



OTAGO  
POLYTECHNIC  
Te Kura Matatini ki Otago

# Rakahau-ā- mahi hou:

New Applied Research

**Special Issue:** Student Research  
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# Introduction.

Robin Day

Here at Otago Polytechnic we prepare learners for successful and fulfilling careers in a wide range of trades, industries and professions.



Our curricula are designed to staircase learners through progressive levels of learning. Our programmes seek to prepare students to be active enquirers and to this end we incorporate research and development at both undergraduate and graduate levels.

“Our programmes seek to prepare students to be active enquirers.”

In this issue of *Rakahau-ā-mahi hou: New Applied Research* we focus on some examples of the research undertaken by students as part of their final year of the Bachelor of Design and as requirements for the completion of masters' degrees in Fine Arts, Nursing and Occupational Therapy.

We are proud to produce students with the creativity and analytical skills to solve problems and we are confident their respective professions will benefit from the contribution of these graduates.

For more information on the degrees available at Otago Polytechnic please see our website for course details: [www.otagopolytechnic.ac.nz](http://www.otagopolytechnic.ac.nz)



**Dr Robin Day**  
Director of Research

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# Prevention the best cure.

Linda Dow

Every year, 4,000 New Zealand hospital patients are injured and 150 killed as a result of drug administration errors.

Otago Polytechnic Nursing Lecturer Linda Dow says that these statistics are made even more sobering by the fact that most medication errors are easily preventable.

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There is, in fact, much that can be done, says Dow. She has recently completed her master's thesis on the subject, focusing on how registered nurses identify and address drug errors in the critical period before they reach the patient.

Dow worked with a group of nurses who administer medication as a daily part of their routine, aiming to find out how they ensured that errors were spotted, and whether these systems were as effective as they could be.

“I was basically trying to unpick their thinking processes,” she says. “A lot of the discussions were centred around experiences they had had preventing or being involved in drug errors.”



As a result of her interviews with registered nurses, Dow has identified a number of factors that contribute toward successful error prevention, paramount among them being comprehensive knowledge of the medications in question, vigilant checking and clear communication between medical professionals.

“It is important that hospitals have clear and unambiguous protocols,” she says. “It is also important that prescriptions use accepted abbreviations, that RNs are well-resourced in terms of where they prepare medications and that the drug error reporting systems are blame-free – there are probably a lot of errors that don't get reported.”

“A lot of the discussions were centred around experiences they had had preventing or being involved in drug errors.”

Dow has published a list of recommendations for practising and training nurses as a result of this research and has also developed a flow diagram for reference in hospitals.

Her work continues to reinforce a well-known medical truism – when it comes to medication errors, prevention is the best cure.



# ‘Manufacturing’ consent.

Mel Child

Flair, glamour, avant-garde – these are not words one normally associates with sustainability.

However, Otago Polytechnic Bachelor of Design (Fashion) graduate Mel Child, in crafting her final third-year collection, was determined to demonstrate that sound ecological principles could be brought into harmony with fashion designs that are bold, innovative and impressive.

The materials Child employed to create the outfits in her ‘Manufactured’ collection ranged from bio-friendly textiles such as modal and hemp to curtain hooks, beer tabs and even vinyl records. She also cut fabric from existing outfits, allowing her, for example, to construct a dress entirely from men’s suits.

Child describes herself as a “conceptual designer” and says that the magpie approach she took to constructing these garments enabled her to “challenge people’s perceptions of what clothing can be”.

“I find it so much more interesting and creative to create things out of unexpected materials,” she says. “I also find it more of a challenge.”

Indeed, she says she faced a number of challenges, particularly when it came to sourcing environmentally friendly textiles to use in her collection. It ain’t easy being green, as a great philosopher once said.

She was particularly keen to use hemp, which, in spite of its durability and eco-friendliness, was illegal to grow until recently in New Zealand due to associations with its more controversial cousin, cannabis.

“Hemp was very hard to source, but I eventually found an upholstery company, which was pretty much the only company in New Zealand that sold it as a raw fabric.”

While her use of hemp and modal draw attention to the potential of environmentally sustainable fabrics for fashion design, Child says that her use of found materials such as beer tabs and records were a way of taking the idea of mass-production and turning it on its head.

“My inspiration in a nutshell is this simultaneous repulsion and fascination I have with mass-production and its by-products. On the one hand, I’m repelled by it, but on the other, I’m taking the idea and running with it, trying to use it in a positive way.”

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# Meeting needs in the community.

Jill Ford

**Being able to send your child to a local school – where they can make friends, establish community ties and travel easily to and from school – is something most parents can take for granted.**



“I think it has quite broad applications, whether for therapists, teachers, policy-makers or parents.”

For parents of developmentally disabled children with very high needs, however, finding local schools that are prepared to provide for those needs can pose a challenge. Jill Ford believes that this does not need to be the case.

Ford, who works as a Service Manager for Special Education in the Marlborough/Kaikoura district, has recently completed her Master of Occupational Therapy at Otago Polytechnic. For her thesis, Ford studied a school that includes a student with very high needs on its programme with a great deal of success. She believes that identifying the factors that contributed to this success could be highly instructive to other educators in a similar position.

“I wanted to challenge the notion that some kids are ‘too disabled’ to go to their local school,” Ford says. “I understood that children have a right to attend school and that parents have a right to choose a local school. I wanted to give voice to what I felt was a neglected perspective – which was the experiences of the schools that have included students whose needs are very different to those of the other kids and who have done it well.”

The major benefit of Ford's research, is that it “shows what is possible”.

What she discovered in her single-site case study was that cultural attitudes have a major role to play in determining successful outcomes for disabled students. “Because they saw him as a kid just like the other kids, they worked out ways of ensuring that he was an active participant and not just an observer,” she says. “They saw any barriers he faced as problems to be solved.”

The major benefit of her research, Ford says, is that it “shows what is possible”.

“I think it has quite broad applications, whether for therapists, teachers, policy-makers or parents. It offers an empowering message about what can happen and how people can make a difference.”

# Working towards recovery.

Qi Liu

**Anyone who has caught a taxi driven by a former university professor will have an insight into the difficulties that may be faced by those who immigrate to New Zealand seeking a new life.**

This familiar scenario is one of many confronting new immigrants, whose employment prospects are often hampered by language and cultural barriers, lack of social networks and other obstacles.

Occupational therapy student Qi Liu and Principal Lecturer in Occupational Therapy Dr Linda Wilson believe the stress associated with unemployment and underemployment can be an important factor in the development of mental illness, and that finding meaningful employment is an important part of the recovery process for mental illness sufferers.

“One of the distinctive features of Asian culture is the value placed on paid work.”

The pair co-authored a paper, published in the *New Zealand Journal of Occupational Therapy* last year, which examines the unique challenges faced by Asian sufferers of mental illness in New Zealand, and the specific role that occupational therapists can play in addressing these challenges.

“One of the distinctive features of Asian culture is the value placed on paid work,” says Liu. “A recent study showed that employment, along with health and family, are the most important things in life for Asian people, and yet many experience employment problems when they move here.”

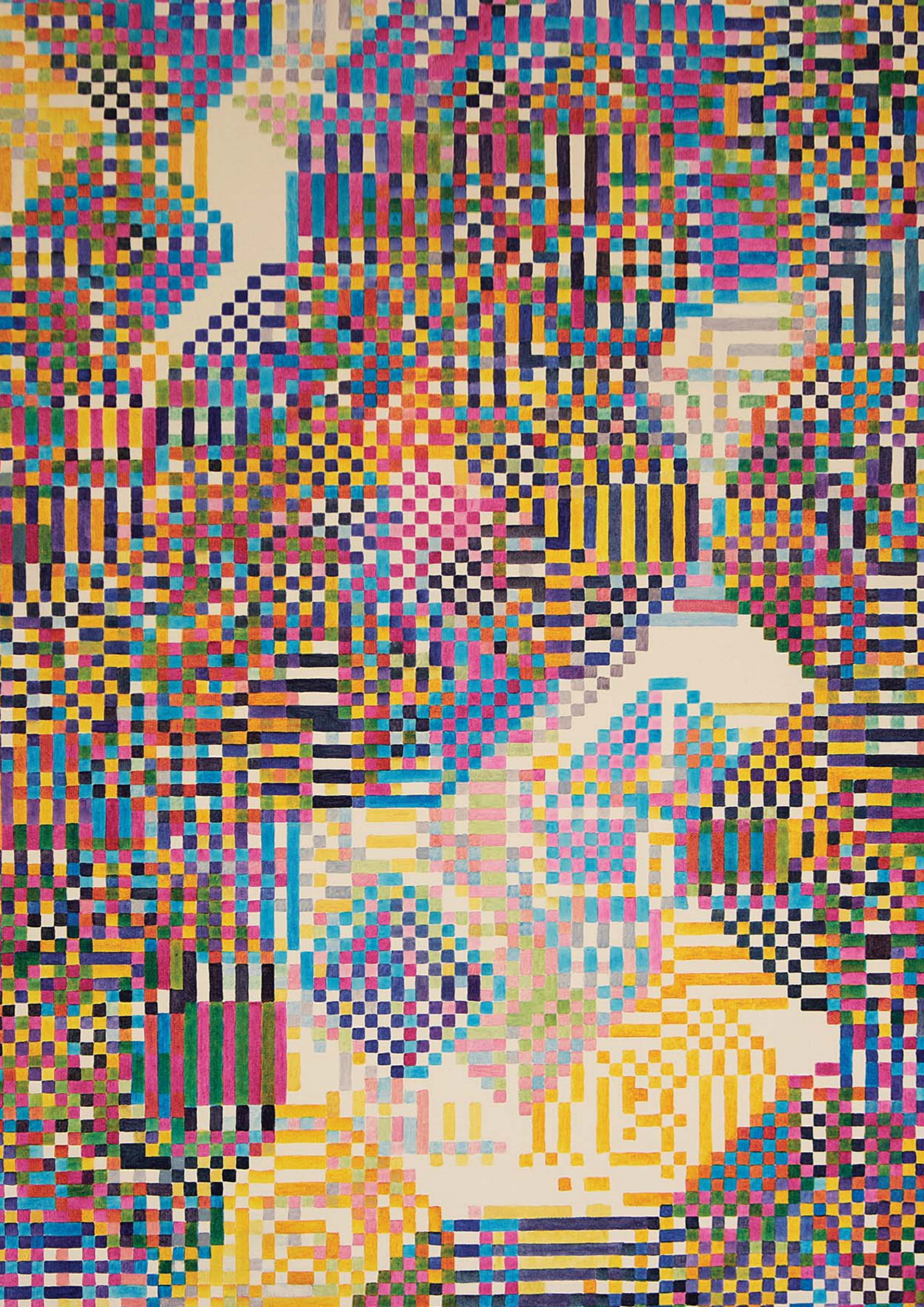
It is an issue that has personal significance for Liu, who immigrated to New Zealand in 2002 after many years working as a herbal medicine practitioner in China. She now works as an occupational therapist at a community mental health centre in Auckland, and says that her experience there has reinforced the findings of her research, in terms of the close relationship between vocation and recovery.

“Recovery is not necessarily about being cured of mental illness,” she says. “It is about learning to live with those symptoms and integrate them into the journey of life in a healthy way.”

“A profound understanding of the meaning of work to each individual is key to enabling Asian people into employment. Occupational therapists, with their unique perspective of enabling occupation, are particularly suitable for helping them to achieve their vocational goals.”



“It is about learning to live with those symptoms and integrate them into the journey of life in a healthy way.”



# Creative science.

Sue Novell

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**If you think that scientists are hardheaded, data-crunching realists, while artists are solitary geniuses summoning inspiration from the ether, Sue Novell would like you to think again.**

Novell, a practising artist and Teaching Research Assistant at the Otago Polytechnic School of Art, recently completed a series of paintings as part of her Master of Fine Arts that challenge the “myth” that there is an unbridgeable gulf between these human endeavours.

“Artists have always relied on algorithms and rules in order to create their work.”

“Scientists have always relied on their intuition and benefited from chance and random events,” she explains. “It is not all predictable. At the same time, artists have always relied on algorithms and rules in order to create their work. It is not something that magically happens.”

The vibrantly coloured, immersive-scale paintings that Novell created for her master’s degree emerged from a process that combined contemporary digital technology with the tried and true low-technology of the paintbrush and easel, and were inspired by everything from Darwinian natural selection to complexity theory.

The process would begin with taking a photograph, which would then be digitally overlaid with one or more other photographs. This image would then be filtered, cropped and zoomed in on. Once she was satisfied with the image, Novell would project it onto a canvas and begin to paint over it. The finished paintings evoke the organic and the digital simultaneously.

“Physicists believe that the world started as something far smaller than an atom and evolved as a result of physical and chemical processes along with all sorts of accidents,” she says. “In a way, I try to live that in my art-making. I set myself rules, and then a chance occurrence will lead me somewhere else. It’s that balance of certainties and uncertainties that I find exciting.”

Novell is currently preparing works to be exhibited in conjunction with the Science Fair in Dunedin and a Christchurch symposium exploring the promise and peril of the emerging science of nanotechnology. These opportunities demonstrate Novell’s conviction that the nexus of art and science offers great potential for contemporary artists and scientists alike.



“I set myself rules, and then a chance occurrence will lead me somewhere else. It’s that balance of certainties and uncertainties that I find exciting.”

*Artwork: PC230047 IX, 2010, acrylic on canvas, 67 x 67 cm*

# Opposites attract.

Kieran Higgins

Kieran Higgins' first foray into fashion design was an attempt to solve a personal style dilemma – he couldn't find any t-shirts that suited his tastes, so he started designing and printing his own.

Several years later, Higgins has completed his Bachelor of Design (Fashion) at Otago Polytechnic. His DIY attitude and desire to stand out from the crowd are still very much in evidence in his final collection, a series of outfits in which finely-detailed designs screen-printed onto silk shine through perforations in black leather jackets and trousers.

"I moved towards the idea of trying to bring things together that wouldn't normally be associated with one another."

The major inspiration for the collection was the concept of duality, Higgins says, from binary code to yin-yang and, in particular, the relationship between light and darkness.

"From that starting point I moved towards the idea of trying to bring things together that wouldn't normally be associated with

one another," he says. "Black leather always carries associations – the motorcyclist, the musician, connotations of danger and 'cool'. Silk carries different associations – it's a very glamorous, luxurious, expensive item."

The complicated leatherwork involved in producing this effect would not have been simple to create using traditional methods, so Higgins decided to take advantage of the powerful laser cutter which is one of the tools available at the Polytechnic's Product Design Centre.

It was the first time the laser cutter had been used for leatherwork, but Higgins says it was the ideal method for making his ideas come to life. "I'd never seen a machine that can achieve that level of detail. As soon as I found out the school had one, I just had to get my hands on it.

"A lot of people couldn't get their heads around the fact that I'd spent all this money on this beautiful high quality leather and that my plan was to cut holes out of it!" he laughs, but as he enters an industry that places a premium on innovation, Higgins hopes that his penchant for risk-taking will be rewarded.

The major inspiration for the collection was the concept of duality, from binary code to yin-yang and, in particular, the relationship between light and darkness.





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