

The Zonta Science Award



Album of Winners 1990-2016



**Medal designed by Tanya Ashken
1990-2012**



**Medal designed by Neke Moa
2014-**

Contents

Introduction	2
Summary of Zonta Science Awards	3
1990 Professor Emerita Jean Fleming ONZM CRSNZ	4
1992 Dr Philippa Gerard	6
1994 Professor Jacqueline Rowarth CNZM CRSNZ	8
1996 Professor Wendy Nelson MNZM FRSNZ	10
1998 Dr Helen Neil	12
2000 Dr Michèle Prinsep	14
2002 Dr Julia Charity	16
2004 Dr Ursula Cochran	18
2006 Dr Victoria Metcalf	20
2008 Dr Deirdre Hart	22
2010 Dr Julie Lim	24
2012 Dr Anna Ponnampalam	26
2014 Dr Laura Green	28
2016 Dr Amy Van Wey Lovatt	30
Thanks to Sponsors	32
Zonta International and the Zonta Science Award	33
Acknowledgements	34



Introduction



Article from *New Zealand Woman's Weekly* 18 December 1989. Photo by Margaret Sparrow.

AN outstanding young woman scientist is being sought for the first-ever National Zonta Science Award. Established by the Zonta Club of Wellington, the award is open to women graduates in the fields of pure and applied sciences. Chair of the club's science committee, Mandy Natusch (left), says: "Zonta's aim is to encourage young women to enter the field of science, thus making their special talents available to society." She is pictured with the International Zonta president Ruth Walker at a recent conference in Auckland. Zonta International has a long history of assisting women scientists. The pioneering American aviator Amelia Earhart was a Zontian. In her memory Zonta established the Amelia Earhart Fellowship Awards to enable young women graduates to study aerospace sciences. British Airways will provide return air travel to Europe, the United Kingdom or the United States for the winner of Zonta's science award. The scientist will also receive \$5000 cash and the Zonta Science Medal. Applications close March 31, 1990.

The Award:

In 1989 the Zonta Club of Wellington established the biennial Zonta Science Award. The first Award presented in 1990 comprised

- A cash grant of \$5000
- Free air travel around the world courtesy of British Airways
- Commemorative silver and gold medal designed by Tanya Ashken, a foundation member of the Zonta Club of Wellington.
- Certificate of achievement

The **cash grant** was increased to \$10,000 in 2006 and to \$15,000 in 2014. Since 1996 the **air travel grant** has been <\$3,000. A new pounamu **medal** designed by Neke Moa was introduced in 2014. The reason for the change was reluctantly made due to escalating costs in the production of the first.

The Judges:

Dr David Bryant and Dame Margaret Sparrow have been judges since inception. Other judges: Sir David Beattie (dec. 2001), Professor Dame Patricia Bergquist FRSNZ (dec. 2009), Dr Joan Mattingly, Janine Cowling (NZ Wool Board), Mr Ross Moore CRSNZ, Dr Jenny Neale, Dr Helen Anderson CRSNZ and three past winners Professor Emerita Jean Fleming ONZM CRSNZ, Professor Jacqueline Rowarth CNZM CRSNZ and Dr Wendy Saunders (Zonta/Building Research Award in 2008). Zontian and former judge Dr Margaret Bailey sponsored the Margaret L. Bailey Science Award administered by the New Horizons for Women Trust and first awarded in 2013.

The Album:

This record has been compiled:

- To celebrate the contribution to science by these women
- To promote the role of women in science
- To raise awareness of the importance of science education for girls
- To thank our many sponsors and seek further funding
- To provide a valuable record for the Zonta archives

At a glance....Summary of Awards 1990-2016

Year	Date	Name & Institution	Area of Study	Venue	Presenter/Zonta Pres & Convenor
2016	1 June	Dr Amy Van Wey Lovatt AgResearch, Hamilton	Mathematics and nutrition.	Parliament	Speaker Professor Mark McGuinness Pres Rayoni Keith Convenor Dame Margaret Sparrow
2014	6 May	Dr Laura Green Biological Sciences, Victoria University VUW	Treating multiple sclerosis with anti-psychotic drugs.	Government House	His Excellency Sir Jerry Mataparae Pres Agnes Espineda Convenor Dame Margaret Sparrow
2012	6 June	Dr Anna Ponnampalam Liggins Institute, University of Auckland	Women's health, menstruation, endometriosis.	Premier House	Speaker Dame Claudia Orange Pres Jen McKinlay-Birkin Convenor Dr Wendy Saunders
2010	25 May	Dr Julie Lim Optometry & Vision Science, University of Auckland	Anti-cataract therapies.	Old St Paul's	Speaker Dr Hamish Campbell Pres Barbara Pope Convenor Agnes Espineda
2008	27 May	Dr Deirdre Hart Dept Geography, University of Canterbury	Environmental scientist, coastal lagoons.	Government House	His Excellency Sir Anand Satyanand Pres Therese Convenor Sue Hope
2006	13 June	Dr Victoria Metcalf Biological Sciences, University of Canterbury	Biologist. Antarctic fish and their adaptation to cold.	Parliament	Rt Hon Helen Clark, Prime Minister Pres Roxanne Shaw Convenor Sharon Nelson-Kelly
2004	25 May	Dr Ursula Cochran GNS Geological & Nuclear Sciences,	Paleoecologist Earthquakes and tsunamis.	Government House	Her Excellency Dame Silvia Cartwright Pres Clare Pinder Convenor Mandy Natusch
2002	30 April	Dr Julia Charity Scion, Crown Research Institute, Rotorua	Risks of genetic engineering for future forests.	Government House	Her Excellency Dame Silvia Cartwright Pres Jan Nye Convenor Lesley Dawson
2000	3 April	Dr Michèle Prinsep Dept Chemistry, University of Waikato	Organic chemist, pharmaceuticals from nature.	Government House	His Excellency Sir Michael Hardie Boys Pres Elisabeth Airey Convenor Lindsay Park
1998	23 June	Dr Helen Neil NIWA, Wellington	Maritime geologist climate change in seabed samples.	Government House	His Excellency Sir Michael Hardie Boys Pres Penelope Austin Convenor Alison Cook
1996	30 May	Dr Wendy Nelson Museum of NZ Te Papa Tongarewa, Wellington	Botany, seaweeds in early European collections.	Government House	His Excellency Sir Michael Hardie Boys Pres Joan Nicol Convenor Marian Kljakovich
1994	9 May	Dr Jacqueline Rowarth AgResearch, Lincoln	Agricultural science, grassland seed production.	Government House	Her Excellency Dame Catherine Tizard Pres Lynn McKenzie Convenor Julia Davidson
1992	4 May	Dr Philippa Gerard AgResearch, Ruakura, Hamilton	Environmental entomologist, wool carpet pests.	Government House	Her Excellency Dame Catherine Tizard Pres Hilary Lamb Convenor Fiona Christeller
1990	16 May	Dr Jean Fleming Wallaceville Animal Research Centre, U Hutt	Molecular biologist gene expression in superfertile sheep.	Vogel House	Beverley, Lady Reeves Pres Adele McLay Convenor Sharryn Waters

1990 Professor Emerita Jean Fleming ONZM CRSNZ

Her father Sir Charles Fleming was an eminent scientist and role model so it is perhaps not surprising that Jean and her two sisters all obtained PhDs. Jean completed a BSc (Hons) in Biochemistry at Victoria University of Wellington then her MSc and PhD in reproductive biology from the Wellington School of Medicine, University of Otago. In 1990 Jean was working at Wallaceville Animal Research Centre, studying hormone gene expression in the superfertile Booroola merino sheep.

Her scientific endeavours led to other awards including the Suffrage Centennial Medal in 1993 and the Silver Science & Technology Medal from the Royal Society of NZ in 1998. In 1993 she convened the first NZ conference for women in science and in 1998 was a founder and is now a Life Member of the NZ International Science Festival, a science outreach event held in Dunedin.

In 2000-2001 Jean took on a very public role as one of the four commissioners on the Royal Commission on Genetic Modification. Her contributions to science were recognised with the award of ONZM (Officer of the NZ Order of Merit) in the Queen's Birthday honours in 2002. For her leadership in science outreach she was elected a Companion of the Royal Society of NZ (CRSNZ) in 2011.

In 1994 she became an academic at the University of Otago and then spent most of her career in Dunedin, apart from 3 years at Griffith University, Queensland from 2005-2007. Jean returned to Otago to become Professor of Science Communication, Centre for Science Communication, in the area of Popularising Science. From 2008 she presented health science topics on Radio NZ National Nights. Jean was also Associate Dean of Outreach at Otago University before her retirement in February 2014. She is now Professor Emerita in Science Communication and can be found on Facebook and Twitter (@KorimakoSong) In 2016 she was a judge for the Zonta Science Award.



Above Left: Dr Jean Fleming at the Award ceremony, Vogel House, Wellington on 16 May 1990. The Award was presented by Beverley, Lady Reeves, wife of the Governor-General His Excellency Sir Paul Reeves. The keynote speaker was Dr Joyce Waters, Massey University. The event was hosted by the Hon Margaret Shields. Jean is holding the air travel ticket courtesy of sponsor British Airways.

Above Right: Jean with one of the rare and threatened kiwi species (Haast tokoeka) in the Orokonui Ecosanctuary. This photo was taken Dec 2012 by Matt Thomson and features in Neville Peat & Brian Patrick's award-winning book *Wild Dunedin*, new edition 2014 (Otago University Press).

SPOTLIGHT

Jean Fleming Sheep Scientist

By Judith Doyle

Becoming part of an international network of scientists working on gene expression in sheep was a major benefit of a recent overseas study trip made by Dr Jean Fleming.

The trip came courtesy of British Airways as part of the first Zonta Science Award. The Wellington branch of the professional women's service club is keen to raise the public profile of women in science. The biennial prize has been approved by the Human Rights Commission to encourage women to remain in science careers.

"One of the delightful outcomes of the Zonta Science Award trip was to discover all these wonderful women working in the labs I visited in the United States, Scotland and France," Fleming said.

The lab visits involved Fleming's research into the fecundity gene in Booroola Merino sheep. The gene boosts the ovulation rate in Booroola ewes, resulting in a high lambing rate. If a genetic marker for the gene could be found, it could be tagged with other desirable traits, such as meat or wool quality or disease resistance.

Fleming gathered useful information on growth factor gene probes from Professor Marian Blum at New York's Pishberg Research Institute of Neurobiology. She exchanged ideas with Dr Judy McNeilly on the expression of pituitary hormone genes in sheep at Edinburgh's Institute of Animal Physiology and Genetics Research. Her visit to the Reproductive Physiology Laboratories in Nouzilly, France, has led to collaboration between the lab and Fleming's Wallaceville Animal Research Centre.

Fleming's objective is to establish methods to measure gene expression — the process of turning on a gene and producing a protein. It's a new field and the lab visits have proved useful in gathering information. If gene expression can be measured, then direct comparisons can be made between animals with and

without the fecundity gene. Central to this is the extraction and analysis of the messenger RNA, the intermediary between the gene and the protein.

"My role is to look at which genes are switched on and whether the presence of the fecundity gene causes the production of more hormone or not", Fleming said. "The quantitation of the small amounts of messenger RNA is right at the forefront of research at the moment and people are only just developing methods for doing it."

The Booroola Merino breed was developed last century by Samuel Marsden, from Merinos, Cape sheep and the Bengal breed. Studies have shown that the superfertility was genetic and that it came from a single gene or a closely linked set of genes.

"We think the fecundity gene is a fortuitous mutation coming from one of these early breeds that were crossed with the Merino," said Dr Fleming. "However, at the moment we cannot tell which lambs have the gene and which do not. We are desperately looking for a DNA marker. We are also interested in the mechanism by which the fecundity gene influences ovulation rate, as this may have implications in fertility control in humans."

Fleming came to sheep studies via a roundabout route. In Britain, she spent the 70s studying brain biochemistry, looking at genetic neurological diseases such as Huntington's Disease. On her return to New Zealand, she worked on rat hormones and reproductive biochemistry. An MSc at Wellington Clinical School was followed by a PhD looking at how the hypothalamus controls hormone release from the pituitary.

"It's very rare that you ever do work on human tissue because — obviously —

you can't get it readily, so I used the sheep as an animal model. I learned how to dissect the brain and all about the control of the reproductive axis through the brain. Within New Zealand there were perhaps a handful of scientists who knew their way around the sheep brain at that time."

Wallaceville researchers wanted to measure the brain hormone in Booroola Merinos that stimulates the pituitary to release the reproductive hormone. Fleming's experience made her the most appropriate person for the study. Study leave in Australia taught her how to analyse RNA. Since then she has set up a molecular biology laboratory at Wallaceville to look at gene expression in Booroola sheep.

Fleming hopes to have a method for quantitating the RNA for one pituitary hormone established by the middle of this year. Once achieved for one gene, it will be easier to set up a system for other genes.

Being able to examine how other labs around the world are tackling the problems in this very new field brings her goals and objectives that much closer, Fleming believes. □

Judith Doyle is a freelance writer based in Wellington.



February 1991

New Zealand Science Monthly 17

18 New Zealand Science Monthly



Above: Jean in her office 2013.

Below: Professor Jean Fleming outside the Centre for Science Communication, Dunedin on graduation day 2013, adjusting the tie of one her MSciComm students, film maker, Adam May. Photo by Debbie May, Adam's mother.

Below: Snippet from *Evening Post* 15 June 1991

THE LAST WORD

"But she's a famous scientist — she won Zonta." So said the young son of Dr Jean Fleming, sheep scientist and current holder of the Zonta Science Award, offered every two years by the Wellington Zonta Club. The occasion was arrival at the Customs desk at Auckland Airport.

Jean and her son Jesse, 9, had arrived home after a holiday in New Caledonia with some shells and giant seeds that

Jesse had collected and been playing with on holiday.

While the items were being examined by Customs, Jean mentioned she worked at the Wallaceville Animal Research Centre at Upper Hutt. This merely elicited a groan. Jesse, somewhat aggrieved, leapt to his mother's defence, declaring her Zonta credentials.

Customs were unimpressed. They gave the shells back but kept the seeds.



1992 Dr Philippa Gerard

In 1992 Dr Philippa (Pip) Gerard was an entomologist at AgResearch, Ruakura Research Centre, Hamilton, a government-owned Crown Research Institute. She won the Award for her research on carpet pests and used the travel component of the Award to travel to research institutes in the UK and USA.

Zonta wished to give credit for the way that she managed to combine her career with the demands of family life. When her family of three were young she spent nine years on home duties but used five of those years to study for her PhD. Zonta's decision has been vindicated. She is still at Ruakura as a Senior Scientist and has devoted 35 years to the study of insect pests.

Her research took a major shift when the cessation of carpet pest research coincided with the arrival of the clover root weevil in 1996. This invasive pest threatened the livelihood of pastoral farmers throughout NZ. Since 2001, Pip has led the pastoral industry-funded biocontrol programme which has seen the release of a tiny parasitic wasp from Ireland to successfully control the clover root weevil.

Her main research interests are improving the control of pasture pests through natural enemies and plant defences. However recently she has also been involved in climate change projects.



ZONTA AWARD: 1992 Zonta science award winner Philippa Gerard, right, shares a joke with 1990 inaugural winner Jean Fleming after the award ceremony at Government House last night.

A scientist who has felt uncomfortable killing any living creature since she was a child, Dr Gerard, of Ruakura, won the award for her search-and-destroy work on carpet pests. Winning the biennial award

— for New Zealand's top woman scientist — has earned her a round-the-world air ticket, a cash prize of \$5000 and a commemorative medal.

Dr Gerard has, with two colleagues, been endeavouring to work out ways of protecting wool carpets from harmful insect pests without using methods that harm the environment.

Her research is three-pronged: seeking

to understand the pest biology, investigating the potential of natural products, and experimenting with putting insect-resistant substances in the carpet backing.

Should she be successful at eliminating insect pests, it would be a "short step" to also eliminating mites. And that could have enormous implications for people suffering from allergies and asthma, and in preventing flea infestations.

Photo DAVE HANSFORD

Down 5/5/92

DISCLAIMER

In this and a number of other articles the Award is referred to as being for the "top woman scientist".

This is misleading. The Award is not for a well established scientist but for an emerging scientist to assist in the further development of her career.

Above: This photo by *Dominion* photographer Dave Hansford illustrated an article on the front page of the *Dominion* on 5 May, the morning after the Award ceremony at Government House, where the presentation was made by Her Excellency the Governor-General Dame Catherine Tizard. Inaugural winner Dr Jean Fleming on (L) congratulates Dr Philippa Gerard.

Top award for bug researcher

● New Zealand's top woman scientist is leading the fight against bugs that like to eat woolly carpets

AS A nine-year-old in Christchurch Philippa Gerard would spend her time at the beach turning over stones to see what creepy crawlies she could find underneath.

Now she has been named New Zealand's top woman scientist.

"I was always interested in science," she told The Dominion Sunday Times just before receiving her award. "I had that drive. Ever since I knew there was such a thing as a scientist, I wanted to be one."

Now, Gerard, an environmental scientist at Ruakura with three children, she is able to say confidently that her love of science has endured — though she has very real concerns about the directions science appears to be taking.

Gerard won the biennial 1992 Zonta Science Award for New Zealand's top woman scientist for her research into ways of protecting wool carpets.

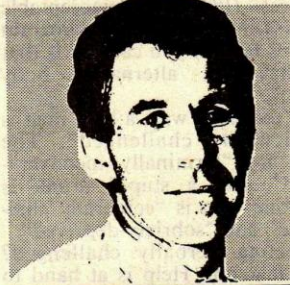
It's exciting research because if she can successfully repel insects it will be a relatively small step to eliminating mites — which could have implications for sufferers of allergies such as asthma.

It is also significant because New Zealand, which is the world's largest producer of carpet wools, has at stake exports worth more than \$1.8 billion a year.

And there is another element: Gerard's work is becoming increasingly urgent since Europe banned carpet proofing methods which engender wastes poisonous to water organisms.

She is attacking the problem

COMPILED BY



ALAN SAMSON

and Fisheries Ministry are "shell-shocked".

"There's been change after change, though hopefully it will get better."

Her concerns centre on the change of the old public science departments into crown corporations, in particular at the boundaries of new boundaries.

"I worry about local analytical chemistry work which crosses statutes but will be preferred."

"I suspect that it's preferred to work with



At Left: Upper half of *Dominion Sunday Times* article 10 May 1992 by Alan Samson. In the photo Dr Pip Gerard is wearing her Zonta medal, and holding the air ticket from British Airways, sponsor of the travel award 1990-1994.



Above: Dr Pip Gerard led the highly successful biocontrol programme using this tiny parasitic wasp from Ireland to control the clover root weevil. Photo courtesy of AgResearch.

Below: Article from *Evening Post* 5 May 1992

Wool-pest researcher wins Zonta award

EP 5/5/92

Winner of this year's Zonta Science Award Dr Philippa Gerard has found an environmentally-friendly way to protect wool from insect pests.

Dr Gerard, of MAF Ruakura's plant protection group, says it is vital to protect the international image of New Zealand's \$1.8 billion a year carpet wool industry.

Her team of four, all part-timers, have found a feasible and effective method after three years of study.

They have four more years to perfect the dry-proofing method and present it to carpet makers before Wool Board funding runs out.

The current water-based method of proofing wool has been banned in Europe because it produces wastes that are harmful to water organisms. Motherhood has proved no hindrance to the top scientist. Dr Gerard, who won the award from a field of 64 women, received it from Governor-General Dame Catherine Tizard at Government House last night.

She says the nine years away from her science career raising a family allowed her to develop in ways helpful to her work. "I've been back at Ruakura three years, and look what's happened."

Originally from mid-Canterbury, Dr Gerard gained a horticultural science degree with honours from Lincoln University, specialising in insect study.

She worked at Ruakura for about four years before having a family. "I did a lot of soul-searching and at



Dr Philippa Gerard — seeking environment friendly methods.

first thought my chances of recognition or international study had gone."

The time out enabled her to spend five years on a PhD, "and I never wanted to get into management, so I wonder whether I'd be much further ahead if I hadn't had the family."

Her three children aged 14, 12 and 10 had grown up with her research commitment. "They were preschoolers while I did my PhD."

Her prize of a world study trip will take her to research institutes in Britain and the United States for six weeks.

1994 Professor Jacqueline Rowarth CNZM CRSNZ

Jacqueline was born in the UK and came to NZ in 1976. In 1994 she had a PhD in Soil Science from Massey University and was conducting seed and plant research at AgResearch, Lincoln.

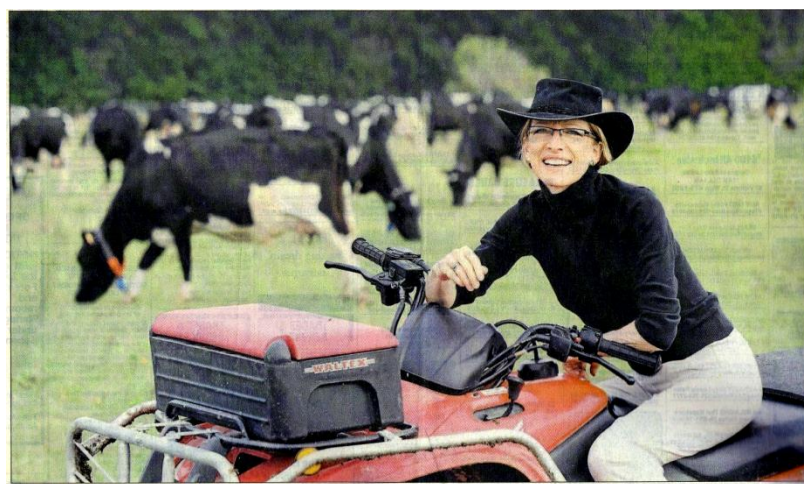
From 1994-2000 she taught Plant Science and conducted research at Lincoln University. From 2000-2004 she was Dean of the Postgraduate Division and Director of Research at Unitec, Auckland. From 2005-2007 she was Director of Research at the Office of Environmental Programmes, University of Melbourne, returning to NZ in 2007 to become the inaugural Professor of Pastoral Agriculture at Massey University. From 2002 to 2008 she was also a Director for the Crown Research Institute, Crop and Food. In 2012 she was appointed the inaugural Professor of Agribusiness in the Department of Economics at the Waikato Management School, University of Waikato.

Since 1994 she has had a distinguished career. In 1997 she received a NZ Science and Technology Medal and in 2001 was elected a Companion of the Royal Society of NZ (CRSNZ). In 2003 she was elected a Fellow and Honorary Member of the NZ Institute of Agricultural Science (HFNZIAS). In 2008 she was made a CNZM (Companion of the NZ Order of Merit) in the Queen's Birthday Honours and in 2009 she received the inaugural 'Agricultural Personality of the Year Award' by the Federated Farmers of NZ. In 2010 she was awarded the Landcorp Communicator of the Year Award by the NZ Guild of Agricultural Communicators and Journalists and in 2013 was listed in the top 50 Women of Influence in NZ. Since 2012 she has been a judge for the Zonta Science Award.

She remains committed to explaining the importance of science, agriculture and education – and encouraging others into careers where it is possible to 'to make a difference'.



At Left: Dr Jacqueline Rowarth wearing her Zonta medal and holding a bunch of yellow Zonta roses, with Her Excellency Governor-General Dame Catherine Tizard, at the Award ceremony at Government House on 9 May 1994.



Below: Equally at home on the farm.
(L): Photo from *Dominion Post*, 9 September 2010.
(R): Photo as columnist for *Waitomo News North King Country Farmer*, 3 June 2014.





This photo by Michael Smith appeared on the front page of the *Dominion* the following morning 10 May 1994.

Dr Rowarth examines mixed hilltop pasture on farmland near Wellington

Photo MICHAEL SMITH

Zonta scientist recalls professor's put-down

By ALAN SAMSON

NEW ZEALAND'S top woman scientist yesterday recalled trying to discuss postgraduate prospects with her professor and being told instead he "expected her to have children".

Now Lincoln College lecturer and AgResearch plant physiologist, Jacqueline Rowarth, 37, received the rebuff at Massey University in 1980, when she already held a first-class honours degree in agronomy.

Her response was to drop agronomy and turn to a welcoming soil science department.

Last night, she was named the winner of the biennial Zonta Science Award, which recognises outstanding women's research of value to New Zealand.

Her award was tremendous she told *The Dominion* yesterday, particularly at a time when fewer women students were coming into science. Less than 30 per cent of science graduates were female and about 10 per cent of post graduates.

Why? "Women's common conception of scientists is of men, bespectacled, white-coated, high IQs, with socks underneath their sandals ... science driven from some ivory tower."

Worse, the stereotype was being rammed home by silly television advertisements. "There are two on at present, men in white coats saying: I have discovered ..."

Dr Rowarth said they were geeks. "No self-respecting female would like to look like that."

It was also difficult in the current climate to promise work to aspiring women scientists.

Dr Rowarth's research is to find more efficient methods of plant production and includes the development of new plants sustainable in increasingly drought-affected east coast areas.

Experiments with plantains and garlic chives also promise worm-resistant qualities that could one day preclude the use of drenches.

Her award comes with a British Airways-sponsored around-the-world airline ticket, a gold and silver medal and \$5000 cash.

'Provocative, challenging' professor wins

MASSEY University director of agriculture Professor Jacqueline Rowarth has been named this year's Landcorp Agricultural Communicator of the Year.

The award, administered by the Guild of Agricultural Journalists and Communicators, recognises excellence in communi-

cating agricultural issues, events or information. It is judged by a national panel and regarded as the premier award for agricultural communicators.

Guild president Mick Calder said Professor Rowarth had always been a prolific speaker on the importance of agriculture to

the economy and particularly about the need to attract quality young people into education for all different facets of the agricultural sector. "She is always provocative and challenging as a speaker, and I am sure her students could not help but be stimulated and entertained."

Above: Article from *Dominion Post* 24 June 2010.

1996 Professor Wendy Nelson MNZM FRSNZ

In 1996 when botanist Dr Wendy Nelson won the Award she was working as a curator in the herbarium of the Museum of New Zealand Te Papa Tongarewa. Her specialty is marine algae (seaweeds) and the Award enabled her to visit major European herbaria and examine collections of NZ plants, made by early European explorers from the time of Cook's visit in the late 1700s, up until the early 1900s. These were located in Lund (Sweden), London and Dublin.

In 2002 Wendy moved to work at NIWA (National Institute of Water and Atmospheric Research) where she became Science Leader in Aquatic Diversity. NIWA runs a joint graduate school with Auckland University and in 2012 Wendy was appointed Professor in the School of Biological Sciences, Auckland University. She is still based in Wellington and her role at NIWA continues as Programme Leader in the Coasts & Oceans National Centre in Marine Biological Resources. She also leads the marine biodiversity and biosystematics research group.

For her contributions to science she was awarded the MNZM (Member of the NZ Order of Merit) in the Queen's Birthday honours in 2008 and FRSNZ (Fellow of the Royal Society of NZ) in 2010. Wendy's family includes a son and a daughter.



Zonta Award winner marine biologist Wendy Nelson pictured at Island Bay with her speciality - seaweed.

Local scientist wins award

Island Bay marine biologist Wendy Nelson has scooped top place in the prestigious national Zonta Science Award.

A curator in botany at the Museum of New Zealand Te Papa Tongarewa, Dr Nelson specialises in seaweed and marine algae.

She was presented with her award by Governor-General Sir Michael Hardie-Boys at Government House on Thursday night.

As well as receiving a silver and gold medal designed by Island Bay sculptor Tanya Ashken, Dr Nelson also received a round the world air ticket plus \$5000 cash.

She will use her prize to travel to Europe to see collections of historically important New Zealand plants collected from the time of Captain Cook's first voyage to New Zealand.

Dr Nelson says she feels "just delighted" at her win.

"The Zonta Science Award is extremely valuable in that it helps to raise the profile of scientists, particularly women scientists, and recognises their contribution to New Zealand scientific research in this country. Too many people still think of a scientist as a bearded man with spectacles wearing

a white coat."

Her principal task at the Museum is to study New Zealand's unique biodiversity and to make this knowledge available to a wide range of audiences.

"New Zealand's coastal and oceanic waters are 18 times larger than our land mass. Our marine environment is of vital economic importance through fishing and tourism and is a major recreational asset. Yet we still have only very basic knowledge of the algae that are the foundation of the marine food chains," says Dr Nelson.

continues pg 2...

At Left: Article from *Cook Strait News* 3 June 1996.


Below: Dr Wendy Nelson at the Award ceremony at Government House on 30 May 1996, being congratulated by previous winner, Dr Jacqueline Rowarth. The ceremony was hosted by His Excellency Sir Michael Hardie Boys.



Listener 13/1/96

Women in Science

POSITIVE ENERGY




Wendy Nelson

When Dr Wendy Nelson was given her first mask and snorkel as a 12 year old, she knew she had found her niche in life.

As a curator of botany for the Museum of New Zealand Te Papa Tongarewa, Wendy's specialty area of research is marine botany, which she says has been little studied in New Zealand despite the country's rich and interesting flora. "Part of our work is to understand and document New Zealand's biodiversity, and to gather and represent this in the Museum's collections. We have absolute treasures in our collections, for example plants dating back to Captain Cook's first voyage to New Zealand in 1768." Wendy enjoys the field work associated with her job which over the years has taken her to almost all the coastal areas of New Zealand including a number of offshore islands. She is also the Wellington co-ordinator for the Association for Women in the Sciences. "Being a woman in science can be isolating and so we get together to share our experiences and discuss our science. It is great to hear about the work of other women in diverse fields and a useful source of information and contacts."

ECNZ is proud to be the principal sponsor of the 1996 Women's Science Conference



ECNZ

McCanns WN

Above: An ECNZ advertisement from the *NZ Listener* 13 January 1996.

1998 Dr Helen Neil

Helen, a marine geologist/paleoceanographer at NIWA won the Award in 1998 for her research on climate change well before it became a hot topic. She was studying core samples three metres long obtained from the Chatham Rise in the Southern Ocean. Microscopic organisms extracted from these samples provide evidence of climate changes over the last 125,000 years.

Helen used the travel component of the Award to attend the 6th International Conference on Paleoceanography in Portugal in 1998 and to visit stable isotope laboratories specialising in marine climate analyses. She says that the Award was timely in that she was able to make key contacts with international scientists and these contacts have proved fruitful for further research.

Helen is now a group manager of NIWA's Ocean Sediments Group. Her present work focus is on the understanding and assessment of the transport of deep water masses, the impact of currents on sediment systems, depositional processes, and age validation and life history of NZ commercial fish species and NZ protected corals. Her expertise has been applied to seabed surveys, marine infrastructure, telecommunication cables, and ocean exploration. Maps of the ocean floor are now available covering an extensive area of almost 12 million square kilometres to depths of up to 11,000 metres.

Helen plays an active role in the NZ Marine Sciences Society and in 2014 is President. The Society has an annual award for an outstanding marine scientist. In 2007 this was awarded to Dr Wendy Nelson (1996 Zonta Science Award winner). Helen combines her career with family life.

Sea-going geologist wins Zonta science prize

Dominion 24 June 1998.

WELLINGTON marine geologist Helen Neil, yesterday named top woman scientist in the biannual Zonta science awards, was on board a ship in the Southern Ocean when she learned of her success.

Voyages to the deep south are a regular part of her work, studying aspects of global climate change for the National Institute of Water and Atmospheric Research.

Her recent voyage, on board institute flagship Tangaroa, was to the Campbell Plateau, 1555 kilometres south of Wellington, to collect sediment cores from the sea floor.

Her work involved extracting three-metre cores and analysing microscopic organisms to provide a chart of the climate during the past 125,000 years.

Dr Neil, 30, managed to get to the function at Government House on time to receive her award from Governor-General Sir Michael Hardie Boys.

But the break from work in her shipboard office, a containerised laboratory strapped to the deck, may be brief.

"[The work] is important because the Southern Ocean is thought to be one of the major driving influences of global climate," she said.

"If we can look at how the climate has changed in the past, we can compare it with today's climate and see if we find abrupt or dramatic changes."

Her research is part of a big



DON ROY

international project looking at climate change in the region.

The award, established by the Zonta International Club of Wellington to promote women in science, is held every two years. Dr Neil is the fifth recipient.

As winner, she receives a round-the-world air ticket, \$5000 and a medal. She said she would use her prize to visit two laboratories in the United States and to attend an international conference on paleoceanography (old ocean biological features) in Portugal.

Above: Article from the *Dominion* the morning after the Award ceremony with photograph by Don Roy.



Marine geologist wins award

MARINE geologist Helen Neil's work in the southern ocean is helping to build a global understanding of climate change.

Dr Neil, a marine geologist working at National Institute of Water and Atmospheric Research in Wellington, was on a ship in the southern ocean when she was told she had won the Zonta Science Award.

On Tuesday, back on dry land, she received the award from Governor-General Sir Michael Hardie Boys at Government House.

The award was established by the Zonta International Club of Wellington to promote women in science in New Zealand. It is held every two years, and Dr Neil is the fifth recipient.

As the winner, she receives a round-the-world air ticket, \$5,000, and a gold and silver medal designed by Wellington artist Tanya Asken.

The 1998 award is



Helen Neil.

sponsored by Wools of New Zealand, the John Ilott Charitable Trust, the Balivean Trust, the Sutherland Trust and BP New Zealand. There were 63 entries.

"In seeking a winner, we look for someone who shows excellence in her scientific field but also has the ability to be a role-model for future women scientists," says Alison Cook, science award committee convenor.

Dr Neil, who completed her degree and studied for her doctorate at

Waikato University, joined Niwa two years ago. Voyages to the southern ocean, on board the Tongatonga, are a regular part of her work.

Her recent trip took her to the Campbell Plateau, 840 nautical miles south of her office in Wellington, to collect sediment cores from the seabed. On board, she works in a laboratory in a container firmly strapped to the ship's deck.

Each sediment core is three metres long and the microscopic organisms found in the mud extract provide a chart of the climate over the past 125,000 years.

"This is important because the southern ocean is thought to be one of

the major driving influences of global climate," 30-year-old Dr Neil says.

"If we can look at how the climate has changed in the past, we can compare it with today's climate, and see if we find abrupt or dramatic changes in climate."

Dr Neil will use her prize to visit two laboratories in the United States and to attend an international conference on paleoceanography to be held in Portugal later this year.

Zonta is an international organisation for professional and business women, which aims to improve the status of women worldwide. There are 34 clubs in New Zealand.

Above: *Contact* newspaper article (25 June 1998), on the Award which lists all the sponsors: Wools of New Zealand, the John Ilott Charitable Trust, the Balivean Trust, the Sutherland Trust and BP NZ

At Right: At Award ceremony on 23 June 1998 with other Award winners. From (L) Dr Wendy Nelson (1996); Dr Helen Neil; Dr Jean Fleming (1990).



2000 Dr Michèle Prinsep

Michèle was a finalist in 1996 and 1998 so her success in 2000 was especially rewarding. Another notable achievement was that at the time of winning the Award she had an 18-month-old son. Michèle is an organic chemist and received the Award for her research investigating marine invertebrates and freshwater micro-organisms as potential sources of new pharmaceuticals. While clinical medicine is not eligible for a Zonta Science Award, this type of basic research falls well within the guidelines.

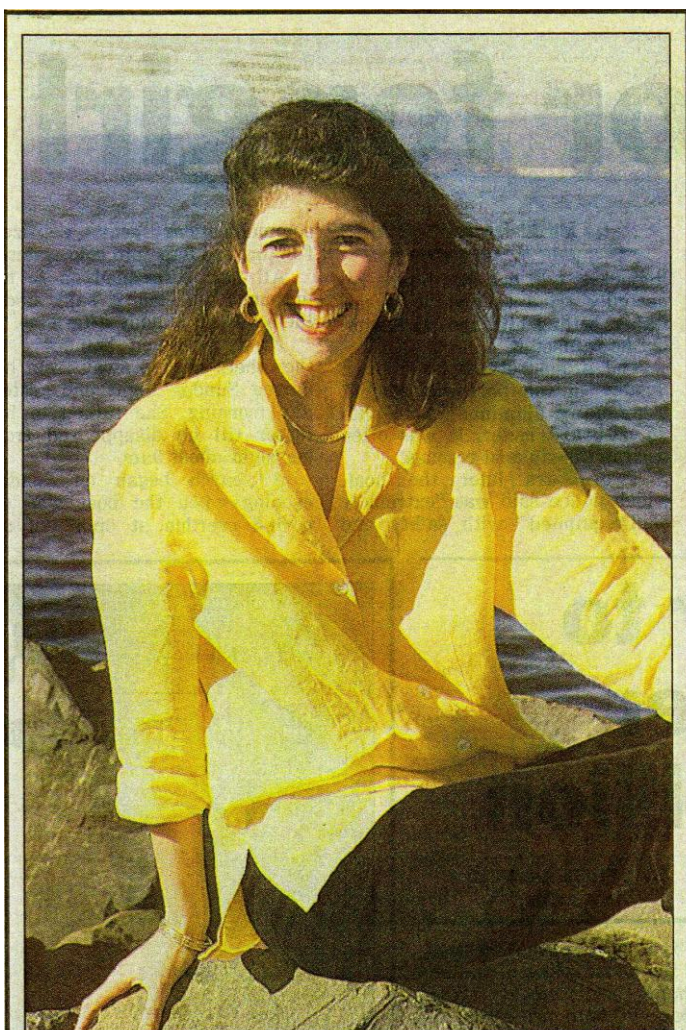
Michèle gained her PhD from Canterbury University in 1990 then in 1991 spent a postdoctoral year with Richard Moore at the University of Hawaii. On her return to NZ she took up a lectureship in the Department of Chemistry at the University of Waikato, Hamilton. In 1994 she took leave to study at the University of Cambridge in the UK and has spent other sabbatical periods in a variety of places including Australia, the UK and Singapore.

She is currently a Senior Lecturer in Organic Chemistry in the Faculty of Science and Engineering, University of Waikato. Her special interests include NMR (nuclear magnetic resonance) spectroscopy and natural products chemistry of marine bryozoans (moss animals) and cyanobacteria (blue-green algae). Samples are tested against tumour cell lines (looking for new cancer drugs) and a panel of micro-organisms (looking for other therapeutic compounds). Michèle has co-authored numerous research papers in this field and is a co-author of the eminent review in the field of marine natural products, published in the journal *Natural Products Reports*. She has consistently received grants from the Waikato Medical Research Foundation, the latest in 2013.

Michèle teaches both undergraduate and graduate students and has a special interest in communicating science, being heavily involved in outreach activities in the community. She is currently President of the NZ Institute of Chemistry.



Above: Dr Michèle Prinsep with the Governor-General His Excellency Sir Michael Hardie Boys at the Award ceremony, Government House on 3 April 2000.



HAANA HOWARD

Dr Prinsep, whose prize includes a trip to the US and Europe

Chemist's research wins science award for women

RESEARCH on tiny micro-organisms aiming to produce cures for diseases such as cancer has won Waikato University organic chemist Michele Prinsep New Zealand's top science award for women.

Dr Prinsep received the prestigious Zonta Science Award from Governor-General Sir Michael Hardie Boys last night. Her research involves the investigation of some of nature's tiniest creatures for potential pharmaceutical compounds.

The award is made every two years as an acknowledgment of the contribution of top women scientists and to promote science as a career for women.

Dr Prinsep, 35, the mother of an 18-month-old child, said yesterday that her research had had some success in identifying anti-inflammatory agents as

well as therapies that might affect tumour components.

But any use in drugs was "a long way down the track".

The exciting part of her work was that many of the organisms used chemicals naturally as a defence against predators.

Is there hope of beating cancer? "There are some types that aren't being cured but you can get a better quality of life," she said. "Look at testicular cancer. Not so long ago there was a 90 per cent mortality. Now, because of one compound they found, there's a 95 per cent cure."

With her prize, which includes a trip to Europe and the United States, Dr Prinsep plans to visit pharmaceutical companies and natural product laboratories to explore collaborative research possibilities.



Above: Michèle is congratulated by past winners at the Award ceremony.

From (L): Dr Wendy Nelson (1996); Lindsay Park (convenor); Dr Michèle Prinsep; Dr Pip Gerard (1992) and Dr Helen Neil (1998).

At Left: Article in *Dominion* the following morning Tuesday 4 April 2000 with photo by Haana Howard.

Below: Article from *National Business Review*, 28 April 2000.

The Achievers' Column

Scientist top in Zonta awards

Overseas scientists are often impressed at what New Zealand scientists can achieve on a "shoestring budget," says Zonta Science Award winner Michele Prinsep (pictured). The Waikato University senior lecturer and research scientist was named the winner of the Zonta award. Dr Prinsep completed a BSc (honours) and her PhD at Canterbury University and is a former Christchurch Girls' High School student. She carried out post-doctoral research at the University of Hawaii before her appointment at Waikato. The



Zonta Science Award was established by the Wellington Zonta Club in 1990. Awarded every two years, its aim is to acknowledge the valuable contribution of women scientists as well as actively promote science as a career for young women. Dr Prinsep, an organic chemist, said that like other New Zealanders, scientists use their ingenuity, and the "number eight wire attitude" to make the most of the resources they have available. Despite limited resources New Zealand produces high quality research. Her current research is investigating micro-organisms (cyanobacteria), and marine invertebrates (bryozoans), for potential pharmaceutical compounds, which may have a use in fighting diseases such as cancer. "Both these types of organisms have proven to be rich sources of compounds with interesting and potentially very useful biological activity," she said.

2002 Dr Julia Charity

Julia gained her BSc at the University of Canterbury then studied for her PhD in Plant Biotechnology at the Australian National University from 1993-1996. On her return to NZ she joined Scion, a Crown Research Institute for Forestry, based in Rotorua.

In 2002 she was studying the environmental risks associated with the transfer of DNA into plant species and used the travel grant to spend three months in Canada with colleagues working in this controversial field of genetic engineering. Later, a change of direction saw her moving away from bench science into project management. In 2009 she faced redundancy and after a couple of years in formal science Project Management finally left in 2011.

Not only did she leave Scion but she gave up her science career altogether. In July 2011 in a dramatic career move she started up New Zealand's Homestay Network called 'Look After Me', connecting travellers with like-minded hosts throughout NZ. Julia admits that the transition from scientist to entrepreneur was challenging but she has no regrets.

She now has time for other things that are important to her. There is the shared care of young daughter Alice after the amicable ending of her marriage. Performance poetry is a source of pleasure. She has done a creative writing course with a view to writing, when she has time, no doubt in a style far removed from that of past research papers.

She is an active member of the Zonta Club of Rotorua and is involved in a number of community activities.



Above Left: Her Excellency Governor-General Dame Silvia Cartwright with Dr Julia Charity at the Award ceremony at Government House, 30 April 2002.

Above Right: From (L): Jan Nye, President Zonta Club of Wellington; Dr Julia Charity and Lesley Dawson, convenor of Zonta Science Committee and sponsor.



Logo from the website of "Look After Me"

Dom 11/5/02



ANDREW GORRIE

Dr Charity in Wellington for her award last night

Discovery a step to designer trees

ROTORUA plant tissue specialist Julia Charity has capped off an evening where she was named New Zealand's top woman scientist with news of a breakthrough that could revolutionise forestry research.

Named as Zonta Science Award winner by Governor-General Dame Silvia Cartwright at Government House last night, Dr Charity reported that her Forest Research team had altered an agro-bacterium to carry dna with favourable characteristics into trees.

The ability to use a naturally occurring and plant cancer-carrying soil organism as a shuttle to introduce exact characteristics to a plant species had been mastered earlier in agriculture and horticulture, but not with trees, Dr Charity said.

"It's taken us five years. We had to create the right conditions in the laboratory to induce it [without the cancerous elements] to infect pine tree cells."

Research work involved trying to introduce sterility, negating the possibility of any unwanted gene-flow through pollen spread, and preventing the development of cones, so that energy from a tree went into growth.

The breakthrough also held out promise for development of frost or insect resistance, as well as of altering timber characteristics to enhance wood quality.

In the long term, it was hoped that trees could be developed to produce pharmaceutical or medicinal materials.

Dr Charity is soon to go to Quebec for three months' work with the Canadian Forestry Service.



Above: Article in *Dominion* 1 May 2002, the morning after the Award ceremony, with photo by Andrew Gorrie.

At Left: At the Award ceremony previous winners congratulate Dr Julia Charity.
From (L): Dr Michèle Prinsep (2000); Dr Julia Charity; Dr Wendy Nelson (1996); Dr Jacqueline Rowarth (1994).

2004 Dr Ursula Cochran

After graduating BSc from Victoria University, Ursula completed a BA from Auckland University, demonstrating her long-term interest in both science and art. She then went on to gain her PhD in Geology from Victoria University which led to her appointment as paleoecologist/earthquake geologist at GNS Science (Geological and Nuclear Sciences), a Crown Research Institute in Lower Hutt.

Ursula won the Award for her research using microfossil diatoms to study past climate change, sea level change, landscape evolution and changes due to past large earthquakes and tsunamis. The Award enabled Ursula to visit Western USA, travelling by road from Vancouver to San Francisco to meet key scientists and learn more about the identification of plate boundary earthquakes and tsunamis in the geologic record.

After taking time out to start a family Ursula has continued this work and has published a number of papers on her research. In 2010 she co-authored a paper with Dr Helen Neil (Zonta's 1998 Award winner) on marine sediment records. More recently she was part of a team that published NZ's longest earthquake record – 24 earthquakes over 8,000 years on the Alpine Fault.

Ursula contributes to a number of professional organisations. She says that her choice of career was probably influenced by the fact that her grandfather was a geologist and that she grew up a couple of hundred metres from the Wellington fault.

In 2004 Ursula shared the ceremony (below) with Helen Greenep who was awarded the first Zonta/Building Research Award. This initiative was repeated in 2006 and 2008 then discontinued.





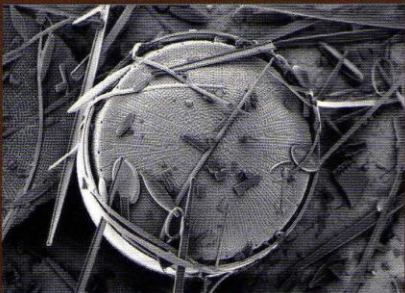
Above: From (L): Her Excellency Dame Silvia Cartwright; Clare Pinder, Zonta President; Helen Greenep; Dr Ursula Cochran; Lynn McKenzie, Governor, Zonta District 16 and a member of the Zonta Club of Wellington; Beverley Shore Bennett, Inaugural President of the Zonta Club of Wellington.



Above Left: At the Award ceremony at Government House, on 25 May 2004, winners and previous winners. From (L) Dr Jean Fleming (1990); Dr Wendy Nelson (1996); Dr Julia Charity (2002); Her Excellency Dame Silvia Cartwright; Helen Greenep; Dr Ursula Cochran; Dr Jacqueline Rowarth (1994).

Above Right: Her Excellency Governor-General Dame Silvia Cartwright; Dr Ursula Cochran wearing the Zonta medal and Marion Patchett, representing long-time sponsor, the John Iltott Charitable Trust.

Below: Wellington City Council publication *You Can't Beat Wellington!* Issue 4, July 2004.

Single-celled algae called diatoms - made of glass





URSULA COCHRAN

New Zealand is a world-class natural laboratory for earthquake research – every year thousands of earthquakes, most too small to feel, are recorded by seismographs around the country.

But there is still much to learn. The faultline that runs right through New Zealand remains an unknown source of GREAT (over magnitude 8) earthquakes and is the focus of study by Victoria University graduate and 2004 Zonta Science Award winner Dr Ursula Cochran.

Ursula leads a team of scientists at the Institute of Geological and Nuclear Sciences in their search for evidence of great earthquakes and tsunamis in the hunt for clues when they might occur in the future.

The Zonta prize will enable Ursula to travel to the United States, where she will meet leading specialists in her field. She intends to visit sites where evidence of past large plate boundary earthquakes and tsunamis have been preserved, and plans to present the results of her research at an international conference.

Ursula's recent work on the Alpine Fault was featured in a segment on TV3's *Campbell Live* current affairs programme on 22 July 2013.

2006 Dr Victoria Metcalf

Victoria graduated BSc (Hons) from the University of Otago and completed her PhD in Biochemistry at the Christchurch School of Medicine. Her qualifications as a marine biologist and geneticist led to the research for which she won the Award, studying lipid transport in Antarctic fish. The research was funded by FoRST (Foundation for Research, Science and Technology) and was based in the School of Biological Sciences, University of Canterbury, Christchurch. Victoria was interested to learn how Antarctic fish have adapted to their frigid conditions.

When not researching, Victoria could also be found as a cruise director and lecturer for Heritage Expeditions, sharing her passion and helping others to better understand the Antarctic environment. Science communication in the form of community and school/teacher presentations, social media, blogging, media articles and involvement in science festivals is something she continues to engage in to excite the public about science.

For six years Victoria lectured in animal genetics at Lincoln University. She describes her special interest as functional genomics, linking genetics, physiology and biochemistry to understand how animals function, especially in extreme environments. Her main research areas were the impacts of climate change, ocean acidification and pollution. In April 2015 she joined the office of the Prime Minister's Chief Science Advisor as National Co-ordinator for the Participatory Science Platform.

Her Excellency the Governor-General Dame Silvia Cartwright was not available to present the Award so the function was held at Parliament and we were honoured that the Prime Minister, the Rt Hon Helen Clark presented the Award. Victoria shared the ceremony with Caroline Shorter who was the 2006 winner of the Zonta/Building Research Award.

Nor'West News **NEWS** Wednesday June 28, 2006 Page 5

Award recognises ambassador for women in science

There may be few women working in science, however University of Canterbury postdoctoral research fellow Dr Victoria Metcalf has proven that women can excel in the field. Dr Metcalf received national recognition for her work after being presented with the Zonta Science Prize by Prime Minister Helen Clarke in Wellington recently.

The prize, awarded biennially by the Wellington branch of Zonta, includes \$10,000, airfares for international travel and a medal designed by Tanya Ashken. Since molecular biologist Jean Flemming won the inaugural award in 1990, the Zonta Science Award has helped outstanding women scientists to further their careers while also promoting science as a career for women. The international organisation aims to improve the economic, legal and political status of women.

Despite more women enrolling in biological science, Victoria said that by professorial level women's involvement plummets to just 8%. "It's very complicated and there is a lot of research being done into why women leave science," she said. Science can be a demanding profession, with scientists having to teach, serve on committees, apply for grants and conduct research and while many women became disillusioned, Victoria believes science would benefit from their input.

"Women tend to be more altruistic in their motivation," Victoria said.

The prize money will go towards a trip to Boston where Victoria will further her work examining Antarctic fish and how they have evolved to adapt to extreme cold. She will spend two to three months working in the laboratory of leading Antarctic fish biochemist and molecular biologist Professor Bill Detrich.

Understanding how Antarctic fish metabolise fat and adapt to cold will, in the long term, lead to predictions of how these fish will adapt to global warming. "We don't know much about the fat metabolism in those species or in other species in fact.

"Ultimately we're not just concerned about the fish down there, though they are very important, but it's what they can tell us about how everything else might cope too."

Victoria graduated from the University of Otago and completed her PhD (the Molecular Evolution of Serum Albumin in Non-Mammalian Vertebrate Species) in Biochemistry at the Christchurch School of Medicine.

At just 32 she is adjusting to being a role model for other women in science. While "it is a bit of pressure, you do feel a weight of responsibility" Victoria said "there is no point getting too worried, I'll just keep doing what I'm doing."

"The award recognises what I've done and the potential of what I can do in the future."



Zonta Science Award winner, Canterbury scientist Victoria Metcalf.

Above: Article from Nor'West News 28 June 2006.



Above Left: At the Award ceremony in the Grand Hall at Parliament on 13 June 2006. From (L): Prime Minister Rt Hon Helen Clark; Dr Victoria Metcalf, winner of the Zonta Science Award; Hon Luamanuvao Winnie Laban MP and member of the Zonta Club of Mana, who hosted the event; Caroline Shorter, winner of the Zonta/Building Research Award.

Above Right: Dr Victoria Metcalf is congratulated by 2004 winner Dr Ursula Cochran.



Above: Prime Minister Rt Hon Helen Clark presents Dr Victoria Metcalf with her medal at the Award ceremony.



Above and below: Victoria and her daughter courtesy of her Parenting by Instinct blog.



2008 Dr Deirdre Hart

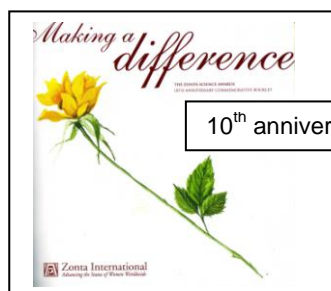
Deirdre studied for her MSc (Hons) at Canterbury and gained her PhD at UNSW Australia. She is a coastal scientist with a special interest in multi-disciplinary, multi-environment interactions. Research foci include coastal-earthquake multi-hazards and implications for built environments, river mouth lagoons on high-energy coasts, tropical reef sediment systems and tides. In 2008 Deirdre impressed the judges with her dedication to increasing public awareness and understanding of complex environmental issues. Thanks to her Zonta experience, Deirdre has been supported to develop her science communication and leadership skills and took up the role of NZ Coastal Society chairperson from 2011-2014. She sees it as her mission to help foster these skills in her students.

If there was an award for providing feedback on how the Zonta Science Award was used for the benefit of the recipient, Deirdre's exemplary and thought-provoking report would be a winner. She attended the International Coral Reef Symposium in July 2008 at Fort Lauderdale, Florida and after the symposium organised a two-day workshop on the integration of reef science. In April 2009 she spent a valuable month visiting the University of Cambridge's Coastal Research Unit (UK). She returned via Lisbon, Portugal where she attended the International Coastal Symposium. As a result of receiving the Zonta Science Award funds were made available from Canterbury University for her to visit colleagues in Korea. Deirdre values the collaboration with scientists in other countries.

She is a Senior Lecturer in Coastal Studies in the Department of Geography, University of Canterbury, Christchurch. In the post-earthquake flooding in Christchurch in March 2014 Deirdre's expertise was utilised and her opinions were widely sought through the media, TV, radio and press.



At Left: At the Award ceremony, Government House 27 May 2008. From (L): Her Excellency Lady Susan Satyanand; Wendy Saunders, 3rd and final winner of the Zonta/Building Research Award; Dr Deirdre Hart, 10th winner of the Zonta Science Award; His Excellency Sir Anand Satyanand. [Wendy joined Zonta, gained her PhD and became a convenor then judge of the Zonta Science Award. She also became a mother.]



10th anniversary booklet



At Left: With previous winners from (L): Back row: Dr Wendy Nelson (1996); Dr Victoria Metcalf (2006); Dr Jacqueline Rowarth (1994); Dr Helen Neil (1998). Front row: Dr Michèle Prinsep (2000); Dr Deirdre Hart; Dr Margaret Sparrow (convenor of judges); Dr Jean Fleming (1990); Dr Julia Charity (2002). After the ceremony we had a celebration dinner at the Wellesley Club. The guest speaker was inaugural winner Dr Jean Fleming.

My best job in the world

2008 Zonta Science Award

2008 Zonta Science Award recipient **Dr Deirdre Hart** is a senior lecturer in the Department of Geography at the University of Canterbury. Here she shares a little of her science journey so far.



Deirdre and Dr Margaret Sparrow at the Zonta awards evening.
Photo: Janine Davie

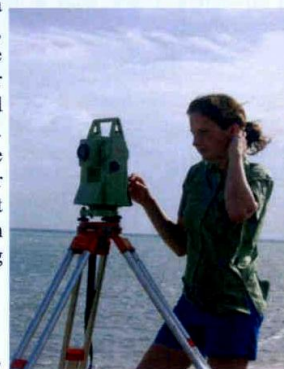
As an undergraduate student I was once confronted with the comment “It’s great that you are really into coastal studies but you realize you’ll never get a job working in the area” (Anonymous, 1997). Testing this ‘hypothesis’ over the last decade has been a productive process, and one which has saved me from advising bright aspiring scientists to choose ‘safe’ options over those that really challenge and excite them. Instead I advise “If you have a passion, follow it. Aim for your best career in the world and, more often than not, you’ll be fine”.

Born in Christchurch, I graduated with an MSc Hons from the University of Canterbury in 2000 and a PhD from UNSW in 2004. My passion is the dissemination and use of coastal science through environmental management, education and community engagement. New Zealanders are well placed to see the full significance of coastal science in everyday life. Living sustainably with these environments is central to the future of our society, a reality highlighted by the extreme seas and associated

flooding and erosion of the July storms this winter. We live in a true coastal nation, with 18,000 km of shoreline, the fifth largest exclusive economic zone in the world, and a tiny proportion of our land further than 100 km from the sea. Like many of our Pacific neighbours, we rely on our dynamic coast to moderate the climate, provide land-sea connections for transport and infrastructure, materials to construct our cities, food to nourish us and our economy, and as a buffer against hazards.

Central to my research interests are multidisciplinary approaches to examining coastal environments. This involves drawing upon principles from geomorphology, ecology, wave and sediment studies, environmental and hazard management to understand the functioning of coastal environments as a whole system. After years of technology-driven advances in increasingly specialised and fragmented areas of coastal science, I believe that integrative approaches provide one of the key tools for using this science to enhance our understanding of coastal environments over the coming decades.

The Zonta Science Award, from the Zonta Club of Wellington, has provided me an amazing science leadership opportunity. Using the award I will visit Cambridge University’s Centre for Coastal Research to develop new analysis techniques for studying rivermouth lagoons. Globally rare but common in NZ, these environments support internationally significant wetlands and are somewhat of a canary in the coal mine, reflecting the future sustainability of our rapidly-changing land and water use practices. Existing lagoon science does not predict their future under current pressures and I am working towards helping fill this gap.



Deirdre conducting coastal fieldwork.

Photo: Kristy Van Putten

Above: Newsletter Association for Women in the Sciences NZ Issue 3, September 2008.

In 2010 Deirdre added starting a family to her list of accomplishments and her daughter has given her an interest in science for young children.

2010 Dr Julie Lim

Julie is a NZ-born Chinese graduate of the University of Auckland. She completed a BSc and MSc with First Class Honours in Biological Sciences and gained her PhD in 2004. Her background in molecular biology and protein biochemistry equipped her for biomedical research and she was inspired to contribute to the study of age-related cataracts, the most common form of blindness in the world.

This work is based in the Department of Optometry and Vision Science at Auckland University. In 2007 Julie was awarded a FoRST (Foundation for Research Science & Technology) postdoctoral Fellowship. The Zonta Science Award enabled her to gain further experience overseas and obtain laboratory equipment. Her travel was delayed for a very good reason, the birth of son Hamish on 16 September 2010 and she also took maternity leave for Sophie born 18 November 2013.

Julie is now back as a Senior Research Fellow at Auckland University and has continued to attract funding. In 2009 she was awarded a Sir Charles Hercus Health Research fellowship and in 2012 her team received a major grant from the Auckland Medical Research Foundation.

Through this basic scientific work there will be a better understanding of the ways in which the lens is damaged by oxidative changes, thus opening the way to therapies to prevent or delay that damage, such as enhancing the delivery of antioxidants to this region of the eye.

One of Julie's other interests is ballet and for six years she served as President of the NZ Branch of Ballet Australasia.



Due to the refurbishment of Government House the Award ceremony was held on 25 May 2010 at Old St. Paul's, Mulgrave St, Wellington.

Above Left: Dr Wendy Saunders; Dr Julie Lim; Dr Hamish Campbell CRSNZ, keynote speaker, GNS Science.

Above Right: Colleen Singleton, Wellington Rotary, representing sponsor, John Ilott Charitable Trust; Therese, Past President Zonta; Dr Julie Lim.

At Left: From (L): Tanya Ashken, designer of the Zonta medal; Dr Julie Lim; Sue Moroney MP, Labour spokesperson on Women's Affairs and Dr Jackie Blue MP, National Government.



At Left: At the Award ceremony.

From (L): Dr Julia Charity, 2002 winner; Dr Jacqueline Rowarth, 1994 winner; Nicki Nicol, representing sponsor BP Oil NZ; Dr Wendy Nelson, 1996 winner; Dr Helen Neil, 1998 winner; Agnes Espineda, convenor, Zonta Science Committee.

Below: Fashion item from *Dominion Post* 30 June 2010.

WHO, WHAT, WEAR

Compiled by Carolyn Enting

Style chemistry



Alannah Hill dresses

Her dresses are feminine and dreamy. My favourite dress is called the "It's a shotgun wedding frock". It's pink, pretty and exquisitely detailed, with sequins throughout the fabric – the perfect dress for evening wear.

DR JULIE LIM doesn't fit the image of the stereotypical scientist. The 33-year-old award-winning molecular biologist is more likely to be dressed in jeans, shirt and boots than a lab coat, although she does wear the latter when conducting experiments.

Lim acknowledges people think of scientists as "nerds in lab coats" and "old professors wearing socks and sandals", but is happy to bust that myth.

Her office is the Department of Optometry and Vision Science at the University of Auckland.

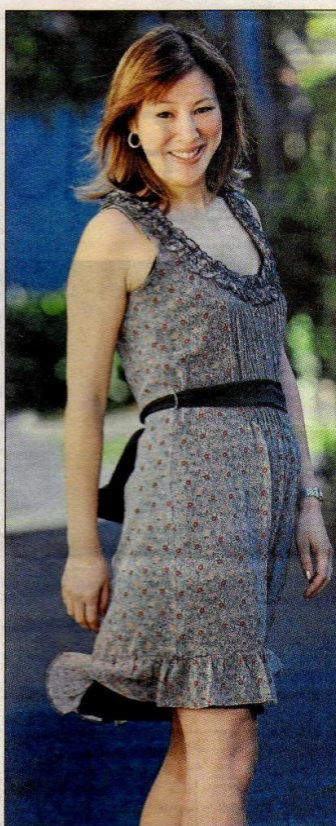
When she stepped forward to accept the 2010 Zonta Science Award, presented recently in Wellington, Lim set the tone for the evening in a figure-flattering black-and-white silk dress by Melbourne designer label Saba.

"We're not the most fashion forward people, but we're not terrible either."

"I like to dress up, and I do follow what's out there, but I don't try to dress to a trend. It just depends on what suits me," she says.

Her long-term goal is to develop an eye drop that will prevent people from getting cataracts.

The Zonta award of \$10,000 and airfares for international travel will go towards this research, and enable her to attend the International Congress of Eye Research in Montreal, Canada next month.



Scientific approach: Julie Lim is no "nerd in a lab coat". Photos: GRAHAME COX



Zonta medal

While this might sound unusual as a fashion item, it was recently given to me as part of the Zonta Science Award. It is a beautifully crafted silver and gold medal designed by Wellington-based sculptor Tanya Ashken, and can be worn either as a brooch or pendant.



Eyelash extensions

Throw out your eyelash curler make you look and feel amazing for special occasions. However, they are infilled every few weeks.



Stilettos

My favourite are my gold stilettos from Nine West. I love them because they add glamour to any outfit.

2012 Dr Anna Ponnampalam

Anna was born and schooled in Sri Lanka. When her family migrated to NZ she gained a Bachelor of Technology in Biomedical Science at the University of Auckland (2002) and a PhD in Gynaecology from Monash University (2006). She is now a reproductive biologist at the Liggins Institute, University of Auckland, a laboratory scientist, not a clinician.

The research that won her the Zonta Science Award involved investigating the underlying physiology of endometriosis, a common and painful condition in menstruating women and girls. However her research interests encompass many other aspects of women's health.

In April 2014 she spoke to the Zonta Club of Wellington about her current work on pre-eclampsia (toxaemia) a condition which has long-term effects on the mother's heart health. This research is supported by Gravida (National Centre for Growth and Development) and the Heart Foundation. Anna used the travel component of the Award to attend a conference in Italy where she was able to present her research on this topic.

Anna is the mother of two and is very active in her ethnic community. As one of the Tamil diaspora she writes a blog in her native Tamil language. She is involved in assisting refugee families to settle into NZ and in the work of Shakti dealing with domestic violence and cultural oppression.

Anna enjoys the teaching and supervision of students and actively promotes science through the LENSscience (Liggins Education Network) a programme linking schools and scientists.



Above top (L): Dr Anna Ponnampalam guest speaker at the Zonta Club of Wellington following her return from her trip to Italy. From (L): Anna; Agnes Espineda, Zonta Club President; Dame Margaret Sparrow, convenor Science Committee; Souella Cumming, member of the Science Committee.

Above bottom: Watched by her young son, Anna receives her medal from President Jen McKinlay-Birkin at the Award ceremony at Premier House on 6 June 2012, courtesy of the Prime Minister Rt Hon John Key. (It poured with rain!)

Above Right: Anna at the Award ceremony, scientist and mother.

From Gravida website
August 2013



Anna in her
laboratory at
the Liggins
Institute

New research fellow aims to better understand the fetal origins of heart disease

The early determinants of heart health will be investigated in a new joint postdoctoral fellowship awarded by the Heart Foundation and Gravida: National Centre for Growth and Development. The full-time position valued at \$240,000 over 3 years has this week been awarded to reproductive biologist Anna Ponnampalam B.Tech, PhD (Monash). Dr Ponnampalam says mothers and babies affected by pre-eclampsia during pregnancy are at higher risk of developing heart disease and stroke later in life.

Pre-eclampsia is a serious pregnancy complication characterised by high blood pressure and protein in the urine. It affects about 5% of pregnancies, and in New Zealand is most common in Maori and Pacific women. It is a major cause of maternal and perinatal mortality and morbidity. The only known cure is delivery of placenta and baby. One of the main features of pre-eclampsia is insufficient blood flow to the placenta," says Dr Ponnampalam. "My project aims to understand the role of a protein called Sirtuin I in regulating placental blood cells and vessel formation, how its mechanism of action differs in placentas from pre-eclamptic pregnancies and whether this molecule can be targeted as a treatment option for pre-eclampsia."

Heart Foundation medical director Professor Norman Sharpe ONZM FRSNZ says building "heart-healthy children" is a key strategic goal for the Foundation, which has invested over \$40 million in research. "We have funded over 180 fellowships and scholarships over 45 years. This is our first research investment into the early determinants of heart health. We're very pleased and excited."

Gravida director Professor Phil Baker, FRCOG, FMedSci, says the research sits perfectly with Gravida's goal of discovering what makes a healthy start in life. "This project will provide new knowledge of one the most important aspects for a healthy start – proper establishment of placental blood supply," Professor Baker says. "We are delighted to be collaborating with the Heart Foundation in this area of shared interest and look forward to future joint initiatives," he says. Gravida is a government-funded Centre of Research Excellence (CoRE) that brings together leading biomedical and clinical scientists seeking to reveal how conditions encountered in early life affect the way an individual grows and develops throughout life.

The jointly-funded postdoctoral fellowship will build on Dr Ponnampalam's work as a Liggins Institute research fellow investigating the placental regulation of a group of signalling molecules called cytokines in the initiation of labour.

She won the 2012 Zonta Science Award which aims to advance the careers of "all round women" who not only work in the scientific field but also contribute to their community.

2014 Dr Laura Green

Laura comes from Wisconsin, the dairy heartland of the US, where she attended the University of Wisconsin-Madison and graduated BS in Medical Microbiology and Immunology. In the US she worked in both private (Infogen Inc) and academic institutions (Wisconsin-Madison and Harvard Medical School) before taking the giant leap to NZ.

Arriving here in 2003 at the age of 23 she held research positions at Massey University and the Malaghan Institute of Medical Research in Wellington. In 2012 she gained her PhD in Cellular and Molecular Biology at Victoria University and became a Postdoctoral Research Fellow in Immunology at the Centre for Biodiscovery, School of Biological Sciences at Victoria. She is now a NZ resident and considers herself a Kiwi.

Laura was a member of the research team studying better ways to treat multiple sclerosis through the use of anti-psychotic drugs (resperidone and clozapine) in low dose. The Award enabled Laura to travel to Switzerland to work with an eminent researcher who has developed a new imaging technique that can visualise individual immune cells trying to gain entry to the central nervous system.

The judges were impressed not only with Laura's commitment to science but also her community involvement, notably her enjoyment of public speaking and her enthusiasm for competitive road cycling, which includes assisting with cycle safety programmes and cycling skill clinics. Laura is passionate about making science accessible to the wider public and is involved in a number of projects including the use of cartoons and film to make science more exciting. In August 2014 she was one of the inspirational speakers at a TEDx Wellington forum. For this event she proudly wore her Zonta medal. In 2016 she is back in the USA utilising her communication skills as a Scientific Programming Coordinator at the Fred Hutchinson Cancer Research Centre.



At Left: Agnes Espineda, Zonta President presents Neke Moa, jeweller, with a cheque for winning the competition to design a new medal.

Below Left: At the Award ceremony at Government House on 6 May 2014 His Excellency Sir Jerry Mataparae presents Dr Laura Green with the medal, watched by Lynn McKenzie, International President Zonta 2012-2014 and far left Dr Jilly Evans, gold sponsor.

Below Right: Dr Jilly Evans, gold sponsor, who came from the USA to speak at the award ceremony.





Above: His Excellency the Governor-General Sir Jerry Mataparae (centre) with invited schoolgirls from the Wellington area. To the (R) of the Governor-General is Dr Laura Green and to the (L) is Colin Walker representing silver sponsor, School Science Advisors Association. To his (L) and almost obscured is Dr Jilly Evans, gold sponsor. In the front row at far left is previous winner Dr Victoria Metcalf and to the (R) of her is Zontian Souella Cumming a partner of KPMG who sponsored 10 students to attend the Award ceremony.



Above: The official party from (L): Maureen Heine, Zonta District 16 Governor; Dr Janette Irvine, Lt Governor; Professor Sir Peter Gluckman, Science Advisor to Prime Minister; Neke Moa, jeweller; His Excellency Sir Jerry Mataparae; Dr Laura Green, winner; Dame Margaret Sparrow, convenor Science Committee; Dr Jilly Evans, gold sponsor; Lynn McKenzie, President Zonta International 2012-2014.



At Left: Laura's parents travelled from the US to attend the Award ceremony.

From (L): His Excellency the Governor-General Sir Jerry Mataparae, Dr Laura Green, her father, Mr Herman Green Jr and her mother Mrs Linda Green.

2016 Dr Amy Van Wey Lovatt

Dr. Amy Van Wey Lovatt was born in Southern Oregon, USA. In 2001 she completed her BA in mathematics, graduating Cum Laude from Willamette University, the oldest university in the Western United States. Amy completed her MA in mathematics at Oregon State University in 2004 then taught mathematics at a range of levels; from junior high students (aged 11-14) to postgraduate students at Oregon State University. In 2009 she came to New Zealand with an Earle Food Research Fellowship to study for her PhD conferred in November 2013. The subject of her thesis was “Mathematical models of biofilm growth and food particle degradation in the gastrointestinal tract” and it was recognised by the Dean of Massey University as an exceptional PhD thesis. Amy is now a Postdoctoral Fellow at AgResearch in Hamilton where she works collaboratively with the team studying Food, Nutrition & Health, using mathematics to describe the complex interactions between food, the commensal intestinal bacteria, and the human host.

Amy intends to use the travel component of the Award to visit prominent scientists in the Department of Food Science and Technology at the University of California Davis examining topics of particular interest to the dairy industry in New Zealand, such as the recovery of important bioactive components from agricultural waste and the development of better infant formula from a study of the differences between human and bovine milk and their effect on the microbiota of the infant intestinal tract.

Amy says in her essay for the Zonta Science Award, “What sets me apart from many successful researchers is that I achieved all of my academic goals as a solo parent. I started my tertiary studies when my son, Noah, was 18 months old, and I completed my PhD when he was 18 years old. There are many young women in New Zealand who find themselves in the place I was 21 years ago, raising a child or children alone, uneducated and with little prospects for the future. I believe my accomplishments set an example to all young women.” Amy is now a New Zealand citizen, married to Dr Simon Lovatt.

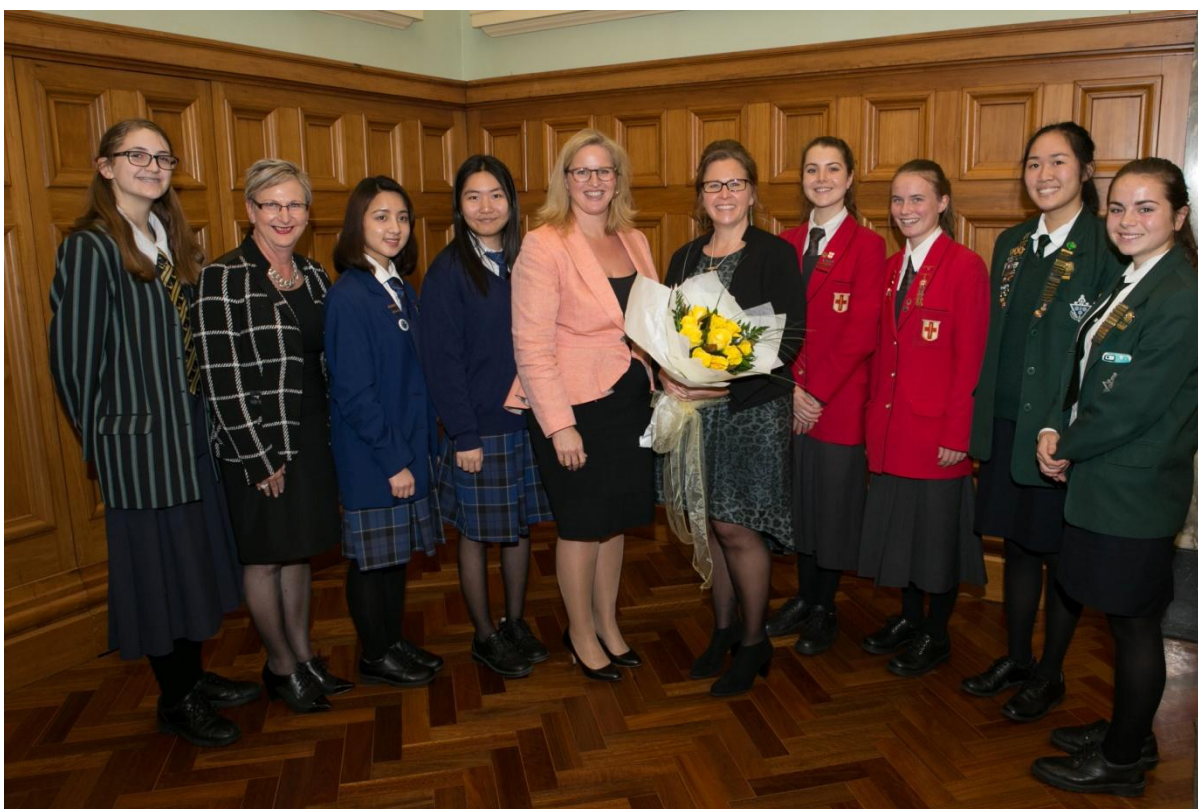
Amy is the first mathematician to win the Zonta Science Award and is a role model for others contemplating a career in the disciplines of Science, Technology, Engineering and Mathematics, often called the STEM fields, subjects where women are historically under-represented.



At Award ceremony from (L) Dame Claudia Orange, Dame Margaret Sparrow, Professor Mark McGuinness, winner Dr Amy Van Wey Lovatt, Christine Reardon-Stonyer fastening Zonta medal.



Sponsors from (L) Dame Margaret Sparrow, Istar Ltd, Souella Cumming, KPMG, Lee Wilkinson, representing the John Ilott Charitable Trust, Minister Hon Louise Upston, winner Dr Amy Van Wey Lovatt, Dr Shan Edwards daughter of Dr Diana Edwards in whose memory Istar Ltd is a gold sponsor, Dr Carol Shand, Director Istar Ltd. Insert at (R) is gold sponsor Dr Jilly Evans from the USA.



Students sponsored by KPMG From (L) Charlotte Hollywood, Queen Margaret College, Souella Cumming, KPMG, Anh Tang & Sylvi Low, Wellington East Girls' College, Minister Hon Louise Upston, winner Dr Amy Van Wey Lovatt, Jessica Beddow & Lucy Reichert, Chilton St James, Kivi Neakiry & Katie Reed, Samuel Marsden Collegiate School.

Sponsors – without whom this would not have been possible!

To help us get started we received \$5,000 from the **1990 Commission** and other support came from **United Bank, BP NZ Ltd, Progressive Enterprises Ltd, Boral Industries Ltd** and **Lane Walker Rudkin Industries Ltd**.

For the first three Awards the air travel sponsor was **British Airways** but when they retracted from New Zealand routes that funding ceased.

The **Balivean Trust** (the Charles Alexander Fleming Trust) sponsored the medals for the first six Awards. We also received grants from the **Sutherland Trust**.

The **John Ilott Charitable Trust** is our most enduring sponsor having contributed biennially since the first Award.

New Zealand Wool Board was a major sponsor for three Awards from 1994-1998 and **AgResearch** was a major sponsor for three Awards 2000-2004.

As well as sponsoring the first Award **British Petroleum (BP Oil NZ)** was a major sponsor for eight Awards from 1996 to 2010.

For 2004, 2006 and 2008 Zonta worked in partnership with **Building Research** who not only provided a three-year scholarship of \$75,000 for a PhD student but also supported Zonta with administrative costs.

In 2014-2016 the gold sponsor is **Dr Jilly Evans** PhD FRSNZ, an outstanding NZ scientist who has had a successful career in the US developing new pharmaceuticals. It was a great pleasure to have her participate in the Award ceremony at Government House on 6 May 2014.

The silver sponsor in 2014 was the **School Science Advisors Association**. In 2016 the Harbour city Rotary Club donated \$4,000 on the winding up of the Club.

Istar Limited in memory of **Dr Diana Edwards** became a gold sponsor for the 2016 Award.

The support of the members of the **Zonta Club of Wellington**, delegated through the Zonta Science Committee, is inestimable. Not only does the club provide many voluntary hours of expertise to administer the Award but the club makes a financial contribution each year from other fund raising activities. In addition the Science Award benefited from funds remaining in the Design Awards account when that enterprise ceased.

Individual members of the Zonta Club of Wellington have risen to the occasion when required. Lesley Dawson, the convenor of the Zonta Science Committee for the 2002 Award was responsible for sponsorship that year from **Hills Pet Nutrition New Zealand Ltd**. Agnes Espineda, has been responsible for sponsorship through **Tactics**. Souella Cumming has provided sponsorship through **KPMG** and is especially thanked for sponsoring secondary school students to Award ceremonies.

Sincere thanks and a yellow Zonta rose to all our sponsors.





Zonta International

Zonta International is a global organisation of executives and professionals working together to advance the status of women through service and advocacy. Zonta was founded in 1919 in Buffalo, New York and the headquarters are in Chicago, USA.

Worldwide there are over 31,000 members and more than 1,254 Clubs in 68 countries. Zonta has consultative status with United Nations agencies and has permanent observers at the United Nations in New York, Paris and Geneva.

The name Zonta is derived from a Sioux Indian word meaning honest and trustworthy. Zonta's symbol is a yellow rose.

The Zonta Club of Wellington

The Zonta Club of Wellington was the second to be founded in New Zealand, after Auckland. It was chartered on 19 May 1969. It is one of 28 clubs in New Zealand (District 16) and has approximately 40 members. Zonta members or Zontians volunteer their time and talents for many service projects locally, nationally and internationally.

The Aim of the Zonta Science Award

Historically women are under-represented in the fields of science, technology, engineering and mathematics (STEM fields) not just in New Zealand but worldwide. The reasons for this gender gap are many including attitudes and influences from home, school, workplace and society. Zonta aims to increase the diversity in career choice for women and does this through a celebration of women in science.

Women who have achieved a PhD have already demonstrated a commitment to science but in the first few years after gaining a PhD there is often a period where support is needed while establishing a career path. The Zonta Science Award is not for the 'top scientist' but for an emerging scientist who will benefit greatly from this support. An opportunity to travel and meet other scientists in their chosen field is therefore an important component of the Award.

A winning attribute is the ability to communicate science and in this way serve as a role model for younger women and girls considering science as a career. In reading the profiles of the winners in this album their commitment to science education is truly inspiring.

Although the Award is given to one person, the benefits to the wider community are far-reaching. Winners have all demonstrated a passion for their science and a willingness to share their knowledge not only with their peers but also with students and the general public. Zonta believes that increasing an understanding of science will help change attitudes towards science for the benefit of society.

Further information can be obtained by writing to:

The Convenor

Zonta Science Award

Wellington

Email: zontascience@gmail.com



Celebrating 45
years community
service in 2014.

Celebrating 45 years community service

Acknowledgements:

Special thanks to all the winners who have contributed to this record. Their commitment to science communication greatly enhances the value of the Award.

This album is a project of the Science Committee of the Zonta Club of Wellington, with thanks to Lynn McKenzie ONZM, Zonta International President 2012-2014; Barbara Pope, Area 2 Director 2012-2014, Janine Gould, Area 2 Director 2014-2016, Agnes Espineda, Wellington Club President 2014, Dr Jan Pearson, Wellington Club President 2015 and Rayoni Keith, Wellington Club President 2016.

Compiled by Dame Margaret Sparrow DNZM MBE, convenor of the 2014 and 2016 Science Committee and involved with the Award since its inception.

Other members of the 2014-2016 Science Committee: Brenda Cutress, Souella Cumming, Agnes Espineda, Martine Foster, Dame Claudia Orange DNZM OBE, Dr Jan Pearson, Sally Pulley, Christine Reardon-Stonyer, Olwen Taylor, Susan Taylor, Patricia Watts (PR & Communications), Dr Nancy Yerly.

Sources: *AgResearch website*, *AWIS Newsletter (Association for Women in the Sciences NZ)*, *Contact*, *Cook Strait Times*, *Evening Post*, *Dominion*, *Dominion Post*, *Dominion Sunday Times*, *Gravida website*, *Massey (Magazine for alumni and friends of Massey University)*, *New Zealand Listener*, *New Zealand Science Monthly*, *New Zealand Woman's Weekly*, *Nor'West News*, *Victoria University website*, *Otago University website*, *Waitomo News*, *Waikato University website*, *Wellington City Council*

Unless specified, photographs are courtesy of Zontians: Janine Davie, Lynn McKenzie and Dame Margaret Sparrow.

Yellow rose by artist Dr Kate Coolahan ONZM, foundation member, Zonta Club of Wellington.

Wellington
29 June 2016