JUNE 2013

the BIG FAT issue

radius
SYDNEY MEDICAL SCHOOL MAGAZINE
Med students have always had a soft spot for sport at Sydney Uni!

Our exciting Sydney Uni Sports & Aquatic Centre extension is almost complete and, naturally, we want the best possible fit-out for this state-of-the-art complex.

Our aim is to raise $250,000 via tax deductible donations – can you help us name a row of seats, or an individual one in our brand new basketball stadium?

Your tax-deductible donation will help us put the finishing touches to this massive Sydney Uni Sport & Fitness project, the benefits of which will be mutually shared by our gym members, Club members and elite athletes.

In addition, all donations of $5,000 or more will also be recognised on a row of seats in the stadium.

$5,000+

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Cover photo by Brian McInerney
Professor Ian Caterson and Associate Professor Amanda Sainsbury-Salis

DO WE HAVE YOUR EMAIL ADDRESS?
From the next issue, radius will be available for download on iPad®. Register your address at sydney.edu.au/medicine/alumni and we will notify you as soon as the radius for iPad® is online.
Every medical school has a mission, and all of them involve some variation of high quality education for the next generation of doctors. In the case of the 16 Australian medical schools, there is general recognition of the quality of training provided but still, there are differences in emphasis and experiences between schools. Some schools have a specific focus, for example, on training doctors to work in community practice or in country, others pay greater attention to incorporating research or international experiences into the medical program, and others again aim to cover all bases.

At this medical school, our mission is to improve the health of this and wider communities through our education and research. We aim to graduate students with a high standard of clinical skills, who have had some experience of research and understand the importance of creating new knowledge, and who have had an experience of health in an international setting. Over recent years, we have been working towards achieving these aims, we are fortunate to have excellent clinical schools, both in the city and in the country, and we have determinedly retained both the amount of and quality of clinical training in the medical program even though other content has been added. It has been gratifying to see the interest in research and the growing number of students undertaking research during the medical program, likewise the numbers are high doing international exchanges and electives.

This medical school is clearly more than medicine, though. We have 1100 students undertaking research degrees – either Master of Philosophy or PhD, and over 1500 students enrolled in one of the postgraduate courses, masters or graduate diplomas. What all the programs have in common is their quality and that they contribute to improving the health of the population. More recently, an additional component has been added to our mission and plans for the future, and that is to integrate our education and research more closely with health care delivery. If I had to name a single issue which could improve health outcomes in our Australian system, it is better connections – between state and federal, between general practice and hospitals, between education and research and clinical care, to name the most obvious.

Sydney Medical School is extremely fortunate to have strong ties with the Local Health Districts and we greatly value the relationships. LHDs and Sydney Medical School share many aims and goals. Both aim to improve health through excellent patient care, both have a commitment to high standards of medical and professional education, to conducting research which increases knowledge, and to translating research findings into improved health care. If we can use these shared aims as a motivation for closer relationships in future, then I feel we will have made a significant step in overcoming some of the challenges of our system.

Closer integration between academic and research institutions and hospitals is a growing trend world-wide, much of the discussion of it coming under the title of Academic Health Science Centres. This is a subject of great interest within the School and in our hospital partners, there will be more talk of these Centres in the year ahead.

Senate elections
Congratulations to Professor Chris Murphy for his recent re-election as a staff Fellow of Senate. The staff election is coming up and I hope many will take the time to vote. Dr Barry Catchlove, an alumnus of this faculty and who has supported students through scholarships, is again standing. It is good for the faculty to be well represented.

The Big Fat issue
This cover theme for this issue of radius is obesity, and the stories reveal just something of the broad spread of research being conducted by staff. From Professor Andrew Holmes working on gut bacteria to the programs by Associate Professor Amanda Sansbury Salo on the public health research of obesity, SMS is making an extraordinary contribution. Obesity is one of the major research themes for the Charles Perkins Centre which is on track to open in 2014. The CPC, a new multidisciplinary research and teaching space, will give the already impressive work being done here a boost, and support new research in this important area.

On Valentine’s Day, the Western Sydney Sexual Health Centre (WSSSH) was formed, bringing together the Sexually Transmitted Infections Research Centre with the Parramatta and Mt Druitt Sexual Health Clinics.

“The beginning of a new era for sexual health in western Sydney,” said Professor Tania Sorrell, Acting Director, WSSSH. “We’ve now got a very active research and teaching program, which is strongly supported by our clinical services. Our aim is to respond to new infectious challenges, explore cervical and other cancer prevention and treatment opportunities, and to collaborate with other university departments across Australia and the globe. Along with all of this, we will continue to provide an efficient, free and confidential service, with a strong focus on individual Sexually Transmissible Infections (STI) treatment and HIV management,” she said.

Key areas of research currently being conducted at the Centre include service delivery in primary care and evaluation of HPV vaccination. The Centre is also committed to expanding development opportunities in the fields of HIV, STIs and Sexual Health, and offers the largest postgraduate course of its kind, through the University of Sydney. It has a strong international capacity building program in HIV and STIs and has received funding from AusAID to work with partner organisations in Africa and Asia.

In 2012, the course had over 350 enrolments in 14 different postgraduate units of study, making the Western Sydney Sexual Health Centre one of the largest global postgraduate providers in the areas of HIV, STIs and Sexual Health,” said Professor Sorrell.

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STUDENT NUMBERS RISE IN SMS

Sydney Medical School student population continued to grow in 2013, with steep rises in numbers of new higher research degree students and studying postgraduate courses.

Flagship postgraduate programs in public health, public health, international public health, and clinical epidemiology - were especially strong in attracting new students and in all, 744 new students enrolled in Semester 1, 2013.

New students commencing research degrees were also significantly higher this year, with 116 new PhD students, 68 enrolling in a Master of Philosophy and 5 new students in Master of Surgery (Research). In 2013, Sydney Medical School has 1104 students enrolled in higher research degrees.

The medical program students numbers remained steady at just above 300 students commencing in Stage One.

POCHE STRATEGY LAUNCH

Healthy kids, Healthy Youth, Healthy Hearts - the new three-year strategy of the Poché Centre - was launched on April 8. Special guests included Kay Poché, Reg and Sally Richardson, and new Chancellor of the University of Sydney, Belinda Hutchinson.

Following the launch, a presentation hosted by Professor Glenn Salkeld, Head of the School of Public Health, showcased research being supported by the Centre.

The strategy has three focus areas, the first being to improve the health of infants and children, as well as addressing maternal health issues. On average, Indigenous children have a higher illness and mortality rate. The Centre works in conjunction with several communities in western NSW to provide services that facilitate improvements in learning, coping with the physical environment and overall well-being.

The second focus is on improving oral health and addressing critical dental issues for community members of all ages. Since 2003, the Centre has been running dental clinics and is seeking to increase service delivery.

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FACULTY EXECUTIVE

Tom Robb - Executive Officer Sydney Medical School
Ria Dawson - Operations and Project Manager
Vera Terry - Director Research and Education Business Development

ASSOCIATE DEANS

Professor Lewis Hosa - School of Public Health
Professor Emeritus Stuart Macfarlane - School of Rural Health
Professor Robert Lipsky - Cancer Clinical School
Professor John Watson - SAH Clinical School

ASSOCIATE DEANS, SYDNEY MEDICAL PROGRAM

Professor Michael Kimber - Postgraduate Medical Education
Professor Paul Billington - Postgraduate Medical Education
Professor Christine Jemm - Postgraduate Medical Education

ASSOCIATE DEANS, SYDNEY MEDICAL PROGRAM

Professor Merrilyn Walton - Research Integrity
Professor Richard Smith - Research Integrity
Professor Sue Merrilees - Manager Strategy and External Relations
Professor Sue Ann Park - Executive Officer Sydney Medical School, Foundation
Karen Scott - Executive Officer Sydney Medical School, Foundation

TEMED COMES TO SYDNEY MEDICAL SCHOOL

TEMED is a health and medical affiliation of the new well-known TED talks. An annual TEMED convention is held in Washington DC with affiliated events held around the world. A group of dedicated Sydney Medical School students signed up to host a local TEMED event in May. Anthony Bloomfield, second year medical student, reports:

We discovered 10 weeks out from the annual TEMED conference in Washington DC that only one other Australian location was hosting a TEMED affiliate event. Seizing the opportunity, we developed a proposal for the co-ordinators in America seeking permission to host the inaugural TEMED Sydney event at the University of Sydney.

Much to our surprise the response was overwhelmingly encouraging – so began the longer-than-before race.

Our speakers included:

• Professor Ian Hickie
• Dr Ross Walker from Channel 9 and 2UE
• Michelle Kew, a 2nd year medical student at the Sydney University spoke passionately about her experiences in America and the need for developed nations to empower the youth of Africa to be leaders of their homeland.
• Professor Warren Anderson, the CEO of NHMRC described how health and innovation in Australia has been led by the big three biotech companies CSL, Cochlear and Reemel and how these companies achieved the basis of their success from limited budgets to big breakthroughs.
• Dr George Mangalis, an experienced physician and IT expert discussed The art and science of digital medicine.
• Arran Schonbreg, a medical student and actuarial studies graduate, described how video games are driving medical innovation.
• Grace Lee, a 5th year medical student at UNSW
• Professor Martin Tatterson, spoke about his own brush with death.
• Dr Paul Baldeck from the Garvan Institute, and Sydney’s Associate Professor Kristina Schmid-Grygel and Professor Adrian Baumann on different aspects of obesity research.

Next year promises to be bigger and better, many thanks to all involved supporting us on this year.
A spate of recent media stories has highlighted some of the complexities of managing academic freedom and autonomy when it has the potential to impact on the wider University. We have recently seen the attempts by some staff to have the University cancel the Honorary Professorship of a leading Chinese transplant surgeon because of China’s approach to harvesting organs from executed prisoners. Ironically the surgeon had been honoured for his work to improve the ethics of transplant surgery, although that information has not been featured in the arguments put to the media. We have not been alone. Melbourne University was publicly criticised for supporting gender separation at an Islamic lecture and UNSW has faced protests because of plans to have a chocolate shop on campus that had Jewish connections. I personally believe that along with academic freedom goes certain responsibilities, but many would disagree. My four-year term concludes at the end of this year, I will however be contesting the election and hope you will support my candidates for a further four years. I strongly believe that membership of the Senate should be a balanced representation of expertise and interests, and therefore be able to deal with the variety of education, research, financial and other matters with which it deals.

Finding a pathway between the nations of how the University should operate – at one extreme, there are those who believe that the University is a multilateral body and business competing in a competitive world for scarce resources, the counter view that we are a centre of learning and research and should not be subject to the same rules as the corporate world – presents a greater challenge in this environment than I ever remember from any time in the past. A spate of recent media stories has highlighted some of the complexities of managing academic freedom and autonomy when it has the potential to impact on the wider University. We have recently seen the attempts by some staff to have the University cancel the Honorary Professorship of a leading Chinese transplant surgeon because of China’s approach to harvesting organs from executed prisoners. Ironically the surgeon had been honoured for his work to improve the ethics of transplant surgery, although that information has not been featured in the arguments put to the media. We have not been alone. Melbourne University was publicly criticised for supporting gender separation at an Islamic lecture and UNSW has faced protests because of plans to have a chocolate shop on campus that had Jewish connections. I personally believe that along with academic freedom goes certain responsibilities, but many would disagree. My four-year term concludes at the end of this year, I will however be contesting the election and hope you will support my candidates for a further four years. I strongly believe that membership of the Senate should be a balanced representation of expertise and interests, and therefore be able to deal with the variety of education, research, financial and other matters with which it deals.

A background in public teaching hospitals and in the corporate world, I can see both arguments and have, I believe, been able to contribute as Chair of the Safety and Risk Management Committee and a member of the Nominations and Appointments Committee (whose last major responsibility was the selection of the new Chancellor). Earlier this year I was appointed one of the two Pro-Chancellors, which does sound like a grand title but the principal function is to share with the Chancellor the role of officiating at Graduations. It is likely I will be the only medical alumni seeking re-election from the graduates. I don’t need to stress the importance of medicine being properly represented.

But most important is that you vote! Voter turnout has been declining in recent years, to the point where it is relatively easy for sectional interests with a particular gripe to get elected. Voting papers will be mailed out in October to all alumni whose contact details are held by the University. I hope with your help to assist you with further stories in 2014. Barry CATCHLOVE

FROM THE SENATE

I have been pondering this column over the last four years to share some of the issues confronting the University of Sydney Senate. As the governing body of the University, the Senate is responsible for the general direction and oversight of the University including, ultimately, for management of the University’s finances, property, business affairs and most significantly, its education and research performance. I hardly need to say that recent years have been demanding ones for the University. Aside from funding pressures, competition and the whole host of other issues that are par for the course with any large organisation, the University is a public institution, dedicated to teaching and learning with a long history of independent thought and academic freedom.

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Shadbolt says that students should seek out ways to deal with the stresses they face. For some, it might be going on holiday, doing yoga or meditating. But equally valid options might be 45 minutes on the basketball court or football field, or reading a book in the backyard.

Some students choose inappropriate ways of relieving stress, such as withdrawing from work or drinking too much alcohol. “There is a culture of alcohol use and we can’t monitor it or intervene in a student’s personal life except when it impacts on dealing with patients, other students and staff.” Then we have a mandated role.”

Shadbolt argues that some of the very pressures which can destabilise students are also those that make medicine such an exciting and rewarding study.

“There’s no doubt that doing medicine is a very stressful course. One can’t deny it. People who choose to do medicine enjoy the challenge of it,” she says.

“There is evidence from around the world that medical students tend to be more prone to anxiety, and therefore depression, than other groups,” says Dr Narelle Shadbolt, Associate Dean for student support.

S

he puts the phenomenon down to the student selection criteria which is ultimately aimed at selecting for good doctors.

“I think it’s more that those students who are successful in the selection process for medical programs around the world are more likely to be perfectionists, hard working, dedicated, who like to be leaders and in control. Those qualities will make you good at your job in the long run, but may also make you prone to depression.”

While Shadbolt concedes that other professions may also value and require these qualities in their students, she believes that medicine brings additional pressures.

“It’s a profession where there is a high level of contact with the public and that places a lot of emotional stress. Students are readily familiar with the idea that they are doctors, not patients, and so they are not sick; they are fit. They might self-diagnose and that compounds into an unhelpful way of approaching your own health care.

Her way of addressing the issue is to get in early. “We talk to students a lot about it from the week go, and try to make them aware of the university-wide counseling and medical services, as well as the medicine-specific services available through the student deans and the website. Medics places a strong emphasis on student well-being as part of its charter, and also the Australian Students Medical Association. Recently, Beyond Blue has put out a medical survey. A lot of work has been done.”

All students in first year complete a condensed version of the standard mental health first aid (MHFA) course. MHFA teaches how to provide initial support to adults who develop a mental illness or experience a mental health crisis. This small group teaching program commenced in 2012 and the incoming 2013 cohort has just finished it – complete with an excellent new video on depression that was scripted by our staff and students and filmed on the university campus. The medical program Statement of Expectations places an emphasis on students’ own responsibility to make sure they are well and to seek help if they are not.

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As early as two years of age, one in five toddlers in Australia is already overweight or obese.

With accumulating evidence that excess weight and fast weight gain in early childhood are related to being overweight in later life, how soon should we intervene to halt the progression?

Dr Li Ming Wen from the School of Public Health and Sydney Local Health District argues that efforts to prevent childhood obesity should begin in the early years of life. He is the principal investigator in the Healthy Beginnings trial, a major public health intervention with first-time mothers and their babies covering the first two years of the baby’s life.

The trial is an international first and has attracted over $1.2 million in NHMRC funding over six years.

“Most trials deal with obesity and overweight in school-aged children. That’s too late,” says Wen.

“It’s much easier to gather school-based information, so researchers may try to avoid younger children.”

Gathering study participants for his trial was definitely a more difficult process, with recruitment taking almost a year to complete. Even then, he started with 647 pregnant women and lost 170 to follow-up (equally spread across the intervention and control groups).

An early risk for children becoming overweight/obese is overweight mothers. Apart from the genetic issues, mothers affect their children’s diet and activity through their own eating habits and physical activity levels.

“We have to start early to engage mothers. Their physical activity, whether they smoke or not, and their nutrition, are the three major maternal behaviours impacting on the weight of babies in the first months.”

Interestingly, while low birth weight is often associated with mothers who smoke during pregnancy, it is also observed. Wen says that it’s not quite clear how the mechanism works, possibly it can be explained by a cluster of health risk behaviours associated with the smokers.

The two year randomised controlled trial was conducted in south west Sydney between June 2007 and December 2010. Women in the intervention group received eight home visits from community nurses. The first visit took place before the birth, with subsequent visits timed to correspond with early childhood development milestones (1, 3, 5, 9, 12, 18 and 24 months).

“In contrast with previous studies, the unique aspect of this study was that the intervention dealt with several risk factors for early obesity in a systematic and timely fashion, including infant feeding practices, children’s eating habits, and maternal behaviours,” says Wen.

The key intervention messages included:

- Breast is best
- No solids for me until six months
- I eat a variety of fruit and vegetables every day
- Only water in my cup
- I am part of an active family
- TV away, let’s go play

“There is continuing evidence that the longer the duration of breastfeeding and exclusive breastfeeding, the greater the reduction in risk for overweight and obesity, at least in the short-term, in addition to many other health benefits. And yet, some mothers are starting their children on solids as early as two or three months,” says Wen.

He’s also concerned that parents use food as an encouragement for good behaviour.

“Many mothers use food as an encouragement for good behaviour – to reward good behaviour or to stop children’s crying. It is possible that parents think that a healthy diet is necessary for their child’s well-being, but these efforts are inadequate. It is important to involve the family in this process. Parents need to be reminded that they are the role models for their children.”

The other significant benefit was experienced by the mothers - not surprising as the trial focused on healthy family life as a whole. Mothers in the intervention group were significantly more likely to eat more than two servings of vegetables a day than those in the control group, and to spend 150 minutes or more a week on physical activity than those in the control group.

Since the lifestyle of the mother becomes the lifestyle of the child, improved maternal nutrition and activity is likely to reinforce the benefits already accrued by children who have had a healthy start to their lives.

“Another issue for our trial group was that half the participants live in units where there is no backyard or park nearby,” says Wen. He’s interested in doing further research into vertical living and whether existing in apartments has any effect on outdoor play and activity.

The good news from the Healthy Beginnings trial is that early intervention can lead to a reduction in BMI at two years of age. The mean BMI was significantly lower in the intervention group than in the control group. In addition, 11.2% of the intervention group were categorised as overweight or obese, by comparison with 14.1% in the control group.

There were also secondary outcomes from the trial which showed further health benefits from the intervention. There was a positive effect on children’s vegetable consumption and reduced time spent watching TV.

Wen also introduces the healthcare benefits of breastfeeding for both mothers and children. The trial is that early intervention can lead to a reduction in BMI at two years of age. The mean BMI was significantly lower in the intervention group than in the control group. In addition, 11.2% of the intervention group were categorised as overweight or obese, by comparison with 14.1% in the control group. There were also secondary outcomes from the trial which showed further health benefits from the intervention. There was a positive effect on children’s vegetable consumption and reduced time spent watching TV.

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It’s the statistical bulge that went under the health radar, and changed the map of childhood obesity: from the mid-1980s to the late 1990s in NSW, the number of overweight children doubled, and the number of obese children trebled.

In 1985, data collected from NSW as part of a national population survey of school-aged children, showed 1.5% of children were obese, with around 11% qualifying as overweight. In 1997, NSW began a population health monitoring program of school kids aged 5-16 from around the state. It found the prevalence of obesity to be around 5% of the school population, and overweight children made up about 16% of the cohort.

Since that time, the Schools Physical Activity Nutrition Survey (SPANs), based at the School of Public Health and funded by the Ministry of Health, has repeated the survey in 2004 and 2010. Not much has changed.

“Since 1997, the prevalence of obesity has not changed significantly, sitting around 5-6%. That may not sound like much, but when you look at how many children that represents, it’s 50,000-60,000 kids in NSW,” says Dr Louise Hardy, an investigator with SPANS.

“NSW is the only Australian jurisdiction to have a representative population monitoring system of children’s weight and weight-related behaviour. Overall the figure for overweight and obesity in 2004 and 2010 remained unchanged at 22.8%.”

Instead of being disheartened by this consistent level of overweight children, Hardy sees it as a welcome plateau. “Over time, a lot of investment in addressing obesity has put a brake on the problem, but we still have far too many obese kids.”

It’s not just NSW that suffers. Hardy believes that the findings are fairly representative of children across Australia and prevalence are similar to those in many other developed countries.

So what happened between 1985 and 1997 that sent our children speeding down the slippery slope of obesity, from which it is proving very difficult to get them back? Hardy claims that it was the emergence of an ‘obesogenic’ environment, one which sees the proliferation of screens.

“It’s hard to keep abreast of the usage of all those screens when there’s a new tablet or smartphone or computer gaming device out every minute. When we survey children, 50% of sedentary behaviour is spent on screens. With younger kids, it tends to be TV and adolescents move on to computer screens, though this may change with young kids now increasingly using iPads. Even cars now have screens,” says Hardy.

She believes screens are particularly insidious when it comes to weight problems; it’s not simply the fact that while children are watching screens they are not undertaking any physical activity.

“When you are spending a lot of time looking at screens, the evidence shows your diet is also poor. There are lots of ads for processed foods on TV and increasingly so on the internet. You also lose satiety cues and start to eat mindlessly. The foods you grab are usually energy dense and nutrient poor.”

But TV is not the only culprit, says Hardy. It’s also what’s in the cupboard. “We need to look at how households have changed from the 50s. We have massive refrigerators and lots of packaged food. You can microwave a meal in one minute and have instant gratification. There’s a lack of food rules, with kids being able to graze at liberty.”

Hardy’s group has been monitoring children on a number of weight indicators (i.e. BMI, waist circumference, waist-to-height ratio) as well as objective measures of physical activity including fundamental movement skills (jumping, hopping, running), and cardio-respiratory endurance (‘Siser’). Students are also asked to respond to a questionnaire covering indicators of weight-related behaviours including diet, physical activity and sedentary behaviour.

The questionnaire is designed specifically for kids, taking into account educational and cultural constraints which reduce their time to be active. “We ask when they are using a screen for doing their homework and when they are using computers for fun. Do they still read? A lot of external tutoring is going on and there is passive travel and just hanging out. Adolescents can lie in bed for hours and not even move. On the weekends, some ethnic groups attend their own cultural schools, such as Greek or Chinese school.”

It all adds up to more sitting and less physical activity.

The surveys, which include up to 8,000 children, also collect socio-demographic data, including locality (rural, urban residence), socio-economic status, and cultural background. Exploration of these data shows some disturbing statistics, especially among the two main ethnic cultures in NSW: Middle Eastern and Asian.

“One in two Asian primary school boys is overweight or obese. With 43% of Asian boys aged 5-12 being overweight, that’s twice the level of the state generally, which sits at 21.7% for primary school boys. We don’t know why that is. Both Asian girls and boys indulge in less screen time, and Asian primary school girls are slightly below the primary school overweight level for girls at 20%.

“When we look more closely, it is the Asian boys from low socio-economic areas that bear the brunt of the overweight/obese burden. Asian boys from higher socio-economic areas are back around the 21.7% overweight/obese level.

“We are seeing similar trends for Middle Eastern boys. However, socio-economic background seems to have no bearing for Middle Eastern girls, around one-in-three (35%) of whom were overweight/obese. In fact, Middle Eastern girls fare poorer on all indicators, including the fact that they are more likely to consume energy-dense and nutrient-poor foods, are less likely to be fit, and are less active.”

“This begs the question of how much physical activity a child requires. Hardy says that between the ages of five and 16, children should be spending at least an hour a day on physical activity of moderate intensity, with their heart rate up, huffing and puffing.

“In high school, around 60% of kids are meeting the recommendation. It’s less than half in primary school,” says Hardy.

But because these statistics are based on self-reporting, she thinks that the real figures are much lower. Believing it is more likely to be only 30% who are managing to do the minimum amount of daily physical activity.

“We can’t put accelerometers on 8,000 kids for a week. The logistics would be impossible,” says Hardy.

“The government mandates for two hours of sport and PE a week and we know that only 70% of schools are delivering this. In primary schools, there are no sports teachers. But schools shouldn’t be the default panacea. It’s a much broader issue that relates to the building of suburbs and public transport infrastructure, and there’s a long lag-time for all of these.”

Hardy says that parents also play a significant role in addressing the weight problems of children.

“The biggest predictor for a child being overweight is mum or dad’s adiposity. Mum and dad have to be part of the picture, even with adolescent children, because they bring the food and technology into the home.”

Hardy laments turning around obesity with the public health campaigns against smoking, suggesting it is going to take a long time. And just as with smoking and the tobacco industry, public health campaigners face a formidable adversary in the food industry.

“We have to keep fighting the food industry and get them to clean up their advertising, not just on TV. A can of coke has 12 teaspoons of sugar which relates to a significant amount of physical activity. We’d have to go on a three hour run to use all that energy. If you went on a one hour run - more than most of our children are doing - you’d still have way too many calories on board.”

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Instead of being disheartened by this
Being a fat teenager can be tough. The schoolyard is an unkind place for kids carrying around too much weight.

But some overweight adolescents have even more on their plate: if they suffer from metabolic abnormalities, they could be at high risk of developing type 2 diabetes, or what used to be called adult onset diabetes. However, the onset can now be as early as the teenage years.

“Development of type 2 diabetes in adolescents is of particular concern because complications are common and appear early in the disease,” says Associate Professor Sarah Garnett, principal investigator in the RESIST trial.

“Avoidance of type 2 diabetes is paramount to decrease morbidity and increase life expectancy and quality of life. The evidence, primarily from adult studies, indicates that progression can be reduced by diet, exercise and the insulin sensitiser metformin.”

The RESIST trial enlisted 111 children from Western Sydney aged between 10 and 17 who were identified as being at high risk of developing type 2 diabetes. The participants were at high risk as they were not only overweight or obese but also showing clinical features of insulin resistance with or without pre-type 2 diabetes.

“To our knowledge, this is the first trial designed to examine the effectiveness of two diet-based lifestyle interventions on adolescents with an increased risk of type 2 diabetes,” says Garnett.

All trial participants were given low-dose metformin and randomly assigned to one of two different dietary regimens: one high in carbohydrates and low in fat; the other with an increased protein to carbohydrate ratio.

“We expected positive outcomes for both groups, with even better results for those on the high protein diet. In overweight and obese adults, there are a number of small studies indicating that moderately high protein weight-loss diets can improve glucose metabolism and insulin sensitivity compared with high-carbohydrate weight-loss diets.”

By December of 2012, all participants had completed their 12 month follow-up visit. Surprisingly, the results showed no difference in outcomes between the two diets.

“One on an individual basis, it may be that one diet is better suited to a particular person, but we weren’t able to see that with our trial.” It seems that the basic message is to decrease the kilojoules consumed, and it doesn’t matter so much from which foods those kilojoules are obtained. There just needs to be less of them. Garnett concides that they had trouble getting good compliance from their participants who are, after all, teenagers. “Our trial was undertaken in a real-life setting, and the difficulty the adolescents had in altering the macronutrient content of their prescribed diet may be a consequence of readily available high-carbohydrate snack foods.”

She found that they needed to give the participants a very structured, prescriptive diet; a return to the old ways of dieting but well accepted by RESIST participants.

“It wasn’t sufficient for them to know that eating healthily would result in a loss of weight. They needed to be told what to eat, and when. So, for breakfast, you eat this and this . . . We had to normalise their eating behaviour because they have lost sense of it.”

The trial, which culminates at the end of 2013 after two years of follow-up, has already shown encouraging results. Across the two groups, weight is down, blood pressure is down and insulin levels have decreased. The last of these measures is of primary importance in relation to type 2 diabetes. Blood lipids, however, did not alter. These improvements, at best, will delay the progression towards type 2 diabetes.

As well as being set a strict diet, participants had to attend a gym twice a week for three months, and were assigned a personal trainer. Though wrangling teenagers is no easy business, Garnett has many star performers in her study. Not surprisingly, these participants lost a lot of weight by following the prescribed diet and also embracing the exercise component of the trial. One of them managed to shed 35 kilos, doing so well that his story was presented on a commercial TV channel.

However, the trial has also highlighted that the intervention is not working for some of the participants, two of whom have already developed type 2 diabetes.

“Even though we are looking at serious health outcomes, diabetes is never seen to be as grave as cancer, so people don’t take it as seriously as they should,” says Garnett, and that’s even when they have first-hand experience of a family member with the disease, as many of the participants did.

“We know that we can reverse the pathology of type 2 diabetes in those newly-diagnosed by stringent dieting or bariatric surgery. The latter is a very severe treatment, especially for adolescents. We have a PhD candidate who is looking at using meal replacements for newly-diagnosed patients. That’s a strict diet. In the RESIST trial, our diets were strict, but perhaps not tough enough,” says Garnett.

Researching Effective Strategies to Improve Insulin Sensitivity in Children and Teenagers

* Associate Professor Sarah Garnett

Associate Professor of Endocrinology and diabetes at the Children’s Hospital at Westmead
When an overweight person starts a lifestyle program to lose weight, they exercise, eat well, and soon the kilos are falling off.

In the beginning, everything goes well... and then they hit a brick wall. The weight refuses to budge. "It's what I call 'the famine reaction'. It is as if the body is saying, 'This is no good. I'm not going to let you lose any more weight.' It is the body's response to protect us," says Associate Professor Amanda Sainsbury-Salis, senior research fellow at The Boden Institute of Obesity, Nutrition, Exercise & Eating Disorders.

That protection mechanism is very useful in times of food scarcity, or in the case of sickness. It can even mean the difference between survival and death. Unfortunately, in times of plenty, when you are trying to shed a few kilos of unwanted weight, it's not so helpful.

"The body defends this higher than ideal body weight and thinks it's normal," says Sainsbury-Salis. This "normal" weight is referred to as the set point, and in some overweight individuals, the set point has increased. Just as the famine reaction stops us losing too much weight, there is a reverse process which protects people from gaining too much weight: the fat brake. Sainsbury-Salis quips that the fat brake has reliably been observed in medical students, "because they are frequently used in over-feeding experiments."

"If you feed three people around 4000 kilojoules in excess of their daily energy requirements, their metabolic rate will rev up, they'll feel warm, they start fidgeting and they lose appetite." In fact, most people have this fat brake, but it may be the case that eating too much for too long, eventually wears down the 'brake lining'.

"Animal research has shown that if you feed rats a diet high in fat and high in sugar over 20 weeks, the fat brake mechanism becomes defective. In humans, we don't know if long-term exposure to a diet high in processed food causes permanent damage to the fat brake." The progression of weight loss varies for different people.

"Some will lose a kilo or more for a week or so before they experience the famine reaction. They start to get hungrier, their metabolic rate falls, there is a change in hormones with an increase in hormones which tend to make the body store fat. Then there are other people who hardly lose any weight at all before the famine reaction strikes and they become ravenously hungry. There would be an advantage in predicting which people will fall in the latter category. For these, there may be little efficacy in dieting. They are likely to need pharmacological intervention or bariatric surgery; not a decision to be taken lightly."

Sainsbury-Salis is keen to look at how we can attenuate or block the famine reaction. She hopes to develop bio-markers so we know when the famine reaction is in hit. She says that it's not enough to simply ask the dieter if their hunger is increasing. "Hunger is subjective. We can feel hungry when we are passing a food outlet. These biomarkers will be from saliva or urine or blood. When we know we're having a famine reaction, then maybe it's time to switch from weight loss to weight maintenance for a while. It will also be helpful to tell people there's a reason why they are feeling hungry."

She's also looking at a way of decreasing the intensity of the famine reaction. "If people stop dieting, and eat more to maintain their weight - not enough to increase or decrease weight - after a few weeks, the effect of the famine reaction may be reduced. Some studies do show this so there is a glimmer of hope."

She is suggesting that instead of going on a diet and sticking with the regimen until you reach your ideal weight, it may prove more effective to take breaks along the way, allowing the body to recalibrate its set point. The biomarkers will let dieters know when it's time to ease off. In dieting, it seems, constant energy restriction may not be so desirable after all.

"There is research that suggests you can get an attenuation of the famine reaction after two weeks of weight maintenance, however, I suspect that it will take a lot longer for people who have struggled with their weight for a long period of time. Maybe it will take months," says Sainsbury-Salis.

"The bio-markers that show when the famine reaction is turned 'on', could also tell us once it is turned 'off' and the time is right to return to dieting." For Sainsbury-Salis, weight loss is about how we can get all the tools we know to work together. "We know that exercise is good for and definitely helps with weight maintenance after weight loss. With physical activity you have a better chance to keep the weight off. In studies with obese rats, after weight loss they ate more and regained their weight. Their bodies were defending the set point. Then exercise was added. They were able to maintain their weight loss more effectively, not because the exercise was burning calories but because it reduced their drive to over-eat."

We know that exercise helps people with weight management, and this research with rats provides clues about how 4 weeks. Exercise blunts the famine reaction by reducing hunger. While exercise certainly speeds up weight loss, it is most important after losing weight. Many people can lose weight with dieting alone, but the crunch time is when the weight is off. It's then that exercise is absolutely essential for preventing weight regain. We encourage people to gradually increase their level of physical activity while they are losing weight, so that once they reach a healthier weight they will be ready for the levels of physical activity required for long-term weight maintenance. It's a lot, but you don't have to do it all when you start to diet."

One of the ways that Sainsbury-Salis is looking at blocking the famine reaction is with fast weight loss with severe energy restriction. "It seems counter-intuitive, but there is evidence that losing weight quickly on a very energy-restricted diet reduces the famine effect. We want to compare fast and slow dieting."

She is recruiting post-menopausal women for a trial which will start this year. "We are trying to reduce the variability in outcome measures and the menstrual cycle has effects on the parameters of the famine reaction."

Surprisingly, she says that those participants who are on the semi-starvation diet are unlikely to suffer hunger pangs. "On really low energy diets, people report that they don't feel hungry. Hunger is repressed while energy intake is restricted, and only kicks in when the diet is over." Sainsbury-Salis knows from first-hand experience how difficult losing weight can be. "I lost 28 kilos and kept it off for 15 years. I've been in that obese state. I've experienced losing just 5 kilos with a sensible balanced diet and feeling ravenous even though I was still obese. The 'experts' sent me off to get psychological help for over-eating. Maybe it was just my famine reaction..."

*Those wanting to take part in the trial should contact Associate Professor Amanda Sainsbury-Salis at amanda.sainsbury-salis@unimelb.edu.au

Trial participants need to be aged 44-65, post-menopausal and with a BMI of 30-46kg/m2. (To calculate your BMI, divide your weight in kilograms by the square of your height in meters.)
This is a continuation of the article from the previous page...
One day overweight people may be able to go to the doctor with a poo sample and be told what diet is likely to work best for them.

That’s the vision of Andrew Holmes, Associate Professor in the School of Molecular Bioscience. He hopes that it will be possible to determine their ‘enterotype’, the cluster of microbes working together in their gut, and then to know whether they will respond well to a high protein diet, a predominantly vegetable one, or maybe a Mediterranean diet high in healthy fatty acids. Or which starch – potato or rice – is right for them.

There are more bacteria in our gut than human cells in our body. In fact, the human body contains over 10 times more microbial cells than human cells.

“Microbes have a profound impact on our health,” says Holmes. “The endocrine system, the immune system, and the nervous system all have major components in the gut tissues where the adjacent gut microbiota can strongly influence them. This means normal functions in many parts of our bodies may have some connection to gut microbes.”

The role of microbes in the relationship between diet and obesity-related diseases is a big issue to think about. All our food passes through microbes in our gut and our ability to harvest energy from the food is affected by our activity. “Differences in microbial composition can mean differences in how we respond to our diet,” says Holmes.

From a global perspective, all people have the same general microbial groups in their gut – they have the basic things in common. But the exact profile of which species are present and their relative abundance is different in every person. Do these differences at the pointy end of things matter?

“There is now abundant evidence that it does. If you compare the microbiota of ‘thin’ versus ‘fat’, there are consistent differences in gut composition.”

“The classic demonstration of microbial influence on health was performed by an American group about eight years ago. Germ-free mice were injected with microbes from the gut of a skinny mouse or a fat mouse and their weight gain monitored. Basically, those receiving an obesity-associated microbiota put on more weight – the obesity phenotype is at least partly transmissible,” says Holmes.

So how do we end up with a ‘bad microbiota’? Holmes draws the analogy between maintaining a healthy gut and a healthy lawn, and how both require some degree of management to prevent disturbances resulting in a disaster.

“Our personal microbiota composition is fairly stable over time, but not completely. Consequently, a healthy gut can go wrong. Acute disasters, such as diarrhoea or a course of antibiotics, mess with a normal gut microbiota. Diarrhoea and antibiotics are basically causing damage to the ‘bacterial garden’ and we can’t completely control what grows back. It’s a bit like a lawn over-treated with herbicide or invaded by weeds.

Just as getting something nasty can lay waste to your microbiota, so can neglect or mismanagement give rise to bad microbiota. A poor diet is like ‘fertilising’ inappropriately – we are inviting weeds to take over our gut. Poor diet is like ‘fertilising’ inappropriately – we are inviting weeds to take over our gut. Poor diet is like ‘fertilising’ inappropriately – we are inviting weeds to take over our gut. Poor diet is like ‘fertilising’ inappropriately – we are inviting weeds to take over our gut. Poor diet is like ‘fertilising’ inappropriately – we are inviting weeds to take over our gut.

“The good news is that, as with gardens, we also have options to manage for a healthy system. Taking probiotics, where the missing beneficial elements are introduced, is like adding the desired seeds. Taking probiotics is analogous to targeted fertilisers encouraging desired species to grow, and finally there is the ‘start all over option’: a fascal transplant where the poo from a healthy donor is given to a recipient with a poor microbiota, that’s like turfing. Given the earlier example of the skinny mouse microbes, can you ‘catch obesity’ from another person’s microbiota? Holmes’s response is that it’s an oversimplification. “Adiposity is multifactorial. “To attempt to single out one factor is wrong. Microbes are one of the factors that work with others to give a certain weight and their importance will be different in different people. It’s about interactions.”

For example, your microbes might well determine how many calories you extract from your diet. In humans, microbes increase our ‘calorie harvest’ by between 10-30% and in animals, such as cows, it is much higher. However, how much energy you extract doesn’t directly correlate to how much you store as fat.

A healthy body will regulate weight by sending signals of satiety once an appropriate nutrient intake has been achieved. So people who are efficient at harvesting energy – at the 30% mark – are generally OK so long as their appetite signalling is also working. But they are at a higher risk of weight gain if they eat more, eat poorly or if their body’s regulation system is not functioning well.

While we can’t blame our problems with weight on our microbiota alone, Holmes says that successfully losing weight is strongly associated with change to our microbiota. “We all know that if you take 20 people and put them on a weight loss diet, some will lose a significant amount of weight, some will lose a little, but not as much as they would like, and some will lose nothing at all.

“Together with Ian Caterson and colleagues at the Raden Institute we’ve looked at the correlation of weight loss and changes in microbial content for dieters, and the greatest weight loss resulted in the biggest change in gut microbiota. Gut microbiota change is an important aspect of successful weight loss, and different diets vary in the way they modify the gut microbiota.”
When Kathryn Naden ran her pilot Health Career Academy Program in Broken Hill in 2007, she had 19 students - and one year’s funding. Based in a remote community where a significant number of school students are from families with limited access to tertiary education, her plan in setting up the program was to introduce young people to interesting and rewarding careers in health.

“The aim was, and still is, to connect local schools and students with higher education, to encourage them to think about health as a career, and to provide role models and support,” says Naden, Community Development Officer with Broken Hill University Department of Rural Health.

From day one, the program was a hit. The following year, 190 students in Broken Hill alone had applied to attend the Health Career Academy Program and there was growing interest from schools in the surrounding towns. This year, the program is running at schools in Broken Hill, Wilcannia, Menindee, Darley, Bourke and, possibly, Wellington. And Naden’s desk is piled with applications from students nominating health professions they would like to learn more about.

What has been especially encouraging, she says, is the high school students who are now enrolling in nursing, radiography, pharmacy and other health related courses.

But the benefit of the program has been broader than enthusing students about careers in health. Relationships formed with the local schools have led to other projects, including a pilot health literacy program last August at Wilcannia schools called Healthy Connexions.

“We asked the schools what they thought were some of the main health gaps for them, and one area nominated was social and emotional wellbeing. One way that we could try to address this was by providing health literacy for kids and community. Keeping well allows us to reach our full potential. When we are healthy we feel good about ourselves and have more energy to tackle life head on. Everyone has a part to play in maintaining their own good health and there are simple things that we can do,” says Naden.

The focus of Healthy Connexions was to provide a fun and hands-on environment for school students and community members to learn the importance of knowing more about their own health and how they can have more control.

While the Health Career Academy Program is aimed mainly at high school students, Healthy Connexions also focuses on pre-schoolers, primary students and interested community members.

The Wilcannia pilot was developed collaboratively between Broken Hill University Department of Rural Health, Maari Ma Health Aboriginal Corporation, the National Rural Health Students Network and Wilcannia schools.

Children attending rotated through seven stations – basic dental care, healthy eating, self-care, ears and eyes, medication use and storage, keeping active and looking after your brain.

Stations were staffed by 22 university students from medicine, pharmacy, speech and language pathology, occupational therapy and dietetics. Also involved on the day were nursing staff, Aboriginal Primary Health Care Workers and health trainees.

“The health professionals and students can be great in passing positive health messages and how to maintain your own health, but are also good role models. Role models are so important in encouraging kids to stay at school, to aspire and go on to higher education,” says Naden.
Recent visitors to the new exhibition gallery on Level 1 of Fisher Library have not needed a Tardis to visit the pain-wracked world of their forebears, writes Yvonne Cossart. The voices of long dead doctors and patients speak about the nature of pain and ways of achieving oblivion in a selection of nearly 200 books published over the last five centuries. The time traveller can venture even further back in history, through the Renaissance translations of the works of antiquity.

It is a great privilege to access so many iconic works by the heroes (and villains) of medical history.

How did Fisher Library acquire them? Some were the gifts of founding fathers – notably Sir Charles Nicholson. Others were purchased on the far-sighted library development scheme of the early twentieth century. Many were gifts of founding fathers – notably Sir Charles Nicholson. Others were purchased on the far-sighted library development scheme of the early twentieth century. Many were gifts of founding fathers – notably Sir Charles Nicholson. Others were purchased on the far-sighted library development scheme of the early twentieth century. Many were gifts of founding fathers – notably Sir Charles Nicholson. Others were purchased on the far-sighted library development scheme of the early twentieth century.
Cardiovascular Disease and the Developing World

There is a disastrous health tsunami on the way, writes Stephen Leeder, and it is in search of an Oriental coastline to wreck it’s havoc.

The establishment of the Charles Perkins Centre, with its emphasis on diabetes and heart disease, positions our university brilliantly to address the global and local concerns that these disorders cause. And they are massive.

CARDIOVASCULAR DISEASE (CVD): A DEVELOPING WORLD KILLER

I have been confronted by how appalling the impact of these diseases is now and will be in the foreseeable future as I have worked with colleagues in India. The second edition of a monograph entitled A Race against Time: The Challenge of Cardiovascular Disease in developing Economies was published in 2004 from Columbia University in New York. In it we explored the economic and social consequences of cardiovascular death and disability both then and in the next 20 years in countries such as Brazil, South Africa, Russia, India and China. Since a landmark meeting of the UN exclusively devoted to the global threat of non-communicable diseases in September 2011, action is mounting. But the data assembled now for our monograph, compared with what we found in 2004, give no cause for comfort. The trends are deeply disturbing.

In 2004 when writing about the social and economic impact of CVD in developing nations, we were impressed that the patterns of mortality in those countries were strikingly similar to what we saw in Australia during the 1950s and 1960s. Then, death from CVD was at its peak and the loss of working-age men and women was common. In Australia we have not only reduced the death rate dramatically – by 83% overall from the 1968 peak by the year 2000, as Sydney epidemiologist Richard Taylor and colleagues have shown – but have done so earlier, and the death rates are now very low. We are familiar with the ageing of the Australian population, but it surprises us to learn the extent of ageing in the less developed world, where improvements in infant survival have increased life expectancy. CVD in these nations is a potent young woman/male and hence precipitates poverty by the concentration of deaths in the under-65 population. As elsewhere, it is also a disease among older people – and there are going to be a lot of older people about.

In the next decade, the less-but not the least-or newly-developed nations will be the ones most affected by ageing, countries such as India and China, in the next decades. Look at the change from 2010 to 2050! Those countries will experience a more than two-fold increase in the population aged 65+ by 2030 from the baseline of 2010 and a more than four-fold increase by 2050, to almost 1.1 billion people.

CHINA – THE PROTOTYPIC VICTIM NATION OF CVD

A recently participated in a meeting in Beijing of nine international centres conducting research into the prevention of CVDs of which CVD was the main disease of interest. The George Institute in China was principal host for the meeting, its own programs serving as a splendid example of the interaction of research and practice.

The demography of China is changing; not only in terms of the usual effects of urbanisation, the increased consumption of food high in fat and salt, and the persistence of tobacco smoking, combine quickly to secure the epidemic. In rural to urban living, of whom between 85 and 100 million were born after 1960, according to the Washington-based Migration Policy Institute. The lifestyle of these rural-to-urban migrants would clearly differ radically from that in more traditional rural settings. It is not difficult to imagine heightened risk-factor exposure for these young people to tobacco, fast food, diminished physical activity and more, including air pollution, a pervasive problem and probable contribution to CVD deaths. The smother health effects are being increasingly publicised through media and the Chinese equivalent of Twitter, much to the consternation of the central government.

This broad scale communication is occurring despite stupendous efforts to control social media, with Internet content parodied by the term, ‘the Great Firewall of China’.

So you can count yourself lucky not to be from Minister for Cardiovascular Disease Prevention in China, with its massive ageing, migrating, population, rapidly evolving high risk profile and few levers at your disposal!

COUNTING THE COST

The economics of chronic disease are socially determined, by which I mean that the cost of treating chronic disease is far from uniform from country to country, but to the nation and to the individual. If a country has a universal health insurance scheme or another form of publicly-funded support for health care, then the costs of chronic disease management are shared and they become a matter for concern to the national treasury. If there is no such system, the individual carries the risk and the cost.

In India, state governments have varied in their support of health care, but overall public investment is low and the costs are carried by individuals and their families. The federal government has focused on rural health programs and makes a relatively small contribution to health care. As stated in an article in The Times of India November, 2011: “Thirty-nine million Indians are pushed to poverty because of ill health every year. Around 30% in rural India didn’t go for hospital treatment for financial constraints in 2004. In urban areas, 20% of families were intimated for financial problems the same year; said a trami study in the Lament. About 47% and 31% of hospital admissions in rural and urban India, respectively, were financed by loans and sale of assets.

In China, the government has raised its own spending on health care to 7.8 billion Yuan (US$116 billion) in 2011, up from 354.9 billion Yuan in 2008, the Ministry of Health said in an Aug. 17 statement. It raised medical insurance coverage to more than 95% of the population and added diseases including lung and gastric cancer to an insured list.

STEPS TAKEN BY THE GEORGE INSTITUTE

As I mentioned, the George Institute from our university, partnering with the Peking University, has been active in China for over a decade, seeking ways whereby inexpensive and effective interventions can be applied in parts of China. Through judicious use of inexpensive medications, attention to sodium intake in regions where it is currently very high, improving the effectiveness of community health workers and more, the efforts have been recognised in the establishment and support of the China International Center for Chronic Disease Prevention. Current activities include:

A large trial in over 100 villages from five regions in rural China evaluating two interventions. The first is a primary care-based community program aimed at improving identification and respiratory management of individuals who are at high cardiovascular risk. The second involves reducing sodium intake by making a salt substitute available at village shops.

Researchers at the Center are currently developing a protocol to evaluate a Simplified Cardiovascular Disease Prevention and Management Package to be applied by the primary care providers through an m-health initiative in Tibet. There is huge potential for blood pressure lowering strategies for high-risk individuals, but little work has been done to test the feasibility of implementing such strategies in rural Chinese communities.

The recent visit to China by Prime Minister Julia Gillard was warmly received. It is important that Australia follow up its interest in developing closer links with China by a deeper understanding of the social and health problems that are emerging for it. Cardiovascular disease and antecedent diabetes, obesity and tobacco-smoking comprise an immense threat to the stability and well-being of China in the next two decades. The government has recognised the problem and has established, rather quietly, several targets. We have knowledge and expertise to share.

Stephen Leeder
Professor of Public Health and Community Medicine at the University of Sydney, Chair of the Western Sydney Local Health Network Governing Council, and recently appointed as editor-in-chief of the MJA.
1953 – GREAT HALL

Celebrating our 50th anniversary, 92 graduates came from near and far, including England, USA, Hong Kong and Yamato. It was pleasing that two widows, Sally Nade and Sue Atkinson, were able to be with us.

After a long period of pre-dinner drinks in the quadrangle, we enjoyed a sumptuous three-course meal along with excellent wines chosen by Richard Jones. To enable maximum reminiscence of undergraduate experiences, seating was arranged in accordance with hospital groups from student days, though freedom movement between tables was encouraged.

John Chalmers made a moving speech to mourn the loss of Sydney Nade six weeks earlier. Syd was the chief organiser of all our reunions. On this occasion he had in addition initiated and driven the creation of an updated Year Book: "A Very Senior Year Book 1962-2012". Every available person in our year has received a CD copy of this magnificent document which contains contributions (with contemporary photographs) from 110 of our number. It is an interesting and important historical record and one of Syd Nade's many legacies.

The next get-together will be in 2018.

Erica McLorie and Martin Glaissen

1963 – GREAT HALL

Was it the venue? The Great Hall looked stunning and is weathering the years better than many of our colleagues. Diffused lighting, Handel’s Water Music in the background, crisp linen table cloths and attractive candelastra made a great first impression.

Was it the singing? Standing together whilst Pip Rickard on piano led us through a couple of varsity songs sure whetted the appetite and heightened our expectation.

Was it the food? First class catering and a spectacular dessert buffet gave an element of class.

Was it the organisation? An informal get together at The Argonaut Hotel on Friday evening, an optional tour of the Wilson Anatomy Museum on Saturday evening prior to the formal dinner and an eight course cocktail brunch at The Pavilion on Sunday, provided chances to socialise.

Was it the speeches? Three colleagues working overseas gave us a glimpse of their experience - Geraldine Room (England), David Kwan (Hong Kong) and Gerry Russell (US). Joe Cakoulo encouraged us all to send him an update covering the last 40 years for the year book he is writing. His talk was about the possibilities of Nightingale’s legacy.

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Fostering cooperation between both universities, as well as supporting their medical and scientific research, was the impetus for the creation of the Fund, now in its 35th year. The brainchild of John Hammond, a Sydney businessman and philanthropist, the Fund was named after Sir Zelman Cowen (1919-2011) to honour both his appointment as Governor General in 1977, and his long links with both the universities. The Fund operates under the guidance of four trustees, two representing each university.

In 2006, the Fund introduced a $10,000 annual prize to recognise significant medical research discoveries made by a scientist under the age of 45, and awarded alternatingly, to an academic at one of the two universities. Last year, the accolade went to Associate Professor Barry Slobedman of Sydney Medical School and Westmead Millennium Institute. Slobedman won for discoveries which have profoundly changed our understanding of how the human cytomegalovirus (CMV) can persist in a dormant state for the life of the human host, despite the presence of a huge anti-viral immune response.

CMV is an infectious disease which occurs in over 50% of the world’s population. The infection can lead to still birth or babies born with profound neurological defects such as mental retardation and hearing loss. CMV also causes devastating disease in people with compromised immune systems such as solid organ and bone marrow transplant recipients. In those circumstances, the killer virus is extremely difficult to treat.

But transplant recipients and pregnant women are not the only people afflicted with this virus. The virus can lie dormant in the human body for a lifetime, waiting for a chance to ‘wake up’ and cause disease. Slobedman and his team discovered that when the virus is dormant it remains active and makes a protein which causes the infected cells to be invisible to the CMV-specific immune response, and thus indestructible.

This discovery has shown the first evidence that CMV is able to actively avoid immune detection even when dormant, and has provided a novel target for the development of drugs to eliminate CMV before it causes disease. An international patent has since been sponsored by the commercial arm of the University, Sydnovate, exemplifying the Fund’s original vision to help transform scientific breakthroughs into medical applications.

Since its inception, the Fund has donated millions of dollars to a broad range of projects, including the development of cultured skin for the treatment of burns, the study and early diagnosis of Alzheimer’s disease, the management of maturity onset diabetes, and the molecular biology of AIDS.

Over the last decade, the Fund has added a program of support for student and academic exchange between the two universities. Each year, scholarships are provided for several students to travel in each direction, pursuing academic and personal goals. Exploring one’s experiences students say they value.

The academic exchange program has enabled significant funds. This type of funding has allowed more projects to get off the ground to a point where larger funding bodies recognise their potential and provide more significant funds.

The Fund has generously supported the University of Sydney’s Bosch Institute, through funding of managerial salaries at the Molecular Biology, Flow Cytometry, Animal Behaviour, and Oxidative Stress Bioanalytical facilities.

Two years before Slobedman won the medical research discovery prize, it was the turn of Associate Professor Rachel Codd, a biological inorganic chemist who has conducted research into drugs for treating conditions that result from accumulating too much iron. Iron overload disease affects up to half a million babies born each year with severe blood disorders.

“...I was fortunate to be awarded a Parkinson’s NSW research grant in 2012,” says Codd. Receiving the Prize, with its attendant publicity, also led to interest from a major pharmaceutical company.
GRADUATION

Providing the address at the first ceremony this year was Professor Ian Frazer AC, the Chief Executive Officer and Director of Research at the Translational Research Institute in Queensland, widely acclaimed for his contribution to cancer research and the development of Gardasil.

The address for the second ceremony was delivered by NSW Governor, former University Chancellor, and member of faculty Her Excellency Professor Marie Bashir AC CVO. Australia’s Chief Medical Officer Professor Chris Baggoley delivered the address at the third ceremony. Professor Baggoley is the principal medical adviser to the Minister and the Department of Health and Ageing, and plays a key, strategic role in developing and administering major health reforms for all Australians.

Congratulations to Sydney Medical School’s new alumni.

DR TESSA BARRETT
SMOKING AND ATHEROSCLEROSIS

The focus of Tessa Barrett’s research was to understand the links between inflammation, atherosclerosis, and smoking. Specifically, her research focused on how reactive chemicals called oxidants produced by the body induce changes to the way cells function in blood vessels.

Arterial wall inflammation is a central feature of atherosclerosis and is exacerbated by smoking, with smokers having higher levels of circulating inflammatory markers, however the mechanisms linking these processes are poorly defined.

Barrett looked at the oxidant HOSCN, and how this species may contribute to smoking accelerated atherosclerosis. HOSCN is a chemical similar to household bleach. Just as we might use bleach in the bathroom to get rid of ‘mildew’, HOSCN is generally produced during the inflammation process - such as when we get a cut - to destroy the toxins that might enter the body. It is part of the body’s natural cleaning process. However, when there is an excess of HOSCN, or it appears in places where it is not usually produced, as in the arteries, it becomes a problem.

The effects of HOSCN are hypothesized to be exacerbated in smokers, as the chemical building block for this oxidant, SCN, is elevated in the blood of smokers.

Her PhD thesis focused on understanding how HOSCN alters the function of macrophages, immune cells that play an important role in the initiation and development of atherosclerosis. Macrophages, called to the site of cell inflammation to ‘help clean up’, then appear to contribute to the formation of plaque which narrows and hardens artery walls.

Atherosclerosis disrupts the flow of blood, potentially causing life-threatening conditions such as heart attack, stroke and other cardiovascular diseases.

THE AUSCULTATION OF ATTENUATION

The second part of the study screened 2,700 pregnant women for GDM and found that GDM is common in Ho Chi Minh City. The main adverse outcomes were an increase in premature birth and neonatal hypoglycaemia, both very serious conditions for the newborn in a low-income setting.

Further key findings showed women with GDM lacked knowledge about the condition, and fear of high blood glucose levels resulted in some women restricting food intake, almost to the point of starvation. Misconceptions that breastfeeding was a problem, and a deterioration in lung function, in people surrounding areas, except for increased symptoms (inflammation) on a number of days. Air pollution emissions as there was no increase in measured pollutants at the stack emissions, however air pollution levels were higher - on the respiratory health of most residents in Epping Road recorded. Despite this, the study found that only a small number of residents were affected.

A ‘picnic study’, a randomized cross-over trial, was also conducted to investigate the health effects of short-term exposures to stack emissions. Volunteers spent two hours at sites both upwind and downwind of the western stack and at a heavily trafficked control site, along Parramatta Rd, Camperdown, on repeated occasions during 2006-2008. At each site, subjects repeatedly recorded respiratory symptoms, underwent spirometry and provided exhaled nitric oxide samples (marker of airway inflammation) on a number of days. Air pollution was also recorded. This study found little evidence of adverse health effects associated with downwind exposure. However, for exposures to the heavily-trafficked site at Camperdown, subjects recorded increased symptoms and higher levels of exhaled nitric oxide, demonstrating the validity of the study to detect short-term effects.

GRADUATION

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under my skin
by Simon Reid

“How many tattoos did he have?” my tutor barked at me. I hesitated briefly as I tried to recall the answer, then why it was even necessary to know it.

I had what could only be described as a love-hate relationship with my 84-year-old communication skills tutor in first year: he loved to make me hate him. He appeared to take great joy in riling me. I’d spent many an hour in the common room raging about him, like the time he left our group alone in a room with a schizophrenic patient who thought we were a committee that had been set up to send him back to prison. To be honest I spent most of that time thankful that I was at the other end of the table and he would have to go through three people if he wanted to get to me.

“Well I definitely saw one on his shoulder, and he wanted to get to me. And he would have to go through three people if he wanted to get to me.”

I barely listened to the answers, busy as I was arguing with Dr Storey: but as usual it was to no avail. This was going to be a long tute.

“Now, I’m going to pretend to be a patient and I want you all to take a history from me as a group. Who wants to start?”

We began to systematically take a detailed history from this fictional patient, who had an oncolological history that was far too complicated for us to comprehend at this early stage of medical school: oesophageal cancer, gastric cancer, prostate cancer, not to mention all of the associated treatment regimes.

I barely listened to the answers, busy as I was trying to think of the next question to ask so I didn’t embarrass myself further. We arrived at the social history, and Dr Storey appeared to be supplementing it with information from his own life, rather than that of a patient from the wards. I thought it odd and wondered why he would be doing that. My thoughts were interrupted by his voice, as blunt as ever, commanding attention.

“The patient is me. I’m the patient.”

Dr Storey continued to take our tutorials right up until his death in June of that year and they became a time of immense learning for me. I had never been ‘involved’ in the death of someone before. As the weeks went on his voice became slower, his sentences shorter, and we didn’t leave the tute room for the most part. He eventually required someone to escort him to and from the tutorials, as he refused to give up teaching us despite his declining health.

I became thankful for the time I was able to spend with him and relished the knowledge he imparted. His commitment to teaching us was honestly nothing short of inspirational. He even arranged for us all to visit his home one weekend where he proudly showed off his extensive library, with his hundreds of books on medical history. It was an honour to be among Dr Storey’s last students and I hope that we made as much of an impact on his life as he did on ours.

I can’t say I regret my initial dislike of Dr Storey. In fact, it actually helped me learn to stand up for myself to someone far superior, even if it meant I was often embarrassingly dismissed. I think he might have respected me for it, but I’ll never get the chance to find out now. I guess what I learnt from the whole thing is that you should never judge a book by its cover. Unless the book has tattoos, of course.

Rest in peace, Dr S. I hope you are still dropping those pearls of wisdom in the afterlife.

Simon Reid is a final year medical student and president of Med Soc.
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