

Director of the National Centre for Disability Issues, Associate Professor Diesfeld focuses on the legal rights of disabled people and tribunal decision-making.

The Legal Services Agency commissioned a research team in 2005, led by Associate Professor Diesfeld, to identify the unmet legal needs of disabled people in Auckland. The research was the foundation for the Disability Law Project, housed in Mangere Community Law Centre, which opened its doors late 2007.

In many ways, New Zealand is at the forefront of rights for disabled people. Our Code of Health and Disability Consumers' Rights is unique and of interest internationally. New Zealand recognises sign language as an official language and was instrumental in developing the United Nations' Convention of the Rights of People with Disabilities," says Associate Professor Diesfeld. "But it is also essential that disabled people have full access to the legal system, participating in its development and reform."

Associate Professor Diesfeld frequently speaks with influential decision-makers, both nationally and internationally. In 2007, she spoke to 20 new judges at the Institute of Judicial Studies about unmet legal needs of disabled New Zealanders.

"Disabled people expressed that within the legal system there is a need for greater awareness of the impact and diversity of disabilities. Their recommendations included removing architectural barriers in community law centres, providing sign language interpreters, developing legal information in simple English and providing disability awareness training for lawyers."

She was also the keynote speaker for the 2007 conference of the Queensland Mental Health Review Tribunal.

"It was an honour to reflect upon the relevance of New Zealand's approach to victims' rights in the Queensland context. The Queensland tribunal is attempting to balance the interests of victims, forensic patients and the public. New Zealand's emphasis on victims' concerns attracts international interest."

Born in the United States, Associate Professor Diesfeld represented people with intellectual disabilities in California before being invited to the University of Kent in Canterbury, England. There she established the mental health law clinic where law students provided free legal assistance for people with mental health or learning disabilities.

By representing patients before the Mental Health Review Tribunal for eight years, she has developed her tribunal research regarding practices in England, Australia and New Zealand.

Her key 2007 publication, "An analysis of the decisions of the Health Practitioners' Disciplinary Tribunal and a critical co-authored with Dr. Brian Madonna of the University of Auckland, "The unintended impact of the therapeutic intentions of the New Zealand Mental Health Review Tribunal? Therapeutic Jurisprudence Perspectives."

Associate Professor Diesfeld is currently writing a book with Professor Ian Freckelton on criminal law and mental disorder in New Zealand and Australia.

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The study was the first of its kind in New Zealand and involved 2000 participants in the North Shore City area. A combination of telephone survey methods and Geographic Information Systems (GIS) technology meant that researchers could match people's health measures to where they lived and worked.

"It turns out people who live in areas where population density is high, streets are well connected and there are a variety of destinations, such as shops, have the leanest and healthiest people," says Professor Schofield.

"People who are able to commute to work using means other than cars are more likely to accumulate more exercise into their day and are healthier as a result."

"For those in cul-de-sacs, driving is often the easiest option, which has several negative consequences for both adults and children - one of these is reduced exercise and increased weight," he says.

Professor Schofield is now examining how neighbourhood design affects children's health using Waitakere City, North Shore City, and Christchurch, as examples. This is supported by a grant from the Health Research Council of New Zealand.

"The study's main outcomes will be to inform town planning and new urban development to support people's health by helping make walking and cycling the first choice."

Professor Schofield is also leading a study into understanding health and productivity in the workplace.

"This is a series of projects that seek to understand the relationship between health, health risk and employee productivity, both absenteeism and presenteeism."

"It turns out that healthier employees are not only less absent, but do more work when they are at work. We are now starting to understand how precious health is as a human capital asset in business," says Professor Schofield.

"I see a future where employers are willing to invest significantly in preventive health measures such as nutrition, weight management and exercise. Employee health as a business commodity is something employers now have the evidence to take seriously."

AUT University's Asian and Migrant Health Research Centre Co-ordinator Ruth DeSouza knows how hard it can be to straddle different cultures. This understanding has fuelled her work with the centre - one of only two such centres in New Zealand that focus on Asian and migrant health.

"The centre aims to improve the wellbeing of migrants, refugees, health careers, long-term settled communities and international students in New Zealand by promoting equity, community development and social justice."

"The research findings need to be accessible and appropriate for educational, policy, practice and for ethnic communities to examine themselves, beyond the traditional view of ethnic communities as a homogeneous block of individuals," she says.

DeSouza is currently writing a book with Professor Ian Freckelton on criminal law and mental disorder in New Zealand and Australia.

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"But some said that they were not self-sufficient because they actively seek out the most needed support they needed, and that their partners became more involved in pregnancy than they would have in their home country."

Another important study DeSouza was part of investigated Chinese migrants and their beliefs surrounding cervical screening. The team received funding from the Chinese-New Settlers' Service Trust and surveyed more than 200 Mainland Chinese women living in Auckland.

DeSouza says invasive cancer is a growing health problem among Chinese women and until now little has been known about their reluctance to attend screening.

The researchers found, while there are universal barriers such as embarrassment, there were also unique issues such as lack of knowledge of services, causes and the impact of cervical cancer, and poor language proficiency.

DeSouza has forged strong community contacts to help migrants and raise awareness of their issues at a grass roots level.

"The general perception is still that migrants are a problem, whereas I see them as an asset, and advocate for them to be seen as such."

DeSouza has also started a Migration and Settlement Research Group at AUT to enhance collaboration among the university's diverse range of researchers.

"AUT is an expert authority on migrant issues as we have many people doing exciting things across the university. Our work makes a positive difference to New Zealand."

Associate Professor Wayne Hing had a vision for ultrasound research at AUT University - one that has been successfully realised.

A physiotherapist of nearly 25 years, Associate Professor Hing set up the AUT-Horizon Scanning Imaging Unit at AUT's North Shore Campus in 2006 with radiologist Dr Bruce Allen.

Horizon Scanning is a specialised ultrasound practice that has clinics throughout Auckland and run by Dr Allen.

"The combination of a radiologist and a physiotherapist is a unique service to the community, contributing to research and education. AUT is excited to expand its research and teaching area - made this logical relationship a reality," says Associate Professor Hing, who is director of the unit.

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UNIVERSITY

Faculty of Health and Environmental Sciences
Postgraduate and Research Profile 2008

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Professor Max Abbott

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Research Development Manager: Sara Metcalf
Faculty Research Manager: Jim Borrows
Professor of Biostatistics: Philip Schluter
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Assistant to Associate Dean (Research): Bonnie Brannigan

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RESEARCH underpins the major responsibilities and roles of universities. It advances fundamental knowledge, informs policymaking at various levels, enhances professional practice and contributes to economic and social development. Research is central to the core activities of teaching, learning and community service. It helps enable universities to fulfil their statutory requirement to serve as an informed critic and conscience of society.

This year's profile focuses on a selection of staff and postgraduate student research activities and outputs. It provides an indication of their contribution to advancing understanding of human behaviour and potential, biological and environmental processes, wellness, illness and disability. It also illustrates some applications of research findings in practice and other settings. Assessment of the diverse impacts of research – locally, nationally and globally – is a challenging undertaking. At best citation measures are a crude proxy for the value of research to wider society and individual being.

The Faculty of Health and Environmental Sciences includes life and environmental sciences, health and rehabilitation disciplines and professions, and sport and recreation. For administrative purposes and to foster synergies and interdisciplinary cooperation, the various disciplines are brought together within five larger schools – Public Health and Psychosocial Studies, Health Care Practice, Rehabilitation and Occupation Studies, Sport and Recreation and Applied Sciences. The latter has strengths in environmental science (particularly in marine ecology), food science and biotechnology. Sport and Recreation has particular strengths in human performance and elite sport. During 2008 staff members contributed in numerous ways to the success of New Zealand athletes and sports people at the Beijing Olympics and in other competitions.

Faculty schools are linked by the postgraduate and research office and the undergraduate office. Of the more than 6,000 students enrolled in Faculty programmes approximately 1,000 are postgraduate. During 2008 new postgraduate programmes commenced in public health, emergency management and counselling psychology. In 2009 a new masters degree will be introduced in medical laboratory science. All of these programmes involve a significant research component and will contribute to the expansion of research in a number of important areas.

The Faculty hosts five of the University's key research institutes, namely the:

- Biotechnology Research Institute
- National Institute for Public Health and Mental Health Research
- Institute for Sport and Recreation New Zealand
- Earth and Oceanic Sciences Research Institute
- Health and Rehabilitation Research Centre.

These institutes are attached to Faculty schools but also have links with other parts of the Faculty, wider University and other organisations nationally and internationally.

During the latter part of the year, preparations were made for the establishment of another major research centre, the National Research Centre for Stroke, Applied Neurosciences and Neurorehabilitation. This centre will have a strong focus on research directed towards enhancing the quality and effectiveness of treatment and rehabilitation for a large and growing number of people.

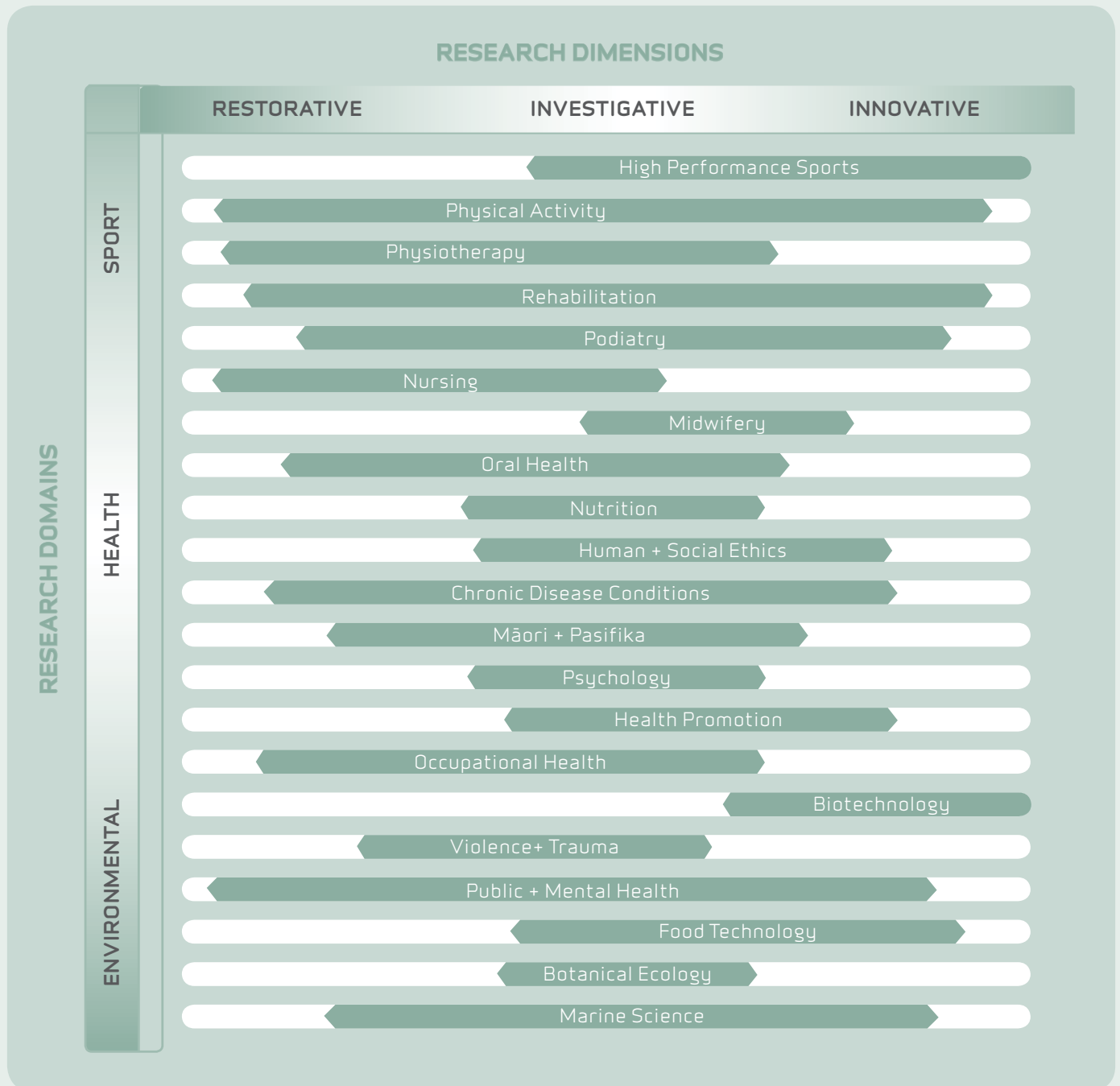
There were many highlights during 2008 – exciting new appointments, major international conferences and think tanks hosted, staff and students receiving recognition and awards, promotions of staff to professorial level, significant external research grants awarded, new sponsorships and partnerships with other organisations, multiple spin-offs from research into professional practice and the wider community. The list goes on – and something of all this is captured in this year's Profile. Less visible is the day-to-day reality of research – making time amidst other responsibilities, the excitement of discovery and new understanding, the frustrations, challenges, the solid grind and blind alleys. For me, a lifetime research addict, I would have it no other way. But there can be costs, commonly including excessive time away from family and loved ones and foregone income from higher paying employment alternatives. I commend staff and students who stay the distance.

A major purpose of this Profile is to foster linkages and collaboration with colleagues in other university, research and applied settings. Much of the research reported is collaborative and it is becoming increasingly important to work more effectively across institutions.

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2008 FACULTY OF HEALTH AND ENVIRONMENTAL SCIENCES RESEARCH SUMMARY



TERMINOLOGY

RESTORATIVE:

Research related to changing from a sub-optimal state, such as the development of new therapies, improved patient care and mechanisms to move towards an improved optimal, healthy state.

INVESTIGATIVE:

Research related to measuring and providing explanations or discovering the nature of an existing state. For example, describing conditions from a particular perspective, determining and quantifying impacts and influences and evaluating services and practices to form a view of how to instigate future change.

INNOVATIVE:

Research related to creating a desired 'future' state. For example, discovery, development and introduction of new technology, products, and creative approaches and ideas that change society.

" THE RESEARCH LANDSCAPE WITHIN THE FACULTY IS EVOLVING AT A RAPID RATE. IT IS ASPIRATIONAL, PURPOSEFUL IN ITS DIRECTION, AND ALREADY DELIVERING RESULTS."



Research Overview

THE 2008 Faculty of Health and Environmental Science research profile continues to showcase our research and researchers. The full repository of our 2008 outputs is available electronically at www.aut.ac.nz¹.

The 2007 merger of the Research and Postgraduate Office, and the finalisation of the Postgraduate and Research Development Plan have provided the impetus for a number of significant initiatives in 2008.

A peer review initiative recognises the informal mentoring that has characterised our faculty in the past. However it is now seeking a more structured approach incorporating research career planning; the participation of heads of research in the annual staff review process; improved engagement of senior researchers with emerging researchers; and the creation of internal panel reviews for research teams submitting major external contestable grants.

Capability mapping is providing a platform for the identification of research opportunities by mapping existing research clusters, external collaborations, postgraduate teaching programmes and topics of research

against external funding opportunities.

The faculty is also pursuing more efficient and effective use of facilities and equipment. It is hoped that research-related capital expenditure issues will be considered more favourably than in the past by highlighting their role in the teaching-research nexus. An additional undertaking is the pursuit of interested parties to conduct joint efforts in acquiring capital equipment.

Faculty initiatives to improve workload management have been complimented by a number of university-wide initiatives. These include the provision of leave for staff to complete their doctoral studies, and more research-conducive work conditions being available to more staff.

The research landscape within the faculty is evolving at a rapid rate. It is aspirational, purposeful in its direction, and already delivering results.

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¹ www.healthresearchreports.aut.ac.nz

"POSTGRADUATE PROGRAMMES OFFERED REFLECT AUT'S DRIVE TO CREATE AN OPTIMUM LEARNING AND TEACHING ENVIRONMENT, CREATING A HIGHER LEVEL OF KNOWLEDGE, UNDERSTANDING AND EXPERTISE IN PRIORITY AREAS THAT OUR COMMUNITIES, GOVERNMENT AND INDUSTRIES SEE AS NATIONALLY IMPORTANT."



Postgraduate Health and Environmental Sciences Programmes

IT HAS BEEN an exciting year with the newly joined Postgraduate and Research Offices developing momentum. The merger is a timely and strategic move that puts our present and future students at the forefront of research. The faculty's research initiatives focus on a variety of health, sport, biotechnology, environmental and applied science areas.

Postgraduate programmes offered reflect AUT's drive to create an optimum learning and teaching environment, creating a higher level of knowledge, understanding and expertise in priority areas that our communities, government and industries see as nationally important.

During the past eighteen months, the faculty has expanded in the health area, despite already being the largest provider in New Zealand. Programmes have been developed across many disciplines to reflect the current national health strategy. New areas include older adult health and wellness – an important addition as we face an aging population – along with child health development – also of urgency as our youth face an obesity epidemic and other health challenges.

Additional postgraduate programmes which have developed out of industry and community need include public health, Māori health, rehabilitation, emergency management and leadership management. In the sporting area, physical conditioning is a developing focus for athletes, reflected in the increasing student numbers within the sport and exercise programmes. Student numbers are also growing at a rapid pace in food technology and marine and micro-biology programmes.

The number of enrolments in the faculty's postgraduate

certificate programmes is increasing annually, with many professionals enrolling to develop specialist knowledge in their respective fields through the faculty's industry-focused postgraduate programmes.

Our strength continues to be the inter-professional and collegial learning environment that we offer through experienced researchers and supervisors who are connected to the community and stakeholders in their specialist field.

Our challenge remains to provide a pathway for our professional students to not only come to AUT and retain and improve their specialist knowledge, but to continue their scholarly journey on to Masters research and Doctoral study offered within a PhD or a Doctor of Health Science pathway.

To make this journey easier, we have developed many programmes that cater to the individual needs of professionals looking to improve their scholarly ability in their chosen field. This year we will have our first Doctor of Health Science graduates.

Working as a team in the Postgraduate and Research Office has huge advantages for our students, ensuring future learning in new and innovative areas that respond directly to the needs of our changing society.

I look forward to this partnership growing from strength to strength over the coming years.

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Making a difference in Pacific children's health and wellbeing

AUT UNIVERSITY Professor Janis Paterson is taking a closer look at why Pacific children are over represented in concerning health statistics. Her research team is carrying out a groundbreaking long-term study amongst various cultures in the Pacific community.

Professor Paterson co-directs the Pacific Island Families (PIF) study, the first life course Pasifika study in New Zealand. The cohort of 1398 infants and their families was drawn from Middlemore Hospital in 2000 and researchers have been working closely with this group ever since.

The aim of the study is to provide information on the children's health and the cultural, economic, environmental and psychosocial factors that have an impact on their development. Dr Teulia Percival, a consultant at Kidz First Children's Hospital in South Auckland is co-director of the study and plays an important role in connecting the research team with stakeholders, ensuring that findings can be applied practically.

"We want to provide Pacific communities, policy makers, health and social providers with relevant and important health and psychosocial information," says Professor Paterson.

"Our findings mean public health interventions and prevention programmes can now rely on evidence-based recommendations, making more effective use of precious health dollars."

During the past six years of research, the PIF study has released 42 academic papers, including reports on smoking, gambling, breastfeeding and postnatal depression as they relate to Pacific families.

Newly released findings have uncovered a significant difference between Pacific Island ethnicities in children's oral health practices.

Research highlights show Tongan children are less likely to use children's toothpaste compared to Samoan and Cook Island Māori. For example, only 19 per cent of Tongan children use children's toothpaste compared to Samoan children at 48 per cent.

The research also shows Tongan children are more likely to have a snack or drink, other than water, before going to bed at 67 per cent and twice as likely as Samoan children to have fillings or extractions at 53 per cent.

Professor Paterson is passionate about the results from the PIF study and how it's making a positive difference to health services for Pacific people.

"Our work has directly contributed to immunisation services for Pacific children, provided greater emphasis and education on diabetes, obesity prevention and



"OUR FINDINGS MEAN PUBLIC HEALTH INTERVENTIONS AND PREVENTION PROGRAMMES CAN NOW RELY ON EVIDENCE-BASED RECOMMENDATIONS, MAKING MORE EFFECTIVE USE OF PRECIOUS HEALTH DOLLARS."

healthy eating patterns, and the appointment of New Zealand's first Samoan lactation consultant."

Professor Paterson and her team have been praised for keeping Pacific families involved in the study up-to-date with its findings. To do this, a booklet "Our Pacific Families" was produced providing participants with an easy to follow snapshot of research results.

The PIF study has gained strong support for its next phase when the children are aged nine and eleven years of age. The Foundation for Research, Science and Technology announced this year it would invest a further \$3,750,000 in the study. This comes after investment in the earlier phases of more than two million dollars.

New watchdog for marine environment

AN INTERNATIONAL EXPERT has joined the staff line-up at AUT University's Earth and Oceanic Sciences Research Institute (EOS).

Dr Kay C. Vopel has worked at universities and research institutes around the world. During the past 15 years his research has focused on the functioning of aquatic ecosystems. He uses microsensor technology to investigate how interactions between aquatic organisms and their physicochemical microenvironments affect mass transfer and reaction processes.

Dr Vopel has applied his research techniques to diverse marine and fresh water systems, including the Arctic Deep-Sea, perennially ice-covered lakes of Antarctica, the Mediterranean Sea and tropical Barrier Reefs. Locally, for the past five years, he has been researching the functioning of aquatic ecosystems at New Zealand's National Institute of Water and Atmospheric Research.

Now at EOS, Dr Vopel continues to focus on New Zealand coastal ecosystems. "We are looking at how the transformation of organic matter in coastal sediment changes under various scenarios and what the consequences of this are for ecosystem functioning," he says.

One example of this could be the changes that occur in sediments under mussel or fish farms, or in estuaries that receive wastewater.

"Defining acceptable environmental change and sustainability are non-trivial tasks when it comes to the use of the

marine environment for aquaculture," he says.

Dr Vopel and his team are focusing on the Auckland region because of its logistic convenience, but the research results are generally applicable and of interest for the wider scientific community. By using a specially crafted sea floor monitoring tool, Dr Vopel and his team of students describe the depth and size of footprints that marine farms leave on the seafloor. This research is pertinent as aquaculture revenue is continuing to increase.

"It is essential that we monitor and assess the risk to the health of New Zealand's coastal sediment, as our local aquaculture industry continues to expand," says Dr Vopel.

"My overall goal is to advance our understanding of the response of coastal ecosystems to multiple stressors, and to challenge generations of students with applied research that addresses the most pressing of environmental issues," he says.

Dr Vopel is pleased with his career shift to AUT, as he enjoys working with students and believes in the hands-on approach of learning.

"The recent advances in research at EOS are exciting and I encourage students to be involved in all research stages and develop valuable skills to explore natural aquatic systems."

Dr Vopel and the students of EOS will continue to expand their research of coastal ecosystems by working with overseas colleagues and New Zealand organisations such as SCION and NIWA.



"IT IS ESSENTIAL THAT WE MONITOR THE RISK TO THE HEALTH OF NEW ZEALAND'S COASTAL SEDIMENT, AS THE LOCAL AQUACULTURE INDUSTRY CONTINUES TO EXPAND."

"DIGGING DEEPER INTO MIXED METHODS RESEARCH IS COMPLEX STUFF, BUT I FIND TELLING SERIOUS INFORMATION LIKE THIS THROUGH STORY AND HUMOUR IS WELL-RECEIVED AND BETTER REMEMBERED."

Fables for academics

ASSOCIATE PROFESSOR of Nursing, Lynne Giddings, knows how to spin a great yarn, and her natural talent in telling fables has earned her a prestigious award.

In 2007 Associate Professor Giddings won the SAGE Best Presentation Award for her paper, "Reliability and validity in mixed methods: A subject for debate". She presented this paper at the Third International Mixed Methods Conference held in Cambridge, UK.

"Digging deeper into mixed methods research is complex stuff, but I find telling serious information like this through story and humour is well received and better remembered."

Associate Professor Giddings is co-director of AUT University's Interdisciplinary Trauma Research Unit, an internationally recognised research methodologist, and an award winning teacher. She is passionate about social justice and women's health issues and has a special research interest in how people live with chronic illness. Her work is strongly influenced by critical, poststructural and feminist philosophical approaches.

It was through the process of wanting to see more non-positivist, qualitative methodologies carried out in health research that Associate Professor Giddings became involved in the international debate concerning mixed methods research, and on the way "becoming somewhat of an accidental expert on the topic".

Mixed methods research is becoming increasingly popular in the health and social sciences disciplines. Associate Professor Giddings believes its mix of quantitative and qualitative methods is often seen as the "best of both worlds" and as a result it is beginning to capitalise on funding dollars.

"At first glance, mixed methods appears to offer an anything goes approach to research. Not so. There is always a taken-for-granted, and usually unacknowledged, world view with underlying assumptions that guides the choice of methods to be mixed and how the data will be used," she says.

Associate Professor Giddings is concerned that if this worldview or paradigm is not made explicit during the research process, data may be pushed where it does not fit.



"The claim that mixed methods is the third methodological movement of the twentieth century could have unexpected consequences for the future of research and policy in the social sciences and health disciplines – it may limit methodological choices and diversity of methods," she says.

Associate Professor Giddings calls for a co-operative inquiry framework for mixed methods research that would move debate beyond methodological competitiveness. A fable from one of her popular presentations best explains her position.

*What excites me now,
is to look outside the square,
to find other paradigms that might be there.
Using Mixed Methods could show up
conceptual confusion and highlight that
certainty is an illusion.
It could open the spaces for all epistemologies
and lead to the use of new methodologies.*

*So 'quantitative' and 'qualitative' their
rightful places have found.
Not as two foes fighting wars to hold on to
paradigmatic ground.
But as methods in Mixed Methods,
a Trojan horse can be,
and bring to our research a rich diversity.*

Power check

IN THE WORLD OF competitive sport, athletes strive to reach a constantly changing performance benchmark, training to go faster, higher and further. But how do they know if all that blood, sweat and tears is improving optimal performance? To measure success in training techniques, athletes need data about their current performance and they need it in real time.

Professor John Cronin, who is the Director of AUT University's School of Sport and Recreation has, with colleagues, designed a device called the "Velocity Trainer" that is specially designed to give athletes vital training information.

The Velocity Trainer works by providing instantaneous feedback during training. It generates results through computer acquisition software and a position transducer, which is attached via a wire to a person or a barbell.

The computer program can then display instant results on the distance, velocity, force and power of the load lifted by the athlete.

"The beauty of the Velocity Trainer is its simplicity, athletes don't need a computer degree to operate it," says Professor Cronin.

The Velocity Trainer is user-friendly. Athletes or coaches can easily set up the equipment themselves and the results are displayed in large, brightly coloured text allowing the information to be easily seen from a distance. The design of the equipment lets an athlete continue training and observe their results at the same time.

Having this type of information on hand gives trainers and athletes valuable direction. "The results help create

more effective training goals and targets, set session thresholds and monitor readiness for training and the status of athlete recovery. All these factors can improve the force-velocity-power output of muscle and therefore performance," he says.

Prior to this device, the most common way to monitor session quality was quantifying the load lifted by kilograms or tonnes, which works for certain parts of the training cycle, but at other times it's more important to monitor how fast an athlete is lifting the load or the power output.

Professor Cronin, who is the Director of AUT's Institute of Sport and Recreation Research New Zealand, is passionate about bridging the gap between theory and practice. He has two students using the Velocity Trainer out in the field, providing them with real skills that will benefit them in the workplace.

One example is PhD student Keir Hansen who is using the program on professional Rugby Union players in the United Kingdom, measuring the effect of cluster training on force-time and power-time variables.

Other local PhD students have conducted a pilot study on the effect of rubber-based resistance on the force and power output of North Harbour rugby players as well as how whole body vibration affects power endurance performance.

Professor Cronin, who developed the Velocity Trainer with an Australian company, is now keen to move the program to the next level. He is now working on integrating position transducer technology with force plate technology, providing another means to assess and monitor athletic performance.

"THE BEAUTY OF THE VELOCITY TRAINER IS ITS SIMPLICITY, ATHLETES DON'T NEED A COMPUTER DEGREE TO OPERATE IT."



"IT'S HARD TO FIND ANYWHERE ELSE IN THE WORLD WHERE AN ORAL HEALTH DEPARTMENT SITS WITHIN A SCHOOL INCLUDING ADDICTIONS, PSYCHOLOGY, MĀORI HEALTH, MENTAL AND BEHAVIOURAL HEALTH. IT'S VERY FORWARD THINKING."

Wider focus for oral health

THE MANY POSSIBILITIES for interdisciplinary and cross-cultural collaborations drew Associate Professor Theresa Madden (DDS, MS, PhD) to AUT University's School of Public Health and Psychosocial Studies.

Associate Professor Madden admires New Zealand for providing universal oral health care for children and adolescents and also wishes to greatly improve her ability to conduct global culturally appropriate health research benefiting indigenous peoples.

"As a student and admirer of the principles of the Treaty of Waitangi, I hope that working in New Zealand will provide me with learning experiences not possible elsewhere in the world," she says.

Associate Professor Madden is a scientist and periodontist (specialist dentist) who has taught at the University of Otago and the Oregon Health & Science University. Studying the complex relationships between oral disease and general systemic health has dominated her scholarly activity, including diabetes, heart disease, osteoporosis and substance use conditions.

Her most recently published work shows that in a cohort of 48 Americans with diabetes and periodontitis, gum treatments improve diabetic status, as measured by glycosylated hemoglobin in blood. She hopes to expand this research here in New Zealand and recruit large numbers of Māori and Pacific Island participants with diabetes.

Associate Professor Madden joined AUT last year. Shortly after settling in, she was awarded RELT funding to develop innovative online video clips for teaching Motivational Interviewing (MI). Final year Oral Health students have received intensive training in applying MI to patient behaviours influencing oral health, for example, avoiding tobacco and highly acidic foods.

Associate Professor Madden also plans to expand this project to include students in other health disciplines at AUT. "If patients are properly encouraged to talk about their own health, they will mention the barriers they face in their everyday lives," she says.

"The motivational interviewing allows students to direct a patient in tooth flossing at one moment, but then also opens the door for discussion around substance use



and how that might be affecting their oral health," says Associate Professor Madden.

More than any other risk factor, tobacco-dependence, unhealthy drinking and other drug abuse damages oral systemic and psychosocial health. Examples of oral damage could cover oral cancer, periodontitis, jaw fractures, cleft lip/palate and "Meth Mouth" – an American term for methamphetamine use causing oral damage.

Associate Professor Madden's knowledge of substance use conditions is proving valuable for students taking the new Graduate Certificate and Diploma in Addictions at AUT.

"It's hard to find anywhere else in the world where an Oral Health department sits within a School including addictions, psychology, Māori health, mental and behavioural health. It's very forward thinking," she says.

Associate Professor Madden is on the editorial board of the journal *Substance Abuse* and her extensive experience in this area is welcomed not only by AUT, but the New Zealand dental industry that's facing new challenges in this area, such as the rise of "P" use and its affect on oral health.

POSTGRADUATE PROFILES

AIMING HIGH TO IMPROVE ENDURANCE

DR DARRELL BONETTI, sports scientist for the New Zealand Kayaking Team and a keen kayaker himself, chose to investigate a topic close to his heart for his AUT University PhD – how to improve the endurance performance of competitive kayakers.

His thesis focused on the effect of simulated altitude training on endurance performance, which has become a popular practice among many elite athletes including kayakers.

DR DARRELL BONETTI MEASURING THE BLOOD LACTATE RESPONSE OF A CYCLIST



“The adaptation to the shortage of oxygen at altitude promotes physiological changes which may enhance endurance performance,” says Dr Bonetti.

Since its inception, the live-high and train-low (LHTL) paradigm has been widely regarded as the most effective approach to altitude training. However during the past decade, replication of this natural exposure through brief intermittent stimulation of LHTL (via the use of hypoxic inhalers) has increased in popularity.

The evidence supporting brief intermittent stimulation of altitude training is limited and results are conflicting, therefore Dr Bonetti needed to conduct his own studies to further evaluate the efficacy of altitude training.

In two experimental studies Dr Bonetti observed worthwhile enhancements in endurance performance following adaptation to brief intermittent hypoxia. Dr Bonetti also conducted a meta-analysis of studies that compared changes in sea level performance following adaptation to various protocols of natural and simulated hypoxic exposure.

“I was able to establish that natural live-high train-low currently provides the best protocol for enhancing endurance performance in elite and sub-elite athletes. Some artificial protocols such as brief intermittent simulation of LHTL are effective in sub-elites,” he says.

Dr Bonetti is still continuing his research at AUT, having completed two further studies on sports performance and carrying out a number of applied research projects looking at environmental effects on exercise.

THE THERAPEUTIC BALANCING ACT

THE THERAPEUTIC RELATIONSHIP between health professional and client is an important dynamic on the road to recovery.

Dr Gudrun Frerichs investigated this relationship as part of her PhD, a study of how services shape recovery from sexual abuse.

Using the philosophical underpinnings of Honneth’s recognition theory, the study provides an understanding of participants’ experiences and views of recovery from sexual abuse.

“For recovery to occur, participants need to balance experiences of recognition and disrespect throughout the therapeutic process,” says Dr Frerichs.

Recognition was given in the form of emotional support and care from the health provider leading to the improvement of participant self-esteem. Participants perceived disrespect as they struggled with the invisibility of sexual abuse and considered lack of understanding.

“When patients surrender the longing for an entirely good and benign health professional and accept that both good and bad qualities reside in each therapist, the balancing act results in a more effective recovery,” says Dr Frerichs.

Only by having the practical experience of being able to protect their physical and psychological integrity did participants become aware that they had recovered from the legacies of sexual abuse. This insight allowed them to proceed with their lives without professional assistance.

Dr Frerichs believes that the general principles of her PhD research are applicable to all therapeutic encounters. Her academic qualifications from AUT University have led to the establishment of her own private practice, Psychological Resolutions Ltd. Through her company she helps care-professionals and organisations deliver better services through advanced skills in personal and professional relationships.

TALENTED SCIENTIST FINDS NEEDLE IN HAYSTACK

THE AUT UNIVERSITY Biotechnology Research Institute (BRI) is a centre of research excellence, developing world-class researchers – and Dr Denise Nardan is one of them.

Dr Nardan carried out her PhD research while working at KODE™ Biotech Ltd (the commercial arm of the BRI). Her study contributed to wider BRI work investigating the potential influence of blood group molecule expression on disease and in particular predisposition to infection. Funding for her PhD was provided by Technology New Zealand.

Dr Nardan focused on discovering a novel method of glycoconjugate modification, as it is not always possible to find glycolipids of interest in biological samples, due to the low frequency of some phenotypes in the general population.

"The aim of my research was to acquire rare glycolipids from the degradation of common glycolipids, as a new and better alternative to biological sources," she says.

The research resulted in the ability to generate, by acid hydrolysis, a range of rare and "unnatural" novel glycolipids from more commonly available structures. BRI and KODE™ Biotech scientists can now more effectively create a wider range of structures suitable for use in the study of biological reactions.

"Studying blood group glycolipids can tell us so much about disease and infection. My research allows scientists in this field to take a closer look in an easier way," she says.

Dr Nardan now works at Watercare Services Limited, but she considers her postgraduate research at AUT the



DR NARDAN CONSIDERS HER POSTGRADUATE RESEARCH AT AUT THE MOST STIMULATING PERIOD IN HER ACADEMIC CAREER TO DATE.

most stimulating period in her academic career to date.

"I find Watercare a challenging and enjoyable job with a promising future. However I wouldn't say this is the end of my study," she says.

MAKING HOMEWORK HEALTHY

CHILDREN WON'T BE cooped up inside any longer because of too much homework. Thanks to a new school health programme, playing is the homework for primary school children.

AUT University is organising an initiative that promises to make living a healthy and active lifestyle part of the curriculum. Dr Scott Duncan from AUT's Centre for Physical Activity and Nutrition Research leads the research team which collects and monitors the data from the schools.

Dubbed 'Healthy Homework', the initiative aims to encourage students, with the help of their parents and teachers, to adopt healthy patterns when they are away from school. The programme is based on previous AUT research which found children are a lot less active at home than at school.

"Children love being active," says Dr Duncan. "The programme gets parents involved so that they can learn to be active and eat well as a family."

Making it a compulsory part of schoolwork, Duncan believes, is the best way to make sure it is put into practice

regularly. "It's a different approach from what's usually done."

About 180 volunteer students aged nine and ten from Auckland's Browns Bay school and Mangere Central school will be the first candidates for the programme, which teaches them how to prepare nutritious meals and gives them ideas about how to be active every day. At certain time points before and after the study, children will keep a diary of what they eat and wear a pedometer to record their activity levels. AUT's team will use these data to determine each child's progress.

The project, which received its feasibility grant from the Health Research Council this year, will be piloted in 2009, after which the decision of whether or not to pursue funding for a nationwide roll-out will be made.

"If the preliminary evidence warrants additional funding, we plan to introduce Healthy Homework into 45 primary schools in Auckland, Christchurch and Wellington in 2010," Dr Duncan says.

THE OCCUPATION OF LIVING

DR KIRK REED, AN EXPERIENCED occupational therapist and head of AUT University's Department of Occupational Science and Therapy, completed his Doctorate of Health Science (DHSc) by taking a closer look at how to understand occupation. Like many occupational therapists, Dr Reed believes there is a link between occupation and health. By providing food for thought on the meaning of occupation, he aims to strengthen this link, potentially improving further health and rehabilitation practices.

After a review of occupational therapy literature, Dr Reed found the meaning of occupation was often overshadowed by describing and defending its practice. "Researchers have largely focused on understanding occupation from a conceptual perspective, rather than the ontological meaning of occupation – the lived experience," he says.

To explore the meaning of occupation further, Dr Reed interviewed 12 New Zealand adults who had experienced disruption to their occupations. In this study participants told their stories about their occupations. Data was analysed by identifying key themes and engaging in a hermeneutic thinking process based on the work of Heidegger and Gadamer.

"When occupation has been disrupted it allows us to talk about what the loss of occupation means to us. The focus is not on the disruption, but how our experience of occupation has changed as a result," says Dr Reed.

As participants talked about their experiences of disruption, for example, being a new mother, retiring or having a head injury, the broadness of the meaning of occupation became clear.



DR KIRK REED

"The meaning of occupation is complex, it changes in response to what we care about, who we are becoming and the interaction of those we engage with," says Dr Reed.

"There needs to be recognition that occupations are not individualistic and occur in a context of other people and the person's environment," he says.

The implications of Dr Reed's research for practice shows that the meaning of occupation is not clear and professionals need to enable a person to tell their story about what it is they need or want to do.

Dr Reed's study in the area concludes his doctorate and officially makes him the first Doctor of Health Science (DHSc) from AUT. This new programme was especially tailored to allow professionals (with at least five years experience within their field) the opportunity to broaden their professional and practice expertise and, through working interprofessionally, contribute to new professional knowledge.

YOUTH STEP OUT AND SPEAK UP

DR MAEA HOHEPA'S doctorate at AUT University is focused on the perceptions, behaviours and environmental influences of physical activity among adolescents in New Zealand, in particular, youth from low socioeconomic backgrounds.

Although physical activity is an important health-promoting behaviour for teenagers, international research clearly indicates youth today display suboptimal levels of physical activity.

Dr Hohepa investigated this issue further, through one of her doctorate studies conducted with the Centre for Physical Activity and Nutrition at AUT University. Her research involved more than 200 students wearing pedometers to measure their physical activity. The study revealed that many young New Zealanders did not achieve the frequently used criterion of 10,000 steps per day, a conservative level of physical activity all young people should be achieving. The study also found that students who walked to school accrued significantly greater steps than car transit users and that young people were less active on weekend days than during the school week.

"Youth today are growing up in a technology-saturated environment that is more likely to support a sedentary, low active lifestyle and provide numerous barriers to physical activity," says Dr Hohepa.

Contributing to her PhD research, Dr Hohepa was also involved in a University of Auckland-led study called OPIC (Obesity Prevention in Community). In this study of more than 3,000 high school students from the Auckland region, sedentary behaviours were found to be associated with displacement of active pursuits. In particular, hours spent watching TV during the after-school period were inversely associated with the likelihood of being active during this period of the day. However parents who encouraged their child to be physically active and implemented 'home rules' around TV use had children who displayed more optimal levels of physical activity and better TV viewing habits, compared with children whose parents implemented only one (or neither) of these strategies.

Dr Hohepa is now putting her PhD research into practice working for SPARC (Sport and Recreation New Zealand).

DOCTORAL COMPLETIONS

Kat Bolstad

Thesis Title: *Systematics of the Onychoteuthidae Gray, 1847 (Cephalopoda: Oegopsida)*

Over 60 species have been described in the squid family Onychoteuthidae in the last 200 years, yet recent estimates considered many names to be duplicates and placed the accepted number of species at ~15. In the course of this global revision of the family, each historical name was critically appraised, and each species reassessed, redescribed and reillustrated. It appears that the true number of species known at present is closer to 25 including six new to science, and that the family comprises seven genera, two new to science.

Supervisors: Dr Steve O'Shea and Dr Barbara Bollard-Breen

Darrell Bonetti

Thesis Title: *Effect of brief-intermittent hypoxic exposure on high-intensity kayaking and cycling performance*

Adaptation to the shortage of oxygen at altitude (hypoxia) promotes physiological changes which could enhance endurance performance. Consequently, altitude training has become a popular practice among competitive endurance athletes. Since its inception, the live-high train-low paradigm (LHTL) has been widely regarded as the most effective approach to altitude training. Over the past decade, brief intermittent simulation of LHTL via the use of hypoxic inhalers and re-breathing devices has gained increased popularity, but the evidence supporting their use is limited and conflicting. The experimental studies in this thesis investigated the response of sea-level exercise performance and related physiological measures following adaptation to the usual and a novel protocol of brief intermittent hypoxia.

Primary Supervisor: Professor Will Hopkins

Fe Day

Thesis Title: *Patterns in a world in slippage – Playback Theatre for Health Care staff development*

A team of indigenous and non-indigenous performers did five Playback Theatre performances for the staff of three community health care centres who had come together as part of a new Primary Healthcare Organisation. The staff were interviewed in semi-structured sessions soon after the performances and then six months to a year later. This thesis describes the work done and discusses results: some of the main findings reported by staff were that expression of emotion and aesthetic play led to refreshment and relaxation; hearing and seeing one another's stories led to

their seeing each other differently and could enhance their functioning as a team; and people raising important themes led to the clarification of values – sometimes this was unsettling and more often affirming.

Primary Supervisors: Professor David Seedhouse, Heather Devere

Scott Duncan

Thesis Title: *Physical activity and obesity in children: Measurement, associations, and recommendations*

Current obesity trends in New Zealand children warrant urgent attention from researchers and policy-makers alike. The overall aim of this thesis was to provide a detailed description of the key determinants of excess fatness in New Zealand children, with a particular focus on physical activity. It is envisaged that this information will assist in the development of evidence-based strategies for preventing obesity in young New Zealanders.

Primary supervisor: Professor Grant Schofield.

Gudrun Frerichs

Thesis Title: *Balancing recognition and disrespect: Recovery as the process of identity formation. A New Zealand study of how services shape recovery from sexual abuse*

This doctoral research describes how the recovery of survivors of sexual abuse is affected by the negative and positive interactions with service providers. Relations based on mutual recognition improved service user's overall functioning and built self-confidence, while the withholding of recognition (disrespect) caused distress and diminished self-confidence. Survivors of sexual abuse had a sense of recovery when they had gained strength through recognition and thus were able to stand up against actions of disrespect.

Primary Supervisor: Associate Professor Marion Jones

Saroja Gurazada

Thesis Title: *Use of yeast species as the biocomponent for priority environmental contaminants biosensor devices.*

The main goal of this PhD project was to develop biosensors that could detect priority environmental contaminants using yeast as a sensing element (biocomponent). This research has demonstrated, for the first time, that the responses of the native estrogen binding protein of *Saccharomyces cerevisiae* can be used to quantify estrogenic molecules in complex environmental matrices at an environmentally significant level. This relatively simple estrogen biosensor has the advantage of using non-genetically modified yeast.

Primary Supervisor: Dr John Robertson

Nigel Harris

Thesis Title: *Kinetics and kinematics of strength and power development*

This was an investigation to add to knowledge around best resistance-training practice for sports performance enhancement. First, an investigation of the force and power outputs of machine squat-jumps at different loads and how they relate to functional performance was conducted. Then, a training study was performed to compare the relative efficacy of training at different loads using a machine squat-jump on strength, power and speed enhancement.

Primary Supervisor: Professor John Cronin

Maea Hohepa

Thesis Title: *Prevalence, perceptions, and correlates of physical activity among youth in New Zealand*

This study focused on the perceptions, behaviours and environmental influences of physical activity among adolescents in New Zealand, in particular, youth from low socioeconomic backgrounds. International research has shown that physical activity, a key prerequisite for health, is lacking in many teenagers. This study objectively measured the physical activity levels of a sample of New Zealand students. Findings indicate that substantive opportunities exist for youth to be active every day, and in different contexts and environments, yet many young people are not maximising these opportunities to be active.

Primary Supervisor: Professor Grant Schofield

Mark Le Fevre

Thesis Title: *Somatic and cognitive stress management techniques: Their effect on measures of stress and competency in managers*

Primary Supervisor: Professor Gregory S. Kolt

Denise Nardan

Thesis Title: *Acid hydrolysis of neutral glycosphingolipids*

Blood group glycolipids are important tools in the study of microbial receptor interactions and other biological phenomena. Presently blood group glycolipids of interest are isolated from biological samples. However, all glycolipids are not readily available due to the low frequency of some phenotypes in the general population. The ability to acquire the rare glycolipids from the degradation of common glycolipids would be a useful alternative to trying to obtain the molecules from biological sources. This research established the ability to generate, by acid hydrolysis, a range of rare and "unnatural" novel glycolipids from more commonly available structures.

Primary Supervisor: Professor Steve Henry

David Nicholls

Thesis Title: *Body politics: A Foucauldian discourse analysis of physiotherapy practice*

The thesis used Foucauldian discourse analysis to explore how physiotherapy has been discursively constructed. It explored the discourses of legitimacy and orthodoxy in the history of physiotherapy in England and New Zealand, and considered contemporary practices that are working at the margins of contemporary physiotherapy.

Supervisors: Professor Julianne Cheek (University of Oslo/ University of South Australia); Dr Kay Price (University of South Australia); Professor Jo Walton (Victoria University, Wellington)

Kirk Reed

Thesis title: *Uncovering the meaning of occupation: Resituating it in the context of living*

This study explores the meaning of occupation, using a phenomenological hermeneutic method informed by the writings of Martin Heidegger and Hans-Georg Gadamer. The study provides an understanding of the meaning of occupation interpreted from the perspective of 12 New Zealand adults who experienced a disruption to their occupations. The findings of this thesis suggest that the meaning of occupation is complex, and tends to remain hidden. Analysis focuses on the call, being-with, and possibilities.

Primary Supervisor: Associate Professor Liz Smythe

Tineke Water

Thesis Title: *The meaning of being in dilemma in paediatric practice: A phenomenological study*

Supervisors: Associate Professor Liz Smythe and Dr Annette Dickinson

Valerie Wright-St.Clair

Thesis Title: *'Being aged' in the everyday: Uncovering the meaning through elders' stories*

This interpretive phenomenological study aimed to understand the meaning of 'being aged' through the everyday experiences of those who are aged. Individual research conversations were conducted with fifteen participants; four Maori elders aged 71 to 93 and 11 non-Maori elders aged 80 to 97 years living in private residences on Auckland's North Shore. Reflecting phenomenologically on the findings, the meaning of being aged is in its ordinariness. The elders' experiences illuminated how being in the ordinary everyday in advanced age both conceals and reveals the phenomenon of being aged.

Supervisors: Associate Professor Ngaire Kerse (University of Auckland) and Associate Professor Liz Smythe (AUT University)

RESEARCH INSTITUTES

BIOTECHNOLOGY RESEARCH INSTITUTE

THE BIOTECHNOLOGY RESEARCH INSTITUTE (BRI) is active in research related to the use of a novel biomedical platform known as KODE™ technology. This technology represents a range of specialised molecules with an almost unlimited repertoire of bioactive head molecules that are able to quantitatively attach to the outside of cells. Originally KODE™ technology was developed around the attachment of carbohydrate molecules but more recently KODE™ technology has been used to attach peptides, fluorescent markers and other structures on to the outside of cells. These recent molecules are opening up substantial new opportunities for research into novel therapeutics and diagnostic assays.

With a commercially focussed approach (in conjunction with the biotechnology company KODE Biotech Ltd), product resulting from some of this research has already been licensed and is being sold on the international market. The first focus and major product arising from KODE™ research was a blood grouping quality control system. The BRI scientists were able to control the attachment of specific amounts of blood group A and B molecules onto group O cells and thereby create a blood grouping analytical quality control system. Research into the attachment of other carbohydrate molecules onto red cells has also created a whole range of designer red cells useful for diagnostic and research purposes.

The second major focus of the BRI is in the field of assisted reproductive technologies. The team of scientists working in this area are creating KODE™ modified embryos with improved adhesion characteristics. It is anticipated that these "sticky" embryos will improve implantation rates in sub-fertile recipients, and allow the industry to move towards a single embryo transfer regime.

The third major focus is in immunology, both diagnostic and therapeutic. Further advances in this area are anticipated to have substantial impact on transfusion and transplantation in the future.

Finally through the collaborative network, some of the new molecules have been shown to be able to inhibit viral infection; specifically one of the molecules has been



PHOTOGRAPHER: CHRIS GORMAN

PROFESSOR STEVE HENRY, DIRECTOR OF AUT'S BIOTECHNOLOGY RESEARCH INSTITUTE AND CEO, KODE BIOTECH LTD

shown to inhibit the HIV virus from infecting cells. Further extensive research is still required but the technology looks promising as a potential viral therapeutic.

Through a commercially focussed approach, integrated association with a commercial partner and a strong collaborative network, the BRI intends bringing the KODE™ platform to the attention of the global biotechnology industry and converting this research into products for the public good.

Director: Professor Stephen Henry
www.healthresearch.aut.ac.nz

FINALIST: 2008 ERNST & YOUNG ENTREPRENEUR OF THE YEAR

Steve Henry, Director of AUT's Biotechnology Research Institute was one of 18 entrepreneurs named as finalists in the 2008 Ernst & Young Entrepreneur of the Year, New Zealand's most prominent global business award. It is aimed at recognising successful entrepreneurs and highlighting their contribution to the New Zealand economy. The finalists were selected for "displaying an exceptional combination of qualities; creativity, courage, innovation, integrity, leadership, passion and, of course, the hard work and focus it takes to build a successful business".

NATIONAL INSTITUTE FOR PUBLIC HEALTH AND MENTAL HEALTH

THE NATIONAL INSTITUTE for Public Health and Mental Health Research (NIPHMHR) is multidisciplinary, comprising five separate but interconnected research centres:

- Taupua Waiora: Centre for Māori Health Research
- Centre for Pacific Health and Development Research
- Centre for Asian and Migrant Health Research
- Gambling Research Centre
- Centre for Physical Activity and Nutrition Research (CPAN).

The institute unites a number of collaborative research projects, including:

- The Pacific Islands Families Study (PIF) is a large scientifically and culturally robust longitudinal study that is following a birth cohort of approximately 1000 Pacific children and their families in order to track child and family development and wellbeing
- Several large scale studies focused on Māori health promotion, workforce development and access to services
- Adjustment and health issues among Asian and other migrants living in New Zealand

- The evaluation (ongoing) of the government's strategy for health eating, physical activity and obesity (named HEHA; Healthy Eating Healthy Action)
- Healthy Steps: A randomised controlled trial of pedometer-based and conventional Green Prescriptions
- Evaluation of the Auckland Regional Transport Authority's School Travel Plan
- Environmental associations with walking and physical activity based in Auckland, Wellington, and Christchurch (Understanding Relationships between Activity and Neighbourhoods or URBAN study)

In 2008 researchers across the institute achieved a high rate of quality peer reviewed publications and have been awarded substantial funding from the Foundation for Research, Science and Technology, the Health Research Council, the Ministry of Health, the Families Commission and a range of other national sources.

Co-Directors: Professor Max Abbott and Professor Janis Paterson
www.healthresearch.aut.ac.nz

THE PACIFIC ISLANDS FAMILIES STUDY (PIF) IS A LARGE SCIENTIFICALLY AND CULTURALLY ROBUST LONGITUDINAL STUDY THAT IS FOLLOWING A BIRTH COHORT OF APPROXIMATELY 1000 PACIFIC CHILDREN AND THEIR FAMILIES IN ORDER TO TRACK CHILD AND FAMILY DEVELOPMENT AND WELLBEING.



GAMBLING RESEARCH CENTRE

THE GAMBLING RESEARCH CENTRE commenced 2008 by co-hosting, with the Problem Gambling Foundation, an international gambling conference in Auckland which attracted 228 delegates with one third attending from overseas (Australia, Asia, Europe and North America). Immediately preceding the conference, the centre co-hosted, with the Gambling Helpline, an international think tank at which 62 invited participants discussed and debated key gambling issues in the areas of research, policy and practice.

This year has also seen the inclusion of specific gambling and related screening tools/questions as part of the intervention process provided by all Ministry of Health funded problem gambling treatment services in New Zealand. These screening tools and questions

were recommended by the centre following completion of a research project investigating assessment and screening processes in problem gambling treatment services. The centre has completed, amongst other research, projects investigating barriers to help-seeking behaviours for gamblers and their families, and the links between gambling and crime (in particular unreported crime).

The centre has been awarded grants to investigate gambling venue exclusion processes (\$113,000 funded by Ministry of Health) and conduct a clinical trial comparing standard and brief interventions for problem gambling (\$1.1 million). The centre is also expanding to include other addictions and will be re-named Gambling and Addictions Research Centre.

CENTRE FOR PHYSICAL ACTIVITY AND NUTRITION RESEARCH (CPAN)

CPAN IS A MULTI-DISCIPLINARY research team that focuses on investigating the health impacts of nutrition, physical activity and exercise, obesity, and other lifestyle-related diseases across the lifespan.

The centre continued to grow in 2008 with new staff joining and success in attracting significant external grant funding. The team was recognised by AUT for their research excellence with Professor Grant Schofield winning the AUT Research Excellence Award and Dr Hannah Badland the award for Excellence in an Emerging Researcher.

CPAN's research falls within the following themes:

Policy and evaluation

The centre's overarching goal is to understand the success of public health interventions in physical activity and nutrition, and contribute to national and international policy formation.

In 2008 CPAN became involved in a large four-year contract with a consortium led by Otago University to evaluate the government's Healthy Eating Healthy Action Strategy (worth more than \$4 million).

A toolbox has also been developed for the Ministry of Health to help evaluation work around nutrition and physical activity.

Children and youth

CPAN seeks to improve the lifestyle of preschoolers to adolescents through social and physical environmental interventions; improving measurement and health surveillance methods; and understanding the broader determinants of physical activity, nutrition, and health for this population.

Dr Scott Duncan and his team secured funding from HRC in 2008 for a "Healthy Homework" study (refer page 13). HRC also continues to fund the physical activity component of the longitudinal Pacific Islands Families Study.

Environment and health

Understanding how urban design variables relate to physical activity, obesity, health, and travel behaviours is a key focus for improving population-level health. CPAN provided the first national evidence of these associations, and use a range of spatial and objective tools to investigate these relationships throughout the country and with different populations. CPAN members contribute to an international project in this field and have expertise in environments which support walking and cycling as travel modes.

Workplace health

The idea that healthy employees are less absent and more productive on a day-to-day basis at work is a compelling argument for employer-funded health programmes. CPAN has been gathering credible evidence around this and is a growth area with several new PhD enrolments.

Older adults

Primary care interventions to increase physical activity levels in older adults are a focus for CPAN. Innovative interventions to promote active lifestyles for this group include dance as a form of exercise, gym-based resistance training programmes, and encouraging doctors to prescribe physical activity.

Director: Professor Grant Schofield
www.aut-cpan.ac.nz

INSTITUTE OF SPORT AND RECREATION RESEARCH NEW ZEALAND

THE INSTITUTE OF Sport and Recreation Research New Zealand (ISRRNZ) is a focal point for leadership and innovation in the development of sport science research. The ISRRNZ's research draws on the disciplines of biomechanics, exercise physiology, anthropometry, physical conditioning, sport psychology, epidemiology and sports nutrition to enable developments in high performance sport across the continuum from sport talent identification to elite performance. Members of ISRRNZ include sport scientists, coaches, podiatrists, physiotherapists and medical doctors.

Recent research highlights include:

- Inception of the Running Mechanics clinic managed by Kelly Sheerin, a registered physiotherapist and ISRRNZ research officer. The clinic offers a commercial service to the public and undertakes associated gait research
- Mountain Safety Council of New Zealand five-year Memorandum of Understanding signed to provide collaborative research, with team members including Brenda Costa-Scorse and Professor Patria Hume.
- Kinanthropometry archive project with Professor Lindsay Carter (San Diego State University) underway.
- World Badminton Championships anthropometry project in collaboration with Malaysian Institute of Sport and Singapore Sports Council.
- Success of PhD student Tom Vandenberghe who has been working closely with NZ Swimming for his research and travelled with the team to the Beijing Olympics.

Projects underway are diverse and include:

- Effects of various interventions on physiological variables and performance in elite level rowing
- Physiological profiling of rugby union players: characteristics of elite and non-elite players and the implications for talent identification
- Development of a Movement Competency Assessment Battery (MCAB): a tool for long-term athletic development
- Absorption and effect on performance of sports drinks in cyclists
- Effectiveness of boat and oar instrumentation for technique feedback and elite on-water rowing performance
- Visual scanning and decision making in cricket batsmen
- Power monitoring strategies to enhance programming and performance in professional rugby players
- Effects of nutritional supplementation on performance and recovery from training in elite swimmers
- Decision making in netball from a motor control perspective working with national netball players
- Hormone-mediated strategies to enhance performance in rugby players



KELLY SHEERIN WITH
A RESEARCH SUBJECT
FROM THE AUT RUNNING
MECHANICS CLINIC

- Inspiratory muscle training and polluted environments – the effect on performance
- Biomechanics of strength training and grinding technique in America's Cup sailing
- Effect of LactAway on sports performance
- Investigation of the transference of strength and power to performance in rugby players.

26 postgraduate students work within the ISRRNZ team and there is significant collaboration from research associates both domestically and internationally. During 2008 ISRRNZ researchers have published extensively in peer reviewed journals. ISRRNZ has secured funding from SPARC (Sport and Recreation New Zealand), Frucor, Les Mills International, New Zealand Rugby Union, ACC, Enterprise, New Zealand Academy of Sport, Netball New Zealand, Rowing New Zealand and Swimming New Zealand.

Director: Professor John Cronin
www.isrrnz.ac.nz

RESEARCH MEETS PRACTICE FOR THE OLYMPICS

DURING THE BEIJING OLYMPICS, a great deal of responsibility fell on athletes and their support teams to ensure that everything was right to achieve personal bests and ultimately medals. In many cases for this to occur, practice is informed by research. In other cases, practice informs research and questions of interest are generated. Whatever the blend, there is no doubt that applied research and performance are close allies. Given this nexus it was very rewarding to observe many ISRRNZ postgraduate students help in the preparation of athletes for Beijing, both through research and through their involvement

with the New Zealand Academy of Sport North Island. This blending of research process and applied practice results in a practitioner that has a great deal to offer athletes and coaches, as shown by the fact that many of the head trainers in professional teams are engaged in or have completed postgraduate studies. ISRRNZ staff and postgraduate students were involved in the preparation of athletes who went to the Beijing Olympics across a wide variety of sports in areas of sport science including exercise physiology, physical conditioning, biomechanics, nutrition and anthropometry.

STAR SPORT ALLIANCE SCHOLAR

MATT KRITZ RECEIVED the AUT ISRRNZ Star Sport Alliance Scholarship. Kritz's doctoral project focuses on developing a Movement Competency Screening tool (MCS) to assist with long-term athletic development by enabling the strength and conditioning professional to objectively identify faulty movement strategies when an athlete performs movements that are essential to sport and sport specific training. Kritz has been investigating the standing posture of athletes from a variety of sports to determine if screening posture would assist with identifying suboptimal movement strategies. The MCS also involves five movements that screen the athlete's stability and mobility at various joints. The MCS will be integrated with software to be used in combination with video analysis to assist the strength and conditioning professional with their qualitative analysis. In addition to the development of the MCS, Kritz with his supervisors (Professor John Cronin and Professor Patria Hume) will be

working in collaboration with sport science researchers Dave Frost (PhD Candidate) and Dr. Stuart McGill at Waterloo University in Ontario Canada. This study will look to quantify the MCS movements using state-of-the-art technology.

In addition to his PhD work, Kritz holds a key role with the New Zealand Academy of Sport North Island. He is the lead strength and conditioner for BikeNZ, including athlete Sarah Walker (BMX) and men's hockey, as well as consultant to some of New Zealand's top-carded athletes from a variety of sports. Kritz is also responsible for helping to facilitate the link between research and practice in elite sports, which has included the development of the 'Power Profile Zone', an instrumented training venue at the Millennium Institute of Sport and Health, and by forming (with Professor Cronin) a Strength and Conditioning Focus Group which aims to stimulate scholarly discussion on strength and conditioning practices.



**COACH KRITZ LEADING THE BLACKSTICKS
IN THEIR SPEED AND AGILITY SESSION**

THE CENTRE'S RESEARCH IS LINKED, AND RESPONDS, TO THE GOVERNMENT'S NATIONAL HEALTH STRATEGY AND THE HEALTH RESEARCH COUNCIL'S STRATEGY FOR INJURY, IMPAIRMENT, REHABILITATION AND DISABILITY.



THE HEALTH AND REHABILITATION RESEARCH CENTRE (HRRC)

THE HRRC IS ADVANCING KNOWLEDGE in the field of rehabilitation through high quality innovative research that integrates the physical and psychosocial dimensions of rehabilitation.

The HRRC works closely with local health organisations and has studies underway with other New Zealand universities. It has an international reputation and collaborates with scientists from Australia, the US, England, Belgium, Japan, Germany and France. The centre's research is linked, and responds, to the government's National Health Strategy and the Health Research Council's strategy for injury, impairment, rehabilitation and disability.

Centre Director, Professor Peter McNair's research focuses on exercise in rehabilitation. Several current studies examine interventions for osteoarthritis in the lower limb. These involve investigating muscle control and the effect on joint loading, and how joint damage influences neural pathways that affect muscle activation. In 2007 with researchers from Belgium, Professor McNair was awarded the Achilles Award from the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine.

The Person Centred Rehabilitation Team, guided by Professor Kathryn McPherson, was awarded the 2008 AUT Award for Excellence in a Research Team (see opposite).

Associate Professor Denise Taylor leads the Neurological Rehabilitation team, which has been involved in projects funded by the ACC. These include evaluating an exercise programme versus a multi-factorial intervention to decrease falls in older adults in rest homes, and the effect of the Otago Exercise Programme on falls in community dwelling older adults. An important landmark for this team was completing recruitment for a large randomised controlled trial examining Tai Chi as a falls prevention intervention.

This led to an investigation of the effect of Tai Chi training on balance control in people with Multiple Sclerosis. A new collaboration is the Te Pakari (Standing with Confidence) Research Group, which brings together internationally recognised researchers in falls prevention.

Led by Dr Mark Boocock, the ergonomics research team has focused on hazard identification and risk assessment of work-related musculoskeletal disorders; the application of biomechanical, physiological and psychosocial measures to assess workplace tasks; implementation of ergonomics intervention strategies; product safety assessment and design; and return to work programmes.

Jennifer Bassement joined the team from the Universite de Valenciennes et du Hainaut Cambresis in France. She is investigating the effects of repetitive lifting on postural, psychophysical, and physiological responses in young and middle aged individuals, and will provide much needed information on manual handling guidelines and workplace interventions.

The AUT-Horizon Scanning Imaging Unit is led by Associate Professor Wayne Hing. His team are involved in externally funded research projects focused on diagnosis and treatment of musculoskeletal conditions. These include the assessment and measurement of nerve movement in the lower limb and their relationship to clinical assessment tests and treatment techniques. Similarly, diagnostic procedures accuracy in a primary care setting for determining the source of shoulder pain is being examined.

A neurophysiology unit has been established within the centre, led by Dr Gwyn Lewis. Her work, primarily funded by the Foundation for Research Science and Technology, focuses on individuals with stroke. She is investigating the neural pathways associated with inappropriate muscle activity in these people, and how these are modified by training interventions involving virtual reality.

The centre provides support for a new research programme in podiatry, led by Professor Keith Rome. This will include the implementation of postgraduate pathways for podiatrists and studies examining foot problems associated with gout, insoles and gait patterns in children, textured insoles in falls prevention, comfort in shoes, and a diabetic podiatry intervention for Māori.

Director: Professor Peter McNair
www.healthresearch.aut.ac.nz

ACCLAIM FOR REHABILITATION RESEARCH

THE PERSON CENTRED REHABILITATION (PCR) team, part of AUT University's Health and Rehabilitation Centre, is lifting the bar on rehabilitation practices in New Zealand.

The PCR team has built a centre of expertise in rehabilitation research and teaching and, on the basis of its performance, won the 2007 Vice Chancellor's Excellence Award.

Established in 2004, the PCR team is a multidisciplinary team led by Dr Kathryn McPherson, Professor of Rehabilitation (Laura Fergusson Trust Chair).

Since its inception, the PCR team has established an impressive international reputation for its body of research, collaboratively producing more than 50 articles in leading rehabilitation and medical journals.

"One in five New Zealanders experience disability, but until recently, research into rehabilitation has received little major funding," says Professor McPherson.

"Our research is focused on making a difference to rehabilitation processes and outcomes, improving quality of life for those dealing with the disabling consequences of impairment," she says.

The PCR team is involved in a number of research projects aiming to improve rehabilitation outcomes in ways that matter most to people with chronic conditions.

Two significant studies funded by the Health Research Council (HRC) are taking a closer look at how best to reduce

disability for people with neurological impairment. The first study identified barriers to physical activity for people with Multiple Sclerosis (MS) and developed a new programme to address these barriers (which the team now aims to evaluate). The second study will explore ways to help people with brain injury participate in their rehabilitation and relearn skills necessary to achieve meaningful life goals.

The HRC also supported the extension of a breakthrough study (funded by a Families Commission Blue Skies grant) of new mothers with MS to include other disabled women throughout New Zealand. The aim of this work is to help identify how pre-pregnancy, maternity and early childcare support services can be most responsive to the needs of disabled women.

The clinically applied focus of the PCR team enables it to influence government policy. One example of this stems from a commissioned report by the Accident Compensation Corporation (ACC), which has informed new developments in return to work rehabilitation support and strategies.

Professor McPherson is positive about the future of rehabilitation outcomes for New Zealanders facing disability.

"As long as we continue to work with disabled people and the health industry, to investigate optimum outcomes in rehabilitation, we can improve services, benefiting both those who provide and access them," she says.

THE PCR TEAM, L-R: KATHRYN MCPHERSON, NATASHA MOLOCZIJ, CHRISTINE CUMMINS, MARTA LEETE, JOANNA FADYL, MARGARET JONES. FRONT, L-R: GRETA SMITH, BERNADETTE GUERIN



EARTH & OCEANIC SCIENCES RESEARCH INSTITUTE

IN 2003, DR STEVE O'SHEA of AUT University's Earth and Oceanic Sciences Research Institute (EOS) investigated a 300kg colossal squid hauled up from the Ross Sea. At the time it was the world's biggest squid, an event that cemented his global reputation as an expert in the species.

Four years later, a larger squid close to 500kg was discovered and frozen for further examination by Dr O'Shea, sparking more media coverage of his work, including a Discovery Channel special broadcast worldwide. Dr O'Shea's passion for the squid species ignited a public curiosity to know more about the sea creature, pushing the work of EOS to the forefront.

Recent investigations of the 500kg squid have brought some interesting facts to light, dispelling Dr O'Shea's assumptions to date. "When compared to the previous specimen examined in 2003, one would have expected this latest specimen to be considerably longer and to have a number of anatomical characters greater in dimension or proportion, but this was not the case," he says.

"What we found was this squid was in fact considerably shorter than the 2003 specimen, and its beaks were not remarkably larger.

THE FOUR COLOSSAL SQUID EXAMINED BY DR O'SHEA AND HIS TEAM HAVE ALL BEEN FEMALE, NO MALES HAVE BEEN CAPTURED AND MANY QUESTIONS ABOUT THE SQUID LIFE CYCLE REMAIN UNANSWERED

"We have learned a valuable lesson from our initial findings. The way we measure squid is important, girth and associated weight seem to be more accurate than length," says Dr O'Shea.

Interestingly, the largest squid beaks found have been in the stomach lining of its major predator, the sperm whale, or even in its prey, the Antarctic Toothfish (by eating dead squid remains), indicating there are much larger colossal squid in the ocean.

So far, the four colossal squid examined by Dr O'Shea and his team have all been female, no male species have been captured to date, and many questions about the squid life cycle remain unanswered. However more pressing than finding out more about the illusive colossal squid, is the question of the species very existence.

"What we are finding, to our great concern, is our fisheries for squid, and the effects of trawlers nets on squid egg masses, are not only putting the squid species at risk



but also the dietary needs of its prey," says Dr O'Shea.

The EOS team has started a new research programme monitoring the diets of squid-eating whales (teuthophagous cetaceans) and fish species in New Zealand waters. The risk to squid species and its predators is apparent by the direct removal of free-floating gelatinous egg masses, resulting in fewer squid in successive generations for whales and fish to consume.

"A number of whales examined recently have had very little squid prey in their stomachs, in addition they also have shocking stomach-lining ulceration," says Dr O'Shea.

Although it is early days in this research programme, Dr O'Shea can only hope these initial findings are not signaling the cascading effects of fisheries for squid, and the subsequent negative effect on the diets of their major predators.

Director: Dr Steve O'Shea
www.healthresearch.aut.ac.nz

THE CENTRE FOR MIDWIFERY AND WOMEN'S HEALTH RESEARCH

THE CENTRE FOR MIDWIFERY and Women's Health Research (CMWHR) responds to key midwifery and women's health issues, including the need for well-qualified competent health professionals, who can support a natural childbirth process and provide appropriate care with good outcomes for women and families. Working in partnership with health providers and community organisations is an underlying principle.

The Centre has received funding from the Families Commission Blue Skies Fund, Health Research Council and the New Zealand Nurses Organisation.

Centre Director, Dr Payne is undertaking collaborative research in breastfeeding, infertility, disability and motherhood, including:

- Factors that influence women's decision-making regarding returning to work and how best to feed their infants – with Women's Health Action and La Leche League.
- The ways embryo donation is constructed by potential donors and recipients – with Sonja Goedeke
- How mothers with multiple sclerosis manage pregnancy, birth and motherhood – with Professor Kathryn McPherson.
- An appreciative inquiry of services provided by the Warkworth Birthing Centre – with Associate Professor Liz Smythe.

Directors: Drs Deborah Payne and Judith Mc Ara Couper
www.healthresearch.aut.ac.nz



DR DEBORAH PAYNE, DIRECTOR, CENTRE FOR MIDWIFERY AND WOMEN'S HEALTH RESEARCH

MANAGING MOTHERHOOD AND MULTIPLE SCLEROSIS

DR DEBBIE PAYNE, Director of AUT's Centre for Midwifery and Women's Health Research, in collaboration with Professor Kathryn McPherson led a study funded by the Families Commission Blue Skies Fund exploring the nature of pregnancy, birth and mothering young children for women with Multiple Sclerosis (MS). This project was a New Zealand study first. MS most commonly affects women of childbearing age, and until recently, these women were discouraged from becoming mothers. Studies have found that pregnancy and birth do not negatively affect the course of MS.

Findings led investigators to suggest three areas for enhancing the experience of motherhood for women with MS:

1. The importance of 'listening' to women's stories prior to making assumptions about their needs in relationship to motherhood.
2. The place of impairment in women's lives is variable and likely to require ongoing consideration rather than one-off static assessment or action.
3. Finally, because knowledge and understanding in the area remains limited, it is vital research focuses on how best to ensure appropriate health and disability policy is developed, and quality health and social services are available.

The study has led to a broader national HRC funded collaborative study into improving the health outcomes of mothers with physical and sensory impairments.

INTERDISCIPLINARY TRAUMA RESEARCH UNIT

THE INTERDISCIPLINARY TRAUMA RESEARCH UNIT (ITRU) conducts research that focuses on three themes: family violence; pre-hospital and emergency trauma; and psychological trauma related to students and marginalised populations. The ITRU is well-known for its collaborative research, involving partnerships across disciplines, government and non-governmental service providers, and national and international researchers. Connecting research to practice and policy is a core commitment.

The ITRU is a leader in researching the health response to family violence. It is steering an evaluation research project funded by the Ministry of Health to examine District Health Boards system response to women and children at risk of family violence. The unit also leads the Health Research Council-funded Women in Safe Environments (WISE) study. The WISE study addresses the need for evidence of healthcare site-based intimate partner violence screening and brief intervention usefulness, while holding women and children's safety paramount and ensuring ethical and culturally safe processes. After collaborating with clinical sites (including

Whangarei Emergency Department and Raukura Hauora O Tainui in South Auckland) and with women who have experienced abuse (as part of a community-based participatory action research phase), a randomised controlled trial (RCT) was initiated in April 2007.

Between April and September 2007, 800 women (> 15 years) seeking healthcare in either an acute care (Northland emergency department) or community (South Auckland hauora) setting participated in the RCT. Half the participants were randomised to receive usual care, while the other half received an IPV screen and brief intervention including referrals to community agencies. Three months later women were followed up during either a home visit or by telephone.

The researchers are analysing the follow up data and look forward to disseminating the findings to participants, community collaborators and the New Zealand and international health community.

Directors: Associate Professor Lynne Giddings and Professor Jane Koziol-McLain
www.trauma-research.info

RESEARCHER RECOGNITION

A REPUTATION AS AN expert in violence prevention has led to two significant appointments for AUT's Professor Koziol-McLain (pictured), co-director of the ITRU. Firstly, Professor Koziol-McLain has been appointed to the Ministry of Health's Violence Intervention Programme (VIP) Advisory Group.

ITRU has been conducting research on the District Health Boards' violence against women and children prevention programme since 2002.

The advisory group steers the VIP's direction and, as the research's principal investigator, Professor Koziol-McLain was an obvious choice.

"Programme development is generally considered to take 5-10 years," she says. "And as this continues, the group will make sure it's the best it can be, offering an evidence-based, equitable, culturally appropriate and helpful intervention.

"The health burden of family violence to New Zealand is great, so the health system needs to respond. While progress has been made, for example in training health care workers about family violence, there remains much to be done."

Professor Koziol-McLain's other recent appointment is to the New Zealand Family Violence Clearinghouse (NZFVC) Advisory Group.

The advisory group ensures the NZFVC is fulfilling its purpose of providing reliable, accurate and quality information to the family violence research, practice and policy sectors.



NATIONAL CENTRE FOR HEALTH LAW AND ETHICS

THE NATIONAL CENTRE FOR Health Law and Ethics conducts research, teaching and consultancy to promote clear and compassionate thinking by the givers and receivers of health care. It fosters critical inquiry regarding health law, ethics, health promotion and social inequalities.

The members have a diverse, multi-disciplinary research approach that results in initiatives with, and on behalf of, New Zealand's communities.

Themes from recent publications include:

- Evaluation of physiotherapy decisions of the Health Practitioners Disciplinary Tribunal
- Strategies to reduce conflict between pain physicians and patients
- Identification of the unmet legal needs of disabled New Zealanders

- Strategies for designing optimum legal services for disabled people
- Lessons from the Health Practitioners Disciplinary Tribunal
- Therapeutic intentions of the Mental Health Review Tribunal.

Staff have active research links with New Zealand government departments, non-governmental organisations and consumer groups. Their research has been supported by funding from the Mental Health Commission, the Legal Services Agency, the Ministry of Health, the New Zealand Law Foundation, and the Accident Compensation Corporation.

Centre members are also part of international projects with researchers at universities such as Sydney, Auckland, and Umea (Sweden).

Director: Associate Professor Kate Diesfeld
www.healthresearch.aut.ac.nz

NEW LEGAL SERVICE PROMOTES RESPECT FOR DISABILITY RIGHTS

DISABLED PEOPLE in Auckland should now get a fairer deal from the law following the launch of a new community law service funded by the Legal Services Agency in May 2008.

Auckland Disability Law is the result of development work by the Legal Services Agency and Community Law Centres in the Auckland region.

In 2005, the Legal Services Agency commissioned a research team, led by the Director of AUT's National Centre for Health Law and Ethics Kate Diesfeld, to identify the unmet legal needs of disabled people in Auckland. The research team consulted widely among disabled people, their advocates and disability organisations, and with lawyers and community law centres.

The findings are the foundation for Auckland Disability Law, which will help disabled people access legal services, and will support lawyers to better understand the needs of disabled clients.

The research participants' recommendations include removing architectural barriers in community law centres, providing sign language interpreters, developing legal information in simple English and providing disability awareness training for lawyers.

Clinics are planned for Waitakere Community Law Service in Henderson, AUT's North Shore Campus and at Te Roopu Waiora in Papatoetoe.

ASSOCIATE PROFESSOR KATE DIESFELD (LEFT) AND AUCKLAND DISABILITY LAW SOLICITOR DR HUHANA HICKEY HOPE TO CLOSE THE GAP IN AWARENESS BY PROVIDING KNOWLEDGE TO OTHER LAWYERS



NEWS BRIEFS

Immigrant health workforce on agenda

AUT's Centre for Asian and Migrant Health Research hosted a forum to discuss a possible integrated service delivery model for refugee and immigrant health professionals seeking New Zealand registration.

The forum, facilitated by the centre's co-ordinator Ruth DeSouza, involved representatives from the Ministry of Health, the Department of Labour, district health boards, health-worker registration authorities, the Medical Council and international speakers. Its recommendations have been given to Health Minister David Cunliffe.

AUT's Charles Mpfu's research on occupational transition issues of immigrant health practitioners from non-English speaking backgrounds, was a central focus of the forum. "My goal is to educate people on the structural barriers to the employment of these health practitioners in New Zealand," says Mpfu.

Mpfu says in countries with health systems comparable to New Zealand, the issue of immigrant health practitioners being underemployed in non-career grades has been researched and tackled by representative groups, labour and health ministries, regulatory boards and local health service employing authorities.

"Most of these countries' – especially Canada, the USA, the UK and Australia – governments and local health authorities have acknowledged initiatives aimed at enabling immigrant health practitioners to meet registration requirements have implications not only for settlement outcomes, but for diverse workforce development and meeting workforce shortages."

AUT is to hold a follow-up day and in the meantime, will make sure the issues are being progressed.

Awards and recognition: PhD Scholarships

MARTA LEETE, a researcher in AUT's Person Centred Rehabilitation (PCR) Team was awarded a PhD scholarship as part of the HRC's Disability Placement Scheme. The scholarship includes a stipend for three years, research costs and mentoring expenses. Leete will investigate the issues facing disabled men in considering fatherhood or being fathers with a particular focus on strategies they use. Findings should enhance understanding but also inform developments in health and social support services.

ANGELA CADOGAN, a physiotherapist from Christchurch has also been awarded a Clinical Research Training Fellowship from the HRC to investigate the diagnostic accuracy of orthopaedic tests used in the determination of shoulder pathologies. The fellowship is fully funded for three years. Her supervisors are Dr Wayne Hing and Professor Peter McNair from the Health and Rehabilitation Research Centre. They are also fortunate to have additional input and supervision from Dr Mark Laslett, a world renowned physiotherapy researcher in the area of diagnostics.

New Appointment Professor Valery Feigin

The School of Rehabilitation and Occupation Studies and School of Public Health and Psychological Studies have appointed

DR VALERY L. FEIGIN as Professor of Epidemiology and Neurology.

Professor Feigin (pictured right) joined AUT in August 2008, coming from the University of Auckland.

He is Editor-in-Chief of *Neuroepidemiology*, editorial board member of *Stroke*, *European Journal of Neurology* and is well-known internationally for his research into epidemiology, prevention and management of stroke and cardiovascular disease.

At AUT, he is developing and managing New Zealand's first National Research Centre for Stroke, Applied Neurosciences and Neurorehabilitation.

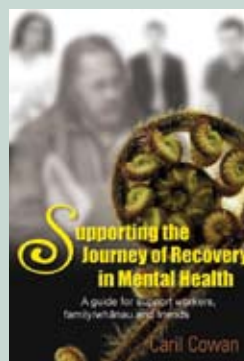


Dean's winter lecture series

Influential and interesting people spoke at an invited lecture series hosted by Faculty Dean and Pro Vice-Chancellor (North Shore) Professor Max Abbott during 2008.

The series gave AUT staff, students and stakeholders the opportunity to hear from people who have made an outstanding contribution to areas of interest to the Faculty. There was also the chance to network after each event.

Speakers included the Honourable Clayton Cosgrove, Minister of Sport and Recreation; Professor Con Stough, Director of the Brain Sciences Institute, Swinburne University (Hawthorn, Australia); Paul Harrison, Director of Hawkins Watts; Richard Bedford, Professor of Geography and former Deputy Vice Chancellor Research of Waikato University; and Professor Stephen Henry, CEO of KODE Biotech Ltd.



Supporting mental health recovery book

AUT lecturer Caril Cowan released a book in 2008 for mental health support workers, family and friends helping people affected by mental illness. Cowan says *Supporting the Journey of Recovery in Mental Health* fills a gap in current literature on the subject. The book, released by Dunmore Publishing, covers

topic including the mental health services in New Zealand; the role of the mental health support worker; interpersonal communication skills; and approaches to self-management of a mental illness.

FACULTY HIGHLIGHTS

Global Healthcare Solutions to Vulnerable Populations Conference

AUT University's Nursing School brought together international and local experts in January 2008 to discuss how to improve healthcare and social services for vulnerable populations.

The Global Healthcare Solutions for Vulnerable Populations Conference was hosted by AUT and the National Nursing Centers Consortium (NNCC) from the United States. The NNCC is a professional association of more than 200 nurse-managed health centres.

It was a first for New Zealand, and speakers included Ministry of Pacific Island Affairs Chief Executive Colin

Tukuitonga; Director-General of Health Stephen McKernan; and Diane Robertson from the Auckland City Mission.

Nurse-managed health centres and university-based solutions are models of healthcare delivery that were discussed at the conference. AUT's Joint Head of Nursing Dr Anita Bamford-Wade says AUT is taking a lead in New Zealand's move towards nurse-led primary health clinics.

The Nursing School has appointed Mary Jane Gilmer, a family nurse practitioner who will develop research and teach advanced nursing practice. The role also encompasses the development of nurse-led clinics in Auckland.

Tobacco control experts

A new addictions diploma at AUT continues to attract high calibre staff. The Graduate Diploma in Addictions covers problem gambling; tobacco control; drug, alcohol and substance abuse; health promotion; and early intervention and treatment.

New Zealand tobacco expert Dr Hayden McRobbie taught the diploma's smoking cessation paper during September 2008. Dr McRobbie has international experience in smoking cessation research and treatment, and was a lead author in the revision of the New Zealand Smoking Cessation Guidelines.

A leading Canadian tobacco control expert, Associate Professor Paul McDonald from the University of Waterloo, Canada, also spent time in New Zealand teaching on the diploma in 2008.

Associate Professor McDonald has developed and tested several of Canada's most popular smoking cessation programmes for adults and adolescents and is a policy and scientific advisor to Canada's Ministry of Health.

He has provided advice to various health ministries, including the United States, Israel and New Zealand, on tobacco control policies and practices.

Māori in health workforce

New AUT University research has identified ways of improving recruitment and retention of Māori in the health workforce.

Taupua Waiora, AUT's Centre for Māori Health Research, carried out the study to identify what factors influence Māori recruitment and retention in the health and disability workforce.

The researchers found that despite improvements over time, Māori are either not represented or vastly under represented in many occupational or specialist health areas.

Rachel Brown, Taupua Waiora's research officer, says a representative New Zealand health workforce is necessary to facilitate the best possible health outcomes for Māori and other New Zealanders.

Key factors that will improve Māori recruitment include addressing institutional racism; improving the socio-



economic position of Māori; addressing the high cost of tertiary education; and increasing educational institution's commitment to Māori health workforce development.

"There is extensive health career information in the public domain – however knowledge and skills are often required to access this. There are also few examples of engaging, Māori-specific health career resources," says Brown.

The study found that once in the workforce, retention is negatively affected by factors including; high expectations placed on Māori in mainstream roles to be expert in Māori matters; dual responsibilities to employers and Māori communities; a lack of value given to Māori cultural competencies; and limited access to Māori cultural support.

"No one intervention will address this range of barriers. Instead, multiple co-ordinated interventions that target Māori, and work across the workforce development pathway, are needed," says Brown.

Taupua Waiora carried out the research in collaboration with Ngā Pae o te Māramatanga (University of Auckland's National Institute of Research Excellence for Māori Development and Advancement) and Rātāteitei Associates. It was funded by the Ministry of Health and Health Research Council of New Zealand.

FACULTY HIGHLIGHTS

WHO at AUT

The New Zealand branch of the World Health Organisation's Quality of Life (WHOQoL) project has been established at AUT University.

There are 26 WHOQoL centres internationally, each one adapting the WHO's generic measurements and researching its population groups' quality of life.

AUT's Dr Daniel Shepherd, convenor of the New Zealand centre, says it opens up many doors for national and international collaborations.

The WHOQoL measure consists of four main dimensions – psychological, physical, social and environmental wellbeing.

"The centre aims to establish general New Zealand population norms and from there, facilitate the use of the WHOQoL within clinical populations.

"This is the direction health care is moving in – while the person may not be experiencing severe symptoms, they still may have a poor quality of life because of their health condition. The WHOQoL measure is an important tool in

determining quality of life and evaluating interventions."

New Zealand government agencies, District Health Boards and councils are all using different assessment methods with their populations, says Dr Shepherd.

"This means there is no consistency and comparison is difficult or impossible. We hope to present the WHO standardised measurement and the New Zealand models we develop to these groups, so we can generate some meaningful data in the future."

The centre's initial objectives include establishing the New Zealand norms; developing Māori and Pacific Island versions; and setting up a website to be used by New Zealand researchers and organisations.

The WHO Quality of Life project was set up internationally by Professor Rex Billington, a former AUT academic. Professor Billington, and Dr Chris Krageloh from AUT's psychology department, guided the New Zealand centre in its establishment.

Knee to know

The knee is one of the most frequently injured joints, costing ACC more than \$100 million a year in rehabilitation. It is also the joint most commonly affected by arthritis – a condition which afflicts one in six New Zealanders older than 15 years old.

This shows how significant AUT senior research officer David Rice's research could be. The PhD candidate is studying arthrogenic muscle inhibition, which occurs due to knee injury or arthritis and causes marked weakness and wasting of muscles around the knee.

"Factors associated with joint injury such as swelling and inflammation alter the firing of sensory receptors in the knee, which in turn prevents the brain from fully activating the quadriceps muscles. This hinders rehabilitation and leads to lasting weakness in these muscles, impairing physical function and increasing the risk of further joint degeneration," says Rice.

"Our research will explore some of the neural pathways



involved, and try targeted interventions to reduce the inhibition, hopefully allowing quicker and more effective rehabilitation for these patients."

Rice has been given a PhD career development award by ACC and the Health Research Council. Professor Peter McNair and Dr Gwyn Lewis are his supervisors, and he hopes to release initial findings in 2009, completing his studies in 2010.

FACULTY HIGHLIGHTS

Findings shed new light on ways to prevent diabetes in Māori

Recent research findings show targeted lifestyle messages have significant success in potentially lowering the progression to Type 2 diabetes among Māori.

The Te Wai o Rona: Diabetes Prevention Strategy Team, which includes AUT University's Professor Elaine Rush (pictured), has released results from a programme that targeted those at high risk of diabetes. This included those with impaired glucose tolerance (IGT) or impaired fasting glucose (IFG), precursors to type 2 diabetes, which can be prevented or delayed by intensive lifestyle changes.

The intervention included personal support delivered by Māori Community Health Workers (MCHWs) and focused on 12 key lifestyle messages. These messages concentrated around practical ways of increasing physical activity and a diet that increased protein and reduced fat, sugar and portion sizes.

While the MCHWs did not make weight loss the focus of the programme, the results show significant weight loss. Professor Rush says the extent of the programme's success was unexpected.

"It shows community-wide prevention programmes are feasible among Māori and likely to result in significant

reductions in the incidence of diabetes," she says.

Type 2 diabetes is a leading cause of blindness, kidney failure, cardiovascular disease and early death. It is a major public health problem among Māori and has been identified at a local, regional and national level.

The resources used in the intervention programme are available to the public

at www.sportwaikato.org.nz under Te Wai o Rona. Included are the 12 key messages and supporting materials for lifestyle change, including maps of health food and physical activity outlets, and publications arising from the valuable information gained from this project.



ISAT Award

Dr Andrea C Alfaro was awarded a Royal Society of New Zealand Bilateral Research Activity Programme grant to travel to Chile and undertake comparative work on mussel feeding and settlement with Chilean colleagues. Dr Alfaro also used this trip in November 2008 to attend the VII Latin-American Malacology Congress at the Universidad Austral de Chile where she was an invited key note speaker.

Dr Alfaro's mussel research was well received at the 8th Larval Biology Symposium in Lisbon, Portugal in July. She, along with postgraduate student Tim Young, gave oral presentations on their recent findings on chemical cues that promote mussel settlement and potential retention on mussel farms. This work has recently generated a provisional patent.

Upcoming events

THE 15TH INTERNATIONAL CRITICAL AND FEMINIST PERSPECTIVES IN HEALTH & SOCIAL JUSTICE CONFERENCE
16 – 19 April 2009, Auckland

Hosted by AUT University's School of Health Care Practice

Critical and feminist perspectives argue for social justice in health. This conference aims to provide a platform for the presentation and discussion of papers challenging societal perspectives and issues of social injustice within health. In Aotearoa New Zealand, the Treaty of Waitangi similarly challenges us to consider the principles of partnership, protection and participation of Māori and other indigenous peoples in our critique of health care. The focus of the conference is on fostering the interchange of ideas along these critical lines among consumers, policy analysts, practitioners, educators and researchers from all health and related disciplines. For more information visit www.aut.ac.nz/cfpnc2009

2009 NATIONAL REFUGEE CONFERENCE: LOOKING BACK AND MOVING FORWARD TOGETHER ON REFUGEE HEALTH AND WELLBEING IN NEW ZEALAND

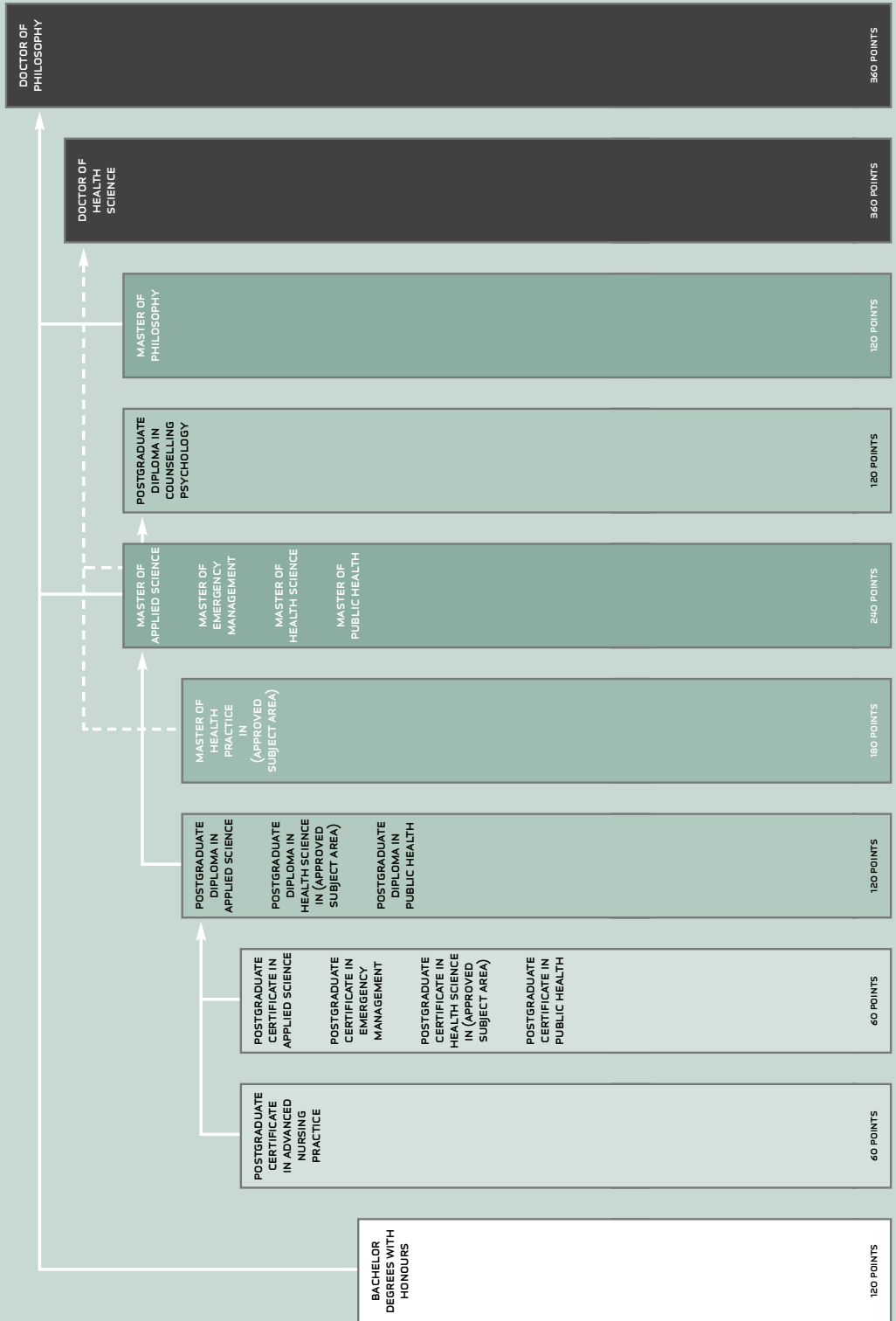
9 – 11 July 2009, AUT University, North Shore Campus
Hosted by AUT University and the Refugee Council of New Zealand

The Conference theme "Looking Back and Moving Forward Together" reflects the 21 years since the first refugee resettlement conference held in 1988. The 2009 Conference aims to celebrate achievements in refugee resettlement and discuss new developments in the field. It provides an opportunity for participants to discuss critical issues, identify research and policy gaps, compare international experiences and strengthen networks by sharing knowledge, skills and experience.

For more information contact: ruth.desouza@aut.ac.nz

HEALTH AND ENVIRONMENTAL SCIENCES POSTGRADUATE STUDY OPTIONS

The postgraduate programmes provide an opportunity for graduates from a variety of health and environmental science backgrounds to advance their scholarly and professional knowledge in an inter-professional and collegial learning environment, and to develop research capabilities. The programmes comprise core and specialist papers and a thesis or dissertation (within Masters), which give students the opportunity to complete research relevant to their programme of study.



PLEASE NOTE: 1) Completion of one programme does not guarantee entry to a higher level programme.
 2) Students are encouraged to apply for the programme for which they are best qualified and are not necessarily required to enrol in the programme that appears at the start of the above diagram. See page 6 for minimum entry requirements.
 3) Some programmes in the above study pathways diagram may be prerequisites to – and not credit towards – higher level programmes.
 4) Students can enter the Master of Health Science or Master of Applied Science from a Postgraduate Diploma with a minimum of a B average before commencing the thesis paper.
 5) OR students can have direct entry into the programme completing their selected papers with the approval of the Associate Dean, Postgraduate or complete the Master of Health Science in a specified subject area as follows: Psychology, Advanced Nursing Practice, MindBody Health Care or Psychotherapy.

FOR FURTHER INFORMATION, CONTACT THE COURSE INFORMATION CENTRE ON 0800 AUT UN (0800 288 864).

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Faculty of Health and Environmental Sciences
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AUT University's Asian and Migrant Health Research Centre Co-ordinator Ruth DeSouza knows how hard it can be to straddle different cultures. This year's awarding has fuelled her work with the centre, one of only two such centres in New Zealand, with a focus on Asian and migrant health.

"I see a future where employers are willing to invest significantly in prevention health measures such as nutrition, weight management and exercise. Employee health as a business commodity is something employers now have the evidence to take seriously."

Professor Schofield is also leading a study into understanding health and productivity in the workplace.

"This is a series of projects that seek to understand the relationship between health, health care and employee productivity, both absenteeism and presenteeism."

"It turns out that whether employees see their employer as absent, but do more work when they are at work. We are now starting to understand how precisely health is as a human capital asset in business" says Professor Schofield.

DeSouza says our health system is not fit for purpose. It lacks the resources to care for some people, but pressures people to focus on breast feeding and said not enough advice and support was provided. DeSouza, nor was there enough information given about formula feeding. Introducing babies to solid food was another issue with some saying there was no information relating to eating food.

"But some said they felt empowered and self-sufficient, because they had to actively seek out the information and support they needed, and that their partners became more involved in the pregnancy than they would have in their home country."

Another important study DeSouza was part of investigated Chinese migrants and their beliefs surrounding cervical screening. The team received funding from the Chinese New Settlers Service Trust and surveyed more than 200 Mainland Chinese women living in Auckland.

DeSouza says invasive cancer is a growing health problem among Chinese women and until now little has been known about their reluctance to attend screening.

The researchers found, while there are universal barriers such as embarrassment, there were also unique issues such as lack of knowledge of services, causes and the impact of cervical cancer and poor language proficiency.

DeSouza has forged strong community contacts to help migrants and raise awareness of their issues at a grass roots level.

"The general perception is still that migrants are a problem, whereas I see them as an asset, and advocate for them to be seen as such."

DeSouza has also started a Migration and Settlement Research Group at AUT to enhance collaboration among the university's diverse range of researchers.

"AUT is an expert authority on migration issues as we have many people doing exciting things across the university. Our work makes a positive difference to New Zealand."

Associate Professor Waiope Hing had a vision for ultrasound research at AUT University – one that has been successfully realised.

A physiotherapist of nearly 25 years, Associate Professor Hing set up the AUT-Hong Kong Scanning Imaging Unit at AUT's North Shore Campus in 2006 with radiologist Suzanne Allen.

Horizon Scanning is a specialised ultrasound practice that has clinics throughout Auckland and run by Dr Allen.

The combination of needs – Horizon wanting to extend affordable ultrasound services to the community, contribute to research and education, and AUT wanting to expand its research and teaching in this area – made the a logical relationship to form," says Associate Professor Hing, who is director of ultrasound research at AUT.

"The combination of an academic department with clinical work, research and teaching is an exciting and valuable partnership."

Associate Professor Hing has led several research projects during the last year, including a major study to address cervical and ovarian New Zealand Pap smears and the impact of mammography positive results on women's health.

Associate Professor Hing is also involved in research into the impact of cervical and ovarian cancer on women's health.

Associate Professor Hing is also involved in the first of three funding phases determined that a battery of measures to the variousarterial blood flow. This study also aims to examine blood patterns within arteries, is under way while Hing works with examining people with neurological artery problems. Hing presented on this subject at an international conference in Manila late and a national physiotherapy conference in August 2012.

Associate Professor Hing also presented at the 2007 World Congress of Physiotherapists Conference in Canada on a study looking at neuro-muscular measurement by diagnostic ultrasound.

"This research uses diagnostic ultrasound imaging to assess and measure the degree of nerve movement within a normal population. This is the first time nerve movement has been studied in the lower limb using ultrasound imaging," says Associate Professor Hing.

The research has been written up for publication. The first paper covers a systematic review related to nerve stretching, while the second explains degree of nerve movement in relation to physiotherapy neural tissue assessment and treatment techniques.

Associate Professor Hing is excited by the opportunities the unit provides for undergraduate and postgraduate students. There are also three studies being carried out by postgraduate students in Auckland and Christchurch focused on the shoulder.

"With this unit we can offer increased postgraduate education opportunities for AUT students in research and clinical diagnosis methods, as well as encourage inter-disciplinary research across the University."

Associate Professor Mihi Ratima has the chance to learn from world leaders in public health research during her Commonwealth Fund Harkness Fellow

The Director of AUT's Taupua Wairoa Centre for Maori Health Research was awarded the year-long fellowship at Harvard University, which spans to 2017.

Associate Professor Ratima was jointly appointed to the Harvard School of Public Health and the Brigham and Women's Hospital (a teaching affiliate of the medical school). She used the opportunity to study obesity prevention among indigenous peoples and ethnic minorities in the United States.

"I interviewed experts in the field in academics, policy analysts, health promoters and health practitioners – also examined two obesity prevention interventions as case studies to explore promising approaches to intervention."

The first is a Native Alaskan-owned primary health care intervention provided by the South Central Foundation which aims to prevent obesity among indigenous peoples. The second, Healthy Eating Active Communities is a four year, \$60 million initiative that aims to fight childhood obesity in California through state and local policy changes to reduce risk factors for obesity and facilitate healthy eating and physical activity environments.

"This research, which I am in the process of writing up, highlights ethnic differences in the immediate and distal causes of patterns of obesity as well as in the immediate and distal causes of obesity. It also has the potential to inform public health practice."

Associate Professor Ratima is also involved in research into the impact of cervical and ovarian cancer on women's health.