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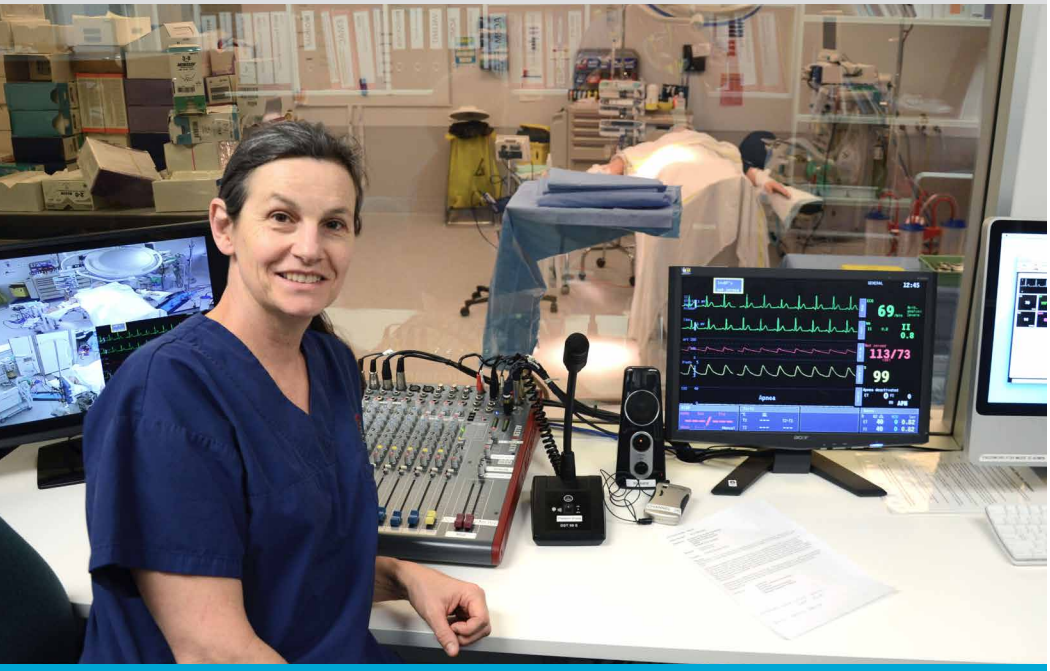
Medical skills without the risk



Dr Jane Torrie works as an anaesthetist two days a week at Auckland City Hospital, has a long interest in teaching and sees simulation education in healthcare as a growing field.

Medical professionals are receiving specialised training at the Simulation Centre for Patient Safety (SCPS) in the medical version of a flight simulator. Its single-minded goal is to improve patient safety through simulation-based education and research.

In search of more space, SCPS moved to Tāmaki Innovation Campus in mid-2011, with level one of Building 721 gutted and rebuilt to highly specialised requirements. The result, according to director Dr Jane Torrie, impresses everyone. "Those who know about simulation drool over it," she says.

The Department of Anaesthesiology has developed its simulation capabilities to support its traditional resuscitation training, enhance undergraduate teaching, provide multidisciplinary short courses in acute care, and conduct research projects using simulation. Anaesthetists became involved early in the history of medical simulation and worldwide continue to develop its use.

SCPS houses the simulation team and equipment in multiple training, ward and operating room areas. It is suitable for the simulation needs of a wide range of healthcare professionals, with the ability to provide outreach activities at clinical sites. According to Dr Torrie, running SCPS is like running a very small hospital, including the complexities of supply and organisation.

Dr Torrie says the driving force in getting the centre off the ground was Professor Alan Merry, now head of the School of Medicine, and his strong interest in adverse events in healthcare from a broad perspective.

"We cater for undergraduates, with all medical, optometry and nursing students receiving resuscitation training. We also run study days for the postgraduate School of Nursing and groups such as speech language therapists, plus many other qualified healthcare staff. Essentially, we expose practitioners to dangerous situations without risk," she says.

Simulation is resource intensive compared with most traditional techniques, but allows participants to "learn by doing" without risk to patients. It also ensures all undergraduates have a standardised exposure to critical but rare events which they may not otherwise experience prior to having to treat such a patient urgently.

Dr Torrie says that while SCPS supports the development of technical acute care skills, it also offers a special interest and expertise in the important contribution of human factors to patient safety.

Enhancing teamwork skills including communication strategies is fundamental to our programme. Course participants can expect to work in multidisciplinary teams as would be the case in clinical practice. SCPS also carries out research on inter-professional teamwork.

Since its inception three years ago, SCPS has worked with many hundreds of learners, with the overarching aim of improving patient safety across the spectrum of care.

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Message from Head of Tāmaki Innovation Campus

Dear Colleagues

As 2014 draws to a close, it is a good time to reflect on the past year at Tāmaki Innovation Campus and to celebrate our many successes, some of which are mentioned in this edition of the Tāmaki Update.

Congratulations to Professor Mick Clout, one of the country's foremost conservation scientists, who has been awarded the Marsden Medal for his achievements over the course of a distinguished career. I was delighted to learn that Dr Elana Curtis from Te Kupenga Hauora Māori received a University of Auckland Teaching Excellence Award for Innovation in Teaching, and has been nominated for the 2015 national Tertiary Teaching Excellence Awards.

There have been a number of other successes over the year, including a Health Research Council grant of $1.2 million to Professor Winston Byblow and his team to investigate why some people recover well after stroke and others don't; the appointment of immunisation expert, Dr Nikki Turner, to WHO's strategic advisory group on immunisation; Professor Alistair Woodward's contribution to the latest report from the Intergovernmental Panel on Climate Change (IPCC); the establishment of the multidisciplinary CoRE, Brain Research New Zealand, which involves contributions from a number of expert staff at Tāmaki; and Professor Fred Seymour and Dr Margaret Agee named Officers of the New Zealand Order of Merit for services to their respective disciplines.

A special mention and congratulations to Professor Ralph Cooney. His success as science leader of the Biocide Tool Box was reflected in the $15.2 million funding over six years received from the Ministry of Business, Innovation and Employment (MBIE). This is a truly impressive achievement and one which has the potential for huge export growth in high-value manufacturing. Professor Cooney, former Pro Vice-Chancellor Tāmaki (2001-2009) has been an unfailing supporter of the Tāmaki Campus for many years. He has recently left the campus and his presence here will be greatly missed.

There have been many other successes and achievements and I congratulate you all and trust you have had an opportunity to celebrate your well-earned rewards. I would also like to take this opportunity to acknowledge those behind the scenes who have supported the academic staff, whether professional staff, research students or assistants. Without your contributions and support the successes would not be forthcoming - your efforts are very much appreciated and we thank you.

Lastly, we say farewell to our Faculty of Engineering and associated Faculty of Science colleagues who have moved to the Newmarket Campus. We wish them well in their new, built for purpose high-tech environment, and we are sure they will flourish and continue to build on their highly successful research and activities.

I wish you and your families all the best for a happy and safe Christmas break, and look forward to an even more successful and fulfilling 2015.

Best wishes
Associate Professor Greg Anson
Head of Tāmaki Innovation Campus

What's been happening?

SHIVERS informs public health policy

A project which is influencing public health policy change for New Zealand, as well as informing international standards, held its fourth annual meeting at Tāmaki recently.

The US funded, ESR-led **SHIVERS (Southern Hemisphere Influenza and Vaccine Effectiveness Research and Surveillance) Project**, is an international, multidisciplinary and multi-agency collaboration to evaluate influenza disease burden, epidemiology, aetiology, risk factors and immunology, and the effectiveness of the influenza vaccination.

The latest results from the project were presented and future surveillance plans discussed.

Choir CeleBRates birthday

The **CeleBRation Choir** celebrated its fifth birthday this year with a lively performance on campus. Launched in September 2009 by the Centre for Brain Research (CBR), the Choir gave its first performance at the CBR Christmas party, with their most recent appearance at the APRA Silver Scrolls Awards. Funding from the New Zealand Music Foundation has helped with resources and enabled them to take the Choir out into the community, see more here.

All are welcome at the Choir's end of year performance on Monday 8 December, 2pm, in the Atrium, led by music therapists Alison Talmage and Shari Storie.

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New green biocides a growth industry

Science leader Professor Ralph Cooney says there is potential for New Zealand to become a world leader in environmentally-benign, highly effective biocides.

A new generation of biocides with reduced environmental and human health impacts is the focus of a University of Auckland-led research programme, the Biocide Tool Box.

The Biocide Tool Box (BTB) recently received $15.2 million funding over six years from the Ministry of Business, Innovation and Employment (MBIE), and was the largest research contract awarded nationally in the 2014 MBIE High-Value Manufacturing and Services funding round.

The aim is to create greener biocides which combine new synthetic and natural agents applicable in both commercial and healthcare contexts.

Science leader Professor Ralph Cooney, says, "It is expected that the new generation of biocides will have reduced environmental and human health impacts, but increased potency against critical organisms. These critical organisms include targets such as mould in construction, biofilms, superbugs in hospital contexts, organisms in food, and organisms associated with industrial products."

There has been rapid growth in demand globally for biocides and New Zealand already has 4,600 manufacturing companies developing and selling export products which utilise biocides. Professor Cooney says there is potential for New Zealand to become a world leader in environmentally-benign, highly effective biocides

"We have talked with a wide range of companies and it is clear that they need a range of biocides from which they can choose to create innovative products which will compete successfully in the international marketplace," he says. The MBIE contract requires that the BTB develops commercialization pathways with greater than 33 nominated New Zealand companies.

The programme involves a network of about 40 researchers from the University of Auckland, Cawthron Institute, Scion Research Ltd and the University of Otago.

The University of Auckland researchers are drawn from chemical and biological sciences in the Faculty of Science, and microbiology in the faculties of Medical and Health Sciences, and Engineering.

The Cawthron Institute and Scion Research will contribute marine and forest natural product biocides, while Auckland and Otago universities will focus on synthetic surfaces through microbiology.

Professor Cooney is the former Pro Vice-Chancellor Tāmaki and Dean of Science. He is the founder of the Polymer Electronics Research Centre and the Materials Accelerator (now the NZ Product Accelerator).

In brief

Informatics expert wins prize

This year's prestigious Clinton Bedogni Prize for Open Systems was awarded to Dr Koray Atalag from the National Institute for Health Informatics (NIHI). The $10,000 prize is awarded to the New Zealand individual (from academia or industry) who has made the greatest contribution to the field of Open Systems in the past two years. Associate Professor Chris Bullen, NIHI director says, "This is a great honour and recognises Koray's unique expertise in this field."

Life and death in New Zealand

Life and death in Aotearoa New Zealand from the first Māori settlement to the 21st century is the focus of a new book by School of Population Health researcher, Professor Alistair Woodward. The book, 'The Healthy Country? A history of life and death in New Zealand', was written in collaboration with Professor Tony Blakely from the University of Otago. The authors investigate New Zealanders' health and longevity which was unsurpassed by other nations until the late 20th century.

Sugary drinks focus of Pacific health research

A new Pacific career development award has been made to public health researcher, Dr Gerhard Sundborn from the School of Population Health. He is one of two researchers to receive the inaugural research fellowship, known as the Sir Thomas Davis Te Patu Kite Rangi Ariki Health Research Fellowship, from the Health Research Council of New Zealand. Dr Sundborn will use the two-year $300,000 award to research Pasifika solutions to reducing sugar-sweetened beverage consumption in Pasifika youth.

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Driver safety app snaps up Spark Challenge

The Back Pocket Driver app team LtoR: Moiz Penkar, Andrew Meads, Dr Robyn Whittaker, Rosie Dobson, Professor Shanthi Ameratunga, and Dr Ian Warren

A smartphone app that encourages safety in young drivers has achieved a third place in the University of Auckland's 2014 Spark $100k Challenge, winning $5,000 seed capital for commercialisation and a three month incubation at The Icehouse.

The app, Back Pocket Driver, was created in collaboration between National Institute for Health Innovation (NIHI) researchers, a team from the Department of Computer Science, and Professor Shanthi Ameratunga from the School of Population Health.

Back Pocket Driver offers a fresh technology-based intervention to tackling the issue of road safety among young drivers, says Dr Robyn Whittaker, who leads NIHI's Health Informatics and Technology programme.

She says New Zealand's youth road toll carries an enormous social cost and emotional impact. The app, combined with NIHI's expertise in behaviour change techniques, aims to motivate and support safer driving behaviours.

It has its beginnings in 2013, when Dr Whittaker and Dr Ian Warren from Computer Science co-supervised a master's student who developed the prototype. From there, the team expanded and worked on the points of difference and potential business models for the app which supports young drivers to change their driving behaviour.

"The app uses the sensors in the smartphone to determine how responsibly and well the individual is driving. We are adding our expertise in behaviour change to provide feedback in a manner that will motivate and incentivise better driving behaviour. We are still working on this part and hope to trial the prototype with young drivers soon," she says.

Dr Whittaker, a public health physician at NIHI has a particular passion for mHealth (mobile health) research, having worked in the area for nearly 11 years. She has interests in supporting people to make healthy behaviour changes and manage their long term conditions using technology. She also works for Waitemata District Health Board in research and innovations, implementing innovations in frontline health services, alongside her research and development work.

Last year, a NIHI team took out second prize at the Spark Challenge with Avatar Anonymous, a virtual reality platform that supports lifestyle changes, such as weight loss, stopping smoking and encouraging physical activity.

Employers urged to support victims of domestic violence

Domestic violence has a huge impact on the workplace and employers need to step up and support victims, says Associate Professor Janet Fanslow.

A paper on Intimate Partner Violence and the Workplace has been published by the New Zealand Family Violence Clearinghouse.

"What happens at home affects what happens at work," says Dr Fanslow. "We are calling for employers to adopt flexible workplace practices and policies to support victims."

Dr Fanslow says staying in paid employment is particularly important for victims of violence from their partner, because financial security can provide a way to escape the relationship.

"Violence from a partner can lead to a victim quitting or being terminated from their job," she says. "Employers need to respond appropriately so victims' employment is not jeopardised because of unexplained lateness, absenteeism or being distracted, tired or unwell."

"These can include things such as flexible work hours, training managers to respond appropriately, and providing additional leave so victims can take steps such as going to court to obtain a protection order," says Dr Fanslow.

"Legislation protecting the employment rights of victims of intimate partner violence is also required."

"One in 20 New Zealand women have experienced intimate partner violence in the last year. Employers need to know it is highly likely within their staff," says Dr Fanslow. "Putting protections in place benefits not only victims of violence but also the economic bottom line."

Dr Fanslow says that "what is good for staff is also good for business."

The full paper can be viewed here.

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Vision for predator free New Zealand

Professor Mick Clout has always been a strong advocate for biosecurity and conservation over the course of his distinguished career.

A New Zealand where native wildlife live without fear of predators is the vision of one of the country's foremost conservation scientists who has been awarded the Marsden Medal for 2014.

Professor Mick Clout from the School of Biological Sciences was jointly awarded the Medal for his contribution to conservation biology and a lifetime's work dedicated to studying the ecology of mammals and birds, including critically endangered species such as kakapo.

The award recognises outstanding achievement in science over the course of a distinguished career and is conferred by the New Zealand Association of Scientists.

After decades working in pest eradication science, Professor Clout believes every last predator in New Zealand could be wiped out: a vision first suggested by the late Sir Paul Callaghan.

However, the whole country would need to get behind the project. Professor Clout suggests we could start with completely eradicating possums, a pest species which he has studied for many years.

"It would be a huge challenge but I honestly believe it could be done, it is feasible."

While offshore havens have ensured the survival of our rarest birds, which might otherwise have been lost forever, people always care more about things they can see and touch, he says.

"Our threatened species cannot only be tucked away in sanctuaries that are remote and inaccessible. We have to bring wildlife and people together, with conservation happening in everyone's backyard."

Professor Clout is a pioneer of the concept of creating pest-free sanctuaries for endangered species through intensive pest eradication and his work in this area is still used by conservation groups and organisations today.

One win, many workers

Dr Elana Curtis rates her most significant achievement as contributing to the development of a growing, vibrant Māori and Pacific health workforce.

Dr Elana Curtis has been awarded a University of Auckland Teaching Excellence Award for Innovation in Teaching, but says while the win is great, she is mindful that it reflects the contribution of many.

"It's a great honour to have work we achieved under Vision 20:20 acknowledged. As a team, we've been committed to the introduction of innovative teaching and learning activities across all our programmes, including our MAPAS admissions process," she says.

MAPAS is a supportive environment that provides admission, academic and pastoral support for Māori and Pacific students studying foundation and undergraduate programmes within the Faculty of Medical and Health Sciences. Its goal is to support the transitioning and retention of MAPAS students through their cultural and educational journey to complete and graduate.

Dr Curtis is a public health physician and joined the University of Auckland as a senior lecturer in 2005. Following a period as academic director of the Certificate of Health Sciences, she moved into a leadership role for MAPAS and Whakapiki Ake and then the directorship position for all programmes under Vision 20:20, which is a commitment to increasing the number of Māori and Pacific health professionals to 10% of the health workforce by the year 2020.

Bringing fresh and innovative approaches to the issues she faced on arrival, Dr Curtis rates her most significant achievement as contributing to the development of a growing, vibrant Māori and Pacific health workforce.

Dr Curtis has been nominated for the 2015 national Tertiary Teaching Excellence Awards.

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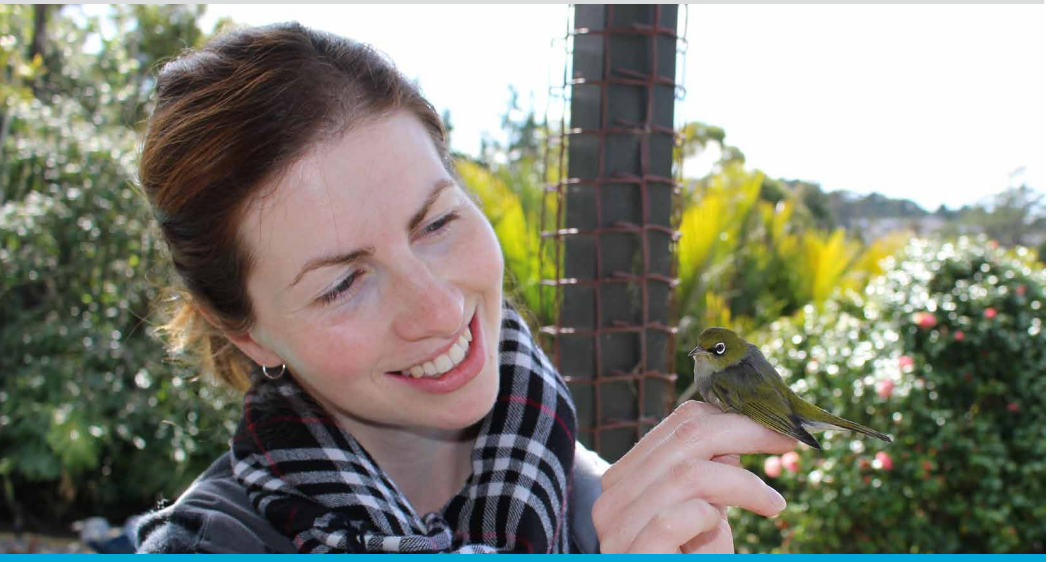
It makes us happy, but what's it doing to the birds?



Josie Galbraith says she is very interested in what makes urban areas habitable for birds, so we can apply this to urban conservation and encourage more biodiversity in our cities.

We've all done it; thrown some bread scraps to the birds in the garden, but just what are we doing to the birds and their environment when we do?

The perplexing question is the subject of Josie Galbraith's PhD research in the School of Biological Sciences. Her study looks at the serious potential implications of both supplying a copious food source for wild birds and encouraging congregation of these birds at a focal point to feed.

It also looks at the effects of enhancing populations of introduced birds and increasing the spread of avian disease.

New Zealanders are unique in their bird feeding habits, with our US and UK counterparts more usually feeding seed or specialist bird food. However, the practice of feeding wild birds is a widespread phenomenon, and Josie believes there has been little consideration of both human and ecological dimensions of the impacts.

While birds are a dominant feature of urban ecosystems with many species surviving in urban centres throughout the world, few studies have focused on avifaunal assemblages in urban environments, particularly in the Southern Hemisphere.

"The practice of bird feeding is becoming increasingly common, and given the lack of attention by the scientific community, appears to be perceived as a harmless human activity," she says.

Josie questions why we do it, and just how harmless is it? The question is slowly being answered through two main strands of her project: quantifying the practice of bird feeding in New Zealand through a nationwide survey to 3,000 households; and investigating the effects of common feeding practices by establishing and monitoring a series of experimental feeding stations in urban Auckland.

"The experimental feeding stations were active for 18 months, with householders providing a prescribed amount of food on a daily basis. This regime allowed me to examine whether feeding causes changes in local avian community structure. Simultaneously, I also collected baseline information on which species are utilising supplementary food sources, their visitation frequency, interactions at feeders, and effects on body condition, parasite load and disease transmission."

Outcomes so far estimate that around 46.6% of households feed birds. Increased age and dog ownership are strongly associated with participation, and bread is most commonly provided. The principal potential risk identified is that introduced birds are likely to be the main consumers of supplementary food sources in New Zealand, which may have follow-on effects for avian community composition.

Disease transmission risks were also identified, with poor hygiene practices reported by many respondents. However, the social benefits to humans of feeding birds is strongly reflected in the motivations of the respondents. Over half feed birds because it brings them pleasure.

As urbanisation increases, opportunities for connecting with nature decrease. Consequently, experiences such as bird feeding, that increase the interaction between people and wildlife, could be a powerful tool for fostering environmental awareness and guardianship.

Josie's study highlights that humans may inadvertently make harmful choices for wildlife, without realising the ecological consequences. She recommends developing appropriate guidelines to minimise risks.

Josie says there is much more work to be done in this area, with this project barely scratching the surface. In particular, more studies into food types being fed, disease transmission, and how far birds will go to access these free food sources.

She looks to the future with confidence, acknowledging there is an excellent group of urban ecologists at Tāmaki Innovation Campus to continue research into urban bird populations and how humans affect them.

Experimental feeding station