NZIDRS 2006 - Successful Recipients by country of origin[1]

Austria – 1

Markus GRADWOHL – Otago (Human Ecology)
Qualifying degree from University of Vienna, Austria

- The proposed research project will investigate the transition of New Zealand during the last 160 years. The rapid development driven by imperial and economical interests led to the implementation of a solar based agricultural system by the colonists, coupled with strong changes to the landscape and ecosystems of the islands. He will be looking at the relevance of the colonisation by Europeans in biophysical terms and undertaking a comparative study with other case studies. In addition, he will investigate the reflection of New Zealand's development up to the present with its special path into modernity and its implications for future sustainability. His aim is to establish a database compatible with the methodological standards of material and energy flow accounting on the transition of New Zealand after 1840, encompassing land use, demographics, production, livestock, material and energy flows and foreign trade.

Belgium – 2

An HERTOGEN – Auckland (Law)
Qualifying degree from Columbia University, New York, USA

- An's research will focus on the principle of non-intervention in public international law. Despite being one of the fundamental building blocks of the post-World War II international legal order, and despite being proclaimed as such in a wide range of international legal instruments, the scope of this principle is not clearly delineated. In her research, she will examine the concept of 'intervention', and consider where the international community draws the line between permissible and impermissible forms of intervention. She will be devoting particular attention to the legality of non-forcible techniques by which states and international organisations exercise influence over the domestic affairs of other states. In a final stage she will look at the implications of her findings for international law and its underlying assumptions, such as the principle of sovereign equality of all states.

Sandra S. NEGRO – Canterbury (Molecular Ecology & Marine Mammals)
Qualifying degree from Université de Liège, Liège, Belgium

- Study of the Reproductive and health biology in the New Zealand fur seal and seal lion. *Arctocephalus forsteri* and *Phocarctos hookeri.* The New Zealand sea lion is an endangered species which is currently experiencing a population decline. Therefore, it is of primordial importance to increase our knowledge on the NZ sea lion molecular biology for conservation of this species. Genetic variation in relation to growth rate/survivorship/disease susceptibility will be analysed and compared with genetic data obtained from the NZ fur seal.
- Sandra is using a combination of molecular genetics, behavioural ecology endocrinology and microbiology to obtain a detailed picture of male reproductive success in NZ fur seals. She intends to undertake multifactorial analyses to investigate the possibility that dominance, testosterone levels, pathogen loads, and actualised reproductive success are all inter-related.

[1] Assuming that all candidates attend their first choice of institution.

Cameroon - 1

Mahama TAWAT – Otago (Political Sociology)
Qualifying degree from Dalarna University, Falun, Sweden

- Mahamas's research will deal with the diversity aspect of the cultural policies of Denmark, Sweden and New Zealand since the 1970's with the post 9/11 period and the controversy over the Prophet Mohamed caricatures as critical junctures. He will attempt to explain why and how New Zealand opted for multiculturalism and the two Scandinavian countries, Denmark and Sweden, respectively for assimilationism and multiculturalism. He will try to show that though institutional and power-interest factors played a role, ideas such as "programmatic beliefs" (Sheri E. Berman 2001) or "frames" (Erik Bleich 2003) played the ultimate role. For each theory relative importance will be evaluated by analyzing values, norms and traditions in the countries cultural policies. The study will try to improve the current knowledge on ideas-based theories. By investigating immigrants cultures, it fills a gap left by previous research on a common Nordic model.

Canada – 4

Matthew R. ANAKA – Otago (Molecular Biology & Genetics)
Qualifying degree from Mount Allison University, New Brunswick, Canada

- This project will investigate the molecular mechanisms underlying the onset of human tumours using several key technologies. Microarray technologies will be used to provide a broad picture of the changes in RNA expression associated with mutational spectra that may in turn influence a number of clinical parameters including tumour outcome, histopathologic subtype and chemoresistance. The analysis of key genes in these pathways will be further investigated using quantitative real-time PCR and RNAi to confirm their biological relevance. Particular emphasis will be given to the role of significant growth factors and their receptors. Following identification of significant genes, tumour specific activation or suppression of their activity by DNA methylation and/or genomic imprinting mechanisms will be investigated.

Jesse L DYKSTRA – Canterbury (Natural Hazards & Disaster Management)
Qualifying degree from Simon Fraser University (B.C.) and University of Canterbury

- The primary focus of Jesse's proposed research is to establish the risk of landslide-generated tsunami at Milford Sound (MS) and Lake Wakatipu (LW). The programme will address the following questions:
    1. What geomorphic record of Holocene landslide activity is preserved on the beds of MS & LW?
    2. How many landslides generated displacement waves large enough to threaten life and property?
    3. Is there geomorphic evidence for incipient failures in the steep rock slopes above MS & LW?
    4. What is a reasonable estimate of the frequency of landslide generated tsunami in the Holocene?
    5. What is the present risk of death due to landslide generated tsunami at MS & LW? Is this level of risk socially acceptable?
    6. Given the popularity of MS & LW as tourist destinations and the rapidly growing resident population around LW, what can be done to manage the risk?

Heather L. HOPKINS – Lincoln (Gerontology)
Qualifying degree from Lakehead University, Thunder Bay, Canada

- The proposed research involves an investigation of the relationship between healthy ageing and participation in nature based outdoor recreational activities. For many older adults, opportunities to participate in outdoor activities contribute positively to health and well being. Age related changes may limit opportunities to access natural environments contributing to a decline in physical function and mental health. Specifically, Heather's study will explore the enabling and constraining factors which influence participation in nature based outdoor recreation activities among older adults in the Canterbury are of New Zealand and northern Ontario in Canada. The factors to be studied will include: the availability, accessibility and conditions of walking trails in nature environments in these

areas; personal and social factors that influence the use of trails by older adults; and programmes, services and policies which facilitate the use of trails by older adults.

Jesse C. KEITH – Auckland (Chemical Engineering & Economics)
Qualifying degree from University of Calgary, Canada

- Jesse will be undertaking his PhD under the auspices of the University of Auckland's 'Energy Centre', a research group comprised of both engineers and economists. The Energy Centre is currently working with industry in New Zealand to provide solutions to electricity generation and transmission issues. Reforming New Zealand's electricity generating industry is a complex process involving industry, government, economic policy, regulation and engineering. The possible options for electricity generation and transmission in New Zealand are numerous: policy strategies range from greater governmental control to privatisation, and while the choice of technology ranges from wind power to coal fired electricity generation. The chosen energy solutions will have long lived and far reaching consequences for New Zealand's economy and environment, so it is imperative to determine the optimal combination of policy and technology. Jesse will be joining the Energy Centre's research group in their future research.

China – 1

Qi LI – Auckland (Language Teaching and Learning)
Qualifying degree from Lakehead University, Thunder Bay, Canada

- The purpose of Qi's study is to investigate the relation of English as a second language (ESL), learners' social and cultural backgrounds to their intrinsic and extrinsic motivation and how the relationship influences their learning strategies and outcomes. The study will be qualitative and a general interview guide will be the main method for data collection. The study will involve in-depth semi structured interviews with 30 adult ESL learners. She will be working towards improved best practice in the area of motivation and second language learning.

Estonia – 1

Indrek MÄNNISTE – Auckland (Philosophy)
Qualifying degree from University of Tartu, Estonia

- The title of Indrek's doctoral proposal is "Identity in Practical Reasoning and Action Explanation". His intended thesis will be divided into three main parts. In part 1, he will trace the historical origins of identity-talk in philosophy and conduct a conceptual analysis of different concepts of identity. In part 2, he will perform a close examination of the relationship between identity and practical reasoning, with the intention of undermining the idea of normative identity based reasons. Part 3 will contain his reasons for holding that identity based action explanations must be able to fulfil the same requirements as causal explanations.

France – 1

Philippe H. G. VALAX – Waikato (Language and Language Education)
Qualifying degree from University of Provence, France

- Philippe's research involves a critique of the work of the Council of Europe as it relates to the design of the *Common European Framework of Reference for Languages*. This includes a critical review of the research that underpins the development of the Framework as well as a study of the ways in which that Framework has been applied in the design of national language curricula in various parts of the world (including Taiwan and New Zealand). In addition, he aims to interview a number of people who have attempted to apply the Framework in a range of different contexts to determine whether they have identified any particular problems in relation to its design.

Germany – 7

Katja FLEISCHMANN – Massey (Digital Media Design and Design Education)
Qualifying degree from University of Miami, Florida, USA

- 'Managing the Complexity of Digital Technology in Design Education with Interdisciplinary Curricula'. Katja's research focuses on the development of an interdisciplinary learning and teaching model to address technological progression in digital design education. It will be an integrative part of the existing design and computer science curriculum, working with existing sources. Digital design students will be prepared for the changing demands of digital environments in the creative industry. The new teaching and learning model will foster the so far missing but needed interdisciplinary collaboration and will offer interdisciplinary experience to students within the course of study. An international survey of digital design programmes of the creative industry and the analyses of existing interdisciplinary approaches will lead to the development of a flexible, future oriented, new interdisciplinary learning and teaching concept which can be applied globally.

Andreas HERMANN – Massey (Theoretical Solid State Physics)
Qualifying degree from University of Jena, Germany

- Andreas will study theoretically, the catalytic properties of water and ice surfaces. He plans to perform large scale numerical *first-principles* calculations on the atomic level within the framework of non-relativistic quantum mechanics. His special interest lies with the chemical reactions in the upper atmosphere due to their relevance in the annual Antarctic ozone depletion. The catalytic role of ice surfaces in these reactions has to be determined to estimate reaction barriers and rates correctly. Starting from density functional theory to correctly describe the respective ground states, he will use transition state methods to find reaction pathways. He is also planning to undertake a comparison of results with quantum chemical procedures. Applying methods known from solid state physics to chemical problems is a new approach and Andreas states that it will lead to new insights into stratospheric chemistry.

Stefanie M. H. ISMAR – Auckland (Marine Ecology)
Qualifying degree from Christian-Albrechts Universität, Kiel, Germany

- Stefanie will be assessing the significance of prey availability and food quality as factors influencing the breeding success in the Australasian Gannet (*Morus serrator (*Gray)) at Cape Kidnappers, New Zealand. For the analysis of complex nutritional data the geometric framework (introduced by A/Prof David Raugenheimer, University of Auckland and SJ Simpson, 1993) would be employed, presenting the first application of the methodology to seabirds. Individually marked birds (through ongoing studies by Dr Mark Hauber, University of Auckland) would be GIS tagged to monitor foraging trips. Correlations of these factors with chick condition would be assessed and combined with observation of chick growth and survival to fledging in the field. This study will inform conservation management of one of the few New Zealand species whose population size has increased in recent decades, despite climate and anthropogenic changes to their breeding and foraging habitats.

Matthias F. KRÜGER – Auckland (Mathematics)
Qualifying degree from University of Bonn, Germany

- 'Theoretical advances for Active Contours and their applications to 3D medical imaging'. A problem that typically arises in the field of computer vision is object tracking, i.e. locating a moving object in time using a camera. The goal of this PhD project is the real-time implementation of a 3D object tracking algorithm, with a special emphasis on human faces and skulls. As object tracking can be regarded as continued segmentation of single pictures, the core of the algorithm will be an active surface model. In order to reach a highly efficient and accurate algorithm, existing approaches will be carefully assessed. Open questions concerning, for example, the estimation of Tikhonov smoothing parameters and the effects of higher order regularisation terms will be investigated. In particular, all methods will be tested for their applicability to medical imaging, e.g. the processing of 3D cranio-facial scans appearing in dental or reconstructive surgery.

Gesine PUFAL – Victoria (Botany)
Qualifying degree from University of Rostock, Rostock, Germany

- Gesine's proposed research topic is the 'Evolution of hygrochastic dehiscence'. The opening mechanism of hygrochastic species in the alpine areas of New Zealand is poorly investigated and she intends to expand the knowledge of hygrochastic dehiscence to a broader range of genera. The species that she will be working with belong to the genera *Oenothera* (Ongraceae), *Veronica* (Scophulariaceae), *Colobanthus* (Caryophyllaceae) and *Donatia* (Stylidiaceae). In field and laboratory experiments the biomechanics of hygrochastic opening and the influence of the amount of rain will

be analysed. In addition, she will investigate whether the dispersal mode influences the geographical range of the selected species. DNA sequence data of all species will be used to detect how many transitions between xerochasy and hygrochasy can be found in the chosen groups.

Christian SEIFERT – Victoria (Computer Science)
Qualifying degree from Seattle University, Seattle, Washington, USA

- Client honeypots are an information security technology that searches a network for malicious servers that exploit clients. Malicious servers are identified by detecting violations of the client's security policy after a server response has been processed. Existing client honeypot technology focuses on state changes of the underlying operating system to detect these violations. While the detection rates are high, performance is low. Christian's research is targeted at increasing performance of client honeypots through light weight signature matching as the primary detection algorithm. He proposes to explore how the resulting lower detection rate can be compensated for by feedback loops between the new light weight and traditional client honeypot technology.

Christine STOCKUM – Auckland (Molecular Biotechnology)
Qualifying degree from Technical University of Munich, Germany

- Christine will be investigating the role of a gene called *GIGANTEA (GI)* in the regulation of flowering time by day length in the model plant *Arabidopsis*, be determination of the GI protein's activity and regulation. The first objective of the research is to gain more insight into the function of GI by identifying interacting plant proteins. These interactors will then be further characterised using *Arabidopsis* mutants and transgenic plants. Objective two will be the identification of factors that regulate the stability of the GI protein by expression of tagged GI in different *Arabidopsis* mutant plants. A third strand of research, directed towards obtaining the structure of one GI domain, will be considered depending on the outcomes of current research efforts.

Hungary – 1

Gabriella KOPAS – Auckland (Theology)
Qualifying degree from Matej Bel University, Slovakia

- Gabriella's research will deal with the relevancy and the place of the Old Testament in Christianity today. She will focus on a theological issue according to the book of Ecclesiastes, namely the author's perception of God, the relevancy of this position and the challenges it puts to Christians in the new millennium. The research will include an exegetical, theological and historical study of the book and the approaches to it in the past in addition to contemporary trends.

India – 2

Amardeep MOHANLAL – Victoria (Architectural Lighting Design)
Qualifying degree from University of Technology, Business & Design, Wismar, Germany

- Poorly designed architectural lighting may result in incomprehensible spaces, containing under and over-illuminated regions, exhibiting poor contrast and failing to effectively communicate the space to a human observer. Once the geometry of the space, the material properties and the viewing parameters have been specified, the appearance of the space depends exclusively on the lighting. In order to design a perceptual quality metric for lighting design, one must first define what visual information the space communicates to the eye and the brain, and then find practical computational ways to *quantify* the effectiveness with which this information is communicated. The purpose of Amardeep's research is to arrive at such computational ways to quantify the effectiveness with which visual information is communicated with lighting design.

Answesha SARKAR – Massey (Food Technology)
Qualifying degree from Central Food Technological Research Institute, Mysore, India

- The proposed title of Anwesha's research is 'High Intensity Pulse Electric Field: An Alternative to Thermal Treatment of Milk with its Particular Effects in Bioactivity'. She has three main goals, the first is to investigate the effects of high intensity pulse electric field processing of milk on aspects of the inactivation of bacterial spores in milk and the inactivation of Alkaline Phosphate enzymes in milk. The second will investigate functionalities of proteins derived from treated milk, sensory aspects of

treated milk and nutraceutical aspects particularly with respect to the bioactive peptides derived from treated milk. Her third goal is to investigate the effects of various parameters and optimisation.

Japan – 1

Atsuko FUKUNAGA – Auckland (Marine Biology)
Qualifying degree from University of Hawaii at Manoa, Hawaii, USA

- Coastal environments are highly affected by humans, and anthropogenic activities often induce pollution that can degrade coastal marine habitats and alter natural communities. Human induced multiple stressors, e.g. chemicals and metals, usually simultaneously exist in marine environments. Because marine organisms interact with each other, studies of multiple stressors at a community level are vital to understand the effects of multiple stressors on marine ecosystems. Atsuko's research will experimentally investigate the effects of multiple stressors (Pb, Cu, Zn) on estuarine communities. Laboratory experimentation and field manipulations will effectively identify a causal relationship between metal concentrations (predictor variable) and macro-faunal community changes (response variable). Community structure will be measured by univariate and multivariate methods. The data will then be used to link patterns in biological communities to levels of pollutants and other relevant environmental parameters.

Jordan – 1

Fu'ad W. F. AL TABBA – Auckland (Computer Science, Computer Architecture)
Qualifying degree from University of Auckland

- Transactional memory is currently one of the hot areas in Computer Architecture. The concept of memory which is transaction-based was proposed in the early 1990's by Herlihy and Moss to overcome many of the problems with critical sections. Transactional memory implementations usually fall into two categories which are either Hardware or Software based. The hardware based run efficiently yet are generally limited by the amount of resources allocated to them. However, the software based category are more able to exploit the available resources, yet are significantly slower than their hardware counterpart. Fu'ad proposes to find a way to have the transactions run initially as hardware, then to fall back to software when needed. He also wishes to see if hardware can be used to optimise Software transactions.

Korea (South) – 1

Shang-Hui SHIN – Victoria (Cross-cultural Psychology)
Qualifying degree from Chung-Ang University, Seoul, Korea

- Globalisation fosters a sense of differences of cultural values and of social identity, which carries attitudes and behaviours in line with group norms and expectations when activated. Identification with one's group may often correlate with socialisation into its perspective (Turner, Hogg, Oakes, Reicher & Wetherall, 1987). Huang, Liu and Chang (2004) showed that high identifiers with China and Taiwan evaluated more favourably Chinese or Taiwanese cultures respectively. However, little attention has been paid to cross-cultural research on the relationship between social identity and cultural values. Shang-Hui will assess the degree of social identification and the characteristics of work-related values and impression management which may be influenced by cultural standards for desirable behaviour. She will develop and compare model structures with critical culture specific factors of New Zealand and Korea.

Malaysia – 2

Chek Kim LOI – Otago (Applied Linguistics)
Qualifying degree from University of Malaya, Malaysia

- Chek Kim's research will look at various cultures and the way that they organise the development of ideas differently in their writing and that these differences persist when speakers of these cultures learn to write in a second/foreign language. Relating to this, the study will take as it's main perspective, the cultural approach to contrastive rhetoric in the writing of these speakers. To illustrate the influence of cultural and rhetorical elements of writing, a comparison will be made between those elements from which East Asian styles developed and those from which English styles derived. The study will compare discourse patterns in the Malaysian Chinese-speaking students' and the New Zealander English-speaking students' English argumentative essays and relate the patters to the influence of Confucianism on the rhetorical style of English writing. Suggestions of pedagogical implications will then be made for the ESL/English writing instructors based on the findings.

Huai Yian LING – Otago (Ecological and Systematic Sciences)
Qualifying degree from Chungnam National University, Daejeon, South Korea

- New Zealand's brown algal flora is diverse and includes large macrophytes such as bull kelp and many tiny species, including members of the filamentous order Ectocarpales. The introduction of filamentous brown algae by bio-fouling may not only impose an ecological threat due to changes in food chain dynamics, but also cause loss of indigenous species in New Zealand through competition for habitat. The primary objective of this study is to assess the ranges and systematic placements of indigenous New Zealand filamentous brown algae and understanding of any alien Ectocarpales that might introduce through shipping using morphology and molecular characters. Secondly, to determine the relationship between New Zealand's endemic species and other species found in other parts of the world.

New Caledonia – 1

Cedric J SIMON – Auckland (Marine Science)
Qualifying degree from University of Auckland

- Cedric will be looking at the varied bottlenecks to the commercial culture of red rock lobsters in New Zealand and more generally spiny lobsters throughout the world. The most significant issues are developing a cost-effective rearing system, sea-cage technology giving the best prospect, and a nutritionally adequate formulated diet. The aim of his PhD is to make some significant advances in addressing these bottlenecks to the commercial culture of juvenile red rock lobster, *Jasus edwardsii*, and to aid in the understanding of this species feeding ecology. The research will involve a sea-cage growth trial, laboratory testing of lobster specific diets, physiological and biochemical work on the lobsters' digestive tract, stomach, and enzymes plus the development of new artificial diets.

Mexico – 1

Ana Sofia IBARRARAN VINIEGRA – Waikato (Biomedical Science)
Qualifying degree from Universidad Nacional Autónoma de Mexico

- The earth's biosphere is currently experiencing one of the most rapid temperature increases ever. Given the present trends, this increase could result in an increment of 1 to 3.5°C by 2100. Aquatic systems, particularly inland waters, will not be immune and considerable ecosystem disruption may be expected. Using midges (genus *Chironomus*) as a model, Ana Sofia proposes to: 1) identify physiological parameters (e.g. egg production, sex rations) that are likely to vary with temperature; and 2) using a combined field and laboratory approach, test which of the parameters are likely to be precursors to more dramatic species responses (e.g. range shifts and local extinction).

Oman – 1

Abdul'Aziz S. A. AL-HARTHY – Massey (Horticulture: Post-harvest Physiology)
Qualifying degree from Colorado State University, Colorado, USA

- Fresh fruits and vegetables have been a part of the human diet since the dawn of history. The magnitude of losses of horticultural produce during post harvest and marketing operations are widely acknowledged to be considerable, although a few studies have accurately quantified these losses to range from 20-80%. The maintenance and improvement of post harvest quality and the shelf-life of fresh for these crops have been of significance in recent times. Therefore, Abdul'Aziz proposes to undertake investigations towards restricting the deterioration of fresh produce as much as possible during the period between harvest and end use. This will be done by adopting appropriate methods using the principles of physiology. He will characterise the post harvest physiology of selected important fresh produce and will determine their responses to innovative post harvest technologies to extend shelf life and reduce losses.

Turkey – 1

Direnc ERŞAHIN – Auckland (Philosophy)
Qualifying degree from Middle East Technological University, Ankara, Turkey

- Friedrich Nietzsche proposed eternal recurrence to be the fundamental concept with which to grasp the nature of time. He argues that eternal recurrence offers a materialist definition of time and that the conceptualisation of linear time in philosophies is idealist. Eternal recurrence is thus a re-conceptualisation and revitalisation of time in opposition to time as a linear causal relation between successive historical entities. Direnc's study aims to disclose why Nietzsche's re-conceptualisation of time is completely different from the linear time of Western metaphysics, as such it invalidates the progressive formation of time.

United Kingdom – 5

Jade BERMAN – Victoria (Marine Biology, Sponge Ecology and Physiology)
Qualifying degree from Heriot-Watt University, Edinburgh, UK

- This research will be the first to consider temporal and spatial biodiversity patterns of shallow subtidal sponges in New Zealand. The data collected will enhance the body of information available on sponges. In a broader context, there is good potential to use sponges as a model to investigate the underlying mechanisms structuring assemblages at global scales. The project will also investigate the widely held view that sponge assemblages change little between years. Finally, the quantification of sponge abundance using different methods will enable assessments to be made as to the level of comparability between studies using different methods.

Barnaby J. W. DIXSON – Victoria (Anthropology)
Qualifying degree from University of California, Santa Cruz, USA

- The aim of Barnaby's research is to investigate the preferences of Pacific Islanders for differing somatic traits in both males and females. He would like to look at what their preferences are for body shape, secondary sexual and facial characteristics and compare them to North Americans and Europeans. Whilst no two human beings are entirely identical, we are still one species and studies between populations is a neglected, yet revealing area of research, particularly with regard to human attractiveness and mate choice. There is enormous interest in the peopling of the Pacific and he would like to investigate the preferences between different island groups.

Mark A. GILLESPIE - Lincoln (Ecology – Entomology)
Qualifiying degree from Liverpool John Moores University, Liverpool, UK

- Mark's proposed research will cover the growing field of conservation biocontrol of insect pests using appropriate enhancement of selective biodiversity in the form of floral reserves. The issue of the type and amount of biodiversity required to improve the fitness of insect natural enemies of agricultural pests, without similar or stronger unwanted effects on target pests or fourth trophic level will be explained using state of the art techniques. A four trophic level experimental system involving a crop plant, an aphid, its key parasites and their key hyperparasitoids will be studied using a suite of

field and laboratory investigations. This will provide much needed detail to the development of biocontrol strategies.

Daniel MCKAY – Victoria (Asian diasporic literature and culture)
Qualifying degree from Purdue University, USA

- This project seeks to connect the literary and cultural productions of Asian Americans with Asian New Zealanders, thus contributing to the trans-national diversification of 'ethnic' literature in the Anglophone tradition. Through examining interracial relationships, attention will be given to understanding the motivating factors prompting women of Asian descent to engage in these unions. These will juxtaposed with accounts written by white males, initially in the nineteenth century, but also possibly in the contemporary period, in order that a holistic or 'double-edged' understanding of what constitutes the interracial relationship can be understood. As an end result, he hopes to uncover and detail the convergent ideological space in which white men and women of Asian descent define their relationship. Through a comparison between the United States and New Zealand, he hopes to anticipate future trends and issues within the Asian New Zealand community and its cultural productions.

Gareth J. WILLIAMS – Victoria (Marine Biology)
Qualifying degree from the University of Wales, Bangor, UK

- The world's coral reefs are in decline, with coral disease outbreaks being of serious concern. Our knowledge however, remains rudimentary. No research has taken place to date in the South Pacific, an area where coral reefs are of huge socio-economic importance. Gareth aims to determine the prevalence of coral disease around the Cook Islands and its impacts upon the community ecology of coral reefs and other adjacent ecosystems. The proposed research will identify whether coral disease prevalence correlates with abiotic factors such as sedimentation, salinity and temperature. The research will also examine the ecological knock-on effects of coral disease on the coral reef communities as a whole. The benefit of such a study will be the development of further understanding of coral reef disease and coral reef ecosystems, with particular emphasis on the threatened reefs of the South Pacific.

United States – 5

Erin DALY – Otago (Human Genetics)
Qualifying degree from University of Denver, Colorado, USA

- Erin will explore the field of epigenetics. This new area of genetic research suggests that gene function can be altered without changing gene sequence. Environmental modification of the genome has been shown to be caused by a variety of factors. For example, research has shown that modification of the nutrient balance of a mother's diet during pregnancy may influence the genetic programming of her unborn child, producing significant and lasting health effects on the child. Epigenetic processes have been shown to be responsible for altering the gene activity in the child and possibly subsequent generations. Erin will pursue research on the epigenetic modifications that influence the processes in normal human development, there by altering the potential for disease.

Monica E. GOWAN – Canterbury (Hazard & Disaster Management)
Qualifying degree from University of Minnesota, Minneapolis, USA

- At the nexus between the phenomena of disaster and one's internal reaction, is the heartbreak of human suffering. By better understanding this perceptual nexus through disaster research, resilience strategies and tools can be identified that will help prevent hazards from becoming personal tragedies. The aims of Monica's proposed research are to understand what risk factors affect resilience to disaster trauma, what types of interventions can normalise the variable response to disaster and how to enhance decision making in order to better manage risks. By bridging the earth, health and spatial information sciences in a truly interdisciplinary fashion, and thereby integrating knowledge of physical processes, risk management and social impact, her research will help clarify the role of spatial and behavioural health awareness on decreasing individual vulnerability and increasing community resilience to disaster.

Melanie HARSCH – Lincoln (Forest and Disturbance Ecology)
Qualifying degree from Frostburg State University, Frostburg MD, USA

- Melanie's research aims to address how climate change and disturbance interact to affect regeneration processes at treelines. Climate and disturbance are two important mechanisms acting

in isolation and through complex interactions to shape treeline demography and regeneration. Despite the known importance of these two processes in driving treeline dynamics, relatively little is understood of how climate and disturbance regimes interact to affect regeneration processes at treelines. Green house studies, direct field measurements and dynamic models will be used to elucidate the direct and indirect effects from the two mechanisms on treeline dynamics and how the two mechanisms interact. Such data is important for making informed management decisions under a changing climate in which conserving valuable resources and diversity will become increasingly difficult. It is critical to understand the interactions between climate and disturbance in regulating regeneration patterns if we are to sustain our forests and natural biodiversity into the next century. This research will provide a critical step towards understanding the mechanisms driving recruitment patterns at treelines and predicting potential natural sustainability under a changing climate. The model developed in this research will help us to understand the impact of climate change on these sensitive ecosystems and possibly identify whether or not forest stands are sustainable in present locations under future conditions.

Nicole HERMANSON – Auckland (Public Health)
Qualifying degree from University of California, Irvine, CA, USA

- The proposed title of Nicole's research is 'Bringing the Health Sciences Toward a More Inclusive Society: How Community Based Organisations Reduce Health Inequities Through Empowerment'. Dominant western values are often put into place as a measure of effectiveness, however, when working with cultures and genders that do not value these same standards, who is really being served. Nicole will challenge the dominant assumption and research ways that community based organisations (CBO's) have found methods to address health disparities. She would like to understand how CBO's practice a greater cultural understanding both within their organisations and (without) when working with the public. It is important that health practitioners address these health disparities in a culturally inclusive way. Community based organisations play a very important role in local health which is why they are an important place to begin an analysis empowerment.

Samuel WOLD – Otago (Education: History)
Qualifying degree from Hamline University, St. Paul, MN, USA

- Samuel will examine how the educational system (primarily upper grade schools) has taught indigenous history and peoples. This will be a comparative study between New Zealand, Australia and the United States. He will explore the changes textbooks have made and the actual methods schools/teachers utilise to teach the histories of these peoples. Specific attention will focus on the experience of Indigenous peoples though their schooling years. Emphasis will also be placed on national and local policy looking at how that has impacted what is taught within schools. The research will include literature review, school observations and interviews.