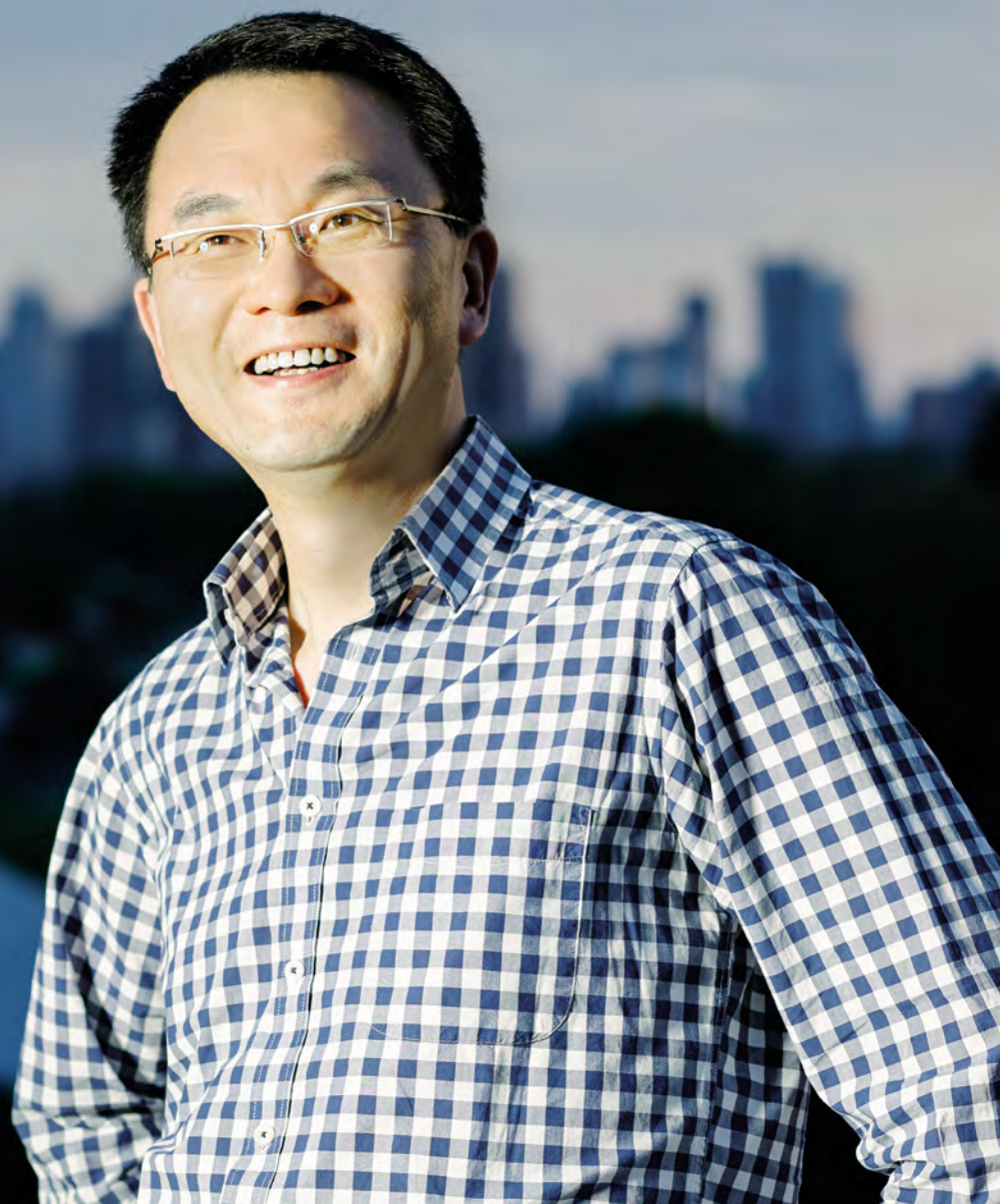


# Alchemy

Faculty of Pharmacy and  
Pharmaceutical Sciences

Issue 28 / Summer 2015



Turning the tables on 'superbugs'

Wound care clinics more than a  
bandage for primary health care

Landmark grant builds world-class lab

A smart approach to asthma  
management in pregnancy



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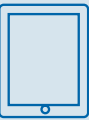
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#### Alchemy has gone digital

Check out the digital version of *Alchemy*. The interactive digital magazine comes complete with staff interviews and videos supporting the latest news from the faculty.

[monash.edu/pharm/alchemy](http://monash.edu/pharm/alchemy)

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## Dean's message

**Summer's here. As we head into the holiday season, we look back with pride at the past few months of achievements and activity.**

In August, two of our faculty projects were recognised as top 30 health innovations with the potential to change global health over the next 15 years.

One is the Inhaled Oxytocin Project, the catalyst for establishing the world-class HMSTrust Laboratory. The other is our work with malaria – development of a single dose oral treatment.

Meanwhile, as antibiotic resistance remains a major public health issue, Professor Jian Li and his team are challenging the emergence of superbugs by re-engineering polymixins. Professor Li's work has been described by the White House as 'one of six examples of successful innovation and science cooperation between the US and Australia'.

If you're in pharmacy, you'll be interested in some changing trends. Pharmacists are moving out of the dispensary and being placed at the centre of primary health care. Whether it's tending wounds, helping pregnant mothers or volunteering their services to help refugees, our graduates are making a direct impact on the real world.

For some insider news, don't miss our profiles of talented students and staff. See what drives them, what they want to be and how they see the future of pharmacy.

Finally, thank you to our generous donors, funding agencies and partners. Your support is crucial for our ongoing activities. To our staff, students and alumni, I wish you a well-deserved break. Here's to another year of innovation and excitement in 2016!

A handwritten signature in black ink, appearing to read 'Mohamman', though it is likely a stylized representation of the name 'Bill Charman'.

**Professor Bill Charman**



From left to right: Dr Tony Velkov, Associate Professor Phil Thompson, Professor Jian Li, Dr Kade Roberts and Professor Roger Nation.



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## THE GLOBAL THREAT OF SUPERBUGS

A recent World Health Organization (WHO) report identified antimicrobial resistance as one of the most serious global health threats of our time, and the greatest challenge in infectious diseases. According to the report, the development of bacteria that are progressively less treatable by available antibiotics is evident in all regions of the world.

The problem is exacerbated by a decline in the development of new antibiotics in the past generation. If not addressed, the WHO warns of a 'post-antibiotic era' in which common infections and minor injuries could once again prove fatal.

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# Turning the tables on 'superbugs'

See the NHMRC's article on Professor Li and his team: [www.nhmrc.gov.au/research-highlights/ten-of-the-best/2014](http://www.nhmrc.gov.au/research-highlights/ten-of-the-best/2014)

**Antibiotic resistance research conducted by the Monash Institute of Pharmaceutical Sciences (MIPS) has been listed among the 10 leading projects of the past year by the National Health and Medical Research Council (NHMRC).**

Published in July 2015, the NHMRC's *Ten of the Best Research Projects 2014* highlights groundbreaking Australian health and medical research, chosen from the many NHMRC-funded projects throughout the year.

The listing recognises the work of Professor Jian Li and his team (Dr Tony Velkov, Professor Roger Nation, Associate Professor Phil Thompson and Dr Kade Roberts) in their quest to develop a new generation of polymyxins to combat antibiotic resistance. Developed more than 60 years ago, polymyxin antibiotics are today used as a last resort in combating Gram-negative 'superbugs' that are resistant to all other current antibiotics. While traditionally effective in many applications, polymyxins have toxic effects and polymyxin resistance is increasingly reported.

Professor Li and his team seek to overcome these challenges and find new possibilities for an 'old' class of antibiotics – to create novel polymyxins with greater antibacterial activity and lower toxicity.

"The world is facing an enormous and growing threat from the emergence of bacteria that are resistant to almost all available antibiotics," Professor Li explains. "And there has been little progress in recent years in the development of new antibiotics against multidrug-resistant Gram-negative superbugs. By working to develop a new generation of polymyxins, we hope to cure life-threatening infections caused by these superbugs – one of the world's biggest health challenges."

Professor Li says the NHMRC recognition provides great encouragement and a valuable endorsement of the importance of his team's research. "Our NHMRC project discovered novel polymyxin antibiotics that act against Gram-negative superbugs. These new compounds were designed using a novel model defining the relationship between the chemical structure of polymyxins and their biological activity.

"This work builds on our mechanistic investigations on polymyxins and the extensive pharmacological research over the last 16 years. This project led to the US National Institutes of Health (NIH) providing about US\$4.4 million in funding over five years – an exceptional sum for an Australian institution. We are now in year four and aim to identify a superior lead compound for further pre-clinical development in the next year or so. It's an important stage of the drug discovery."

When US President Barack Obama welcomed the then Prime Minister Tony Abbott to the White House last year, he highlighted this NIH-supported research as one of six examples of successful innovation and science cooperation between the US and Australia. Professor Li says it is the support of organisations such as the NHMRC and US NIH that make such research projects possible.

"Antibiotic resistance, compounded by the lack of new antibiotics, poses a significant global medical challenge. Without new antibiotics, clinicians have no effective remedy for these drug-resistant superbugs. And, to come back to polymyxins, pharmaceutical companies typically aren't interested in an old class of antibiotics. Therefore the support from the NHMRC and NIH is crucial. Without them, we could never have achieved what we have so far."

Professor Li and his team have been investigating polymyxins since 1999 and are regarded internationally as leaders in the field.

"Most of the modern pharmacological data on polymyxins available today were obtained by our group. Our extensive pharmacological research on polymyxins makes this drug discovery program unique. We organised the first international conference on polymyxins in 2013, and now we've just delivered the second."

Professor Li chaired the Second International Conference on Polymyxins in San Diego in late September. Professor Li and MIPS colleagues Professor Roger Nation, Dr Tony Velkov and Dr Kade Roberts also chaired sessions and delivered presentations at the opinion-leader conference.

Professor Li praised and congratulated his team in achieving the NHMRC recognition. "I thank the team for their hard work particularly Dr Tony Velkov, Professor Roger Nation, Associate Professor Phil Thompson and Dr Kade Roberts. This project started with a corridor chat with Dr Velkov in 2008. Since then, we have designed and synthesised more than 550 novel polymyxin compounds for pharmacological evaluations. Many of these exhibit much better safety profiles and highly promising activity against the superbugs we are targeting."

# Wound-care clinics more than a bandage for primary health care

**Australia's ageing population and the growing burden of diabetes have created new challenges for primary health care in the area of wound management. Melbourne's Quality Pharmacy Group is working to address the challenge by establishing dedicated wound care clinics in six of its pharmacies.**

Monash's Associate Professor Geoff Sussman OAM has been central to the development of the clinics and training of the pharmacists involved. With more than 100 publications and 30 years of clinical research, practice and teaching to his name, he is an internationally renowned expert in wound management. This interest, he says, evolved from his background as a pharmacist. And he sees wound care as central to the pharmacist's role.

"I originally trained as a pharmacist," Associate Professor Sussman says. "Working in hospitals gave me the opportunity to do clinical research, and the area I was most interested in was wound management. The number of chronic wounds we see today is skyrocketing. Someone in Australia loses a limb to diabetes every three hours. It's very alarming and it's only going to get worse."

While Associate Professor Sussman has taught wound management at Monash for many years, he says the challenge of wound care is compounded by a general lack of appropriate health care training in the area.

"Monash approached me 20 years ago to join the staff and start a wound centre. Today it remains the only university in the southern hemisphere providing a substantial level of woundcare teaching to pharmacy and medical students, and the only one offering postgraduate qualifications in the field."

Early in 2013, Associate Professor Sussman was contacted by Quality Pharmacy Group founder and CEO Charles Khallouf, who was interested in expanding the health services offered in his pharmacies to encompass wound care. After more than a year of rigorous planning, development and training, the wound care clinics commenced practice in July 2014.

Associate Professor Sussman says the establishment of the clinics reflects the growing role of the pharmacist in primary health care – and pharmacists are ideally placed to provide wound care.

"For too long the pharmacist was seen as someone who dispensed medicine. The pharmacist today is integral to primary health care. And wound care is as primary as it gets. Wounds are common – every pharmacy, every day will see someone with some sort of wound. There's great potential for pharmacists to work in wound care."

Associate Professor Sussman is also senior clinician at the Austin Hospital, which houses one of the leading wound clinics in Australia and provided the training venue for the program. In difficult cases, the pharmacy will contact Associate Professor Sussman for guidance, while severe cases are referred to the Austin Wound Clinic.

Monash pharmacy graduate Ana Belen Baos Minguez is one of 12 Quality Group pharmacists to have completed the wound care training so far. As the group's health services development manager, Ana has been closely involved in establishing the wound care clinics across six pharmacies. She sees the clinics as providing a vital service.

"Chronic wounds are debilitating and distressing," Ana says. "Improperly treated, they can be devastating. I know this from personal family experience and the people I meet each day as

a pharmacist. Many have been treated for chronic wounds for months with little improvement. We're seeing great results and receiving wonderful feedback. To heal a wound can have a profound effect on a patient. You can change someone's life."

She says the wound clinics play a key role in providing a multidisciplinary approach to patient care.

"We work collaboratively with doctors and medical centres to provide expertise that complements patient care and delivers better outcomes. Everything is documented and monitored and referred back to the nominated GP or specialist. It's important to have a team approach and work together for the health of the patient."

Quality Pharmacy general manager Larry Field says that while establishing the wound care clinics was a considerable undertaking, he is delighted with the response from both patients and other health care providers.

"We saw a great opportunity for patients to have better access to better care through their local pharmacy. The initiative has opened up a new referral stream from medical centres. Our relationship has changed from being the local pharmacist to being a pharmacy that provides services that are very complementary to their practice. It's a valuable addition to our patient care and to primary health care in general."

Encouraged by the potential for patient care, Ana is now building on her experience by undertaking postgraduate training in wound care with Monash. "As pharmacists, there are so many opportunities for patient care – to identify problems and help people. Pharmacists are so accessible. And as many wounds present in pharmacies, I'm particularly passionate about wound care. I see great potential for our pharmacy and pharmacists in wound care."



*“For too long the pharmacist was seen as someone who dispensed medicine. The pharmacist today is integral to primary health care.”*

Learn more about the faculty's postgraduate courses in wound care: [monash.edu/pharm/future/courses/postgraduate/wound-care](https://monash.edu/pharm/future/courses/postgraduate/wound-care)



Ana Belen Baos Minguez  
and Geoff Sussman.

# Two MIPS projects ranked among top 30 global health innovations

Learn more about Innovation Countdown 2030 and download the IC2030 report *Reimagining Global Health*: <http://ic2030.org/>

**Two research projects being conducted by MIPS have been included in the recently published Innovation Countdown 2030 report, *Reimagining Global Health: 30 high-impact innovations to save lives*.**

Led by the international non-profit organisation PATH, the Innovation Countdown 2030 initiative seeks to promote innovation in global health by 'identifying and showcasing technologies and interventions with great promise to accelerate progress toward solving the world's most urgent health issues'.

Driven by the 2030 health targets proposed in the United Nations Sustainable Development Goals, the inaugural IC2030 report highlights 30 innovations with the potential to change the face of global health over the next 15 years.

The two MIPS projects stood out as 'game-changing health technologies and ideas'. They were selected from more than 500 submissions and evaluated by 60 independent health experts, based on affordability, accessibility, effectiveness and other key factors.

The work of the MIPS Centre for Drug Candidate Optimisation (CDCO) to develop a single-dose antimalarial drug was selected as a leading innovation in the Combating Infectious Diseases category. This work was part of an international collaboration with the Medicines for Malaria Venture (MMV), the University of Nebraska and the Swiss Tropical and Public Health Institute.

The WHO estimates malaria caused more than half a million deaths in 2014. Most of these were children in Africa, where a child dies every minute from malaria. Half the world's population is at risk from the disease.

The potent synthetic antimalarial drug candidate known as OZ439 has the potential to rapidly and completely eliminate the malaria-causing *Plasmodium* parasite, while avoiding the growing problem of drug resistance. CDCO director Professor Susan Charman says OZ439 is a particularly exciting drug candidate, as it offers the hope of a single, oral-dose cure for malaria.

"Drug resistance is a major problem, so we desperately need new drugs such as OZ439 that may be effective against resistant parasites," Professor Charman says. "The added bonus of single-dose administration would have a major impact on improving patient compliance and treatment outcomes."

OZ439 is undergoing Phase IIB clinical trials. The clinical development program is being conducted through a partnership between MMV and pharmaceutical company Sanofi.

In the Maternal, Newborn and Child Health category, the MIPS-led Inhaled Oxytocin Project was selected as a leading innovation. The project seeks to develop a simple and widely accessible delivery system for oxytocin in the treatment and prevention of postpartum haemorrhage, the leading contributor to maternal deaths in developing countries.

The project leader, Associate Professor Michelle McIntosh, is delighted the Inhaled Oxytocin Project was included in the IC2030 report. "This builds upon the co-development agreement recently established with global pharmaceutical company GlaxoSmithKline that will bring an inhaled form of the drug a step closer to reality," she says. "This recognises the efforts of the Monash team and our international partners, and comes at a particularly exciting time as we begin our first human clinical trials."

The MIPS Inhaled Oxytocin Project was the catalyst for establishing the world-class HMSTrust Laboratory. See page 14

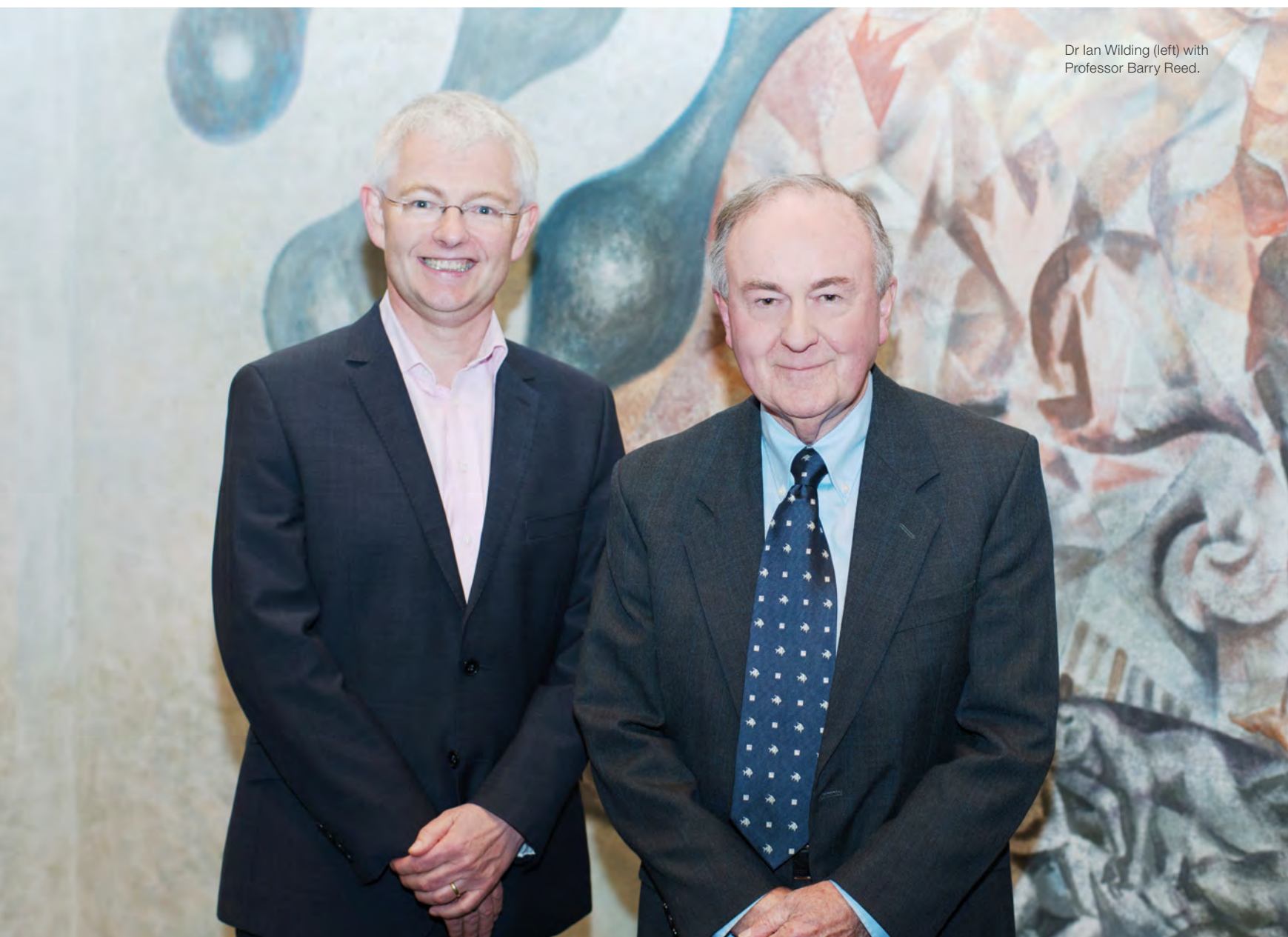


Associate Professor Michelle  
McIntosh (left) and Professor  
Susan Charman





# A bright future for our profession in a rapidly changing world



Dr Ian Wilding (left) with  
Professor Barry Reed.

*“I actually think the future is really bright for our profession in what will be a very different world.”*

Learn more about Emeritus Professor Barry Reed and other presenters of the annual Barry L Reed Distinguished Lecture: [monash.edu/pharm/about/events/barry-reed](http://monash.edu/pharm/about/events/barry-reed)

## The faculty was honoured to host internationally renowned pharmaceutical scientist Dr Ian Wilding as presenter of the 2015 Barry L Reed Distinguished Lecture.

Special Professor in the School of Pharmacy at the University of Nottingham, Dr Wilding is an internationally recognised expert in the design, development and clinical evaluation of drug delivery systems.

Faculty dean Professor Bill Charman described Dr Wilding as a thought-leader, innovator, entrepreneur and alchemist: “An alchemist in terms of being able to link science, medicine development and commercialisation all together. There is a degree of alchemy required to do that successfully, as Ian has shown so many times in his career.”

Dr Wilding’s lecture ‘The Pharmaceutical Industry 2020’ explored what the future may hold for the next generation of pharmaceutical scientists. He charted the decline of internal discovery and early development within large pharmaceutical companies, and the challenges and opportunities this represents.

“My belief is that by 2020 large pharma will largely have ceased to undertake its own internal discovery activities,” Dr Wilding declared. “The landscape in which we are working is changing extremely rapidly.”

Dr Wilding explored what this new landscape may look like. “Whilst large pharma will reduce its footprint, there is growth in the satellites around it. Biotech will increase in size. Academia will

increase in prominence. Speciality pharma will become more niche focused. Contract research organisations will change their business models.”

What does this mean for us as pharmaceutical scientists? Dr Wilding believes we need to ensure our next generation of industrial scientists have a broad perspective of drug development issues.

“We must remember that early drug development is about understanding consequences. We have to know enough to engage with our colleagues on multiple issues that impact success or failure. It’s important that we understand how to pull people together to have that interplay of skills – still giving them expertise, but also providing context – the context in which to apply the science. I actually think the future is really bright for our profession in what will be a very different world.”

Dr Wilding’s lecture was held at Parkville in June and attracted more than 300 guests – the largest audience in the history of the Barry L Reed Distinguished Lecture.

Dr Wilding was subsequently awarded an honorary doctorate by Monash for his major contributions to international drug development.

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When Emeritus Professor Barry Reed retired from Monash in 2006 after 43 years of distinguished service, his colleagues sought to acknowledge his contribution to the faculty, university and pharmacy profession. The annual Barry L Reed Distinguished Lecture was established. The only named lecture series within the faculty, its first lecture was presented in 2008.

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# Leadership commended

**Alumna Sue Kirsa (BPharm 1983) has been honoured with a 2015 Distinguished Alumni Award, which recognises alumni who have made an exceptional contribution to their field through excellence, leadership and their ability to inspire.**

Professor Bill Charman congratulated Sue on her award and highlighted her reputation as a highly regarded and influential leader of the profession.

"Sue's leadership in the form of innovative practice models and setting strategies for the advancement of the profession has been instrumental in shaping the landscape of hospital and clinical pharmacy nationally. She is one of our most prominent alumni and a highly deserving recipient of this award," he said.

Over a career spanning more than 30 years, Sue initially worked as a community pharmacist before specialising in oncology, and was subsequently appointed senior pharmacist, clinical support, at Monash Medical Centre. Since then she has held a number of senior appointments in Victorian hospitals, most recently as the director of pharmacy at the Peter MacCallum Cancer Centre. She currently serves as the director of pharmacy at Monash Health. It is through such roles that she led the development and implementation of transformative changes to pharmacy in the hospital setting, including key safety, service enhancement and medication management initiatives, many of which have been adopted in hospitals across Australia.

"It was a wonderful surprise and an honour to receive this award. I have been very fortunate to work in a career I love, and I'd like to thank my many wonderful colleagues and friends for their support and encouragement," Sue says.

Sue has also been a prominent advocate for hospital pharmacy and the advancement of the profession. She has held positions such as councillor, president and now immediate past president of the Society of Hospital Pharmacists Australia (SHPA), co-authoring a number of SHPA standards and leading the development of an advanced practice framework for pharmacists. In 2008, Sue was made a fellow of the society in recognition of her service, leadership and excellence in the practice of hospital pharmacy.

Sue has also influenced many students and young pharmacists through roles as lead preceptor and as a mentor to PhD candidates, intern pharmacists and registered pharmacists. She has a passion for higher education, and has helped embed contemporary clinical and professional best practice into Monash's BPharm curriculum through her role as the chair of the Pharmacy Advisor Stakeholder Group.

"Passing on our knowledge and experience to the next generation, and seeing them grow and develop into the leaders who will replace and surpass us, is very satisfying and essential to the development of the profession. I have been very privileged to have been given the opportunity to work closely with Monash University, and students and young pharmacists in my various workplaces."

Sue received her award at the Distinguished Alumni Awards ceremony at Monash Clayton's Robert Blackwood Hall on 28 October.

# Fostering a sustainable future for pharmacists

## The Australian Pharmacist Workforce Summit – the first event of its kind – was held at the Faculty of Pharmacy and Pharmaceutical Sciences in June.

A joint initiative of the faculty's Project Pharmacist and the Australian Pharmacy Liaison Forum (APLF), the Workforce Summit gathered delegates under the theme 'Uniting our profession for a sustainable future'.

As Project Pharmacist director John Jackson explains, the aim of the summit was to identify and explore the major issues of the pharmacist workforce. "It's in our interest as educators to ensure practice opportunities meet the needs and expectations of our graduates, the wider profession and the community," he says. "When the faculty established Project Pharmacist last year, we began by identifying factors surrounding primary care pharmacists which have a bearing on the implementation of new professional roles. One of the priority factors identified was the workforce."

John sees the capability and capacity of the workforce as underpinning the profession's future. "A professional and sustainable workforce is essential to address the growing needs of the population and enable the continued expansion of the pharmacist's scope of practice. So we decided to conduct a comprehensive workforce summit. As the APLF was also keen to conduct a workforce study, we collaborated to deliver the summit jointly."

The event attracted delegates from the major pharmacy organisations, along with the Australian Health Practitioner Regulation Agency, the Commonwealth Department of Health and the Australian Institute of Health and Welfare.

"We surveyed the major pharmacy organisations in advance to shape the agenda for the summit," John says. "Our objective was to consider the pharmacist workforce in all areas of practice and identify major issues affecting sustainable and rewarding professional roles that contribute to the health of the Australian population."

He adds that the initiative sought to take a comprehensive look at the workforce issues, and identify the data needed to monitor and address these.

"The feedback from the survey and subsequent assessment at the summit identified a range of priority areas," John says. "We need to study the workforce opportunities and issues from the perspectives of both supply and demand. We need to explore the attitudes and beliefs of pharmacists. And we need to conduct a longitudinal study tracking a group of pharmacists over several years."

"Building on the valuable groundwork of the summit, Project Pharmacist will seek to continue to work with the APLF and other groups to investigate these and other issues pertinent to the enhancement of pharmacists' practice – for the profession and the broader community."

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Project Pharmacist is an initiative of the Monash Centre for Medicine Use and Safety.

Established in 2014, Project Pharmacist seeks to support new models of practice for pharmacists – to better benefit patients, meet health care demands and build a rewarding profession.

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# From Portarlington to Parkville

*“I love learning and sharing my experience. Studying pharmacy at Monash has been a great choice.”*

Georgina Pennefather has always been a rural student. She grew up in small towns with strong communities. She's from a big family with a strong commitment to education, life experience and community service. So it's no surprise she chose to study pharmacy at Monash. And it's no surprise she's this year's recipient of the Thea Pärnamäe Rural Pharmacy Bursary.

“I grew up near Mt Macedon before we moved to the Bellarine Peninsula, which is where I live now – at Portarlington. I love living in a rural area. And I love learning and sharing my experience. Studying pharmacy at Monash has been a great choice.”

Although Georgina is the first in her family to study pharmacy, it was her family who encouraged her to pursue this path.

“I loved bio and chemistry at school. My mum's a nurse. She suggested I think about pharmacy. Mum's dad did industrial chemistry, but always says he regrets not doing pharmacy! So I guess it's been on my mind for some time. I work part time in the Portarlington Pharmacy. I love it. It's a typical small rural pharmacy. Everyone knows the pharmacist by name. Everyone knows and cares for each other.”

Knowledge and caring are two qualities that Georgina says her upbringing emphasised.

“Mum and dad always instilled in me the value of life experiences and education. Money would be spent on going places and doing things rather than cars and stuff. We also do foster care. I guess we value caring and sharing.”

Georgina says studying pharmacy at Monash has opened her eyes to a world of possibilities.

“I've wanted to do pharmacy since Year 10. I love everything about it. Being at Monash and learning from such inspiring people really is an eye-opener. I'm doing things I never thought I'd be able to do. I'm even now thinking I could go on and do medicine. If I could be at uni for the rest of my life, I would!”

The Portarlington local says the Thea Pärnamäe Rural Pharmacy Bursary has provided valuable support and encouragement.

“The bursary means so much. It's taken the pressure off me financially. But it's simply the recognition for a rural student that's so encouraging. Going to uni has an extra challenge for students from outside the city. I really appreciate someone recognising that I do have to go that little bit further.”

*The Thea Pärnamäe Rural Pharmacy Bursary supports female pharmacy students from rural and remote areas. The bursary was established by Dr Kersti Nogeste in honour of her late aunt, Swedish pharmacist Thea Pärnamäe.*





# Landmark grant builds world-class lab

**The HMSTrust Laboratory was officially opened at MIPS in August. The world-class translational research facility is the first of its kind in Australia, putting MIPS at the forefront of global health research and development.**

The development of the new lab was made possible by a landmark \$1.2 million grant from the Helen Macpherson Smith Trust. This fostered a further \$1.4 million of in-kind contributions from international industry partners PerkinElmer and Shimadzu. This combined support helped leverage an additional \$1.5 million, bringing the total to more than \$4 million.

Some 130 guests – comprising government and industry representatives, donors and senior university staff – attended the official opening by the Victorian Minister for Health, Jill Hennessy. Ms Hennessy said the laboratory would ensure Victoria and Monash remain world leaders in global health. “The HMSTrust Laboratory is a shining example of Victorian research, development and infrastructure having a global impact,” she said.

Bringing together Victorian research institutions with international biotech and pharmaceutical organisations, the HMSTrust Laboratory creates a dynamic hub for research and development. Located within the Drug Delivery, Disposition and Dynamics theme at MIPS, the laboratory makes available sophisticated physical and chemical characterisation instruments to support pharmaceutical research and overcome drug development challenges.

MIPS director Professor Bill Charman thanked the HMSTrust and industry partners for their support, collaboration and vision in establishing the new facility. “These state-of-the-art facilities and capabilities will support researchers in making

the giant translational leap from research to new medicines,” Professor Charman said. “The laboratory will improve global access to life-saving medicines, while providing industry-leading training for the next generation of pharmaceutical scientists.”

The HMSTrust Laboratory is open to both Monash and external researchers, with systems training and support available for all instruments. The open-access platform will enable home-grown researchers to continue to develop their projects within Australia.

The establishment of the lab builds on the success of an earlier HMSTrust grant that enabled MIPS to purchase key analytical equipment in 2007. This equipment, still in use today, enabled early-career researcher Dr Michelle McIntosh to develop the groundbreaking Inhaled Oxytocin Project. This work was the catalyst for establishing the world-class HMSTrust Laboratory, of which the now Associate Professor McIntosh is director.

The global industry partnership between PerkinElmer and Shimadzu is a world first, providing advanced technologies for Victorian pharmaceutical researchers to develop improved global health solutions. HMSTrust chair, Dr Philip Moors AO, said the trust was proud of its role in supporting innovation and collaboration.

“Building capacity for the long term through collaboration and partnership are key objectives of the trust,” Dr Moors said at the opening. “We’re delighted that the HMSTrust grant has leveraged additional international funding and partnership. Our shared vision is truly reflected in the laboratory’s slogan, ‘Victorian ideas, global impact’.”

The HMSTrust Laboratory creates a unique and invaluable resource for Victoria, Australia and global health.





Learn more about the HMST Laboratory: [platforms.monash.edu/hmstlab/](https://platforms.monash.edu/hmstlab/) and the HMSTrust and grant: [hmstrust.org.au/case-studies/monash-institute-pharmaceutical-sciences-mips](https://hmstrust.org.au/case-studies/monash-institute-pharmaceutical-sciences-mips)

From left to right: HMSTrust Lab Senior Administrative Officer Nicole McMillan with Victorian Minister for Health Jill Hennessy, Monash President and Vice Chancellor Professor Margaret Gardner AO and Associate Professor Michelle McIntosh.

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## DEVELOPING A SIMPLE SOLUTION TO A GLOBAL HEALTH PROBLEM

Each year, nearly 300,000 women globally die from pregnancy-related causes, with postpartum haemorrhage (PPH – excessive bleeding after childbirth) the leading contributor to these deaths. Although PPH can be effectively prevented or treated with an injection of oxytocin, access to the drug is limited as it requires refrigerated storage to maintain efficacy and trained medical personnel to administer.

The Inhaled Oxytocin Project seeks to develop a novel aerosol delivery system for oxytocin that can be administered with a simple, low-cost, disposable device immediately after childbirth. This will increase access to this life-saving medication in resource-poor settings – where a large number of women give birth outside medical facilities or in understaffed and under-resourced clinics.

The project has now reached the exciting clinical trial phase. The capabilities of the new HMSTrust Laboratory will support this translational research being undertaken at MIPS.

The Inhaled Oxytocin Project was recently included in the Innovation Countdown 2030 report, *Reimagining Global Health: 30 high-impact innovations to save lives*. See page 6

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# Q&A with Tom Day

*“Music production became my outlet or escape from the research world. Whenever I was out of the lab, I was sitting in my room writing new songs.”*

Tom Day is the faculty’s student recruitment officer. He’s also completing a PhD in medicinal chemistry. And he’s an accomplished music composer and producer.

We talk to Tom about how he came to be here, how these sometimes competing interests can complement each other, and where they may one day lead.

Cue music...

**What led you to Monash? Tell us about your pathway and research.**

I originally studied medicinal chemistry at La Trobe after not quite making it into Monash. I had too much fun in Year 12! I made the jump to the Monash pharmaceutical science honours program, which paved the way for a PhD.

My research project was under Professor Peter Scammells. I designed small molecule inhibitors for an over-expressed enzyme found in several tumours, including ovarian and endometrial cancers. The enzyme is also implicated in chemotherapy resistance and endometrial disorders such as endometriosis. The compounds I designed were based on the common household anti-inflammatory drug, aspirin.

**What drew you to this? Why medicinal chemistry?**

Life and physical sciences always sparked my interest. Medicinal chemistry, being the perfect intersection of chemistry and biology, was something I’d wanted to pursue since high school. I loved the idea of being able to create new molecules that can alter the body’s processes and aid in treating disease.

In terms of the recruitment world, being able to excite and educate students about how they can use their science in future careers is a great reward. It’s a challenge to create content that’s informative as well as entertaining, but when you pull it off and get a positive response from a classroom of students, it’s a huge pat on the back.

**How and where does music-making fit into all of this?**

Around the time I was delving into science during high school, I developed an interest in music production. This evolved through my undergraduate years, with several labels expressing interest in my music, including the UK-based Ministry of Sound. So I was gradually exposed to various audiences around the world. Since then, my music has evolved from traditional ‘dance’ music to more ambient and downtempo genres. I also began releasing independently instead of relying on record labels to distribute my music.

Music production became my outlet or escape from the research world. Whenever I was out of the lab, I was sitting in my room writing new songs. I think the two worlds complemented each other really well – a bad day in the lab resulted in a melancholic, ominous track.

In recent years, my music has gained some attention for use in film and advertising. My tracks have been licensed by National Geographic, Holden and Volvo, as well as independent film producers around the globe. I’ve also managed to play a few live shows around town, including last year’s Melbourne Music Week.

**Tell us about your work as student recruitment officer. Does it help recruiting students when you’re actually a student as well as a recruitment officer?**

Absolutely! I think the model of student recruitment is starting to shift towards content-based workshops as opposed to course presentations and expos. I still remember when CSIRO came to my school in Year 10 and ran a workshop in my science class. It has a huge effect when someone external comes in and discusses the science behind their field.

Visit Tom's website to hear his music  
and see/hear the videos he's scored:  
[www.tomday.me](http://www.tomday.me)

As I progressed through the PhD, I began helping out the recruitment team doing high school visits. I would talk about how chemistry and biology can be used to make medicines. It was a great way to earn some extra cash on top of my scholarship. I found myself drawn to the science education/communication aspects, so when a full-time role came up I leapt at it.

Since starting the role, I've developed more of an 'outreach' approach to recruitment. This involves curriculum-aligned workshops for Year 10, 11 and 12 students, as well as a 'Young Alchemist' club, which further engages with Year 11 and 12 students who share an interest in chemistry and biology. Interest from schools seems to be growing exponentially. Apologies to those who need the faculty car!

#### **So where to next?**

Well, I've recently packed away all my music gear. I need to tie up loose ends and submit my PhD thesis. Between working full time and making music, the thesis writing took a bit of a hit – sorry Pete!

After that? Well, I'm learning a lot from the recruitment and marketing world, so perhaps with those skills, alongside my PhD and music production, some kind of science communicator who talks about drug design, over the top of some ambient/chillout music?



# A smart approach to asthma management in pregnancy

Respiratory conditions have long been a key area of research within Monash's Centre for Medicine Use and Safety. For instance, over the years the centre has delivered many advancements in asthma management. In recent years, this work has come to focus on asthma management in pregnancy.

Asthma is among the most common medical conditions affecting pregnant women. While the safety of common asthma medications for use in pregnancy is well established, many asthmatic mothers-to-be put concerns about their baby's health ahead of their own and stop taking their medication.

This potentially jeopardises the wellbeing of the mother and the healthy development of the baby. Poorly controlled asthma during pregnancy has been linked with numerous maternal and perinatal hazards, such as increased risk of pre-term birth and low birth weight.

The Centre for Medicine Use and Safety is pioneering the use of smartphone technology to encourage pregnant women to better monitor and manage their asthma. As principal investigator and senior lecturer Dr Johnson George explains, the strategy builds on the centre's multidisciplinary approach to asthma management in pregnancy.

"The centre developed a pharmacist-led, multidisciplinary model of care for maternal asthma management emphasising education and regular monitoring," Dr George says. "This was the focus of recent PhD graduate Dr Angelina Lim.

"As smartphones have become more user-friendly and widely embraced, they provide the ideal platform for an intervention encouraging self-management and providing customised feedback. In an age group where people are frequent users of smartphones, an app to facilitate self-management has great potential. And that's what we've seen in the trial just completed. Elida Zairina is focusing on this research as part of her PhD."

The intervention combines a smartphone app with a Bluetooth-enabled handheld device for self-monitoring lung function, asthma symptoms and medication usage. Readings are automatically transmitted to an online database and portal. Customised feedback is provided to the patient, while health care providers can access patient information via the portal in real time.

Patients are immediately alerted to any changes in symptoms and can follow up with their pharmacist or physician in a timely manner. So they are better informed and more in touch with their health and health care providers. This is the first time such technology has been investigated for remotely monitoring lung function and optimising asthma control during pregnancy.

Dr George says the centre drew on a wide range of expertise in conducting the research. "The Mercy and Royal Women's hospitals were our main partners in the project. We also drew on expertise from the Austin Hospital, as well as Monash's departments of Epidemiology and Preventive Medicine, and Electrical and Computer Systems Engineering. Without them, the work wouldn't have happened. It was a large collaboration."

By combining innovative use of technology with a pharmacist-led, multidisciplinary strategy for patient care, the Centre for Medicine Use and Safety is effectively reducing the risk of poorly controlled asthma during pregnancy – for mother and baby alike.



Elida Zairina (left) with Asuntha Karunaratne.



# In brief

For further information or to access  
PharmAcademy, visit: [pharmacademy.org](http://pharmacademy.org)



## PharmAcademy

### Connect | Share | Learn

A new online education innovation will transform the way education, knowledge, experience and resources are accessed and shared among the global pharmacy community.

The faculty recently launched PharmAcademy.org, a free online community of practice designed to be the 'go to' place for pharmacy educators worldwide to connect and share knowledge and resources.

PharmAcademy comprises three principle components which combine to deliver content sharing, academic publishing and peer networking on a single platform. It builds significantly on SABER (Sharing and Building Education Resources), a site housing contributed resources from world-leading institutions launched by the faculty in 2012. PharmAcademy also incorporates access to the journal *Pharmacy Education* and to a community networking hub designed to enable the worldwide community of pharmacy educators to connect online.

The first of its kind to be developed globally and created under the auspice of the International Pharmacy Federation (FIP), the unique repository focuses on collaboration and sharing of education research, resources and ideas to support the global pharmacy education community.

Faculty manager Marian Costelloe said the University is constantly looking for opportunities to deliver innovative educational activities and enhance learning outcomes.

"PharmAcademy is free, internationally accessible and houses valuable teaching and learning resources. The social aspect of the platform is a way of creating opportunities for interaction among pharmacy education providers and the wider pharmacy education community. The philosophy behind the development of PharmAcademy is to discover, collaborate and share."

PharmAcademy was officially launched at the 75th FIP World Congress of Pharmacy and Pharmaceutical Sciences in Düsseldorf, Germany in October.

PharmAcademy is free to join and is available to pharmacy educators anywhere in the world.

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### PharmAcademy

Your community, your resources, your *Pharmacy Education* journal. All in one place – free of charge.

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## Students raise funds for refugee health literacy

**More than 120 students channelled their inner-game show host as the Parkville Postgraduate Association (PPA) held their annual trivia night, raising funds for The Water Well Project, a charity with a special link to the faculty.**

Founded in 2012 by alumna Dr Linny Kimly Phuong (BPharm (Hons) 2002) (MBBS 2009), The Water Well Project is a registered not-for-profit organisation which aims to improve the health and wellbeing of migrants, refugees and asylum seekers by improving their health literacy.

Dr Phuong who is currently an Advanced Paediatric Trainee at the Royal Children's Hospital, founded the charity after observing a need for greater health literacy in refugee and asylum seeker groups.

"I became increasingly aware of the barriers to access while working as a pharmacist and now as a doctor. Also, my parents were refugees so it was both personal and professional experiences that motivated me to create The Water Well Project," she said.

Katrina Hui who is the Secretary of the PPA said it had always been a conscious decision to raise funds for both local and international charities and was proud to announce that more than \$1400 had been donated.

"This year we wanted to support a cause closer to home and when we came across The Water Well Project on Facebook, the connection was obvious."

"It was founded by a graduate, a number of pharmacists volunteer at the project and improving health literacy is something we all learn about during our degree. We also wanted to inspire students and graduates by showing them another way of how pharmacists can make a real difference in the community," she said.



## New course director for Bachelor of Pharmaceutical Science

**Associate Professor Michelle McIntosh has been appointed course director of the Bachelor of Pharmaceutical Science.**

Associate Professor McIntosh has a long history with the faculty and the degrees it delivers. She completed her Bachelor of Pharmacy, honours and then PhD here in the 1990s. After seven years working in the US at the University of Kansas, she returned to Parkville in 2006.

Since that time, Associate Professor McIntosh has lectured in both the Bachelor of Pharmacy and Bachelor of Pharmaceutical Science. In recent years, she has been a member of the Bachelor of Pharmaceutical Science course team, and the major coordinator for the formulation science component of the course.

Associate Professor McIntosh says she is eager to build on the course's strong foundation and reputation. "Our aim is to ensure that the Bachelor of Pharmaceutical Science continues to be recognised as the best offering in pharmaceutical science in Australia, and sought after on an international level. And that our graduates continue to meet industry demands and take advantage of new opportunities locally and internationally.

"I would like to further this through developing our international relationships – such as our PharmAlliance partners at the University of North Carolina and University College London – to create new opportunities for international exchange."

The newly appointed Bachelor of Pharmaceutical Science course director takes over the position from Professor Peter Scammells, who has undertaken an industry sabbatical placement in the US.

Associate Professor McIntosh also heads the Inhaled Oxytocin Project and the newly established HMSTrust Laboratory. See page 14

*"Our aim is to ensure that the Bachelor of Pharmaceutical Science continues to be recognised as the best offering in pharmaceutical science in Australia."*





## SciFinder award out of this world

MIPS research fellow Manuela Jörg is one of 20 PhD students and postdoctoral researchers worldwide who were recently rewarded for their academic accomplishments and scientific merit in the 2015 SciFinder Future Leaders in Chemistry awards. The awards are offered by the Chemical Abstracts Service (CAS), a division of the American Chemical Society (ACS), considered the world's leading authority for chemical information and related solutions.

The group, which included researchers with backgrounds across a broad range of chemistry disciplines, travelled to Columbus, Ohio, to attend a week-long program of activities hosted by CAS. Participants had an exclusive opportunity to share their insights on the information and workflow needs of scientists around the world, and contribute to the development of SciFinder, a comprehensive directory of references, substances and reactions in chemistry and related sciences.

"I routinely rely on SciFinder for my work, which focuses on the design, synthesis and evaluation of small molecules and pharmacological tools targeting G protein-coupled receptors," Manuela says. "I was thrilled to have been selected to provide input into refining this very useful tool."

While in Columbus, participants also had a behind-the-scenes look at how CAS scientists collect and organise the information in SciFinder, and had the opportunity to present their research, take part in career and leadership development workshops, and learn advanced SciFinder search techniques.

The 2015 program also included the return of SciFinder Future Leaders in Chemistry alumni. "One of the highlights of this trip was the opportunity to meet and network with some of the world's leading scientists in their field," Manuela says.

At the conclusion of the program in Columbus, the awardees of the 2015 SciFinder Future Leaders travelled to Boston to attend the 250th ACS National Meeting and Exposition.

Manuela completed an apprenticeship as a chemical lab technician at Ciba Specialty Chemicals in 2001. She obtained a bachelor degree from the University of Applied Sciences Northwestern Switzerland in 2008, followed by a masters degree from the University of Basel in 2009. She moved to Australia for a one-year traineeship at CSIRO before she started her PhD under the supervision of Professor Peter Scammells and Dr Ben Capuano at MIPS.



## Finished business

After four years at the helm of its business development endeavours, Dr Rocco Iannello was recently farewelled by the faculty.

As director of business development at MIPS, Dr Iannello worked primarily across the pharmacy and medicine faculties at Monash. He drove and facilitated inter-disciplinary research collaboration across both faculties and led the business development, industry engagement and commercialisation strategies across these faculties and, where required, the broader university.

Professor Bill Charman said Dr Iannello had been instrumental in guiding the strategic direction of the faculty's business development initiatives and achieving some outstanding results.

"Rocco Iannello has been a fabulous contributor to the growth of MIPS and the Centre for Medicine Use and Safety, and to our overall research enterprise. He has led the structuring and negotiation of our major corporate and collaborative partnerships and has been the lynchpin in our interaction with the technology transfer and commercialisation activities of the University. He has had a passion for supporting our researchers, and contributed significantly to the MIPS Executive Committee," he said.

Dr Iannello will head up the international business development activities of Gordagen Pharmaceuticals Pty Ltd, which focuses on developing biopharmaceutical therapeutic agents and evidence-based nutraceuticals.

"Rocco leaves with our best wishes for his future career, and our gratitude for a job very well done. He is a friend of us all at the Parkville campus – and I am sure we will see him into the future as we follow his, and he follows our, future progress," Professor Charman said.

Taking over the reins from Dr Iannello is Joy Hewitt (BPharm 1988). Joy is a graduate of the faculty and holds an MBA (entrepreneurship and innovation) from the Australian Graduate School of Entrepreneurship, a Master of Laws (commercial law) from Monash and has completed a Company Directors Course at the Australian Institute of Company Directors. Most recently, she was director of business development at Biota following prior experience at EQiTX Limited as chief commercialisation officer and at CSL Limited as business development manager (pharmaceuticals).

*"Rocco Iannello has been a fabulous contributor to the growth of MIPS and the Centre for Medicine Use and Safety, and to our overall research enterprise."*



## New beginnings for Steve Marty

**Adjunct Associate Professor Steve Marty recently stepped down as chair of the Faculty of Pharmacy and Pharmaceutical Sciences Foundation (formerly the Victorian College of Pharmacy Foundation).**

Steve joined the board in 2011, taking the reins from the founding chair of the foundation, Alistair Lloyd, in 2013. Under his leadership, the foundation raised more than \$3.5 million in philanthropic funds, primarily in support of the Alistair Lloyd Scholarship for Excellence and Leadership, and the Inhaled Oxytocin Project.

Professor Bill Charman acknowledged Steve's leadership and long association with the faculty, and thanked him for his contribution.

"Over the course of a long and distinguished career, Steve has made an outstanding contribution to our profession, our faculty and the foundation. His talent, commitment and expertise have helped shape the professional landscape of pharmacy through governance, education and his philanthropic involvement. I thank him for his leadership and his work as chair of the foundation, and congratulate him on some outstanding results," he said.

Professor Charman also thanked a number of departing board members for their service and contribution to the foundation's success.

"Since its inception in 2001, the foundation has raised over \$13 million to support the education and research initiatives of the faculty. We owe much of this success to the commitment of our board members, and I want to thank Ken Windle, Professor Barry Reed, Bill Scott, Alistair Lloyd and Dr Geoffrey Vaughan for their service and support," he said.

Peter Cook (BPharm 1969, MPharm 1977) has been appointed chair of the foundation.





## Transforming practice through education

In July this year, the faculty hosted the 8th Pharmacy Education Symposium in Prato, Italy, bringing together some of the world's leading pharmacy educators to share ideas and best practice in pharmacy education and workforce development.

Titled 'Transforming practice through education', the Symposium focused on the global challenges facing pharmacists and the need to adapt education and curricula to suit the wide range of local needs.

Chair of the organising committee and director of the Postgraduate Studies and Professional Development Unit Kirstie Galbraith said the 2015 Symposium was the largest and most successful in the event's 13-year history, attracting over 130 delegates from countries across the world. "The success of this year's Symposium demonstrates the depth of interest in developing academic capacity and improving pharmacy education through global engagement and participation," she said.

The Symposium featured plenary addresses from international leaders in pharmacy education and workforce development, and a series of in-depth interactive workshops designed to improve teaching practice and cater for both established and entry-level academics.

Delegates also had a preview of PharmAcademy, the faculty's latest online education innovation before its official launch at the 75th FIP World Congress of Pharmacy and Pharmaceutical Sciences in Düsseldorf, Germany.

Preparations for the 9th Symposium, to be held in July 2017 and themed 'Pharmacy Education and Collaboration for Global Practice' are underway. The Symposium is held every two years in Prato.

*"The success of this year's Symposium demonstrates the depth of interest in developing academic capacity and improving pharmacy education through global engagement and participation."*

# Where are they now?

## ‘80

The multi-talented Leonie Wohl (nee McKeough) (BPharm 1980) began her career as an inpatient pharmacist at Wangaratta District Base Hospital. After completing a Graduate Diploma of Hospital Pharmacy and a Master of Pharmacy Studies in 1982 while working as a discharge pharmacist at Queen Victoria Hospital, she took on the role of retail manager at a pharmacy in Bendigo.

In 1983, Leonie moved across the globe to San Francisco to marry lawyer and long-term pen pal Steven Wohl. Keen to continue practising pharmacy in America, Leonie worked in finance while studying at the University of California, San Francisco, to gain the required qualifications.

She was subsequently employed as an inpatient pharmacist with Kaiser Permanente, the largest integrated health maintenance organisation in the US. Soon after, she was promoted to assistant chief pharmacist in the outpatient setting.

She was the first clinical pharmacist in the Northern California Kaiser region and held various roles with Kaiser Permanente in a career that spanned more than 30 years.

Leonie has two boys and currently works on call in retail pharmacy while spending her spare time doing volunteer work with seniors. A fan of the arts, Leonie enjoys Bollywood dancing, playing piano, watercolour and acrylic painting, travel, documentary films, theatre and music.

## ‘02

For Robert Sztar (BPharm 2002), pharmacy runs in the blood. As a second generation pharmacist and son of Joseph Sztar (BPharm PhC 1968), he has spent the last 16 years working across community, hospital and international practice settings.

Robert met wife Amanda Sztar (nee Bracht) (BPharm 2002 (Hons) at Monash and a year after graduation they travelled to the UK to work for Lloyds Pharmacy as pharmacy managers in neighbouring communities. A year later and after touring Europe for six months, they arrived back in Australia as a newly engaged couple. They joined Robert's father Joseph, to help him operate and develop his community pharmacies. It was during this time that Robert's knack for technology came to the fore.

A self-confessed technology crash test dummy who sees innovation around every corner, Robert founded Pharmactive, working directly with pharmacy owners to transform their businesses through smart technology. He is also the author of *Transpharmation*, a book detailing a four-step method to successfully implementing technology into a pharmacy business, editor in chief of *Transpharmation* magazine and podcast host of the *Transpharmation* show.

Outside work, Robert is a weekend warrior who loves keeping active with his wife and two young daughters and is a passionate lifelong supporter of St Kilda and Manchester United.

What are you doing now?  
We'd love to hear your story.

If you would like to be featured here, email:  
[pharmacy.alumni@monash.edu](mailto:pharmacy.alumni@monash.edu) with your  
name and a short description of what  
you've done since graduation.

## '10

For someone who graduated just five years ago, Howard Heng has definitely made a name for himself at Baxter Laboratories, the Melbourne-based developer and manufacturer of skincare and topical therapeutic products. Howard's first role after completing his Bachelor of Pharmaceutical Science (Hons) in 2010 was as an entry-level formulation chemist. This saw him assisting the transfer process from laboratory to production, as well as managing the overall stability program onsite.

The critical skill sets he has developed over his time at Baxter Laboratories have enabled Howard to progress through a variety of roles with the company, including product development supervisor, and research and development manager. His current role is senior business manager, overseeing the research and development team as well as the overall business in Australia and New Zealand. Howard maintains involvement in all aspects of the industry, and is an active member of the Australian Society of Cosmetic Chemists.

In his spare time, Howard is an avid traveller and seeks out good food and coffee. In other exciting news, Howard recently married his high-school sweetheart, 11 years after they first met. We wish the happy couple all the best!

## '11

BPharm (Hons) 2011 graduate Lisa Hui likes keeping busy. During her internship year at Austin Health she continued to work in a busy community pharmacy in Northcote, undertaking pharmacist-in-charge duties on weekends.

After completing her internship, Lisa stayed on at the Austin as a rotational clinical pharmacist, and now works as a clinical ward pharmacist in the area of haematology, oncology and palliative care. If this doesn't keep her busy enough, she is the current newsletter editor for the SHPA Victorian branch, and sits on the organising committee for the 2015 SHPA Medicines Management Conference as a CPD coordinator. With an eye to the future, Lisa also volunteers as a mentor to current pharmacy students in the faculty's Student Ambassador program.

In her spare time, Lisa loves all things extreme. She's been known to skydive, drive a stunt plane and roll a quad bike – all in one day! Aside from the death-defying activities, Lisa has a passion for sports in general, photography and travelling.



# Retired Pharmacists' Group

**Q. Thinking about retirement and wondering how you'll stay connected to community pharmacy, intellectually active or socially engaged with your pharmacy peers?**

Come join the Retired (semi-retired or soon to retire) Pharmacists' Group.

**Q. Who are we?**

We are a group of ex-pharmacists who schedule an annual calendar of speakers and activities, supported by the Faculty of Pharmacy and Pharmaceutical Sciences, Monash University.

**Q. Where are we based?**

We are based in Victoria, but anyone can join our group. We meet on the last Tuesday of every month (except January and December) at the Monash Parkville campus (easy parking and public transport) for lunch and to listen to a speaker. Occasionally we venture out as a group to see some of the more interesting and lesser known points of interest in Melbourne.

**Q. Want to know more?**

To register your interest and receive regular invitations, contact Iliana O'Donnell, Iliana. [odonnell@monash.edu](mailto:odonnell@monash.edu) or +61 3 9903 9087. For the full 2016 calendar go to [monash.edu/pharm/alumni/touch/retired-pharmacists](http://monash.edu/pharm/alumni/touch/retired-pharmacists)

**What's on in 2016?**

Date/Time	Topic	Speaker	Venue
Tuesday, 23 February 11am	Project Pharmacist	John Jackson	Parkville campus
Tuesday, 22 March* 11am	Melbourne Town Hall tour	Volunteer guide	City
Tuesday, 26 April 11am	Bridge – the key to keeping your brain fit	Sandi Fallshaw	Parkville campus

*\*Will be held on the second last Tuesday of March due to Easter*

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