

2006 ZONTA Science Award Recipient

Passion for Antarctic Research Pays Off.

*Congratulations to **Victoria Metcalf** winner of the ZONTA Science Award. The Zonta Science Award promotes science as a career for women as well as providing encouragement and recognition for those already working in the scientific field. Zonta is looking for an outstanding woman scientist able to use the Award to further her career, a person who can be an advocate for women in science but who also contributes to her community.*

Just over a year ago, I wrote an article for the AWIS newsletter on my FRST Fellowship at the University of Canterbury, describing my passion for my research on Antarctic fish as well as my strong belief in work/life balance. It's this all round approach to life that helped me win the 2006 ZONTA Science Award.

For those of you not familiar with it, the ZONTA Science Award is given biennially to the best all round early-mid career female scientist in New Zealand- someone that contributes to her community, helps others in the wider field of science and whose career would benefit from the Award. I don't think that anyone could set themselves up with the goal of winning this Award, without naturally possessing the qualities listed above that ZONTA seeks.

Being an excellent communicator is fundamental to the success of the ZONTA Science Award as the overall aim is to create a really strong and effective role model for women in science. Thankfully, communication has always been one of my strong points, due to school years spent doing speech and drama as well as a love of English.

My research interests primarily revolve around the study of Antarctic fish. Fishing in Antarctica through a hole in the ice Eskimo-style may not be everyone's cup of tea, but it's the aspect of my job that I get the most excited about. I



Vic on the ice with the catch of the day

can think of not too many things better than standing patiently outside in up to -30°C temperatures on blue, sculpted sea ice with matching azure skies under the watchful eye of Mt Erebus, waiting for a faint tug on my baited hand-line. Antarctica is stunningly beautiful but this icy continent also holds an absolutely pivotal place in maintaining the health of our globe. Understanding Antarctica is fundamentally important, even more so given the reality of global warming.

The ZONTA Science Award differs from other awards in that it recognizes promise in the qualities of an individual and there is an expectation that certain outcomes will be delivered. In the short term, the Award will allow me to travel to Boston to work with my collaborator, Professor Bill Detrich, a renowned Antarctic fish biologist. I'll use Antarctic fish genetic resources his lab has created and we'll also create further genetic resources. The work I do there will significantly extend my project. I'll return with a stronger international collaboration and skills to share with others.

In the long term the Award should allow me to be the strongest advocate possible for the preservation of

Antarctica. Alongside that I hope that I am and will be a superb role model for women and women in science.

Accolades for my work have continued and this year I have been given not just one but three major awards. The Rt Hon Helen Clark presented me with the ZONTA Science Award in June (NZD\$10 000 plus around-the-world airfares). However, recently I have also been awarded the Antarctic Science Bursary (£4000) and a SCAR Fellowship (USD\$10 000), both highly competitive international awards. It's extremely gratifying to be given this cluster of accolades all in one year. Like most women scientists, there are always people trying to instil doubt in me about my own capabilities. Three awards are not luck, they're well earned and give me great confidence in my skills and career progress.

The real trick now is to gain one of those elusive permanent academic positions so that I can not only continue my Antarctic research but work with and inspire a new generation of scientists.

Women Supporting Women: Making Connections

Joy McIntosh attended the 'Women in Diversity Forum', she writes about this enlightening experience.

The 'Women in Diversity Forum', hosted by the Ministry of Women's Affairs, Monday 21 August 2006 at Te Papa Wellington, was part of the 2006 New Zealand Diversity Forum 'National Identity, Cultural Diversity and Harmonious Relations'. And the forum really did live up to its title! In the space of three hours both the panel of speakers and audience listened to and shared their many different cultures, identities and viewpoints, many of which are unique to women. For example, we heard stories of struggle and overcoming from migrant women settling into NZ, from gang women, from transgender women, from women who are religiously persecuted, from disabled women, and from women geographically isolated in NZ. Much of the discussion centred on aspects of isolation and loneliness, often brought about by societal attitudes – this could have been negative and depressing, but instead, each woman's story also told us of people's kindness and caring that provided a real hope for change, acceptance and value. As the afternoon progressed, there was a consensus that more than just tolerance between people is needed – people's differences must be accepted and respected before real connections can be made.

So what does that mean for women in science – do we support and network with each other enough? Albert Einstein once said 'it is harder to crack an attitude than it is to crack an atom'. Perhaps we need to check that we're not part of any attitude problem that prevents us from communicating with each other. It would be great to see women in NZ science connecting with each other more effectively and sympathetically – this way we can encourage and support each other in the often difficult and lonely work situations that many of us find ourselves in, leaving us able to really enjoy our science!

From Student to Scientist...

Winner of the Emerging Scientist Poster Competition organised by the Canterbury branch of the RSNZ, Anna Pilbrow tells us what she's up to a year after completing her PhD.



Anna hard at work in the lab

The daffodils are beginning to bloom in Christchurch, signalling that spring is on its way and that it's nearly a year since I handed in my PhD. The time has gone so quickly and, despite the steep learning curve, I am enjoying the transition from student to scientist.

The environment and the outdoors were a central part of my upbringing and fuelled an interest in science, which lead to a keen involvement in science fairs. My projects ranged from using lion dung as a key ingredient in an environmentally friendly rabbit repellent, to producing a continuous ready-to-serve hard boiled egg for the food and catering market. These and other projects developed into an interest in biomedical research. My PhD, undertaken at the Christchurch School of Medicine and Health Sciences, focused on the question "Can we use genes to predict patient survival in heart disease?"

I have recently started an exciting new programme of postdoctoral research, mentored by Dr Vicky Cameron, Cardioendocrine Research Group, Christchurch School of Medicine and Health Sciences. This postdoctoral work, a collaborative project with the Cleveland Clinic, Ohio, USA, will extend the findings of my PhD by examining human heart tissue from heart-transplant patients and heart-healthy donors, to determine whether biochemical pathways in the heart are altered in association with our genetic makeup.

The pressures of being a fully grant-funded researcher are now very real. On one hand it is exciting to be a part of the active, innovative, New Zealand research community that punches above its weight in terms of research output per dollar and produces high-quality research that may be of economic benefit to this country. On the other, our highly competitive, government-driven funding approach seems barely sustainable. Applied research is fed from a broad base of research experience: the "break throughs" we enjoy today have been built on decades of earlier work. Lack of support for long-term basic research projects will cut our vibrant scientific community off at the knees.

I feel like I am in the second chapter of what may be a very exciting book. I just wonder how many more chapters there will be?

MacDiarmid Young Scientist of the Year Awards

The MacDiarmid Awards are an annual celebration of New Zealand's top young researchers. They are designed to recognise excellent, innovative research, science and technology while also promoting the importance of good science communication. The awards acknowledge the importance of effective communication that will attract the interest of the next generation of potential scientists and researchers. They are presented by the Foundation for Research, Science and Technology and sponsored by Fisher & Paykel Appliances.

The awards are named after one of New Zealand's greatest scientists - Professor Alan MacDiarmid - who won the Nobel Prize for Chemistry in 2000 for the discovery and development of conductive polymers.

The following articles profile some of this year's winners.

Hayley Reynolds (Auckland), was runner-up in the Advancing Human Health category with her poster 'Melanoma, Catch it before it's too late'.



I always enjoyed Science and Maths subjects when I was at school, so when I started looking into courses to take at university, Engineering stood out as an obvious choice. In particular I was drawn towards the Bioengineering

discipline, because it combined maths and science with human biology and had the potential to really make a difference.

Many assignments and exams later I decided that I quite liked studying, and decided to enrol in a PhD degree. Currently I'm in my 2nd year, based in the Bioengineering Institute at Auckland University and funded by the Centre for Molecular Biodiscovery. My research involves mapping clinical melanoma data onto a 3D computer model to visualise and analyse possible patterns of melanoma spread. The aim is to provide a predictive software tool for clinicians which may improve patient treatment. This project is in collaboration with the Sydney Melanoma Unit, the world's largest melanoma treatment centre in the world.

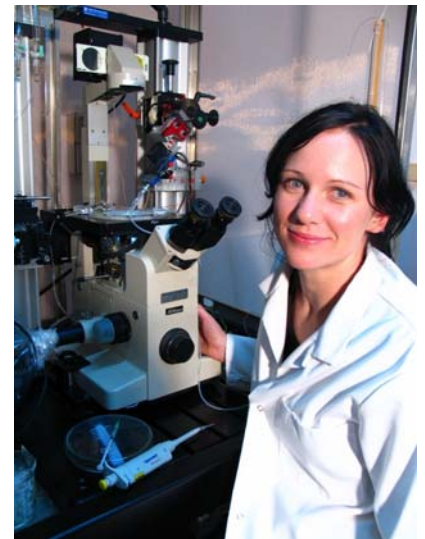
During late July to early September this year I am travelling overseas to attend bioengineering conferences and visit the University of Oxford. I am going to the 5th World Congress of Biomechanics in Munich, and will also attend the Annual IEEE Engineering in Medicine and

Biology (EMBS) Conference in New York to personally present my work. I also plan to spend a week at the University of Oxford with my supervisor Dr Nic Smith to meet fellow researchers in the bioengineering field and discuss my research. I'm very appreciative of the funding support I have received for this trip from the MacDiarmid Young Scientist of the Year awards, the Royal Society of New Zealand and the Sir John Logan Campbell Medical Trust.

In the future I wish to continue working in the field of bioengineering. There are so many worthwhile aspects to this discipline that could have enormous benefit to public health, which is what keeps me motivated. After my PhD degree I hope to continue focusing on research that has a tangible clinical outcome.

Wendy Imlach (Manawatu) won the Understanding Planet Earth category with her poster 'What's Making them Shake'.

When I was little I wanted to be a witch - brewing up magic potions in my cauldron. In retrospect I have successfully pursued my childhood whim and now through science am unravelling the mysteries of molecular magic.



After leaving school in Auckland I moved to Dunedin to study first year health sciences. I knew I wanted to work in a lab and thought that the med lab science degree was the path for me. In third year, realizing the difference between diagnostic work and research I wondered whether I should have chosen the research path rather than the one I was on. So I swapped degrees and started a BSc majoring in micro. I had always been fascinated with viruses – how sneaky they are at evading the immune system and replicating themselves. So I decided to do my honours project in the Virus Research unit (Otago) researching human papillomavirus. With my interest in immunology well stirred I chose a masters in the same lab investigating the activities of a viral cytokine (or immune hormone) encoded by Orf virus – a poxvirus commonly known as scabby mouth. I was taught a lot of great stuff in this lab which has helped a lot with my projects since.

My first proper job out of university was as a technician at the ESR (Environmental Science and Research) in Porirua, working in the invasive pathogens lab doing meningococcal disease surveillance. With a strong desire to get back into the research side of science I left this job

and joined the biotech team at NIWA (National Institute of Water and Atmospheric research) in Wellington. This was a change from working with scary pathogenic bacteria to isolating, culturing, and fermenting marine microbes for bioactive compound screening. After a couple of years of playing with these cool looking things that grew from the sea, I decided it was time to start my PhD.

In 2004 I moved to Palmerston North and began my PhD in the Biomembrane lab at AgResearch on a project involving fungal toxins and human ion channels funded by a Marsden grant awarded to AgResearch scientists Dr. Julie Dalziel (Grasslands) and Dr. Sarah Finch (Ruakura). The toxins we are interested in are called lolitrems, and are produced by an endophyte fungus that grows in ryegrass. The lolitrems inhibit the activity of a type of potassium ion channel called the BK channel. BK ion channels are expressed in many tissues, including muscle and brain, and regulate important physiological processes including blood pressure and neuron excitability. Lolitrems act as pest deterrents and protect the grass from insect attack but, the grazing animals that consume these toxins develop a neurological condition called ryegrass staggers with symptoms of muscle tremor and loss of coordination. This condition is common in sheep, cattle, deer and horses and leads to reduced weights, makes it difficult to move stock, and can result in death due to accidents or drowning. It is estimated to cost the New Zealand agriculture industry \$100 million in losses per annum.

My current project relies heavily on electrophysiology techniques to investigate the mechanism of ion channel inhibition. This is done using a technique called 'patch clamping' which allows us to measure the activity of ion channels in real time as they open and close and as their activity is modified by different compounds. This is a really fun technique to use and extremely satisfying when it works.

To determine whether the tremorgenic and ataxic effects of the lolitrems were mediated through the BK channel, I visited Stanford university (USA) where I conducted experiments in Richard Aldrich's Lab using BK channel knock-out mice generated by Dr. Andrea Meredith. These mice have been genetically modified so they don't express BK channels. These experiments revealed the biological site of lolitrem B neurotoxicity. It had been known for about 20 years that ryegrass staggers is caused by fungal toxins from grass. But it was not known how the toxins acted to produce the symptoms characteristic of this disease. Results from this study revealed that these symptoms were specifically due to the BK channels being inhibited by the lolitrem toxins, which in turn may alter and disrupt signals from the brain to the muscles – as BK channels are involved in the propagation and transmission of electrical signals through nerve cells and in controlling neuron excitability.

Being able to do this work at Stanford was an exciting and rewarding opportunity and I feel lucky to have gone. For the first few days I felt like I was in an American TV show – something about the Californian accent. With unlimited access to such nice equipment and resources surrounded

by such enthusiastic researchers it was hard not to return with loads of data. Among the results collected on this trip I found some intriguing effects that these toxins have on the heart. I am now investigating these effects further by doing isolated heart experiments in Dr. John Miller's lab at Victoria University.

Earlier this year I won my category (Understanding planet earth) in the MacDiarmid Young Scientist of the year Awards. It was a real honour to be awarded this prize considering the high standard of the entries. For this competition entrants are required to write a description of their project for a scientific audience and make a poster describing the work targeted at a high school audience. The five category winners give oral presentations to determine the overall winner. I would totally recommend this competition to students and post-docs as the prizes are great, the publicity is nice and the awards dinner was well worth going to – they also pay travel costs for students and put on seminars about careers in science and research.

Later this year I hope to return to Dunedin to do some experiments using brain slices with Dr. Steve Kerr- my PhD supervisor at Otago in the department of pharmacology and toxicology. I plan to finish up my PhD mid way through next year and would like to continue with electrophysiology hopefully heading over to the States to do a post-doc.

Hayley Lawrence (Auckland), received a commendation in the Understanding Planet Earth category for her poster 'Can Whakapapa help save NZ's rarest seabird'.



I have always been interested in science, ever since I was a little kid hanging out in my Dad's lab. (He's a technician at AgResearch in Upper Hutt.) I studied Molecular Biology at Massey University in Palmerston North for

two years then at Victoria in Wellington where I finished my BSc Honours (and almost completed a BA in Maori Studies). I was a bit worried about what I was going to do with my genetics degree because I wasn't into biotechnology or medical genetics. I heard about an honours project in Conservation Genetics and I knew that was exactly the field I wanted to be in. My project was on genetic variation in Tuatara from the Mercury Islands. I then worked at AgResearch for a few months before starting my PhD at Massey University in Albany, Auckland.

My PhD is on the genetics of New Zealand's rarest seabird, the Chatham Island Taiko, to aid in its conservation. Taiko are critically endangered – there are only about 120 left and they are under serious threat from predators. I examine relatedness between birds to help understand their behaviour, mating systems, to identify sex, parentage, and genetic variation. I also work on

ancient DNA from Taiko bones to find out about the past population. The part of my research I focused on for my poster for the MacDiarmid Young Scientist awards, was the use of genetics to assess the possibility of undiscovered Taiko breeding burrows (nests) and to assist in finding them. The poster was called “Can Whakapapa help save NZ’s rarest seabird” and won a commendation for communication. I am interested in the communication of science to the public and appreciate that FORST also recognises its importance.

I have been very fortunate in having been to the Chatham Islands five times. I love the island: its landscape, wildlife, people, history, and of course being able to see the beautiful bird I study! What gets me through the hard times of my PhD is the fact that my research will help Taiko conservation. The people I have met through this project have really enriched the experience for me, from volunteers, members of the Taiko Trust, to Department of Conservation workers, to Moriori, Maori, and other Chatham Islanders. I have had some very special experiences, including attending the opening of the first Moriori marae. My project is perfect for me, combining my interests in genetics, conservation and Maori/Moriori. It has been very difficult at stages, but I have survived this far to almost beginning to write up my thesis. I think in order to stay sane it is important to have a balance with your work and personal life. I am concerned about one day trying to balance a career in science and having children, but was inspired by the AWIS members I met at last years conference. I hope that in the future I can do both, (and finally finish my BA!)

Kylie Quinn (Wellington), was runner-up in the Advancing Human Health category with her poster 'TB's partner in crime'.

During my undergraduate years at the University of Otago I studied science and law but for my honours year I had to choose a focus and I chose science. I followed my passion for genetics and immunology but I found that law had given me a passion for the communication of ideas that complimented my science, particularly an appreciation for the “grey” areas in life that permeate both disciplines.



I am currently in my third year of a PhD funded by a Lottery Health Scholarship at the Malaghan Institute of Medical Research, a biomedical research facility located on Victoria University’s Kelburn Campus in Wellington. I am a member of the Infectious Diseases Group lead by Dr Joanna Kirman, and the aim of our research is to characterise the protective immune response to Tuberculosis (Tb) with the eventual aim of designing new,

more effective vaccine approaches to combat this debilitating disease.

My project focuses on the involvement of a specialised white blood cell type called T regulatory cells (Tregs) in the immune response to Tb infection. Tregs function in suppressing immune cell activity and consequently play an important role in preventing inappropriate immune responses that can lead to autoimmune disease or allergy. However, infections like malaria or hepatitis C can induce Tregs, thus preventing clearance of the pathogen, and resulting in a chronic infection. If other pathogens hijack Tregs to suppress the immune response and persist, it is possible that Tb may have also evolved this approach. If so, we could use treatments that selectively inactivate Tregs to prevent immune suppression in patients and activate their immune response to clear the Tb infection.

This work formed the basis of my entry in the 2006 MacDiarmid Young Scientist of the Year poster competition, which earned the joint runner-up prize in the Advancing Human Health category. A core value of the competition is to communicate science to the public, an aspect of being a scientist that I enjoy and value. Furthermore my sister is a talented graphic designer and we like to be involved in each other’s work, so the competition offered us the chance to collaborate on something together.

The poster presented the analogy that Tb was an evasive criminal, indiscriminately causing damage, and that Tregs were an accessory to the crime. It was structured as though Tregs were on trial, with the experimental results presented as evidential exhibits. So not only did this competition give me the opportunity to exercise the communication skills I had learnt in law, but I also got to turn my scientific question into a legal case, which was a lot of fun and a refreshing perspective.

Later this year I will present some of my work at the “Genomes to Protective Antigens- Designing Vaccines” conference in Prague, Czech Republic, followed by the Pasteur Institute in Belgium, and the National Institutes of Health in Bethesda, USA. Since publishing our findings in the journal Immunology and Cell Biology, I have realised the importance of using different forums to raise awareness of my work in the greater scientific community, and I look forward to this as my next challenge.

Congratulations to the other successful scientists...

National Award Winner:

Claire French (Auckland), 'CSI Cellular Source ID'

Runner-up Adding Value to Nature:

Jane Kay (Hamilton), 'Is low fat milk healthy for cows'

Winner Science in our Communities:

Claire French

Commendation Advancing Human Health:

Dr Karen Silvers (Christchurch), 'Can Fish make you Happy'

Developmental Dyslexia

Karen Waldie is a Senior lecturer in the Department of Psychology, University of Auckland. Her research focuses on the brain processes that underlie different childhood disorders such as dyslexia, ADHD, and Asperger's syndrome.

It is generally accepted that approximately 30% of children struggle to become proficient readers. In many of these cases, there are identifiable reasons why the child is having problems. However about 5% of the population suffers from persistent reading deficits that remain *unexplained* (developmental dyslexia). Dyslexia has been defined as the selective impairment of reading and spelling skills that occurs in the absence of other problems such as hearing or visual acuity deficits, poor general cognitive functioning, known brain trauma, poor motivation or inadequate reading instruction.

Although evidence supports the idea that dyslexia is associated with atypical brain functioning, there is still no consensus among scientists as to which area(s) are affected. With new non-invasive brain imaging technology (called fMRI) we are now, for the first time in New Zealand, able to map increases in oxygenated blood flow that accompany brain activity during reading. As illustrated in Figure 1, we have found that there is a striking difference in brain activity between adults who are normal readers (**Fig. 1A**) and adults with dyslexia (**Fig. 1B**), during a reading task. As expected, the figure to the left shows a predominance of activity in the left hemisphere of normal readers, particularly in superior temporal regions (marked by the cross-hair and white arrow). In contrast, the figure to the right shows very limited left-brain activity and only significant **right-brain** (inferior frontal) activity, possibly as a compensatory reaction to left hemisphere dysfunction.

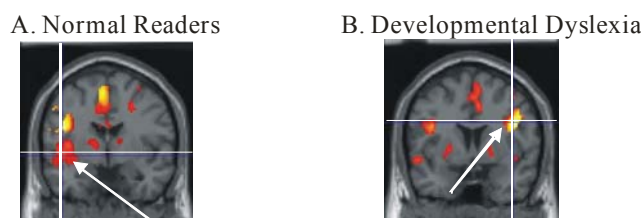


Figure 1. fMRI allows us to map increases in oxygenated blood flow that accompany local synaptic activity during cognitive tasks. The bright areas indicate statistically significant areas of activation (baseline task subtracted), $p < .001$. Both images show a coronal section of the brain whereby the left side represents the left hemisphere and the right side represents the right hemisphere.

It remains unclear, however, whether activation patterns observed in adults with dyslexia reflect a fundamental brain anomaly (the result of the original problems that were manifested during early years of reading acquisition) or rather reflect some long-term sequelae of years of reading difficulties. The next stage of our experiments will attempt to answer this question by having volunteer children and adolescents with dyslexia perform the reading tasks while in the fMRI scanner. Our results will give continued support for a neurobiological aetiology of dyslexia. This is particularly necessary in New Zealand, because the Ministry of Education does not formally recognise the existence of dyslexia. The evidence that dyslexia exists, and is of organic origin, is overwhelming. It is also recognised internationally that understanding the neural basis of reading and reading impairments have important implications for researchers, clinicians and teachers. The early identification of children at risk for reading deficits can help to provide them with an appropriate education and specific training programs. It is also expected that our studies will help New Zealand researchers and postgraduate students become recognised as leading investigators in the areas of functional brain imaging, developmental neuroscience, and dyslexia research.

Karen is originally from Canada (and received her degrees at the Universities of Victoria and Calgary) and came to New Zealand with her kiwi husband 8 years ago. They met at the University of Calgary when she was doing her PhD on dyslexia and brain laterality and he joined the department to do a post-doctoral fellowship in the area of memory. Once they moved to New Zealand, Karen spent the first three years in Otago working on the Dunedin Multidisciplinary Health and Development Study - an internationally renowned longitudinal study of almost 1000 individuals who have been tracked and studied over 30 years. The last five years has been spent in Auckland with the Psychology Department, where she has been learning how to use fun toys such as EEG and fMRI. The biggest challenge that she has faced so far is that she is so far away from her family in Canada. As Karen says – “my mother simply adores my husband Ian, which is lucky because otherwise she’d never speak to him again for taking her baby so far away...” When two people are in the same academic area, such as Karen and her husband, it is very difficult for both to get staff positions at the same University. Canada, for example, has a “Canada first” hiring policy, in that only if there are no qualified Canadians available would they then consider hiring someone from a foreign country. It was fortunately a bit easier for them to both get positions at the University Auckland. In fact, their offices are just down the hall from each other and they co-supervise students. Now this poses other challenges for Karen, but perhaps that’s a topic for a different article!



"a neat, neat, neat science show!"

Reviewer Jane Clifton said of QTV...

QTV, a kids science multi-media TV show was a finalist for the AirNZ Screen Awards and the interactive website has been nominated for two TUANZ Innovation Awards 2006!

QTV is intelligent television for kids. It contextualises the big issues in science and society and talks to kids in their own language. The aim was to learn and be entertained at the same time. The interactive "Q" website (www.qteam.co.nz) created by OKTOBOR Interactive and sponsored by the Ministry of Education, is packed with details of the episodes, online games and experiments. The shows covered a variety of topics, from marine biodiversity to biowaste and microbial forensics. There's DIY experiments for the kids, including science fair classics (build your own volcano) and tips for budding cops (dusting for fingerprints with cocoa). Reuben Schwarz wrote in the Dompst "The best part of the site, is the Flash-animation games. In Deep Sea Explorer you plum the depths of the ocean looking for specimens. Shake-a-quake is somewhat more sinister, letting you make your own tsunami to flood a city. You place maggots on a rotting pig in Decomposer and in the delightful Poo Face you connect pipes to steer human waste through the sewers. Watch as it changes colour! It's less disgusting and more fun than it sounds, and kids will love it and learn a lot about where things go when you flush."

QTV is the brain child of Di Oliver-Zahl, and supported by her business partner Glenis Giles they developed Project Q. Sadly Di was tragically killed in a bike accident in Wellington just prior to commencement of pre-production in February 2005. Glenis was galvanised by the loss to continue their work, and with Di's daughter and researcher on QTV, marine scientist, Megan Oliver, they faced delivering a contract to TVNZ that had only just been signed the week before the accident.

Glenis has worked in the New Zealand independent film and television industry since 1988 as a production manager, line producer and producer. Her portfolio of work includes film and television drama, theatrical short films, documentaries, children's television, commercials and music videos. Glenis is an active member of the Wellington film community currently Chairing the Wellington Fringe Film



Megan Oliver, Di with grandson Levi & Glenis

Festival, and was a founding member of WIFT Wellington Inc. (Women in Film and Television)

Di was passionate about the power of new media technology and about the ability of young people to own their own issues in society. She had moved away from the film industry and more recently had tutored in media studies and the creative industries at Victoria and was in the process of preparing her PhD about women leaders within New Zealand, under the Management School at Victoria University of Wellington.

Directed by Lala Rolls and Clare O'Leary, the series presents science in a funky and accessible manner, asking questions like "What would your clone be like?" and "What if a tsunami hit Wellington?". QTV screened on TVNZ from September 2005. Q's presenters are a group of young Wellingtonians that 'Question Everything'! Tessa Devereux, Barnaby Frederic, Chelsie Preston Crayford and Paora Durie. They travelled throughout New Zealand and met scientists working on the big issues facing the future. Whether it's checking out the conservation issues behind the extinction of the moa or fingerprinting soil samples to help solve a crime, QTV takes science out of the classroom and plops it down wherever real scientists are working - underwater with giant spider crabs, on the edges of volcanoes, in front of a supercomputer or brewing bugs in the lab.

With initial support from Dr Rick Pridmore at NIWA, Di and Glenis brought together an amazing amount of corporate and public sector partners, who donated time and money into making the series scientifically authentic as well as providing the scientific talent for the show. These strategic partners want to see more discussion and debate about science in mainstream communications.

Although QTV didn't win the children's award in the recent Air NZ Screen Awards, Glenis said she was 'delighted to be in the company of the best children's television productions' and that her business partner Di Oliver-Zahl would have been extremely proud of the whole team.

The Q website has been nominated as a finalist in two of the education sections of TUANZ in association with General Cable - Education (Primary or Secondary) Award 2006 sponsored by Tyco Electronics, and TUANZ Education (General) Award 2006 sponsored by Victoria University.

Project Q is a joint venture between OliverGILES Productions Limited, The Sir Peter Blake Trust, NIWA, The Crown Research Institutes, TVNZ, Transpower, The Vodafone Foundation and the Ministry of Education. It encompasses a 13 part television science series, the interactive website and the first of a Careers series on DVD, Q Careers/Science, featuring 10 profiles of young scientists from NZ. This first DVD is available free from NZTE through the site www.qcareers.co.nz, just click order now. The DVD of the 13 part television series is available for sale through Roadshow, email: liz_fordham@roadshow.co.nz

New to the Science Lab!

Barbara Ryan is a New Zealand Science, Mathematics and Technology Teacher Fellow, for 2006. She is finding her first foray into the lab challenging and rewarding.

A year to pursue an avenue of science of my choice! I am a primary school teacher and this year I have been awarded a New Zealand Science, Mathematics and Technology Teacher Fellowship. A dream come true!! I am having the most amazing year, delving into all sorts of interesting areas and learning about new and exciting innovations in science.

I have joined myself to the New Zealand Biotechnology Learning Hub (www.biotechlearn.org.nz), working with a group of people at the University of Waikato who have a MoRST contract to make modern biotechnology research more accessible to school students and teachers. As part of my placement, I have gone out to work with scientists, gathering stories about the latest research. Some of these stories have then become resource material for the Hub. Organisations that have so far let me in for a behind-the-scenes experience include AgResearch (to find out more about biocontrol of the clover root weevil and other insects), Dexcel (investigating the ins and outs of a fully automated dairy farming system), and HortResearch.

As a primary school teacher, science laboratories and the practice of scientific research are all quite foreign to me. It was exciting to be involved in such a different area. At HortResearch I met and worked with some of the people involved in Nutrigenomics New Zealand (NuNZ), a collaborative venture between HortResearch, AgResearch, Crop & Food, and the University of Auckland. First I had to google the word and talk to people to find out what I was going to learn about! The Biotechnology Learning Hub also has a good, in-depth case study.

Nutrigenomics research explores how and why different people respond differently to foods. Part of the reason is genetic variation. Our genes affect the way that our bodies deal with the chemical components that make up a particular food. This means that some food components may be very helpful to some people, but cause problems for others. For example, polyunsaturated fats can affect different people in different ways. One of the goals of NuNZ is to find strategies to control diseases caused by variable gene responses to food through the development of tailor-made diets for an individual's optimum health.

On my first day at HortResearch my first job was to accompany one of the science technicians to buy a kilogram of kiwifruit. The next step was to separate out chemical classes from both green kiwifruit and golden kiwifruit. Although this initial separation would be fairly crude, eventually individual chemicals might be extracted and tested for its effects on specific gene variants.

I had to don a white coat and lab glasses and become a chemist for a few days. It all seemed quite complex to the beginner and I was amazed that the scientists allowed me to participate as if I was one of them!!!



Barbara comes to grips with the lab

My experience showed me how careful chemists have to be; measuring out the exact amounts required, taking care with potentially dangerous chemicals, and making sure that nothing ever contaminated the extracts that were being made. A contamination would ruin the bioassay tests. You also have to know how to use all the equipment!

One day the scientist I was working with was ill and had to go home. He left me with the instructions for the extraction of the kiwifruit. It was rather like following a cake recipe, but more complicated and I had to be so much more precise. I was doing very well until I tried to connect the filter to a vacuum. My professional facade crumbled in an instant, and I became the obvious novice that I was when something (I still don't know what) happened to the filtration process and water backwashed into the air hose into my very precious extraction solution! Half a day of work out the window ... I left that one and moved onto the next sample, which I managed to filter using a second vacuum system.

I have been amazed by how welcoming the scientists have been, and how willing they are to go 'back to basics' to explain their projects to me. The Fellowship has provided me with a terrific opportunity to work with scientists, learning about exciting scientific discoveries such as nutrigenomics. I hope I am around long enough to take advantage of these latest discoveries and new possibilities.

International Geographical Union Commission on Gender and Geography Symposium

Robyn Longhurst from the Department of Geography, Tourism and Environmental Planning at the University of Waikato attended the symposium and agreed to tell us about it.

Public toilets, breastfeeding, Bedouin women in Israel, women's employment in Guyana, men's houses in Papua New Guinea and weddings were just a few of the topics discussed in Hamilton on June 28-30, 2006. Approximately twenty women and one man from around the world met to present papers at the Waikato Museum of Art and History as part of the International Geographical Union (IGU) Gender Symposium hosted by the Department of Geography, Tourism, and Environmental Planning at the University of Waikato.

The IGU Commission on Gender and Geography is chaired by Dr Tovi Fenster (Tel Aviv University). It's an active group of about 400 geographers from 60 different countries. The Commission organises meetings and expands its intellectual network through newsletters and academic publications (see <http://www2.fmg.uva.nl/igugender/index.html>).

Leading academics and emerging scholars from Hawaii, Spain, Israel, United Kingdom, United States, the Netherlands, Taiwan and New Zealand presented research on the Symposium theme 'Shifting Boundaries: Gender, Bodies and Spaces'. Delegates were asked to reflect on how boundaries, whether psychoanalytic, discursive and/or 'real', are threshold spaces that differentiate one thing from another. Boundaries play an important role in social and spatial ordering. Shifting or crossing boundaries often disrupts the social and spatial order.

The first two days of the Symposium were devoted to paper presentations. On the third day delegates embarked upon a field trip led by Angeline Greensill to Whaingaroa Raglan. Whaingaroa is Angeline's turangawaewae. It's a small coastal town on the west coast of the North Island of New Zealand and is well known for its surfing, music, artisans, cafes, and 'lifestyle.' Delegates heard and saw how Whaingaroa has been, and continues to be, shaped by complex gender, social, cultural, environmental, and Māori politics.

Following the Symposium and fieldtrip in the Waikato most delegates went on to the second part of the IGU programme - a Regional Congress in Brisbane, Australia, July 3-7, 2006. The Gender Commission organized several sessions at the Brisbane conference including one entitled 'Regional Responses to Global Changes: Gendered Views from the Antipodes' which honored Janice Monk's contributions to the field of gender and geography.



Delegates on the field trip to Raglan, led by Angeline Greensill (second in from right)

All in all, it was an intellectually challenging and very enjoyable two weeks. Given our global location in the Antipodes we were pleasantly surprised to attract so many delegates both to the Waikato and to Brisbane. It is likely to be many years before we get to host another IGU conference in the Antipodes but I am already looking forward to it.

Congratulations

Congratulations to **Margaret Barbour** who has been awarded the 2006 Outstanding Physiologist of the year award by the New Zealand Society of Plant Physiologists.

Congratulations to Palmerston North convenor **Nicole Roy** who won the Emerging Scientist award from the New Zealand Institute of Agricultural and Horticultural Science. The Emerging Scientist award recognises significant achievement and outstanding contribution by an emerging scientist dedicated to research and science leadership in the promotion of agriculture and horticulture.

Rosemary Hipkins, New Zealand Council for Educational Research, Wellington, has been awarded a New Zealand Science & Technology Bronze Medal for her significant contribution to science education, particularly her ability to communicate key ideas in science and science education to teachers, and the community of interest, in ways that are informative, engaging and forward-looking.

Well done everyone who successfully gained Marsden funding in the recent round. A total of \$39.1m has been allocated to 78 projects over the next three years.

Congratulations to the University of Auckland Women in Leadership Programme which won the Manāki Tangata Innovation Award at this year's EEO Trust Work & Life Awards. The programme focuses on the development and promotion of women in leadership roles in the University of Auckland and seeks to redress the historically low numbers of women in senior positions at the University.

'What do you get out of AWIS?'

What do you really get out of AWIS? Why have you paid your annual subscription? How could AWIS provide value to you? **Liz Carpenter** applied Value Network Analysis to AWIS.

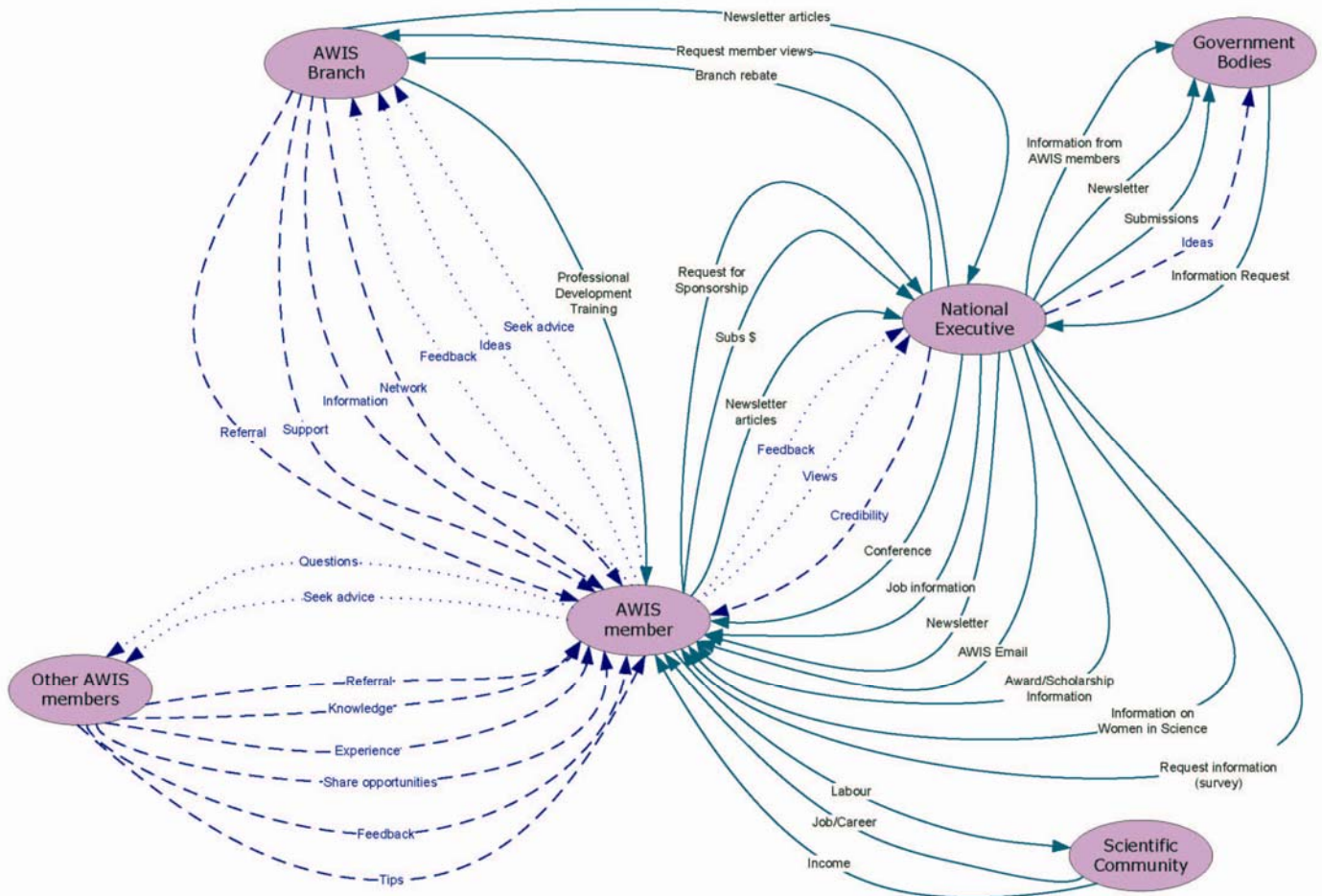
The AWIS executive sent out a survey recently, to ask members similar questions to those above. There is a lot of effort in running an organisation such as AWIS – at the national and branch level. Sometimes, one is left wondering “Is it worth it?” Fortunately, the response to the survey was very positive.

I decided to use a new approach to the question. I’ve been learning about a system called “Value Network Analysis”. Through the Learning & Development programme at AgResearch I’ve had the opportunity to complete a course, to become a ‘Certified ValueNet Practitioner’. The course was run using phone conferencing and web meeting over a period of 6 months, and we learned the methodology from US-based Verna Allee, who developed the tools of analysis (www.vernaallee.com). And using an Action-Learning based approach, I have learned the skills to examine the value exchanges within a network. And AWIS is ALL about networks.

How do you answer the following question: “What value is there in this relationship? Is it beneficial to me?” If you’re approaching this from a work perspective, you’ll probably be encouraged to look at dollar values and documentation that describes the relationship. Is there a contract for the work? Can you invoice for it? Have you written a report? Can you get a publication from the work? Have you made a product?

Now, sit back and ask the question again. What else have I got from this relationship? Perhaps you’ve met new people who’ve helped you with new knowledge, ideas, contacts with others, market information, feedback, advice. Is this important? Does it bring value? Of course, it does. However, the reality is that it’s difficult to demonstrate the value of this aspect of a relationship. The accountants and managers don’t usually pay much attention to it – what **value** has it brought you?

The accountants are focused on the TANGIBLE exchanges. Often these are accompanied by documentation – the invoice, payment, contract, funds, report, product, data, publication, newsletter, conference. What often goes unrecognised is the INTANGIBLE exchanges, e.g. knowledge, feedback, ideas, support. Using Value Network Analysis, we record both these exchanges, generating a value map.



A Value Network Analysis of AWIS

I've put together a map for AWIS. I started by looking at the participants in the AWIS network. Then I considered the Tangible exchanges within the network, and drew those onto the map (using solid lines to show those exchanges), and then the Intangible exchanges (dotted lines). It's just a 'snapshot' that I jotted down one evening. It's not necessarily complete & at this stage, it's just my view of AWIS. But, already I've made a few observations.

The National Exec provides many Tangible benefits to AWIS members, and receives some in return. Overall, the responses to the survey focussed on this aspect of the AWIS network – perhaps because it was an email survey, sent out by the Executive. The survey respondents mentioned the newsletter and the AWIS mailing list as being beneficial to them. However, if we focus on what benefits a member might receive from the branch, you will notice that there are very few Tangible exchanges recorded. But, I came up with a great list of Intangible benefits. If a member came along to the Waikato branch meetings, I'd expect them to be able to access the AWIS network provided by their fellow members, and thus access ideas, feedback, support, referrals, knowledge, opportunities. I've had examples of members asking me about whether to do a PhD, how to get access to professional development training, where to find scholarships, is science a good career, overseas work These are all the sorts of things we can help each other with, as it is the sort of thing we know about. Where else can you find a ready source of this information and support? I think this is of a huge benefit to members. But, I don't believe we (i) acknowledge the value to each of us, or (ii) realise that this could be what AWIS is all about.

I guess, what I am trying to say is that in this world where we're all struggling to find satisfying jobs, family friendly work, professional development, and 'stuff I want to do', then we can all benefit from accessing the AWIS network. As they say, it's not what you know, it's who you know.

Final note: I have used the VN analysis in my work also, and found it very helpful in getting an overview for how my group sits among our collaborators etc. I hope to write an AWIS article about that in the future. In addition, I am helping to organise a Masterclass workshop on learning about Value Network analysis which we will run in November. We are also planning a VN Conference for 2007. If you are interested in either of these events, please contact me (liz.carpenter@agresearch.co.nz).

AWIS listserver (free!)

A low volume forum for announcements and discussions relevant to women in science.

To join, visit

<http://lists.otago.ac.nz/listinfo/awis-list>

From the National Executive

We had a very successful AGM in Christchurch in July and you can read more about this in the minutes elsewhere in the newsletter. However, Malina Storer is taking over as National Convenor and I would like to wish her every success in this role. Malina will be the youngest ever AWIS member to take on the role of Convenor which bodes well for the health of the organisation. I am staying on as an executive committee member along with Julia Wilson-Davey and the newly elected Suvi Viljanen-Rollinson. Hazel Gatehouse is staying on as treasurer and Elisabeth Wells as secretary.

Thank you very much to all those people who wrote in with their views on the future direction of AWIS. The majority of the feedback suggested that AWIS was still relevant and pretty much on the right track. Many people liked the idea of branch meetings but acknowledged that it was often difficult to get along to them, possibly reflecting the ever-increasing busyness of our lives as multi-tasking women! We really appreciated the whole-hearted support for continuation of the newsletter and conference in their current forms – thank you.

Thanks very much for all your support and communication during my two years as National AWIS Convenor.

Fiona Carswell

Meet the Exec members

As a result of the AGM there have been some changes to the national exec. We thought it was a good time to remind you who we are.

Julia Wilson-Davey will be staying on the exec as membership secretary and newsletter co-editor.

I've just returned to work part time after a years maternity leave looking after my son Connor. I work as an ecological technician at Landcare Research. Before I left I worked mainly in the biological control of weeds, now my focus is more on pollination ecology and writing a newsletter. It's rather weird being back at work! Things are the same but different. It's a major adjustment but I'm excited about regaining some time for me. I do have to be terribly organised, however, but I'm getting used to that!

I've been a member of AWIS since 2003. I can't remember how I found out about it, through friends I think. Anyway, I enjoy the friendship, support, and hearing other people's stories (especially how they juggle work and family, something I'm quite interested in now!).

Suvi Viljanen-Rollinson was elected to the exec at the AGM. Suvi was profiled a few newsletters ago but here's an update.



I am a plant pathologist at Crop Food Research based at Lincoln. I specialise in plant disease epidemiology, especially how weather conditions drive the disease progress so that fungicides and other disease treatment strategies can be better timed and targeted. We use modelling tools to calculate risks of weather variables that drive the disease, and often fungicide sprays can be

delayed or omitted totally if weather conditions are not conducive to the development of a particular pathogen. I work on various diseases of cereals and vegetables, and I'm also involved in the Better Border Biosecurity (B3) programme where I use modelling tools to identify weather conditions that are suitable for fungal spores to travel in trans-oceanic airflows to New Zealand.

I have three primary school -age children that keep me busy outside work. This year I have had lots of fun taking them skiing!

I joined because Fiona asked me to! :-). Seriously I've had an interest in the issues AWIS deals with for a while, especially after attending the first Women in Science conference in Wellington as a PhD student. The interesting issues have changed over the years with career progression and arrival of children.

Malina Storer will continue as newsletter co-editor and was also elected as the national convenor.

I think a stray comment at a newsletter folding had a lot to do with me becoming convenor. Having just finished my PhD I made the comment that I needed new hobbies to fill in all my spare time. Obviously someone was listening!

I've been an AWIS member since the Christchurch Branch was rejuvenated in 2001, and I've been co-editor of the newsletter since Christchurch took over the role in 2004. I find my involvement with AWIS inspiring as I'm constantly amazed at what other women manage to achieve both at work and at home. I have enough trouble organising myself to get to work, let alone raising a family and working.

My recently completed PhD involved the development of new laboratory tests to measure markers of vitamin deficiency. Now that it's finished I'm taking some time to reassess what the future holds and I'm currently working for SYFT technologies investigating solvent exposure in the workplace. In the long term I'd like to head overseas but I'm undecided as to whether it will be to travel or work.

Meet the Convenors!



Palmerston North

*Nicole Roy, Convenor
(nicole.roy@agresearch.co.nz)*

I am a metabolic physiologist by training and am currently working in nutrigenomics to investigate the role of nutrient/gene interactions in maintaining and restoring gut function using models of Inflammatory Bowel Disease and functional genomic analyses. I also study the role of food-microbe-host interactions crucial for optimal gut function. I am originally from Québec, Canada and spent two years as a Postdoctoral Scientist in the Protein Metabolism Division of the Rowett Research Institute in Aberdeen, Scotland prior to joining AgResearch.

Since 1998 I have also mentored a number of future scientists, including PhD students and FRST Postdoctoral Fellows. I have also been involved in science education for children, primarily through Search at Grasslands.

I am unashamedly passionate about my science and use this passion as the source of the creativity and commitment required to succeed. I thrive in an environment where people have a thirst for learning and I hope that I have inspired many to "have a go" at being what they want to be in science.

I am an avid reader of novels especially those with topics that involve travel and foods. These novels are often the seeds for travelling that I do with my family. I dabble in writing from poetry time to time. I enjoy escaping to the magic of movies and live shows like *Le Cirque du Soleil*. I also love the company of cats (especially the Oriental breed) and dogs being the proud owner of a few of them.



Wellington

*Liz Feary, Convenor
(elisabeth_feary@frst.govt.nz)*

I have just completed and submitted my PhD thesis, but not yet sat my defence (viva).

I left my job as a specialist medical sales representative after 10 years to return to study to become a vet. As luck would have it, I ended up in the majority of students who did not make the hurdle of getting in to vet school. I was enjoying the science so much I continued on to do my BSc at Massey and then transferred to Victoria where I did my honours in cell and molecular biosciences. I was very fortunate at the end of that year to get the opportunity to work with the Reproduction team at Wallaceville AgResearch and start my PhD in reproductive biology working under Dr Ken McNatty and Dr Jenny Juengel.

I completed my PhD this year and secured a position with the Foundation for Research Science and Technology as a business manager. Although many of my friends feel I may have gone to the “dark side”, I feel that there is an opportunity to make a difference by getting along side science institutions and scientists and assisting them in getting funding for science.

I live on 20 acres with my husband, 3 dogs, 1 cat, 5 horses, about 35 ewes with lambs and Marshall (Marshall Romney) and Perry (Perindale) rams. There’s not a lot of spare time, but I ride horses when ever I can, and I’m training a couple of young ones at the moment and I have a mare in foal, due in November.

Sitting down with hubby at the end of the day sipping a glass of bubbles or a nice smooth red is also high up on my list of nice things to do.

I hope to get more meetings organised for the Wellington region over the next few years and build up a network of women in science where we can learn to support and encourage each other in our chosen fields.



Hamilton/Waikato

Liz Carpenter, Convenor
(liz.carpenter@agresearch.co.nz)

I think of my life in phases. As a child, my family moved every 3 - 4 years, as my father was in the Air Force. And with a career in science and 3 year contracts, I've continued with the 3-4 yearly migration - until now. I have been in the same research institute for 5 years - that is a RECORD for me. Then again, I did move office and lab last year, so maybe that was enough of a move !

Science does not give you a good secure job, does it? And with the current funding situation, I don't think there is the chance for real 'follow through' to really get down to the 'nitty gritty' of a subject. But, I can honestly say that no day is the same as the one before.

I'm not going to be a 'famous scientist'. I doubt that there will be anyone quoting my papers in the future. But, through my involvement with science, I've had some absolutely wonderful opportunities. Highest on the list for me, has been the opportunity to travel. I've attended conferences in the US, the UK and in Europe. I spent 4 years in Canberra, Australia, working on my PhD. I worked for 3 years in Nairobi, Kenya, followed by a year in Glasgow, Scotland. I've learned about parasites, infectious disease, immunology, cows and vaccines. I've worked with 3 different animal models & 4 different infectious organisms. How many people can say they've had to milk a sheep as part of their work? I can, and had to feed some of the lambs as well. I had three years in secondary education before my post-graduate work, and now that I'm based at AgResearch I sometimes have the opportunity to share my love of science with school students again. But, I'm pretty happy when they disappear

back on the bus, and I can get back to the lab. Sadly, I don't spend much time in the lab anymore. I've stayed around long enough to start climbing the management ladder. This is another great experience that I am enjoying (most of the time).

Please excuse me if this 'blurb' seems a bit distracted – but that might be as I'm jumping on a plane tomorrow – heading to a conference in Europe (Paris). I'll visit a lab in Amsterdam and Oxford, and then squeeze in a holiday in New York on the way home. Lucky me!



Christchurch

Fiona Carswell, Convenor
(CarswellF@landcareresearch.co.nz)

I work half-time for Landcare Research in the fields of forest ecology and climate change with particular emphasis on opportunities for carbon sequestration. I have two children under the age of three, hence my decision to work part-time for the early years of my kids' lives. I find it difficult to really maintain my hours to those that I am paid for but by and large I really love the balance between having interesting, stimulating work and quiet time at home doing something that is ultimately very creative! I enjoy AWIS because I find meetings energising and am always inspired by the stories of other members. Sometimes, getting together with other women in similar situations can really help me to get ideas on how to better manage my life.



Dunedin

Lyn Dowsett, Convenor
(lyn.dowsett@stonebow.otago.ac.nz)

I've been involved with women's issues for ages - being so old! I started in UK when I moved to Paulerspury (near Northampton) from Bristol with a 6 month old baby and found there was very little outside of CWI for women at home to be involved in. So I started a playgroup and that helped me meet lots of people and for the women in the village to meet each other. Then, coming here, I arrived just in time for the Aramoana Smelter debate so was drawn into conservation/environmental issues. As soon as that Circular Quay Holdings took out an exploration licence over the Otago Peninsula (where I live) so I was involved in that.

I came to my job by accident in a way, having applied to the Department to do some demonstrating and been given a supervisory role and haven't been away from it since. I am a Senior Teaching Fellow and work mostly at second-year level. As well as teaching in labs and tutorials, I manage all of the demonstrators, (68 this semester), keep records for 2nd and 3rd year papers etc etc. If I hadn't been homesick, I'd never have realised how much fun it is working with undergraduates and their quick and enquiring minds - well, the vast majority of them.

I've been involved with the AWIS for 15 years, convening the national conference here in 1999. I served on the Exec when it was based here (1996-1999). I've a slack convenor here for a few years now but we do idle things like having breakfast from time to time and contribute names for judging at the science fair.

I've been academic president on Staff Women's Caucus here at the Otago University and a member of the exec for 12 years. I represent them on the local branch of National Council of Women.

A few years ago I went along to a meeting of Business and Professional Women's Club of Dunedin and three meetings later was President; I'm stepping down next month!

In my spare time I garden and sing with the City of Dunedin choir (busy learning David Hamilton's Missa Pacifica for the Festival of the Arts next month). And belong to a book club and walk in half-marathons - a couple per year. I have 3 children (+1 son-in-law), 2 cats and 1 ex-husband.



Nelson

Jenipher Hubley, Convenor
(Jenipher.Hubley@nz.mwhglobal.com)

Hello, I'm Jenipher Hubley, the convenor for the Nelson section of AWIS. I inherited this role from Jackie McLaren when she departed for Bahrain (I believe it was) in July of 2005. I have met so many switched on women through AWIS, but still find the biggest challenge is to generate sufficient enthusiasm in our group to bring up meeting attendance. Upcoming tours include a winery in Brightwater and one of the enormous timber shipping vessels if I can arrange to get past security. In addition, I'm hoping to generate some interest amongst our members in mentoring within the public or private schools.

I work for a consulting engineering firm called MWH New Zealand and focus on design and construction of various water projects....treatment plant upgrades, building new storage reservoirs and pipelines, developing new water supplies....that sort of thing. I graduated in 1989 from the University of Anchorage in Alaska as a Civil Engineer.

I've lived in New Zealand for almost 3 years now and the longer I'm here, the more I love it. I just bought a new pair of tramping boots and am looking forward to tramping up Mount Owen this Labour Day weekend. I also enjoy scuba diving, sailing, wine tasting, rock hounding and reading voraciously. I'm intrigued by reptiles and in the United States, I owned 3 snakes, a blue tongued skink and a red tegu. The tegu was enormous and had skin like a red beaded purse and exceeded 1 metre in length. Amazing beasties. I'm hoping to get involved with the endangered lizard breeding programme through the Department of Conservation.

My partner, Brian, and my two teenage daughters, Shelley and Lancia (16 and 14) keep me on my toes (and visa versa). Together, we've had some great adventures touring around the South Island. We still haven't been south of Wanaka or Twizel but will do soon as a niece of mine from Germany will be schooling for two terms down in Dunedin.

Branch News



Overseas

Jilly Evans, Convenor
(Jilly.Evans@amirapharm.com)

In August the overseas members of AWIS, 5 to date, agreed to become a branch for AWIS. The main rationale for this branch is to increase interest in AWIS from NZer or NZ- associated women scientists now working overseas. Our founding 5 members come from Australia, Canada, Germany and USA so branch meetings will be virtual rather than in person. We will contribute to branch news in the Newsletter and offer networking opportunities for NZ women scientists.

In July, I attended the international pharmacology meeting in Beijing and was impressed with the standard of science, and depressed by the pollution in Beijing. Hopefully, they can improve on that before the 2008 Olympic games. In Beijing I made 2 important contacts, one with a Japanese scientist with whom I have started an excellent collaboration and another with Patrick Gladding an MD from Auckland. These connections illustrate the huge value of attending overseas conferences. I will be back in NZ at the end of September and looking forward to speaking to the Christchurch AWIS group.

(Watch out for profiles of our overseas members in future newsletters. If you have friends or colleagues overseas who were past AWIS members or interested in AWIS please encourage them to get in touch with Jilly or the Exec so they can become part of our extended AWIS network. – Ed.)

Waikato

Thanks to Shirley Nichols for the Waikato branch update. Our July meeting was a talk by AWIS member Penny Cooke. Titled "Dust to Dust", it covered Penny's decision to change career paths from paleo-oceanographer to forensic geologist. Penny's passion for her work was evident as she shared the thrills, trials and costs – 40,000€ per day in some cases! – of working on ocean research vessels. Unfortunately, employment and funding opportunities in this field have proved to be difficult – or more accurately, currently non existent – in New Zealand, leading Penny to decide on a change in direction. This involves a post graduate diploma in Forensic Archaeology at Bournemouth University in England. To all present it sounded like a fascinating course and field of work. Penny had obviously thoroughly researched and considered many

aspects of her decision such as: the pros and cons of a post graduate diploma versus the full Masters degree; the politics of the field; where will she work?; who might she work for?; what type of projects would she be working on?; and what should she actually call herself once it's all done?! For someone considering their own career direction, probable PhD study and wrestling with selecting a thesis topic, there were some valuable and timely messages from Penny's story: a) consider carefully where your PhD. will take you in the future; b) the importance of choosing a topic that YOU are really interested in; and c) while it might be tempting and easy to go with a pre-prepared topic that someone else has come up with and is already prepared to fund, don't forget points a and b!! AWIS provided some great tools and motivation for Penny to make and implement her decision, through workshops and support at both branch meetings and AWIS conferences. Although forensic geology may sound as rare in New Zealand as paleo-oceanography Penny plans to be based here and work on contract to overseas projects, so we look forward to seeing her back here soon.

Dunedin

This month there will be a breakfast to mark Women's Suffrage Day (September 19) and in October Lyn will report back to the branch on the National Council of Women Conference.

Christchurch

We had a really good evening with Andrea Byrom in June, when Andrea lead a discussion on "Women in Science Leadership". Andrea has recently been appointed as a science leader of "Wildlife Ecology and Epidemiology" at Landcare Research. It was good to hear everybody's ideas on how best to lead and manage science and we look forward to a progress report from Andrea!

In July we had the AGM which was a great opportunity to catch up with branch convenors from around the country and share some tasty food! Among other things we discussed the results of the AWIS survey and the things that AWIS members get from belonging to AWIS. It was really nice to be among friends and enjoy the evening.

Ket Bradshaw, President of the New Zealand Institute of Forestry, shared her experience and thoughts on whether there is a "wood ceiling" for women in Forestry in New Zealand. Ket's description of the forestry training made it sound like an excellent background for all sorts of interesting work both within and outside the sector. Apparently, female forestry graduates are currently excelling and are sought after as employees. However, there don't seem to be many women staying in the profession and progressing to management levels etc.

On September 25 Jilly Evans, Vice-President (Biology) of Amira Pharmaceuticals in San Diego, will talk about her career development as a biologist in the pharmaceutical industry. Jilly is a New Zealander who completed her undergraduate studies at the University of Auckland and is passionate about New Zealand science. Jilly was the former Director of Cardiovascular Diseases at Merck and

Co. In her talk we will hear a little about the "behind the scenes" aspects of this kind of career and her advice for success for women in a scientific career.

Auckland

Needs a new convenor, please contact the exec if you can help.



New members

A warm welcome to the following new AWIS members:

Christchurch

Nicoline van Loenen,
Miriam Denney,
Jaquetta Bradshaw

Dunedin

Pam Gilmour

Hamilton / Waikato

Elisabeth Micklander

We have 103 financial members.

Julia Wilson-Davey
Membership Secretary

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AWIS AGM minutes 2006

Held on Friday, 14th of July at Ensis, University of Canterbury, Christchurch.

Meeting opened at 6:45pm

Present: Di Barraclough, Jenipher Hubley, Elisabeth Feary, Nicole Roy, Liz Carpenter, Lisa Langer, Lyn Dowsett, Heidi Tanskanen, Fiona Carswell, Malina Storer, Julia Wilson-Davey, Hazel Gatehouse, Elisabeth Wells.

Apologies: Karen Bailey, Suvi Viljanen-Rollinson, Lisa Berndt, Jean Fleming, Margaret Bailey.

Minutes of the previous AGM: The minutes of the previous AGM, held on the 7th of July, 2005 (printed in the September 2005 newsletter) were circulated and accepted as correct (Fiona, Lyn, carried).

Convenor's report: Presented by Fiona, circulated and accepted (Malina, Di, carried).

Treasurer's report: Presented by Hazel, circulated and accepted (Fiona, Julia). Liz asked if it was necessary to have the accounts audited. Fiona said that there was no requirement to do so yearly in the Manual but would check the precedent.

Election of National executive:

Suvi Viljanen-Rollinson (Exec Committee member)

(Fiona, Malina, carried)

Malina Storer (Convenor)

(Fiona, Hazel, carried)

Julia Wilson-Davey (Exec Committee member)

(Lyn, Lisa, carried)

Hazel Gatehouse (Treasurer)

(Di, Elisabeth Feary, carried)

Elisabeth Wells (Exec Committee member)

(Nicole, Liz, carried)

Fiona Carswell (Exec committee member)

(Malina, Jenipher, carried)

Other business:

Subscriptions: Proposed that subscriptions remain at \$25 for members and \$15 for students with a \$5 branch rebate per member per year (Fiona, Liz, carried).

Transfer of executive: The executive will transfer to the Wellington branch of AWIS after the AGM next year. The Christchurch branch will provide assistance with the newsletter by providing copy for the next issue after newsletter production has been transferred and any remaining articles available after that (Fiona, Liz, carried).

Storage of basic documents: Liz Carpenter stressed the value of a collection of documents for subsequent committees, particularly since so much is now kept only on private emails. Julia does archive significant material to the Hocken Library each year. Minutes, collations of responses from AWIS members and submissions could be of value to committees, not just to the Hocken Library.

The future of AWIS: An extended, free ranging discussion during a pot luck meal occupied most of the meeting and ideas and issues, particularly around branch activities, are summarised separately. Responses to the questionnaire sent out by Fiona on the AWIS list had been compiled and these were discussed. The general tenor of the responses received was that there was no need for fundamental change to the aims or structure of AWIS. However maintaining or forming a branch committee has been difficult in some centres and all convenors had experienced frustration with organising branch events only to have very few people turn up, which is not only disappointing but also embarrassing if there is an invited speaker.

New Horizons for Women Trust: Lyn Dowsett, who is one of the three AWIS representatives on the Trust, spoke of their current work. Grants of \$2000 are made to women for "second-chance" study and there are also small research grants for studies about women or children. Fund raising is underway as they hope to double the capital available from which they make their grants. The Federation of Graduate Women also provides the Trust with money each year for some grants which the Trust administers.

AWIS in schools: Liz still has profiles of women scientists that need to be translated into a form suitable for school students. Julia offered to try one to see if the task worked. Liz has someone involved with communications who can assist with appraisal of the suitability of material. Fiona suggested that profiles be farmed out to several members to make the task of "translating profiles for secondary school students" manageable.

Offer from Jilly Evans: Jilly has kindly offered to make a donation to AWIS and also try to start an AWIS overseas group. Fiona will write back to ask what purpose Jilly has in mind for her donation. A number of AWIS members from overseas responded to the questions about the future of AWIS and wished to stay in touch so we decided that we should accept her offer of starting an overseas AWIS group.

The meeting closed at 9:30pm

Disclaimer

The views and opinions expressed in this newsletter are not necessarily those of the Publisher or AWIS. Whilst the Publisher has taken care to ensure the accuracy of material contained in the newsletter, no responsibility for errors or omissions will be accepted.

AWIS Financial Report 2006

Income and Expenditure for Year Ending 31 March 2006

AWIS finances remain in a healthy state with \$7,325.87 in the current account, \$37,000 in the term deposit and a net income of \$440.01 this year.

Current Account

	04/05	05/06
Income		
Subscriptions	\$3,875.00	\$3,291.00
Interest (net)	\$541.54	\$131.81
Misc (donation)	\$36.10	\$0.00
Conference sponsorship	\$3,800.00	\$0.00
Total Income	\$8,252.64	\$3,422.81
Expenditure		
Printing/Photocopying	\$1,502.73	\$1,549.13
Stationery/Postage	\$499.69	\$517.39
Meeting expenses	\$43.25	\$136.80
Branch rebates	\$910.60	\$442.98
Website	\$0.00	\$38.00
Misc	\$0.00	\$0.00
PO Box rental	\$125.00	\$125.00
Bank fees	\$22.50	\$2.50
Subscription	\$171.00	\$171.00
AWIS in schools stationary	\$730.73	\$0.00
Conference sponsorship transfer	\$3,800.00	\$0.00
Total expenditure	\$7,805.50	\$2,982.80
Excess income over expenditure	\$447.14	\$440.01

Balance Sheet for Year Ending 31 March 2006

Current Assets 31 March 2006

Current Account	\$7,325.87
Term Deposit	\$37,000.00

Less Current Liabilities 31 March 2006

Unclaimed branch rebates (03-06)	\$973.60
Total Assets	\$43,352.27

- It is surprising that the printing and photocopying costs have not risen much considering there have been some colour pages in the newsletter. The size of the newsletter has remained at 16-20 pages.
- The drop in the account balance from 31 March 2005 to 31 March 2006 (\$11,885.86 to \$ 7,325.87) was due to the transfer of an additional \$5000, along with \$32,000 from the past conference, to the term deposit for the seed fund for the next conference.
- Subscriptions are down by \$584.
- Branch rebates have decreased, indicating decreased activity in the branches, or decreased awareness that there are rebates to claim. Most rebates remain unclaimed. This year the branch rebate rate remained the

same, at \$5 per member per year, with the ability to claim funds remaining unclaimed from the previous year. Branches with their own accounts can claim the full rebate. Others have to submit receipts for expenses incurred. Christchurch and Auckland branches were the only two branches to claim rebates this year.

- AWIS stays subscribed to the NZ Association of Scientists (\$105 subscription) and the National Council of Women (\$66 subscription).
- Website fees were paid out this year as these are paid for 24 months at a time, and so will not be paid again next year.
- Meeting expenses increased this year as the new Christchurch executive found their feet and realised they could claim funds for meeting expenses.
- Postage and stationery increased by just under \$20. Envelopes have been used to post colour newsletters.
- Bank fees consisted of a cheque duty of \$2.50. Last year there was an additional \$20 charge for duplicate statements.

AWIS Convenors Report. July 2006

There were 160 financial members of AWIS to the end of March 06. Members by region were: Auckland 24; Christchurch 26; Dunedin 21; Nelson 4; Palmerston North 6; Rotorua 8; Wellington 31; Waikato 35; Overseas 5. Membership appears to be more or less static since 2004.

This summary of the work of the AWIS National Executive over the past year is divided into interaction with external groups and AWIS internal activities.

Interaction with External groups

New Horizons for Women Trust: The New Horizons for Women Trust (NHWT) supports women by giving awards for second-chance education and training, and research on women's issues. As AWIS is a nominating organisation, we were again asked to supply nominees to the Trust in 2006. We put forward two names to the Trust, Annike Hinze succeeding in her nomination. AWIS is now represented by Lyn Dowsett, Rosalind Archer and Annike. We also thank Anne Pomeroy who is now retiring from the Trust but who previously represented both SROW and AWIS.

New Zealand Association of Scientists Last year's AGM confirmed the continued membership of AWIS to the NZ Association of Scientists. AWIS receives a quarterly periodical for its membership but the members present at the AGM in 2005 felt that the most important benefit to the organisation was representation by this national lobbying body.

National Council for Women: AWIS now belongs to the National Council for Women who lobby Government on a wide range of issues affecting women. Their national conference is in Invercargill from September 28 to October 1. AWIS would consider helping a member to attend so if you think you'd like to go please get in touch.

AWIS Internal Activities

Future direction of AWIS: We have noticed a decline in the number of members attending branch meetings and a

consequent decline in branch activity. We have therefore requested feedback from members on which aspects of AWIS are most important to them and whether a change in direction of AWIS is required. Findings will be discussed at the AGM. Questions posted are as follows:

- 1) Are you an AWIS member and if so, how long have you been a member for?
- 2) Do these aims adequately address why you belong to AWIS? If not, can you please suggest alternatives that more adequately express the reasons for your membership?
- 2) How relevant is AWIS to both your professional and personal life? Why?
- 3) Is attendance at branch meetings an important part of belonging to AWIS for you? Please explain why/why not. If you don't attend meetings can you please let us know if there is a better way for you to participate.
- 4) How important to you are other AWIS functions such as the AWIS list server, website, newsletter, submissions from the organisation to government, quasi-government bodies etc?
- 5) Please provide any additional comments on what AWIS means to you and how you think we should continue as an organisation.

From the feedback received so far it appears that most members are very enthusiastic about the current structure, aims and functioning of AWIS. Most comment on liking branch meetings but also admit to not being able to attend many. There is almost unanimous support and enthusiasm for the newsletter and to a lesser extent, the conference.

Acknowledgements: The AWIS exec committee would once again like to thank Dunedin AWIS members Judy Broom, Kim Currie and Sue Galloway for their ongoing efforts with maintaining the AWIS list server, website and archives respectively.

In addition I would like to thank my own executive committee members Malina Storer, Hazel Gatehouse, Julia Wilson-Davey and Elisabeth Wells for their constant hard work in preparing the newsletter and keeping AWIS running. I also thank Lisa Berndt and Tamsin Braisher who left the Executive Committee for part-way through this past financial year, both of whom contributed a lot.

The Waikato branch of AWIS put on a fantastic conference from July 6-8 in Hamilton last year. There were 131 participants and many excited happy faces around at that time. Speakers talked on matters as diverse as tsunami prediction to why we assume certain roles in our families and workplaces. There were plenty of opportunities also for participants to look at how they conduct their own lives with respect to work and home and of course many social gatherings. Finances were managed very well by the Hamilton team and there is consequently a seed fund of \$37 000 now sitting in term deposits awaiting the next conference. Thank you to all of those in the Waikato branch who contributed to making the conference such a success.

Fiona Carswell

Discussion around AWIS branch activities

The Exec and branch convenors welcome your feedback on the points raised below.

This discussion took place during the 2006 AWIS AGM, held on the 14th of July. Convenors or representatives from branches were brought down to the AGM to contribute.

The context was that of the future of AWIS. Feedback from members supported the aims and current activities of AWIS. However branch activities are not thriving, although some members of longer duration commented that these activities had waxed and waned previously. Nonetheless there was a feeling that the pressure of other demands had perhaps increased. Currently there is no committee or convenor in Auckland and attendance is low at most other branches, especially in Nelson. Liz Carpenter spoke of the need for a 'pulse' in each branch, a person with the energy and commitment to lead. Others spoke also of having a group to share what needed to be done so that people coming to a branch were not put off by what might seem like more than they wished to do. There was also discussion of the need for succession planning through including other people and also believing that someone would be found to fulfill a role (that is, not thinking of particular people as indispensable and irreplaceable).

A variety of alternatives for branch activities were presented. Professional development sessions seem popular. Waikato alternates between a dinner and a more formal meeting; only women are invited to the dinner but anyone can come to meetings. Wellington has joined on to other activities such as a Café Scientific meeting followed by coffee for AWIS members. That way a small attendance is not a problem yet those who wish to come are able to meet up. Christchurch has occasionally joined with the Royal Society or with the Sceptics Association on Darwin Day but had not thought to add a social AWIS component after the meeting. The frequency of branch activities was discussed without any idea as to the optimal, which may well differ across centres and the energy and time of the branch committee. Di Barraclough discussed the difficulties of getting women together in a place as dispersed as Auckland. Perhaps there need to be three or four branches that get together close to where people work or live – central Auckland, Tamaki, North Shore. Fiona mentioned that some lunchtime meetings had been successful at Lincoln with visits to places like Canesis (Wool Research in an earlier life), Crop and Food and parts of Landcare. This was suitable because there were several sites close together. Meetings at different times and days may enable more women to come. Early meetings such as at 5:30pm are unsatisfactory for most AWIS members with small children but may be preferable for others who would rather come to a meeting and then go home, rather than go home and have to go out again. Everyone agreed that weekends were not suitable on a regular basis although might work for occasional activities such as joining with another organisation for tree planting. One suggestion was that a list of activities found popular

with members should be up on the website for other convenors and committee members to look at for ideas.

The convenors and national executive committee much enjoyed being able to talk together. Liz Carpenter wondered if this could happen annually. Hazel pointed out that the cost of doing this was not sustainable from present income, although Liz pointed out that if we managed to increase the number of members there would be more income. However at \$25 a member minus the costs of the newsletters, a very large number of new members would be required. Elisabeth Wells wondered if teleconferences (audio, not video) perhaps three times a year might be useful with sharing of experiences and ideas and support for smaller branches.



AWIS exec and convenors at the AGM. L-R Malina Storer, Hazel Gatehouse, Elisabeth Wells, Di Barraclough, Jenipher Hubley, Elisabeth Feary, Nicole Roy, Liz Carpenter, Fiona Carswell,, Lyn Dowsett, Heidi Tanskanen, Photo- Lisa Langer

Not a member and interested in joining AWIS?

Go to www.awis.org.nz for more information and to download a membership form.



Rachael inside a giant wheel at White Island. Photo C.K. Reynolds

A whole lot of Rubbish!

Rachael Goddard, Environmental Manager, Consultant, Children's author, Raglander, and Chocolate enthusiast, writes about her career and shares some information about rubbish in NZ!

In the mid eighties I left school at 15 to go to work on a kiwifruit farm. I saved up enough money and then left for the UK to visit family that I hadn't seen since I was 5 when my parents and I emigrated to NZ. I traveled back and forth over the next 7 years doing a range of work from supervising handicapped people, to picking apples, to potting-on plants, to testing blood at Medlab.

By the time I was 23 I was living in Germany and struggling to learn the language whilst teaching English, working on a farm and being a nanny. I was there 18 months before I decided I needed an education, so headed back to NZ and enrolled in a Landscape Design Diploma. After one day in the class I realized it wasn't what I wanted to do, so switched to Horticultural Science. A strange rollercoaster and addictive pattern of perpetual study followed. As I had not stayed at school for very long I wasn't confident enough to undertake a degree, so for some illogical reason ended up doing three one-year Diplomas in Horticultural Science, Sustainable Land Management, and Environmental Technology. They naturally led onto a 4 year Bachelor in Environmental Science, which then slipped smoothly into a Post Graduate Diploma in Environmental Science and then of course, no surprise, a Masters in Science. Almost a decade of study and the sole reason for my graying temples!

In between study I worked part time as an Environmental Consultant, EnviroSchool Facilitator, managed an Environmental Education Centre and spent 7 years with the Fire Service running around with extremely heavy hoses and portable pumps putting out fires (as one does).

Now I am all grown up working full time. I am the Manager for an Environmental Trust in Waikato, and an environmental consultant undertaking a range of jobs such as developing educational resources, lecturing, undertaking environmental surveys etc. I am also a children's author with Reed Publishing.

My major area of interest is landfills, waste and environmental education. As this is my passion (I have been known to many a child as the 'Worm Lady', which has slightly nicer connotations than the 'Bag Lady') I thought I would share some information about the rubbish we are producing in NZ...

My kitchen drawers and cupboards are bulging with plastic bags of every size and description. They are thrust eagerly upon me several times a week by shop assistants, manufacturers and retailers. In fact in some stores when I have declined the ubiquitous plastic bag I have been informed that it is shop policy that I am required to take one.

New Zealanders dispose of a whopping **800,000,000** plastic bags to landfill each year. To simplify that, around 22 million plastics bags a week. That little plastic shopping bag from the supermarket takes approximately 15 years to break down in a landfill. 10 million 'disposable' diapers dumped in landfills weekly take over 75 years each to break down. Polystyrene never breaks down.

There are seven different types of plastic, yet only four are normally recycled. Don't be misled by the recycling symbol on the base of plastics which gives the impression that the product can be recycled. In Auckland and Hamilton City only types 1 and 2 are recycled. These are generally PET drink bottles and HDPE Milk bottles. More plastic types aren't recycled because either, it is not economic and there is no market, or the plastic cannot be broken down easily and reformed due to its chemical composition and bonds.

Some plastics like PVC contain phalates and benzene which are possible carcinogens. Other additives in plastics may include chloride, oil, aluminium, cadmium and ethylene.

For those of us who constantly refill our drink bottles for months on end, PET (type 1) plastic bottles actually have a shelf life of 16 weeks.

Biodegradable plastic bags on the market are an alternative to sending millions of plastic bags to landfill. However when the organic component in the biodegradable bag is broken down by bacteria in landfills, methane is produced. Methane is a highly flammable as well as being an effective green house gas.

Contradictory to our green eco image New Zealand is one of the highest rubbish producers next to the USA, UK and Australia. 80% of what we produce is thrown away. In Auckland around 800kg of rubbish per person each year is disposed of. In Waikato approximately 650kg of waste per person, per annum is dumped to landfill.

There are 1000 closed and 90 legal operational landfills in New Zealand, which require ongoing monitoring, and often extensive remediation decades after closure. Landfills have a wide range of negative environmental effects during, and well after their operating life. The effects come in the form of liquid emissions such as leachate, which comprises heavy metals, volatile fatty acids and a cocktail of toxic chemicals. Gaseous emissions in the form of explosive gases such as methane, and

carbon dioxide (greenhouse gases) build up under the ground during decomposition of waste material. Both of these substances ultimately escape from landfills and into the environment even though the landfill may be lined with thick plastic.

The state of existing landfills and our apathetic attitude to waste in New Zealand is grim. Approximately 282,000 tonnes of hazardous waste is sent to landfill each year. We have over 7,200 (even up to 10,000) contaminated sites in New Zealand 1,580 of which have been classified as high risk to the environment and human health.

The Ministry for the Environment via the NZ Waste Strategy is establishing methods to minimise the countries waste and improve its management. It aims to reduce inimical impacts to the environment from waste generation and disposal, as well as lower the social costs and risks of waste. Most council's now have a waste management plan.



Some of the 800,000,000 plastic bags to landfill dumped into land fill every year. Photo C.K Reynolds

Some initiatives established to curb plastic production and disposal such as The Plastic Packaging Accord, a voluntary initiative between the government and plastic manufacturers, has not been effective at reducing non recyclable plastics.

A recent Bill headed by the Green Party to the Select Committee wants extended producer responsibility and checks placed on inferior products being imported from overseas. It also suggests businesses should be assisted to change their packaging to recyclable types and have waste audits conducted on their premises.

It is worth noting that recycling is not the key to eliminating the waste problem, it merely prolongs the life of the object and requires energy and input to maintain it. Prevention and design incorporating 'cradle to the grave' at the start of the product's life cycle are more effective methods.

If you are serious about preserving the environment and saving money, look at what you are buying. You have power as a consumer. Write a letter to a manufacturer if you are concerned about their packaging, and ask if they can use recyclable plastic. Take cloth bags shopping instead of getting plastic bags. Compost and worm farm all of your food scraps, (cardboard, coffee grinds, tea bags and vacuum cleaner dust will be consumed by worms in a worm bin). Even people living in small city flats can operate these easily. Refuse a plastic bag when you shop.

For more information on plastics visit www.zerowaste.co.nz. For local information on waste and landfills visit www.ew.govt.nz or www.mfe.govt.nz