Study suggests rethink of ‘alcoholic depression’

By Mark Wright

Findings emerging from the TEAM (Treatment Evaluation of Alcohol and Mood) study in Christchurch are set to challenge current practice when treating depression in alcohol-dependent people.

Professor Doug Sellman, who is the director of the National Addiction Centre at the University of Otago Christchurch School of Medicine and Health Sciences, says their key question was whether people with this “double pathology” do better with an antidepressant in addition to the anti-craving medication naltrexone.

They recruited 141 people to the national multisite study to compare outcomes for those given the antidepressant citalopram as well as naltrexone and conscientious clinical case management (CCM), focused on support for taking the medications, dealing with side-effects and assisting people with problems in their lives.

Professor Sellman says the main paper is under review at present so he cannot be specific about the findings yet, “but we can report that using citalopram in addition to naltrexone and CCM is not as effective as you might anticipate compared with those who received naltrexone and CCM alone.”

He says the findings will certainly challenge current practice which generally involves giving such patients antidepressants for their depression.

“Hopefully, the findings will shift clinical practice towards more actively assisting people to reduce and, ideally, stop drinking alcohol altogether in this situation.”

“Further, it adds to the argument that naltrexone should be made more available to people with alcoholism in New Zealand. At the present time it can only be accessed through specialised drug clinics and not through general practice.”

Professor Sellman says a secondary question of the study was whether the combination of medications had a differential effect depending on whether the depression was “primary” or “secondary”.

“Traditionally, primary depression is the sort of depression that was there before the person became alcoholic and would probably have occurred even if the person wasn’t alcoholic. However, secondary depression is traditionally thought of as being directly associated with heavy drinking, so that once heavy drinking is reduced and ideally stopped, the depression will resolve spontaneously.”

“Our findings did not find a differential effect for these two types of depression and adds to the increasing scepticism about the validity of such a dichotomous concept.”

Professor Sellman says research investigating alcoholic depression on a continuum, including genetic markers in addition to clinical phenomena and historical data is likely to be a fruitful area for future research. This could also include researching the use of further medications in assisting people with alcoholic depression, particularly at the outset of their recovery from alcoholism.

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INSIDE

Revolutionising exercise tests for the heart
Kiwi ingenuity is providing new data on heart abnormalities under exercise-induced stress. Read more on pages 6–7.
Acting Chief Executive’s message

In this issue of HRC News we highlight the results of the HRC’s 2014 annual contestable funding round. I would like to thank all HRC staff for their efforts to ensure that our annual funding round has once again run as smoothly as possible. I would also like to acknowledge the work of our reviewers. These people give their valuable time and expertise to ensure that we are able to maintain our excellent assessment processes, and we very much appreciate their input.

We are now working on the preparation for the 2015 annual funding round, with the roadshows recently completed. All closing dates for the next funding round can be found on our website: www.hrc.govt.nz/funding-opportunities/calendar.

Recently the HRC’s Māori health research team organised and hosted our biennial Hui Whakapiripiri, with support from many other members of staff across the Secretariat. The event was a great success and that is a reflection our Māori Health Research Committee’s commitment to funding high calibre Māori health research.

We have now published our Statement of Intent (2014–2018) and our annual Statement of Performance Expectations on the HRC website. These statutory documents outline the outcomes the HRC is seeking to achieve from the funds we invest in health research and New Zealand’s health researchers.

The Statement of Intent (2014–2018) reflects the HRC Board’s strategic intentions and the important outcomes we will work towards over the next four years. The document also identifies targets and measures that will help us track our progress and capture the impact and value of the health research we support.

The Statement of Performance Expectations outlines the HRC’s annual undertakings and identifies more immediate performance measures and targets which cover all the funding opportunities and deliverables for 2014. Both documents serve to provide the reader with a clear understanding of the HRC’s purpose, priorities and future direction, as well as a tangible understanding of how the HRC is accountable for, and works hard to demonstrate the value and benefit of health research.

In closing, the HRC is recruiting for a Chief Executive. See page 5 of this issue of HRC News for details or visit the HRC website, www.hrc.govt.nz/about-us/situations-vacant.

Lex Davidson, Acting Chief Executive, Health Research Council of New Zealand

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Follow the HRC on Twitter

If you’d like an easy way to keep up with the latest HRC news, you can follow us on Twitter: @HRCNewZealand.
2014 Queen’s Birthday honours

The HRC Secretariat and Board would like to extend its warmest congratulations to the HRC Board Chair, Sir Robert Stewart, who has been made a Knight Companion of the New Zealand Order of Merit in this year’s Queen’s Birthday honours list. Sir Robert received this honour in recognition for his services to manufacturing and the community.

Sir Robert is a successful manufacturer, innovator, philanthropist and the founder of Christchurch’s SKOPE Industries. He is a life member and past President of the Canterbury Manufacturer’s Association and is a Fellow of the Institute of Management. In 1986, Sir Robert won the Mobil Exporter of the Year award. He was awarded the Ernst & Young Master Entrepreneur of the Year in 2000. He is Patron of the independent Canterbury Medical Research Foundation, and in 2006 was made an Officer of the New Zealand Order of Merit.

Also recognised in the 2014 Queen’s Birthday honours list was Professor Graham Le Gros, Director of the Malaghan Institute of Medical Research and member of the HRC’s Biomedical Research Committee. Professor Le Gros has been made a Companion of the New Zealand Order of Merit for his services to science and medicine.

Other people with links to the HRC who received Queen’s Birthday Honours include: Dr Virginia Hope, Programme Leader, National Centre for Biosecurity and Infectious Disease at the ESR Kenepuru Science Centre; Dr David Meates, Chief Executive of the Canterbury District Health Board; and Professor Elaine Rush, Senior Lecturer in Sport and Recreation at AUT University. Dr Hope, Dr Meates and Professor Rush were made Members of the New Zealand Order of Merit for services to health.

The HRC Secretariat and Board congratulates all recipients of this year’s Queen’s Birthday honours on their thoroughly deserved awards.

Call for Liley Medal nominations

The HRC is seeking nominations for the Liley Medal for 2014. This award is presented to a recipient who has had research published in the previous calendar year (January to December 2013) that has made an outstanding contribution to health and medical science.

The HRC introduced the Liley Medal in 2004, in recognition of Sir William Liley, KCMG, FRSNZ, and his leadership of scientific endeavour in New Zealand.

Nominations close at 12pm (noon) on Monday, 18 August 2014.

This year the award will be presented at the 2014 Research Honours Dinner at Te Papa, Wellington, on Wednesday, 26 November.


You can direct any nominations or questions to Dr Katie Evans, email: kevans@hrc.govt.nz or phone (09) 303 5233.
International Relationships Fund recipients

The HRC recently announced funding for four projects that aim to facilitate the development of research collaborations between New Zealand researchers and European Union colleagues.

The International Relationship Fund: EU-NZ Collaborations supports collaborative research relationships focused on non-communicable diseases.

The following list of successful applicants includes the named principal investigator only for the International Relationship Fund: EU-NZ collaboration.

Professor Geoff Chase
University of Canterbury
24 months, $193,400
Professor Chase plans to develop and validate his team’s recent modeling advance that enables real-time, beat-to-beat estimation of stroke-volume from existing catheter measurements. This new capability will enable more optimised and personalised circulatory care that is not currently possible. They will collaborate with existing University of Liege (ULG; Belgium) colleagues and expand it to include the GIGA Cardiovascular Sciences group at ULG and its medical school at CHU de Liege Hospital.

Professor Robert Doughty
The University of Auckland
24 months, $199,951
Professor Doughty states that the objective of this grant is to establish a critical mass of expertise across clinical, epidemiological and biostatistical disciplines in collaboration between the University of Auckland and Oxford University on cardiovascular disease risk prediction/diagnosis. As far as they are aware, this will be the first significant international collaboration to develop a coherent research and analytical methods programme on cardiovascular risk prediction/diagnosis.

Professor Rodney Jackson
The University of Auckland
18 months, $199,809
Professor Jackson aims to establish collaborative relationships between the New Zealand applicants and researchers in the United Kingdom and Denmark who undertake large scale clinical data linkage studies related to cardiovascular diseases.

Associate Professor Tony Merriman
University of Otago
24 months, $195,406
Associate Professor Merriman will lead a grant which addresses the non-communicable disease gout, taking a genetic approach towards furthering knowledge of the molecular pathways of this disease. The work will support new collaborative activity between New Zealand gout researchers and a network of European gout researchers.

For more information about these research projects, check out the full lay summaries on the HRC website: www.hrc.govt.nz.

Secretariat staff news

Jaimee Dudley (Ngāpuhi, Tainui) has resigned from her role as Project Coordinator for the HRC’s Māori Health Research team to take up a role at the University of Auckland and continue her studies. We wish Jaimee all the very best.

Welcome back to Lucy Pomeroy and Dr Katie Evans, who have both returned to the Investment Processes team from parental leave. Lucy will resume her role as Project Manager – Clinical, working two days a week (Wednesday and Friday), while Katie will also resume her role as Project Manager – Biomedical, working in the office on Monday, Wednesday and Thursday.

Stacey Pene, who has been covering for Lucy and Katie while they’ve been on parental leave, finishes his HRC contract with the Investment Processes team this month. It’s not goodbye just yet though. Stacey will be joining the HRC’s Māori Health Research team on a fixed-term contract until early November 2014.

Subscribing to HRC News

Current and past issues of HRC News can be viewed on the HRC website: www.hrc.govt.nz.

If you would like to subscribe to HRC News, please email: info@hrc.govt.nz, and put ‘Subscribe HRC News’ in the header. Please include your name and postal address details. You can also use this email address to advise us if you no longer wish to receive HRC News.
Funding for independent research organisations

Four of New Zealand’s independent research organisations will receive a combined total of more than $27 million in funding through a new initiative that aims to ensure that research, science and technology of national significance is not lost.

The HRC recently announced funding for the Malaghan Institute of Medical Research ($14.2 million), the Medical Research Institute of New Zealand ($6.8 million), Te Atawhai o te Ao: Independent Māori Institute for Environment and Health ($3.8 million) and Whakauae Research Services Limited ($2.8 million) as part of a new Capability in Independent Research Organisations Fund.

This initiative, which comes out of the HRC’s existing budget, provides long-term funding of up to seven years for research organisations outside of the Crown Research Institute sector. In the first instance, funding for four years is provided.

To be eligible for this fund, these independent research organisations needed to have the capacity to undertake research, science and technology, and related activities in a field that is not commonly present in other New Zealand research organisations. These activities also had to be ‘nationally significant’, meaning that if the ability to undertake these activities was lost, it would have a demonstrable and significant negative impact on the ability to grow the economy, or to achieve key environmental, societal and health outcomes for New Zealanders.

The HRC’s Board Chair, Sir Robert Stewart, KNZM, said this new funding initiative will give these organisations greater stability over a longer period of time, ensuring that they can continue to employ some of our best and brightest to carry out research of the highest calibre.

The Ministry of Business, Innovation and Employment has also run its own process for investing in science capability funding in independent research organisations.

Background

In 2011, as part of decisions on Crown Research Institute Core Funding, the Government decided that long-term funding arrangements of up to seven years will be available to research organisations outside of the Crown Research Institute sector that hold significant research capabilities supporting national outcomes in areas of government priority. The HRC responded to this requirement through the development of the Capability in Independent Research Organisations Fund.

HRC Chief Executive vacancy

The HRC is New Zealand’s principal health research funder and distributes around $90 million of grants per year. The new Chief Executive will lead a small, very experienced team who process a variety of applications from medical researchers. These applications range from training grants through to complex three year or more grants which are peer reviewed around the world to ensure the research has the potential to make a significant difference to the health of New Zealanders.

The successful applicant will work with the Ministry of Health (MoH) who are responsible for the HRC, and the Ministry of Business Innovation and Employment (MBIE) who fund the HRC. MBIE are funding long-term health science challenges in the health sector. The HRC distributes 40 per cent of its short-term funding in the area defined by the health science challenges.

One of the responsibilities of the new Chief Executive will be to work with MBIE to meet the MoH-defined HRC health outcomes, but also to ensure that exceptional short term HRC grant projects continue to be funded by MBIE for long term successful commercialisation or practical translational outcomes, saving the health system costs.

To be successful in the role you will need to:

• be a credible leader
• be a competent speaker and be able to represent New Zealand at international health research conferences
• have a working knowledge of ethics
• have an appropriate tertiary qualification in medicine, science or research
• have the knowledge and experience to identify and implement business partnerships to improve the effectiveness of HRC research initiatives.

For further information please call Brian Cowper on 021578704, or email Jacque Tweedale at jtweedale@hrc.govt.nz for a position description. Applications addressed to the Board Chair, Sir Robert Stewart KNZM, close at 5pm on Friday, 29 August 2014 and can be submitted to the above email address.
Kiwi-made device revolutionises exercise tests for the heart

By Suzy Botica

A unique bicycle or “cycle ergometer” designed to allow patients to perform exercise tests during an MRI examination is providing new, previously unobtainable information on heart abnormalities under exercise-induced stress.

A team of researchers from the Auckland Bioengineering Institute (ABI) developed the ergometer to help cardiologists better assess the heart’s function and effectiveness of treatments for cardiovascular diseases. As part of a HRC-funded project led by ABI Principal Investigator Professor Alistair Young, the first cardiology patient trials using the ergometer have now been successfully completed in collaboration with cardiologists from the Auckland District Health Board.

The ergometer is a major engineering achievement because it doesn’t contain any ferro-magnetic materials such as steel, which would interfere with the high magnetic fields in the MRI (magnetic resonance imaging) scanners. It is also made to shield external interference that could affect the signals that make up the scanned images.

Professor Young says the ergometer was first conceived by ABI researchers Professor Poul Nielsen and Associate Professor Andrew Taberner, together with Liggins Institute Professor Paul Hofman. Since then, ABI PhD student Paul Roberts has worked with him and Associate Professor Brett Cowan and Professor Ralph Stewart at the University of Auckland to refine the ergometer for clinical use and subsequently used it in a study of 40 healthy volunteers and 60 patients with vascular disease.

Exercise testing is an essential tool for evaluating heart disease. However, although cardiac MRI produces excellent images of heart structure and function, it has up until now been difficult to take images of the heart during exercise.

“We know that you have to stress the heart to reveal its pathology because it may function normally at rest. Our results show that exercising on the ergometer while lying on a table in the MRI scanner provides a good stress test for the heart, with heart and work rates comparable to the traditional treadmill exercise tests. We achieved heart rates of over 120 beats per minute and cardiac outputs of over 12 litres of blood per minute,” says Professor Young.

The ergometer has significant advantages over the treadmill test.

“After hopping off the treadmill, the patient has to be moved and positioned in the MRI scanner. This can take up to a minute, during which time the heart rate can drop dramatically. Our device enables imaging of the heart immediately after the patient has stopped exercising,” says Professor Young.

For the patient trial, Professor Young’s team developed new fast imaging methods that can capture images while the heart is beating faster during exercise. As MRI is slower at taking images than ultrasound, they had to find clever ways of using less data to build up the image, while still getting all the necessary information.

Patients at risk of heart and aortic abnormalities, including aortic aneurysms (where an area of the aorta, the blood vessel which takes blood from the heart to the rest of the body, becomes very large or balloons out), were tested on the ergometer inside a MRI scanner to see which two blood pressure lowering drugs – Metoprolol and Losartan – were more effective at reducing aortic stiffness at rest and during exercise. Patients were scanned three times: a month after being on each drug and again after stopping treatment.

The team was able to detect abnormalities in cardiac function, and used pulse wave velocity to measure the effect of the two drugs on the stiffness of the aorta.

“The aorta is quite elastic. As blood pumps through the aorta, it expands. When you’re young your aorta is very elastic, but as you get older it stiffens. This stiffening makes it harder for blood to flow through, which in turn increases blood pressure.”

Professor Young says while the data from this study is currently being analysed in preparation for a journal
submission, early signs are that there was a difference between the two blood pressure lowering treatments. The Losartan drug resulted in lower pulse wave velocity than the Metoprolol drug, which suggests it was more effective at reducing aortic stiffness.

“The data from this study are unique in that the effects of different blood lowering agents have never been compared before, and never compared during exercise,” says Professor Young.

The ergometer and the new MRI scan methods developed as part of this project are now being used in clinical evaluations at Auckland City Hospital, where clinicians have been keen to combine echocardiography or MRI examinations with exercise for patients with coronary artery disease.

Paul Roberts, who recently submitted his thesis related to this project, has also received several enquiries for the ergometer from overseas institutions. He is now starting a research fellowship with the newly established Medical Devices CoRE (national Centre of Research Excellence), led by ABI Director Professor Peter Hunter, on medical devices and facilitating links between hospitals and bioengineering. The ergometer will be one of his first case studies.

Professor Young and his colleagues are currently developing an ultrasound lab for university teaching and research, including applications of the ergometer in echocardiography.

A patient using the cycle ergometer inside a MRI scanner at Auckland City Hospital (Photo by Paul Roberts, Auckland Bioengineering Institute).

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Problem gambling research opportunity

The HRC is administering the Preventing and Minimising Gambling Harm Career Development Awards, which are funded by the Ministry of Health. Applicants are invited to apply for Masters, PhD and Postdoctoral awards to support the career development of emerging health researchers seeking to prevent and minimise gambling-related harm for Māori and Pacific populations in New Zealand. Applicants can apply using the standard HRC Māori or Pacific career development forms, which are available on the HRC’s website, www.hrc.govt.nz.

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South Link Health – from small beginnings

By Mark Wright

When, in the early 1990s, Professor Murray Tilyard and several colleagues put together an HRC funding application to trial GP budget-holding they had no idea of the path it would eventually lead them down.

Twenty years later that initial application has spawned South Link Health Services, a separate charitable company currently owning 29 practices looking after more than 80,000 patients. They provide those practices with clinical programme development and support, IT, administrative and financial services.

Dr Tilyard, who is Professor of General Practice at the Dunedin School of Medicine and a practising GP, says the original study had six intervention practices and four control practices.

“The project was very successful. It showed that GPs, if given the right information and incentives – professional incentives and not monetary ones – could not only make good clinical decisions, they could also apply good fiscal decision making.”

Professor Tilyard says there were many requests from other practices to join the experimental group. As a result they developed a membership-based, not-for-profit organisation called HealthLink Dunedin. This eventually morphed into South Link Health with membership coming from practices all over the South Island, excluding central Christchurch.

“We started off with a grant of approximately $90,000 in the early 90s. This coming year we’re budgeting a turnover of $50 to 60 million and we have about 350 staff members.”

“The small HRC research grant has resulted in the development of several businesses all of which have charitable status. This means that any dividend that is produced can only be used for the purposes for which the charitable status was given.”

The other businesses arising from South Link Health include Best Practice Advocacy Centre New Zealand (bpacnz), an independent, not-for-profit organisation set up to deliver educational and continuing professional development programmes; Best Practice Advocacy Centre Inc (BPAC Inc), which delivers clinical decision support systems for health professionals; and the New Zealand Formulary, an independent resource providing health care professionals with clinically validated medicine information and guidance on best practice.

Little wonder the head office for all these entities now occupies the top two and a half floors of a Dunedin office block.

BPAC Inc has developed “a cupboard of mini consultants” – a computer programme which provides a decision support system.

“It allows a GP to act as a mini neurologist, a mini nephrologist, or a mini cardiologist. New Zealand has the highest use of decision support in primary care in the world. We’re on the desktop of 97 per cent of GPs and practice nurses in New Zealand and we’ve just been awarded a multi-million dollar contract in the Northern Territory (Australia).”

Their team of 40 programmers has also developed a pathway enabler which goes back into a patients records, suggests clinical pathways to the GP and also looks for other options.

Professor Tilyard says GPs are now using 90,000 modules per month. “A module is not just a prompt, it is a full decision support. So it’s 90,000 clinician/patient encounters with the computer.”

“Before this system half of those 90,000 encounters would result in a hospital referral. Now we’re seeing less than half that many referrals.”

Bpacnz, meanwhile, has a contract with Pharmac and DHB Shared Services to do the demand management for pharmaceuticals, laboratories, and the Primary Health Organisation performance programme. They produce written material where they condense research-based information into readable and easily transferrable knowledge.

Other initiatives include the NZ Medicines Formulary Ltd Partnership they formed with the Royal Pharmaceutical Society in the UK to take the British National Formulary and contextualise it for New Zealand.

It has been launched as an e-book, a web service, and a smart phone service, provided free of charge to all health care providers. They employ seven pharmacists in their Dunedin offices to provide support.

One of the features with much of this and other online information (e.g., the Best Practice journal and Best Tests)

(Continued on page 11)
Kids in the city

By Mark Wright

‘Threshold spaces’ – the shared areas between home and neighbourhood, such as verges and car parks – have been identified as a key part of getting children outside and being more active in the face of urban intensification.

The HRC-funded ‘Kids in the city’ study, involving a team of researchers from Massey University, AUT University and the University of Auckland, took a detailed look at the lives of 253 Auckland children aged 9–12 years to examine declining rates of physical activity and independent mobility.

Karen Witten, Professor of Public Health at Massey University, says they wanted to understand why children’s levels of physical activity and independent mobility are declining in Auckland, and assess whether this is likely to be exacerbated if it becomes a more compact city.

“Children’s active travel has decreased greatly in the last 20 years, from 130 minutes a week on average to about 69 minutes. Over the same period kids being dropped off by car as the usual means of getting to school has increased from 31 per cent to 59 per cent,” she says.

“We were trying to understand the reasons for that and how children use and experience their urban neighbourhoods as a way of trying to work out the more complex relationships between the physical and social characteristics of neighbourhoods, parenting practices and the way children were allowed or not allowed to be out and about on their own.”

Professor Witten says they also wanted to bring children’s voices to urban planning in Auckland.

“Inevitably we’re going to have higher density living so we were interested to know, is that likely to impact further on children’s declining levels of physical activity and independent mobility?”

To gather data children wore a GPS device and an accelerometer for a week to track where they went around their neighbourhood and the level and intensity of activity in different places. They also filled out travel diaries noting where they went, how they got there and whether they went alone or with siblings, friends or adults.

Trained local teenagers took children on walking interviews in which the children showed them places they liked or disliked.

Researchers also interviewed parents to find out what freedoms they thought were appropriate to give their children and to understand their social connections to their neighbourhood.

“For a great number of children outdoor play had become an adult-dependent activity. Children that moved about independently knew a lot about their neighbourhood, but we had children who didn’t and felt fearful about being beyond the front gate unaccompanied,” she says.

“Many children had always been transferred from the care of one adult to another.”

Professor Witten says the major reasons parents cite for this are fear of strangers and traffic.

“But when you dig a bit deeper parents will also talk about how they have busier lives now and tend not to spend so much time in the neighbourhood, coming and going in cars. Car dependency is a very significant contributor to the decline in children’s independent mobility,” she says.

“It also means parents don’t spend as much time in the neighbourhood as their parents did when they were young. They and their own children don’t really have those sorts of neighbourhood connections.”

Professor Witten says the push towards medium density housing means areas which are referred to as ‘threshold places’ are likely to become more important.

A teenager trained by the research team conducts a walking interview with child participants.

(Continued on page 10)
“Backyards, driveways and verges can be important places for children to play. But for children living in medium and higher density developments these threshold places are often harder to find. In apartment blocks these will be stairwells and foyers. They don’t provide the same opportunities for free outdoor play,” she says.

“Medium density developments could be a very positive thing for children and families as long as they’re designed to provide lots of spaces where kids could meet to play and also have that level of visual surveillance from surrounding houses that gives parents a sense of safety.”

She says urban planners need to provide more than playgrounds and prioritise walking and cycling by providing the infrastructure to make it safer and easier for children to get around residential neighbourhoods. That will allow levels of daily activity to increase.

Using data from the ‘Kids in the city’ study Professor Witten and her colleagues have made several presentations to the Auckland Council regarding planning for a child-friendly city, while she and co-investigator Melody Oliver are involved in the ‘Te Ara Mua – Future Streets’ project, working with Auckland Transport on a street design intervention in Mangere.
Large increase in contracts offered to health researchers

The number of health researchers offered funding in the HRC’s 2014 annual funding round has increased significantly from last year due to the release of funds from maturing contracts.

In the 2014 HRC funding round, the HRC offered a total of $80.5 million in health research funding for 4 Programmes ($20 million), 50 Projects ($56 million), 13 Feasibility Study Awards ($1.9 million), 14 Emerging Researcher First Grants ($2.02 million) and 4 Explorer Grants ($600,000).

The $56 million-worth of Project grants offered to researchers this year is a big increase on last year where 33 Projects valued at a total of $33.9 million were awarded. The success rates of researchers in this year’s funding round were also higher than last year, and in the case of Projects, 23 per cent higher (53 per cent in 2014 versus 30 per cent in 2013).

Many of the research contracts awarded after the significant funding increase announced in the 2010 budget, finish at the end of this year and during the 2014/2015 financial year. These released funds allowed the HRC to increase its funding offers for these contracts in 2014 by more than $18 million from the 2013 funding round.

One of the Projects funded is part of a landmark three-year diabetes prevention trial across New Zealand, Australia, UK, Netherlands, Denmark, Finland, Spain and Bulgaria. Professor Sally Poppitt from the University of Auckland will carry out the New Zealand arm of the trial, which aims to test if a higher protein diet is more successful for weight loss and diabetes prevention than the current international best practice of a higher carbohydrate diet.

Other Project recipients include Professor Tim Anderson from the University of Otago, Christchurch, who will carry out advanced brain scans, gene testing, and clinical evaluations in Parkinson’s disease patients with mild cognitive impairment, and Māori neuroscientist Dr Melanie Cheung from the University of Auckland, who will measure the effectiveness of a special brain resilience training programme that she and her team have developed in partnership with the Brain Plasticity Institute in San Francisco, US, to slow the progression of Huntington’s disease.

Some of the grants reflect the Government’s strong focus on maternal health, pregnancy and early childhood. Examples include University of Otago, Dunedin, Programme recipient Professor David Grattan, whose ‘Healthy pregnancy, healthy babies’ study will evaluate how specific pregnancy hormones induce changes in the mother’s brain. Also, Emerging Researcher First Grant recipients Dr Jacqueline Henderson (University of Canterbury), who will assess the effects of methadone exposure during pregnancy on children’s brain and nervous system development.

The full list of all 2014 funding round recipients, including lay summaries of their research, is available on the HRC website: www.hrc.govt.nz/funding-opportunities/recipients.

(Continued from page 8)

is the ability for users to select the articles and information they want and pin them to their own e-book, (a system Professor Tilyard calls ‘Build my BPAC’.

Looking to the future, Tilyard anticipates growth and can see South Link Health Services’ orbit growing to include about 400,000 patients, particularly as fewer young GPs are interested in practice ownership, something he sees as generational.

“Younger colleagues, whether it’s medical or dental, or even legal and accounting don’t want to be owner-operators anymore. They want to be paid fair recompense for the work they do. They want a good team environment and good premises but they don’t want to do the GST or have the HR issues.”

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HRC Assessing Committee members

The HRC would like to thank the following people who gave their time and expertise to be members of an assessing committee in the recent 2014 annual finding round.

Associate Professor Haxby Abbott  University of Otago, Dunedin
Professor Wickliffe Abraham  University of Otago, Dunedin
Professor Robert Adams  University of Adelaide
Professor Osvaldo Almeida  University of Western Australia
Professor Craig Anderson  The George Institute for Global Health
Dr Deborah Askew  Inala Indigenous Health Service
Dr Clive Aspin  Sydney, Australia
Associate Professor Duncan Babbage  AUT University
Professor Margaret Baird  University of Otago, Dunedin
Professor Laura Bennet  The University of Auckland
Professor Michael Berridge  Malaghan Institute of Medical Research
Professor Peng Bi  University of Adelaide
Associate Professor Nigel Birch  The University of Auckland
Professor Tony Blakely  University of Otago, Wellington
Dr Amohia Boulton  Whakaaue Research Services Limited
Professor Bernhard Breier  Massey University
Dr Charis Brown  The University of Auckland
Associate Professor Stephen Buetow  The University of Auckland
Professor Jim Butler  Australian National University
Dr Grant Butt  University of Otago, Dunedin
Professor Vicky Cameron  University of Otago, Christchurch
Dr Lisa Chant  Poutini Waiora
Dr Louise Cheng  Peter MacCallum Cancer Centre, Melbourne, Australia
Professor Don Chisholm  St Vincent's Hospital, Sydney, Australia
Professor Stephen Clarke  Royal North Shore Hospital, Sydney, Australia
Associate Professor Toby Coates  Royal Adelaide Hospital, Adelaide, Australia
Associate Professor Bronwen Connor  The University of Auckland
Dr Kirsten Coppell  University of Otago, Dunedin
Professor Christopher Cowell  The Childrens Hospital at Westmead, Sydney, Australia
Professor Marie Crowe  University of Otago, Christchurch
Dr Ian Czirzer  Canterbury District Health Board
Professor John Crump  University of Otago, Dunedin
Professor Jacqueline Cumming  Victoria University of Wellington
Dr Maurice Curtis  The University of Auckland
Dr Gabi Dachs  University of Otago, Christchurch
Dr Stuart Dalziel  Auckland District Health Board
Professor Brian Darlow  University of Otago, Christchurch
Professor Tim David  University of Canterbury
Professor Dirk De Ridder  University of Otago, Dunedin
Professor Lea Delbridge  University of Melbourne, Melbourne, Australia
Associate Professor Sarah Derrett  Massey University
Professor Kevin Dew  Victoria University of Wellington
Associate Professor Gordon Doig  University of Sydney, Sydney, Australia
Professor Jeroen Douwe  Massey University
Professor Michael Dragunow  The University of Auckland
Dr Hinemoa Elder  Te Whare Wananga O Awanuiarangi
Dr Lis Ellison-Loschmann  Massey University
Dr Ruth Empson  University of Otago, Dunedin
Professor John Evans  University of Otago, Christchurch
Professor Michael Farrell  National Drug & Alcohol Research Centre
Professor Valery Feigin  AUT University
Professor David Ferguson  University of Otago, Christchurch
Dr Penny Fitzharris  Auckland District Health Board
Associate Professor Jane Ford  University of Sydney, Sydney, Australia
Dr Jan Fullerton  Neuroscience Research Australia, Sydney, Australia
Dr Brian Gabrielli  Princess Alexandra Hospital, Brisbane, Australia
Professor Manohar Garg  University of Newcastle, Australia
Professor Anne Gillis  University of Calgary, Alberta, Canada
Dr Jean Gilmour  Massey University
Professor Paul Glue  University of Otago, Dunedin
Professor Merryn Gott  The University of Auckland
Dr Daniel Gray  Walter and Eliza Hall Institute of Medical Research
Associate Professor Andrew Gundlach  University of Melbourne, Melbourne, Australia
Professor Alistair Gunn  The University of Auckland
Associate Professor Maree Hackett  The George Institute for Global Health, Sydney, Australia
Associate Professor Leigh Hale  University of Otago, Dunedin
Dr Christine Hawkins La Trobe  University of Melbourne, Australia
Professor Allan Herbison  University of Otago, Dunedin
Associate Professor Ian Hermans  Malaghan Institute of Medical Research
Professor Jane Heyworth  University of Western Australia, Perth, Australia
Professor John Horowitz  The Queen Elizabeth Hospital, Australia
Dr Inga Hunter  Massey University
Professor Rachel Huxley  University of Queensland, Brisbane, Australia
Professor Brian Hyland  University of Otago, Dunedin
Dr Tristram Ingham  University of Otago, Wellington
Dr Aaron Jarden  AUT University
Ms Bernadette Jones  University of Otago, Wellington
Professor Heath Kelly  Victorian Infectious Diseases Reference Laboratory, Melbourne, Australia
Associate Professor Timothy Kenealy  Counties Manukau District Health Board
Dr Tony Kenna  University of Queensland, Brisbane, Australia
Professor Martin Kennedy  University of Otago, Christchurch
Associate Professor Paula Kersten  AUT University
Associate Professor Ray Kirk  University of Canterbury
Professor John Kolbe  The University of Auckland
Dr Rosemary Korda  University of Otago, Christchurch
Dr Susan Lacey  University of Otago, Christchurch
Dr George Laking  The University of Auckland
Dr Regis Lamberts  University of Otago, Dunedin
Dr Peter Larmer  AUT University
Dr Julie Lawrence  University of Otago, Dunedin
Professor Ross Lawson  The University of Auckland
Ms Keri Lawson  Te-Aho, University of Otago, Wellington
Associate Professor Beverley Lawton  University of Otago, Wellington
Professor Stephen Leeder  Menzies Centre for Health Policy, Sydney, Australia
Dr William Levack  University of Otago, Wellington
Associate Professor Andrew Lew  Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia
Dr Richard Linscott  University of Otago, Dunedin
Professor Thomas Lumley  The University of Auckland
Dr Helen Lunt  Canterbury District Health Board
Associate Professor Antonia Lyons  Massey University
Dr Michael MacAskill  New Zealand Brain Research Institute
Associate Professor Ralph Maddison  The University of Auckland
Dr Colin McArthur  Auckland District Health Board
Dr Kieran Mccaul  University of Western Australia, Perth, Australia
Dr Melanie-Jane McConnell  Victoria University of Wellington
Associate Professor Mark McKeage  The University of Auckland
Associate Professor Alexander McLellan  University of Otago, Dunedin
Associate Professor Paul Mitchell  Austin Health, Melbourne, Australia
Dr Tess Moeke-Maxwell  The University of Auckland
Professor Helen Moewaka Barnes  Massey University
Dr Rinki Murphy  The University of Auckland
Associate Professor Rachel Neale  Queensland Institute of Medical Research, Brisbane, Australia
Associate Professor Linda Nikora  University of Waikato
Professor Cliona Ni Mhurchu  The University of Auckland
Professor Helen O’Neill  Australian National University, Canberra, Australia
Dr Te Hereripeine Sarah-Jane Paine  Massey University
Dr Gavin Painter  Victoria University of Wellington
Dr Janine Paynter  The University of Auckland
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Dr Anna Pilbrow  University of Otago, Christchurch
Professor Dino Pisanelli  University of Adelaide, Adelaide, Australia
Professor Richard Porter  University of Otago, Christchurch
Professor John Potter  Massey University
Professor Richie Poulton  University of Otago, Dunedin
Associate Professor Patricia Priest  University of Otago, Dunedin
Professor Robert Ramsay  Peter MacCallum Cancer Institute, Melbourne, Australia
Professor Robert Russell  The University of Auckland
Dr Ivan Sammut  University of Otago, Dunedin
Associate Professor Kristy Sanderson  Menzies Research Institute, Hobart, Australia
Dr Darren Saunders Garvan Institute of Medical Research, Sydney, Australia
Professor Susan Schenk  Victoria University of Wellington
Professor Philip Schluter  University of Canterbury
Professor Grant Schofield  AUT University
Associate Professor Kate Scott  University of Otago, Dunedin
Dr Nina Scott  Te Puna Oranga
Professor Robert Scragg  The University of Auckland
Associate Professor Katrina Sharples  University of Otago, Dunedin
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Professor Neil Sims Flinders University, Adelaide, Australia
Professor Bruce Small  The University of Auckland
Professor Dave Smith  University of Western Australia, Perth, Australia
Mr Andrew Sporle  The University of Auckland
Professor Lisa Stamp  University of Otago, Christchurch
Dr James Stanley  University of Otago, Wellington
Professor Mark Stevenson  Monash University, Melbourne, Australia
Mr Alistair Stewart  The University of Auckland
Professor Ralph Stewart  Auckland District Health Board
Associate Professor Cathy Stinear  The University of Auckland
Professor Patrick Sullivan  Retired
Dr Gerhard Sundborn  Wise Trust
Ms Virginia Tamanui  Tūhi Tūhi Communications
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Dr Martin Than  Canterbury District Health Board
Dr Benjamin Thompson  The University of Auckland
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Professor Mark Weatherall  University of Otago, Wellington
Dr Mark Webster  Auckland District Health Board
Dr Susan Wells  The University of Auckland
Professor Malcolm West  University of Queensland, Brisbane, Australia
Dr Nick West  University of Queensland, Brisbane, Australia
Dr Philip Wood  Waikato District Health Board
Professor Alistair Woodward  The University of Auckland
Professor Robert Young  Auckland District Health Board
Associate Professor Robert Young  Auckland District Health Board
Associate Professor Sarah Young  University of Otago, Dunedin
Female researchers leading the way – Part II

By Mark Wright

In the April 2014 issue of HRC News, we profiled three female health researchers in part one of a series that celebrates some of the HRC-funded female health researchers who are helping lead the way forward in their chosen areas of study. Mark Wright talked to Professor Franca Ronchese and Professor Christine Winterborn for the second part in this series.

Professor Franca Ronchese: Immunotherapy researcher

Senior Malaghan Institute Researcher Professor Franca Ronchese began her career in her home country of Italy when working towards her PhD.

“I worked with a group in Italy that was researching the immunology of tumours and at the time we understood very little about the field and what exactly the immune system can recognise in tumours.”

She stopped working on tumour immunology for some years and started working on what triggers immune responses.

“When I came to New Zealand the two things came together beautifully because if you want to try to generate cancer vaccines or, as I am doing now, you want to understand what starts allergic immune responses, understanding the immune cells involved in these early stages is really important.”

Professor Ronchese is only too aware that a scientific career can be difficult to reconcile with family life – particularly for women.

While she feels the situation has improved in some ways, leading to many more women entering science, in other ways it has become more difficult.

“Science is a lot more competitive now and there is less money, so any little thing can make a difference. It’s not only how the scientific world treats her; it’s how the world outside of science treats her too. When you have a competitive career, it is difficult if you don’t have a lot of support at home when you have a young family.”

A supportive husband or partner – and in her own case, a very supportive mother-in-law – can make a tremendous difference, she says.

“I thought it was so exciting that you have almost a creative license where you can use your imagination or your understanding of a problem and try to come up with some solution and test it in the lab. I find being a scientist quite a privileged career.”

Professor Ronchese’s current HRC work revolves mainly around dendritic cells, which act like scouts for the body’s immune system and trigger immune responses – including allergic immune responses.

“We are interested in these cells which are all around the surface of our bodies and in our airway and our gut, and how these cells react to allergens.”

The other side of her work still involves tumours and understanding which cells are important in starting good anti-tumour responses.

They have identified a new type of dendritic cell which is driven by the inflammation coming in.

“Our research will be around understanding what the cell is doing and can we come up with better ways to elicit them and make sure that whatever vaccines we use against cancer recruit these cells effectively.”

Professor Christine Winterbourn: Free radical research

Like many women Professor Christine Winterbourn found the early stages of her working life, to a degree, shaped by her husband’s work opportunities. But that also created opportunities for her.

When he (Mike Winterbourn) got a job at Massey she linked up with Professor Dick Batt in Biochemistry who offered her the opportunity to do a PhD on how red blood cells grow old. Later, when he got a job as a fresh water biologist at the University of Canterbury, she began a productive collaboration with Professor Robin
Carrell in the Clinical Biochemistry Department at Christchurch Hospital who was developing a strong programme in haemoglobin and haemolytic anaemias associated with abnormal protein structures.

“It became apparent that the haemoglobin was actually oxidising and generating free radicals in the process, so I became very interested in how these superoxide free radicals were generated and what they did to the cells. At that time people knew about free radicals in relation to nuclear radiation, not biology or medicine.”

Professor Winterbourn says the questions became what damage do radicals cause and how well do our own particular antioxidant proteins protect against these oxidants?

“It became apparent free radicals were generated by a variety of metabolic processes or exposure to different environmental chemicals or drugs, and that white blood cells generate a lot of free radicals and peroxides to fight infections and kill bacteria. So I became interested in the white cells as well as red cells.”

Much of her HRC-funded research has focused on characterising how white cells use superoxide radicals to kill bacteria, and what happens if there is excessive production during chronic inflammation.

Professor Winterbourn says it has recently been realised that inflammation contributes to numerous diseases, including cancer, heart disease and even metabolic syndrome. “We can detect oxidant production in these diseases – the goal is to see if they can be controlled to improve outcomes.”

However, reactive oxidants are not always damaging. “Our cells produce them on purpose to regulate their metabolism. Specific proteins react with these oxidants to switch on signaling pathways that regulate what genes they express and whether they grow, divide or curl up and die. It’s a very elaborate network that we are trying to understand.”

Professor Winterbourn believes women in research need the opportunity to combine work with family.

“I've seen a huge change in the demographics of scientists doing health research – particularly young people. In our lab there are more women than men, certainly at the PhD and postdoctoral stage. It remains a challenge for women to balance family and research – particularly in an era of balance family and research – particularly in an era of uncertainty with funding etc.”

Understanding activin’s role in prostate cancer

By Mark Wright

A family of growth regulators known as activins are providing a window on a whole new area of research into prostate cancer – both in terms of finding a better disease marker and providing a potential clinical target.

“Activin A is kind of like the master molecule and it is a potent negative growth regulator in the prostate,” explains Dr Elspeth Gold, from the University of Otago’s Department of Anatomy, who was carrying out HRC-funded research into the role of these proteins.

“That is good. We need negative growth regulators like activin A to get rid of abnormal cells and stop them growing and causing cancer.”

When prostate cancer progresses, for some reason this negative growth regulator no longer works and Dr Gold and her team have found that is due to the increased activity of another member of the family called activin C.

“An increase in activin C basically blocks the activity of the good activin,” she says. “If we can get rid of it, does it mean that activin A – the good activin – can start getting rid of all these abnormal cells?”

It also raises the question, could increased activin C levels be used as a marker of aggressive prostate cancer?

Dr Gold says the current prostate specific antigen (PSA) test has limitations, with a high incidence of (Continued on page 16)
false positives and false negatives.

“It means there are hundreds of men undergoing quite intensive further testing because their PSA is elevated. This causes a great deal of worry for them and costs a great deal of money in the health system.”

Ideally they would like a marker of the aggressive form of metastatic prostate cancer so men can be treated early before it spreads.

There were several parts to their HRC-funded research.

Their mouse model showed that if they increased the expression of activin C they get prostate disease and low grade prostate cancer, but not frank malignancy.

Then using several human prostate cell lines they found that those demonstrating a low grade form of prostate cancer had low levels of activin C, whereas the high grade cancer cell lines had a lot of activin C.

Dr Gold says they also found that if they modified the low grade cancer cell lines so that they produced more activin C, those lines then took on the characteristics of an incredibly aggressive prostate cancer cell line.

“Then in the aggressive cells lines, if we knocked back the expression of activin C the cell line starts to look completely normal. That’s given us all the proof of concept we need to show that we are on the right track.”

They also examined the biopsies of hundreds of men and found that activin C levels were higher in men with aggressive prostate cancer than those with organ-confined prostate cancer.

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A three year $900,000 study into prostate cancer care shows most men and their families are pleased with the care they received.

Speaking at the launch of the final report from the Midlands Prostate Cancer Study in Hamilton on Tuesday, 8 July, Health Minister Tony Ryall said the study makes very interesting reading and contributes significantly to the evidence base around prostate cancer in New Zealand.

“The study showed good results for men with prostate cancer. There is a high survival rate – with a majority of men surviving over ten years.”

“It has also identified areas where we can make future improvements to the work already being done to improve patient care. The report made eighteen recommendations which support the work already underway by the Ministry of Health to improve health outcomes for men with prostate cancer,” says Mr Ryall.

“Prostate cancer is the most common cancer among New Zealand men. Each year, about 3,000 New Zealand men are diagnosed with prostate cancer.

“The government is committed to improving outcomes for these men. We have invested an extra $4.3 million to raise awareness of prostate cancer among men and their families, and to ensure men have better access to quality information and care.”

“I would like to congratulate Professor Ross Lawrenson and his research team from the University of Auckland for their excellent work in completing this project and delivering such a comprehensive report,” says Mr Ryall.

The three year study, commissioned in 2010, was funded by the Ministry of Health and the HRC.

(Continued from page 15)

(Left to right) Professor Ross Lawrenson, Dr Charis Brown and Dr Fraser Hodgson at the launch of the Midlands Prostate Cancer Study. (Photograph courtesy of Auckland UniServices Ltd)

Minister Tony Ryall will retire from politics at the election in September.

(Left to right) Professor Ross Lawrenson, Dr Charis Brown and Dr Fraser Hodgson at the launch of the Midlands Prostate Cancer Study. (Photograph courtesy of Auckland UniServices Ltd)