside chairs, please! radius


alternatives that might work as well, or better, than what you are proposing.
Go you good things!

Somewhere in their hectic study schedules, our students manage to find time for others; whether it’s baking cakes to raise funds for a medical library in Nepal, volunteering their time to visit refugees in detention centres, or organising a network of mentors for budding doctors. Here are some of their activities.

MEDIC TO MEDIC

In August, Philomena McNamara and I organised a mock Objective Structured Clinical Examination (OSCE) for Stage 2 students. Students were required to take a six-minute focused medical history or do a targeted examination on a particular organ system, and then a marker gave them feedback on their performance.

The purpose of the OSCE was to raise money for Medic to Medic (http://www.medictomedic.org.uk) which sponsors medical students and junior medical officers (JMOs) in Malawi, the country with the lowest number of doctors per capita. Medic to Medic is currently a UK-based organisation and so we are establishing the first Australian-based branch. Appropriately, it was JMOs and medical students who volunteered as patients and markers, whilst students from Stage 2 participated in this fantastic opportunity to get feedback on their OSCE technique.

Medic to Medic is looking to put together an elective placement for 3rd/4th year students to be able to visit and study with the students that we are supporting, perhaps with supervision from graduates from Medic to Medic’s sponsorship. We hope that this will provide an opportunity for further fundraising and be an exciting cultural experience.

Amelia Street

MENTORING DATABASE

UMS is excited to announce the development of a career networking and mentoring database. It is our hope that this database will help students engage with alumni in the community who are eager to mentor Australia’s next generation of health care professionals. Alumni will be able to opt-in to participating, their contact information will be blinded, and they will have the opportunity to upload a resume. The database will be modeled after Harvard’s Crimson Compass but will also have a bulletin board where alumni can post opportunities for students. Community engagement is an important and edifying part of the medical student experience and we hope that this database will promote student involvement and provide avenues for students to be inspired by our highly accomplished alumni.

Katherine Jeffress
**INDIGENOUS HEALTH**

Sydney University Medical Society (SUMS) is proud to host many Indigenous Health events throughout the year for medical students. In March, we hosted our Close the Gap BBQ where students learnt more about the campaign and networked with people passionate about making change. During National Reconciliation Week, we screened the documentary ‘Our Generation’ and heard from Dr Jeff McMullen AM, Associate Producer of the documentary, who is dedicated to improving the health, education and human rights of Indigenous Australians. He was able to shed light on how we can contribute to achieving this as future health professionals. Our annual ‘Message Sticks’ in May allowed students to share their experiences from recent placements in Indigenous communities, informing other students about the opportunities to get on board and organise similar placements.

SUMS was also pleased to be involved with the organisation of MIRAGE Rural Health Club’s first Cultural Awareness Day, facilitated by two Aboriginal elders and a remote area nurse. They shared their knowledge and experiences working with Aboriginal people and provided a valuable insight into Aboriginal culture and practical advice for working with Indigenous patients. Some said it was one of the best experiences in Indigenous health they had had whilst studying. We hope to continue the event for years to come!

The keynote speaker at our annual Indigenous Health Forum, held in August, was Dr Tom Calma, the National Coordinator of Tackling Indigenous Smoking and former ATSI Social Justice Commissioner and founder of Close the Gap steering committee. He spoke about the progress of Close the Gap since its inception in 2007. Other inspiring speakers included Associate Professor Kelvin Kong, Australia’s first and only Aboriginal surgeon; Dr Paul Torzillo, medical director of Nganampa Health Council; Noel Butler, Indigenous Elder and traditional custodian of the Budawang people of the Yuin Country; Dr Sandra Meihubers, dental consultant with many years’ experience in Aboriginal communities; and Justin Cain-Bloxsome, the National Rural Health Students’ Network’s own Indigenous rep and Indigenous Allied Health Australia student member. Sally Plunkett

**GLOBAL HEALTH OPPORTUNITIES & MEDICAL EQUALITY CLUB (GLOBALHOME)**

GlobalHOME organises and sponsors a variety of activities that help to engage with organisations dealing with global health issues in Australia and throughout the world. In August, we held our third annual globalHOME charity auction, raising $3,000 for the Zonta Foundation which seeks to decrease maternal mortality worldwide. The funds from the auction go towards the cost of birthing kits. Students were given the opportunity to bid on a variety of activities including anatomy tutorials from university professors and scrubbing into surgery with prominent local surgeons.

Crossing Borders for Health-Sydney is a new initiative that students from globalHOME are organising with other universities in the Sydney area to address issues around refugee health. Students are currently attending Villawood Detention Centre, organising educational sessions on refugee health and are looking to further their involvement in clinical care.

Earlier in the year, globalHOME held their annual Red Party which raised over $2500 for FACE AIDS, which is a student-run section of Partners in Health. Kelly Thompson

**MEDICINE REVUE**

Every year, stage 1 medical students are given the opportunity to showcase their artistic abilities through participation in the Medicine Revue. The main focus of the revue is not putting on a show, or even letting Med 1 students shine; the focus is on charity.

The Medicine Revue is unique of all the Sydney University revues in that it donates all of its profits to charity. Every year, the first years nominate a charity or two to support. Medical revue cast and crew members then spend months preparing a show that they are not only proud of and have enjoyed creating, but also with the hopes of generating the most revenue they can for their charities. Aside from the money raised in ticket sales, cast and crew also hold bake sales and approach corporate sponsors to provide support, financial or otherwise. They also sell show merchandise, and encourage their peers and tutors to dig deep and donate spare change to the revue and thus the chosen charities.

In 2011, the Medicine Revue, Beauty and the Deceased, raised $65,000 for Cure Cancer Australia and Milkcrate Theatre. The 2012 Medicine Revue, Placebo Royale, aims to match this in support of Medecins sans Frontieres and Milkcrate Theatre. Rebecca Stockbridge
His heart’s in the right place

When Richard Longes landed in Royal North Shore Hospital after a car accident in 2007, the chances he would survive his injuries were not good.

By Aviva Lowy
Richard had a torn pulmonary artery which is easily fatal. “It’s low on the documented injuries fixed in hospital after someone has sustained chest trauma, which means that it occurs infrequently or those with the injury die almost instantly,” says Dr John Brereton, the cardio-thoracic surgeon who worked on Longes when he was airlifted to RNSH.

“It was similar to the injury that killed Lady Di. Fortunately, we had a little more time to act,” says Brereton.

“John and his team managed to repair my artery against all odds,” says a grateful Longes who, once recovered, says, “My family wanted to give something back to the cardio-thoracic department at RNSH in recognition of what they had done for us by saving my life. Although,” he jokes, “the kids sometimes wonder if that was a good thing.”

The result was the establishment of the Cardio Thoracic Fund, which provides grants for research undertaken at the hospital. Successful grant recipients have just been announced for the third year since the fund’s inception; one of those is Associate Professor Gordon Doig, Head of the Northern Clinical School’s Intensive Care Research Unit.

“Immediately after heart surgery, 20% of patients experience kidney problems,” says Doig. “Some patients will end up requiring life-long dialysis. If we can spare the kidneys from toxic insult during surgery, we may be able to provide a better result for the patient.

“We will use the funding to look at very new and novel markers for kidney function in urine assays not normally done in hospital. This will be an add-on to an existing North Shore Heart Foundation funded clinical trial.

“How lucky we are to be in a country with medical services at the very top of the scale.”

“In our biochemistry labs we conduct kidney function tests which are widely accepted and have been used for a long time. They cost a few cents per patient to run. This grant will allow us to run a new test which is very sensitive to small changes that would not normally be picked up,” says Doig.

This new test costs $47 per sample to cover the stand-alone kit and the staff time to administer it, so would not have happened without the Cardio Thoracic Fund. And that’s what Brereton likes about the fund.

“If we had been given $5m, we probably would have bought a major robotic surgical device. There’s always the temptation to spend money on one big thing which will change surgical practice. So often we look back down the track and it was the wrong thing to do. We wanted to come up with a much more precise thing we could do with this money to help cardio-thoracic surgery at the hospital,” says Brereton.

While RNSH Department of Cardiac Surgery has an excellent reputation for teaching local and international students from Japan, India, Jordan and the UK, it has not published much in the research literature.

“We have definite ideas on how surgery should proceed but we didn’t have a basis on which to promote this. We have older surgeons who can say what we should be looking at and younger surgeons who know how this might be done.

“While our researchers’ time is freely available, the fund covers equipment and other associated research costs,” says Brereton. He also likes the fact that grants establish a deadline; there’s an impetus to meet schedules to justify the funding so you don’t keep putting the research off.

“Until the fund was set up, I didn’t know of Gordon’s existence even though he was only metres away from me in the hospital. It turns out he’s the most valuable person in terms of his insight into problems, his political awareness, and his track record in critical care.”

Gordon Doig has also received two grants from the fund in previous years which enabled him to undertake a world-class literature search on the very important topic of whether you should manipulate the aorta at the time of bypass surgery. Brereton has spared touching the aorta and was fairly certain that this reduced the risk of stroke during surgery.

“What we have shown with our study is that minimally-invasive techniques, which are not-standard procedure, can reduce stroke rates resulting from cardiac bypass surgery from 1.4% to 0.5%. We looked at everything published on this topic which included eight major studies involving 11,398 cases. It was a definitive study, published in the Journal of Thoracic and Cardiac Vascular Surgery in 2011,” says Doig.

For Doig, the funding also allowed him to take a PhD student through the process of doing a comprehensive literature search and for the student to attend a UK research institution as a Visiting Research Fellow. “These are opportunities we usually wouldn’t have. This is an educational experience for students to see how other leading centres around the world work.”

Richard Longes believes the nexus between hospital and education is essential to the success of the fund’s grants. “RNSH’s association with the University of Sydney has very important benefits. The university is able to undertake research ‘on the job’ and the hospital has the benefit of having the research published. Sydney Medical School knows where we’ll get the best bang for our buck. I’ve been impressed by how a focused but modest amount of money can have an impact in a teaching hospital. This is a chance to significantly extend research that would otherwise be limited by lack of funds,” says Longes.

He knows that he’s a lucky man: lucky to have survived the car accident and lucky to be in a position to give something back. But then, he thinks we are all fortunate.

“How lucky we are to be in a country with medical services at the very top of the scale. The expert medical attention and care I received is available to everyone else.” radius
The 2014 centenary of the outbreak of World War I is fast approaching and Sydney Medical School would like to mark the occasion by commemorating the activities of alumni, staff and students – both those who served overseas and those who occupied critical roles at home.

The centenary presents a great opportunity to build on the School’s knowledge of its alumni during the war, and to commemorate their often heroic contributions to saving lives.

In an earlier edition of Radius, Professor Elizabeth Elliott wrote of her grandfather, Clive Wentworth Thompson BSc (1911) and MB ChB (Honours 1913), who was one of Australia’s most highly awarded doctors in WWI. He received the Military Cross for “conspicuous bravery” at Gallipoli, and The Distinguished Service Order and The Medaille de la Reconnaissance Francaise after serving in France where he participated in battles at Ypres, the Somme and the attack on the Hindenburg line.

In the Online Museum are profiles of Sir Norman McAlister Gregg and Archibald Lang McLean, who both served in France and who were both awarded the Military Cross for gallantry. Sir Norman Gregg is better remembered for his post-war discovery that children exposed to rubella virus in utero during the first trimester of pregnancy are at risk for not just cataract, but also deafness and other severe problems. Archibald Lang McLean was Chief Medical Officer under Douglas Mawson for the first Australian Expedition to Antarctica in 1910.

The Online Museum also contains a biography of Elsie Dalyell (MB ChM 1910), a distinguished microbiologist who joined the Scottish Women’s Hospitals for Foreign Service unit in Royaumont, France in 1916 after she was refused entry to the Army when she offered her services as a medic (it was against Army rules at the time to have women doctors). There she led a team of doctors and nurses who treated the wounded from the battlefields.

While the stories of some are well covered, there is still much more to be done. Very little has been documented of the role of those who remained at home and played important roles.

Professor James Wilson, first Challis Professor of Anatomy (1890-1920) and appointed dean of the Faculty of Medicine in 1920, was actively engaged in military affairs and became the Chief Censor during WWI.

So the aim is to expand Sydney Medical School’s database of information, and to plan a program for 2014-2018 which would recognise the role of Sydney’s doctors in the conflict.

If you are interested in contributing to the WWI commemoration in any way - with ideas, writing biographies, contributing photos, letters home, information from diaries kept during the war period - please contact the Medical Alumni Association.

To get the ball rolling, those interested may also like to attend the History of Medicine club meeting on Tuesday 6 December, meeting at 5.30pm in the Burkitt Ford Lounge, Edward Ford Building. Information is also on the web link below.

http://sydney.edu.au/medicine/alumni/
president’s report

This year has seen the launch of the "First Tuesday – History of Medicine Club" – an initiative of the Medical Alumni Association. As the name suggests, the group meets on a regular basis at the Medical School on the first Tuesday evening each month to discuss a topic of broad interest. The club is not exclusive to medical alumni which ensures that we have a broad multi-disciplinary input into the discussions.

In setting up the club we were aware that there are many of the alumni, and other health professionals, who develop an interest and a passion for the history of medicine but often labor away on their own, becoming experts in a field and acquiring an in-depth knowledge of a person or event. The club aims to draw together these people for mutual benefit. It may be that someone might want to start a project but has no idea of how to proceed; the club may provide that initial assistance. Whatever your interest in history of medicine, or whatever your level of expertise, this might be the forum to assist.

Sadly, history of medicine is one of those pursuits that seem to be the domain of those who have themselves seen a lot of history! I would suggest that the study of history has something to offer all, the young and the more mature clinicians. We would certainly welcome students and new graduates as well as the more experienced to join in the discussions and so bring a broad range of knowledge and ideas to the forum. This is a very enjoyable way to get to know more about our medical heritage.

At one of our recent meetings we tackled the interesting topic of the Scottish influence on the Sydney Medical School. Many of our alumni are possibly unaware that Scottish trained physicians, particularly from Edinburgh, dominated the early years of the Faculty. The first dean of the Faculty, Professor Anderson Stuart, graduated from Edinburgh University in 1880 and, just two years post graduation, made the journey to Sydney to head up the Medical School in this far flung colony. Within a few years he was joined by two of his own Edinburgh classmates. By 1900, there had been 26 appointments to the Medical School, 15 of whom had graduated from Scottish universities - 12 of those from Edinburgh. When Professor Lambie [another Edinburgh graduate] retired in 1956, it is said that the Scottish influence finally waned.

If you would like to join us, know more about the club or just receive the documentation of the proceedings of each meeting, please contact me at cestorey@bigpond.com.
WE ARE THE CHAMPIONS

The last few months have been some of the busiest and, without a doubt, the most rewarding of the time I have been involved with SUMS. Since May we have had our MedBall, once again an amazing event with several hundred students wineing and dining to the theme of ‘Carnivale’ at Circular Quay.

May also featured our annual MedRetreat where the 50+ SUMS council members head away for a weekend full of all things fun and productive. This year’s retreat was held at Eureka Homestead in Megalong Valley and was a great time of getting to know new SUMS members and going through a lot of the to-do items that pile up.

One of the most significant things achieved over this weekend and May/June was the formulation of our Australian Medical Council (AMC) questionnaire and collation of student responses. My thanks to Joel Bedford, Welan Dionela, Professor Frommer and everyone else who wrote questions for this document and then collated all the answers. While we are unsure of exactly what the AMC want with much of the information, SUMS found it a useful task which should be completed on a two-yearly basis to provide relevant data and feedback for faculty. Overall, the questionnaire revealed a huge amount of satisfaction with all the hard-work done by staff at the Sydney Medical Program, especially with the amount of feedback actively sought and acted upon. I have seen great changes during my four years.

June and July saw 32 full and 20 part registration delegates fly to Perth for the Australian Medical Students Association (AMSA) Convention: a week of world class academics, competition, learning and, of course, costume parties. This year it gives me great pride to declare the Sydney Medical School THE CHAMPIONS! Over the past four years, USyd has been a massive presence at Convention and this year, with one of the smallest delegations, we dominated everything, taking our usual war-cry of ‘we are good at something’ to ‘we are good at everything’. We were victorious in many of the competitions throughout the week such as planking, the Great Debate, dodge ball and many of the costume events along with great representation in many of the other competitions like the Emergency Medical Challenge.

Another great achievement is that NSW has won the role of running AMSA for 2013. This is a huge task which the new executive – seven of the 15 members are from USyd – will have well covered. The new AMSA president and the two vice-presidents are from USyd, positioning USyd to have a very active voice nationally over the next year, advocating for increased intern training places and increased specialist training positions.

Continuing the winning streak, USyd also won the NSW Medical Students Sports Day Competition, placing first in planking, tug-of-war, netball and boat racing, and coming runner-up in soccer.

Finally, the SUMS elections will be held in October so this could be my last post as el Presidenté. It has been a pleasure and I hope everyone has an excellent few months ahead.
For Sharon and fellow student Mark Kizito, the trip to Australia was also the first time the pair had travelled beyond East Africa – a journey made possible by scholarships from the Sydney Medical School.

“Our students are already doing elective terms at Makerere University in Kampala, Uganda’s top university,” says Professor Bob Cumming from the School of Public Health. “So last year we met with Makerere medical school’s Deputy Principal (International) to see if we could arrange an exchange for their elective students to come over here. Of course, our students pay for their own travel, which is a few thousand dollars, and that’s far too much money for a Ugandan student.”

The financial hurdle was overcome when Professor Bruce Robinson, Dean of the School, agreed to establish two annual scholarships for the purpose. This year, 10 of Makerere’s brightest medical students were able to travel abroad: four to Yale, two to the Karolinska Institute in Stockholm, two to the University of Des Moines Iowa and, for the first time, two to the University of Sydney.

Cumming’s relationship with Makerere started when he spent six months in Uganda in 2008.

“A former medical student, Phoebe Williams, had set up her own small charity, Hands of Help, to provide health care in Uganda. I helped her analyse some of the data she’d collected in Uganda so my interest was sparked. I had always wanted to do a sabbatical in a developing country and I loved it! “The country is safe and friendly, with a huge need for anything health-related. I was teaching over there and they were very appreciative, so I looked for opportunities to continue the relationship.”

As well as applying for large grants to undertake collaborative research, Cumming has encouraged several Ugandan students to undertake their Masters of International Public Health at Sydney on AusAID scholarships.

Both Sharon and Mark were placed at Concord hospital for five weeks – a problem with organising visas robbed them of an intended sixth week - under the supervision of Associate Professor Vasi Naganathan, a geriatrician who has his own connection with Uganda. He spent two months over there assessing the country’s need for geriatric medicine. Added to this, his father-in-law was a Ugandan surgeon who left there in the 1970s.

“Vasi is the most wonderful teacher. He used to keep winning all the teaching awards until he was obliged to step aside to let some of the other academics have a go at the prize,” says Cumming.

As well as geriatrics, the students were able to spend time in emergency, cardiology and ophthalmology.

“The thing I enjoyed most about my time at Concord was that if I saw a patient anywhere in the hospital, I could follow them up in the database,” says Mark. “There are no computers in our hospitals so we use paper files; you have to walk around the hospital to find the information. Back at home, a person could have visited the hospital four years ago and it would be really hard to access the old notes.”

Sharon says: “Investigating patients is so easy to do here. Within an hour it’s been done. Tests have been taken, you know the results, and you can make an informed decision. In Uganda, it is difficult getting lab tests done, compared to here.

“Wards at home are very crowded and there’s not much privacy. In Australia, they observe patients’ privacy and the hospitals are much cleaner,” says Sharon.

On their return to Makerere, the two fourth-year students will prepare a report about their time here. “The main objective is to take back these ideas,” says Mark.

Mark says he has wanted to be a doctor since he was a young boy, perhaps inspired by his mother, a nurse who died in a car accident when he was still a small child. Sharon says that taking on a career in medicine is a good way to help people in a country where there aren’t enough doctors.

“Most children would say that they want to be doctors. Still, there are few girls studying medicine, even though they get extra marks to help them get in. In our year there are 40 girls in a class of 120, and the number of girls is not increasing very much,” says Sharon.

They are both keen to return to Australia at some time. Based at Concord Hospital student accommodation, they have made lots of friends, including with students from Denmark, Malaysia, Germany, Nigeria, the US and the UK.
FEEDING BABY

Associate Professor Michael Dibley has had an abiding interest in India since he travelled around the country in 1970. “I went to India with the Australian Union of Students on an excursion. It was before mass travel was common and we chartered a Qantas flight to Chennai and were picked up three months later in Calcutta.”

Dibley’s interest in child health and nutrition in developing countries also dates to his years as a medical student. “I went to Surabaya on an unallocated term in 1975, and collected information from mothers with malnourished babies who were attending clinics. A large number of the mothers were not breastfeeding. In fact, they were giving their infants Indomilk, a sweetened condensed milk which was the product of the Australian Dairy Corporation. “It was expensive and so the women believed it was powerful. Of course, because it was expensive, they also diluted it, which meant that it could well have been contaminated by unclean water. Repeated bouts of diarrhoea combined with inadequate nutrition were leading to acute and chronic under-nutrition.

“When I presented this information to my paediatrics professor, he said I should contact Choice magazine and they wrote an article, the consequence of which was that questions were raised in parliament,” says Dibley. The end result was that Indomilk was relabelled and marketed as unsuitable for children. “It was the most rapid cycle of translation of research into action that I have ever seen!”

Dibley has spent much of the intervening 35 years focusing his research on infant feeding. In 2007, he received Public Service Linkage Program funding to set up a network of investigators and program managers across three countries – India, Bangladesh and Sri Lanka – which quickly came to include Pakistan and Nepal as well.

“There is a large amount of publicly accessible data available from health surveys, but this information hadn’t been exploited. There are relatively few investigators in South East Asia and they didn’t know how to deal with these large surveys. The Indian survey alone covered 100,000 households.”

Working with Upul Senarath from the University of Colombo on the complex sampling survey methodology, the two published a special supplement in Food and Nutrition Bulletin on breast feeding indicators. The indicators for breast feeding include early initiation, exclusive breast feeding, continued duration of breast feeding, and timely introduction of other foods. “On most of the breast feeding indicators, the five countries rate pretty poorly, except for Sri Lanka where exclusive breast feeding to six months is up at 76% of mothers. Nepal rates quite high at 50%. In India and Bangladesh, only 40% of mothers breast feed their children exclusively up to six months, and in Pakistan it is 37%.

“We have some data which shows that the rate in Nepal is falling, and there has been no change in India and Bangladesh over 15 years.”

“Dr Archana Patel, professor of paediatrics at Indira Ghandi Government Medical College in Nagapur, India, has been trialling an innovative approach to improving breast feeding which uses the mobile phone. In a small sample study, women who enrol get some counselling at delivery and during visits, and they also receive daily SMS with advice on the feeding needs of their child for the first six months.”

Mobile phones are an ideal way to convey information in India. In 2008, there were 500 million mobile phone subscribers; in 2012, the number had jumped to 800 million; 70% - 80% of women have access to a mobile phone and that number is rising. “The mother will also receive a weekly call from a lactation counsellor. While we know that 80% of the assistance sought in these calls is not about feeding but other problems the mother is facing, that general support is important.

“One auxiliary nurse/midwife can deal with 500 women. Some might need a home visit, but most only require a small amount of information. That’s a very efficient way to deal with this issue. India is so large that we need cost-effective solutions.”

The second wave of Dibley’s research is on indicators for complementary feeding - the transition from breast to eating family foods. “While we don’t have the same information for complementary feeding as we do for breast feeding, we do know that the overall nutrition in India is poor, with only 15% of children getting the minimum acceptable diet.”
SINGING ABOUT CERVICAL CANCER

Cervical cancer is the most common cause of cancer death in women in India. In 2010, over 33,000 women died from this cancer: most in rural areas, most with poor levels of literacy and most in the prime of their lives.

“India accounts for one-quarter of the cervical cancer deaths in the world,” says Associate Professor Lyndal Trevena. “We don’t have robust data on the incidence of cervical cancer in India but we do have mortality data from a study in The Lancet earlier this year.”

Rather than attributing it to a higher incidence of the disease, Trevena thinks the high mortality rate in India is probably a function of later diagnosis and a lack of access to treatment. She says it is a preventable cancer, and too many women are dying needlessly.

“It’s estimated that by 2030, the most common cause of death around the world will be cancer, and most of those deaths will be in the developing world. The good news about cervical cancer is that there are ways of preventing it with a vaccine - not rolled out yet in India – and screening. The screening we are talking about is low tech, not the pap smear we use here. You need a substantial pathology infrastructure for pap smears and there’s also a heavy cost involved.”

The low-tech alternative is very simple to conduct and cheap. You paint vinegar on the cervix and shine a light on it. Affected areas will appear white. This method, visual inspection with acetic acid (VIA), allows for the removal of the pre-cancerous lesions on the cervix with liquid nitrogen. “You can screen and treat the woman immediately. The process is safe and has very few side-effects. Sometimes a health professional will see these women only once, so being able to remove all suspect lesions at the time of screening, rather than waiting for a biopsy, is another benefit of VIA,” says Trevena.

Her work in India implements WHO’s three-pronged approach to the disease: educate, screen, and treat. The screening and treatment components involve an outreach program where trained hospital-based nurses go out to the countryside. The women who can’t be adequately treated are then referred back to the hospital. However, as Trevena notes, the first step is education. “It’s not just about providing access to testing, but improving awareness and health literacy. You can have the best facilities and staffing, but if no-one comes to use them, you haven’t achieved much. We need to get the message across that women need to be tested for cervical cancer, even if they don’t have symptoms.”

To this end, education is being achieved through the existing women’s self-help groups and peer-educators. “We also run ‘camps’ in villages, presenting puppet shows and performing the cervical cancer song. These camps use locally developed audio-visual communication tools. Brochures and other reading materials have limited impact because many of the women aren’t literate.”

Trevena has just returned from a cancer screening symposium in Chennai, which brought together some of the most knowledgeable doctors, researchers, and government and non-government workers from across India. “It was the first time all these people had come together and there was such a shared sense of purpose. The meeting of the expert group, made possible with AusAID funding, was so we could do three things: link with other programs, train local providers in screening and treatment, and develop a mobile phone-based educational tool.

“The last of these is being developed in collaboration with IBM Research and our school here. We’re finding that our peer educators are generating a whole lot of new questions that they aren’t able to deal with, so they need further information support.

“The new technology is called ‘spoken web’ and is entirely audio. It has voice recognition as well as pre-recorded information. You can’t send text messages to people who can’t read and 75% of these women can’t. You can also consult a mobile phone in private, so we hope there will be less embarrassment with asking,” says Trevena.

LET'S TALK ABOUT SEX

Thirty years into the AIDS epidemic and 10 years since the landmark UN General Assembly Special Session, HIV/AIDS continues to present major public health challenges to developing countries.

“In 2009, 2.6 million people became newly infected with HIV: 69% were from sub-Saharan Africa and 10% from South-East Asia. More than five million people are now receiving HIV treatment, and in 2009 alone, 1.2 million people received therapy for the first time,” says Dr Shailendra Sawleshwarkar, senior lecturer in HIV and STIs at Westmead Clinical School.

With AusAID support, Sawleshwarkar coordinates the Short Intensive Professional Program in HIV (SIPPH) - Global which has been running since 2010. In its first year, 10 mid-career professionals from India took part in SIPPH. This year, 23 health sector workers were able to attend the intensive training program in Australia, with eight Indian participants joined by 15 others from Cambodia, Botswana and Zambia.

“SIPPH - Global provides a unique opportunity for participants to engage in the reciprocal exchange of skills and ideas that will contribute significant improvements in HIV/AIDS prevention and treatment programs in all participating countries,” says Sawleshwarkar.

“The mix of perspectives can prove challenging. The people taking part come with different attitudes and different experiences of the problem. As the program progresses, it becomes more interactive and enlightening for everyone - including us! People share their stories and successes. For example, in Botswana, they are working on integrating HIV in the school curriculum.

“Australia’s response to HIV is recognised globally as a success, especially in injecting drug users and sex workers. National prevalence is lower than most other comparable developed countries. HIV is largely transmitted through man-to-man sex in Australia.

“However, in India, the major route of transmission is heterosexual and mainly among sex workers and their clients. Indian women already suffer a great deal of inequality. When you add sex work to the mix, it becomes very difficult for them. They are in a most vulnerable position and it’s also hard to gain access to services.”

Sawleshwarkar has been involved with a national consultation for developing a training program in India on HIV in collaboration with the Public Health Foundation of India. It included delegates from the Indian Ministry of Health, the universities, community organisations and other stakeholders.

“The stigma and discrimination around sex work and men-having sex with men is greater in India than here, making it difficult to talk about HIV, even with health workers. So addressing attitudes is important in training for HIV testing and management. If you are training your frontline health workers, they need to be less judgmental and inclusive.”

radius
Even the local taxi driver speeding around to get Malcolm Bowman to his assignation had no idea where the Doha Rugby Club was.

“He made about 10 U-turns before we found it. There were no signs anywhere. And then, behind a wall I discovered this oasis for expatriates with a bar, swimming pool and a lush pitch,” says Bowman, a rehabilitation specialist.

It wasn’t a medical emergency that brought him to the place, but a rendezvous with mad keen Aussie football supporters, like Bowman himself, visiting the Qatari capital for a Socceroos match.

“It’s always been the Socceroos for me, ever since I was seven-years-old and I went to my first game. It was Australia playing Greece. I inherited a love for the game from my father. I still go to matches with him, but now it’s a case of I take him rather than he taking me. It’s still the Socceroos and Sydney FC, but we’re changing allegiances because a Western Sydney team is being put together - The Wanderers.

“I played football from the age of five but had to give it up in my early 20s when I tore a ligament. I was never a great player.”

With his doctor’s hat on, Bowman says he believes that football (a.k.a. soccer) is a safer sport than others as far as body contact goes. The main injuries are those to the knee, such as he suffered. In his rehab work, has he had to tell anyone to stop playing the game? “My son. When he was 18 he had to give it away as well.”

In spite of his personal experiences, Bowman is a great advocate for participating in the sport.

“Anyone can play, men and women, all you need is a ball. It’s the same rules in every country in the world and you can play at any age, up to 45 - that’s unique.”

Since being sidelined from the team, Bowman has concentrated all his energies on spectating.

“If there’s a game on TV, I’m up watching, regularly at 4am. It’s one of those sacrifices you have to make! I’ve been to three World Cups. In 1990, when I was young and idealistic, I planned and booked my trip to Italy for my first Cup. It never occurred to me that Australia wouldn’t qualify. We got knocked out by Israel in the qualifiers, but I was committed to going. My wife came too; back then she’d still go with me.

“Germany was the next Cup for which Australia qualified in 2006 and I took my son that time. South Africa was the third time and I went by myself,” says Bowman.

Not that he’s ever lonely when he heads off to a game, no matter which part of the world he finds himself in.

“I’ve made a lot of acquaintances, not from the medical fraternity, just football fanatics. We catch up when they turn up for the game. I go to a lot of conferences and no matter where I go, there’s always a football game on and I’ll head out to see it. In fact, I’ve missed a few conference dinners because I’ve gone off with a group to a game.

“The rehab faculty has a conference every year, and there’s a competition to get your photo taken wearing a tie in a setting appropriate to the conference location. In Barcelona, I had my photo taken at the Barcelona football stadium, and won $100!

“Football is often played in the Middle East and that’s a good stop-off on the way home from Europe. It’s surprisingly easy to get around. Even though I’m supporting the other side from the locals, I always find I get a great deal of respect from them because I’ve come such a long way for a football game.

“The great thing about football is that it is played everywhere and so every country has that in common. You always have something you can talk about with people, wherever you are.”

Malcolm Bowman
REHABILITATION SPECIALIST & FOOTBALL FANATIC MBBS (1986)
Malcolm Bowman
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