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## About TENZ

Technology Education New Zealand (TENZ) is a professional network working to support and promote Technology education in New Zealand. TENZ:

- fosters the development of Technology in the New Zealand Curriculum;
- develops and maintains national and international links between Technology education professionals and with the wider technological community;
- supports professional, curriculum, and resource development in Technology Education;
- encourages research in Technology Education.
- organises a biennial national Technology Education conference.

To register for TENZ, visit [www.tenz.org.nz](http://www.tenz.org.nz).

## Top Technology Scholar

Lisa Holmes from Queen Margaret College in Wellington is the NZ Scholarship Top Scholar in Technology for 2006

Lisa's major project involved designing and developing a prototype for an 'ultimate' downhill mountain-biking uniform for a team of keen, young mountain bikers who regularly compete in downhill specialist events and night-time 'moonlight' races. The uniform uses cutting-edge materials and includes protective panels and sewn-in lighting for night-time visibility

Lisa received her award at the 2006 NZ Scholarship Top Scholar Awards held in

May at Government House, hosted by the Governor-General, His Excellency The Honourable Anand Satyanand, with Education Minister Steve Maharey joining the presentations.

Lisa's project is featured in the Techlink Student Showcase at [www.techlink.org.nz/student-showcase/materials/lisa.htm](http://www.techlink.org.nz/student-showcase/materials/lisa.htm)

[techlink.org.nz/student-showcase/materials/lisa.htm](http://www.techlink.org.nz/student-showcase/materials/lisa.htm)



# TENZ CONFERENCE 2007

Auckland  
02 to 05 October

Early Bird Registrations Closing Soon !!

We're into term 3 and the conference is now less than ten weeks away. Things for you to check on for yourself and your department in preparation for TENZ2007:

- Register before 20 August to receive early-bird registration benefits.
- Check out our website to identify the professional learning sessions that will best support your teaching programme.
- The HOD/Leadership day precedes the conference – details are on-line. Registering for the conference will lower the attendance costs.
- Check the programme for the variety of technologists from industry and the industry visits that are available. Register early to get your first preference.

Further opportunities are available for everyone to network with international and national colleagues and to make new connections through the social events, in particular the conference dinner. We look forward to seeing you all there.

*Kris Blewitt, TENZ 2007 Organising Committee*

[www.cce.auckland.ac.nz/conferences/index.cfm?P=11012](http://www.cce.auckland.ac.nz/conferences/index.cfm?P=11012)

## FROM THE CHAIR

## 18th PATT Conference report

In June, TENZ National Council Chairperson, Wendy Fox-Turnbull and at least 10 other Kiwis attended the International PATT (Pupils' Attitudes to Technology) Conference at the Faculty of Education at the University of Glasgow. Here's what Wendy has to say about the experience. This is followed by observations from Paul Tilley and Niall Dinning on page 3.

"Somewhere in the maelstrom that is Heathrow Airport rests a not so small light blue suitcase with several examples of never to be presented students' work, not to mention a camera recharger and download cable and all the clothes and jewellery I needed for a three week trip!! And yes I missed the bombing in Glasgow by six days and the bombing in London by six hours.

"Despite this stormy start, the PATT 18 conference was a stunning experience. The PATT conferences serve as an international forum for discussions on various issues related to technology education. The 'PATT family' as they describe themselves, are a group of technology education teachers, researchers and connoisseurs from over 27 countries around the world. When paper presentations began John Dakers, conference convenor and organiser reminded delegates that "Pidgin English" was the official conference language. This set the tone for a very supportive and informative atmosphere. I continue to have the utmost admiration for those who can present at an international research conference in a language that is not their first or even second language in some cases.

"For the first two days we were based at the University of Glasgow School of Education and treated to a number of seminars from the reasonably new but increasingly popular field of Technology Philosophy. Saturday morning saw a



*Wendy (top) and Vicki giving their conference presentations*

change of venue and format, and a number of new delegates. This second half of the conference consisted of three days of papers on technology education research from around the world. Only two papers were presented in any one session, which meant all presenters enjoyed a full audience and that delegates were able to attend a large number of sessions.

"Conference papers came from a wide variety of different countries and were on a range of different topics and themes. One of the issues that surfaced as a common thread is the debate about the place of technology in the curriculum and the practical versus theory issue. It was comforting to know that New Zealand is not the only country currently wrestling

with this. However despite this there was also a very strong feeling that although still young, technology education is thriving, exciting and continues to evolve.

"New Zealand was very well represented at the conference with Vicki Compton, Niall Dinning, John Gawith, Cliff Harwood, Geoff Keith, Judy Moreland and myself presenting papers and Barbara Knight, Peter Tilly, Claire Wood and Terry Wood also attending.

"During the conference I felt very proud to be a New Zealander. Papers from New Zealand were very well received and many other delegates commented to me on the strength and presence of New Zealand at the conference. Marc de Vries, affiliate professor at the Delft University of Technology and assistant professor at the Eindhoven University of Technology, both in the Netherlands, whose research initiated the PATT conferences was very complimentary about the current research undertaken in New Zealand and the approach and direction we are taking in the new curriculum, indicating that New Zealand is a world leader in this area. Marc is also currently editor-in-chief of the International Journal of Technology and Design Education published by Springer, in which a number of New Zealanders have published.

On Saturday evening we were also treated to an open-topped double decker bus ride around the main sights of Glasgow. The city is truly beautiful and welcomed us with a good dose of rain. A vivid memory is of the locals laughing heartily at the intrepid tourists in a topless bus in the pouring rain. This was followed by a civic reception in the amazing Glasgow City Chambers.

"Although this was an international research conference, it held a surprising mix of high-brow academia and 'chalk



*New Zealand delegates with John Dakers (right) and two Scottish dancers and a piper at the conference dinner*

face' child centred research papers. Without a doubt papers that showed examples and evidence of children's work were very well received which leaves me in good heart, knowing that technology education is all about children and their learning.

### **Peter Tilley's perspective**

*Peter Tilley, Technology Teacher from Geraldine High School, attended the PATT 18 Seminar and Conference as part of his New Zealand Sciences Mathematics and Technology Teacher Fellowship Year.*

"I arrived slightly apprehensive – here I was a Technology Teacher from a rural New Zealand school about to attend seminars led by many of the world's leading Technology philosophers and educators, people whose names I had only seen in books and journal articles.

"The first two days were divided into sessions where contributors to the book 'Defining Technological Literacy' talked on their chapters. Despite the big words I found these sessions fascinating and inspiring, I recommend reading the book as it really does pose questions about how, what and why Technology should be taught to our students.

"The theme of the following two-day conference was 'Technological Literacy' or 'Technological Capability' and many of the papers presented reflected this. One common theme that I found ran through

the presentations, and when talking to individual delegates was the high esteem with which the New Zealand Technology Curriculum is held worldwide. Indeed Marc J de Vries, one of the organising committee, singled out our Technology Curriculum as an example of excellence.

"The five days of the conference were not all work. Organised events included an open-top bus trip of the sights of Glasgow – an interesting mode of transport in torrential rain, a whiskey tasting, and the conference dinner with the piping of the Haggis and highland dancers.

"If you ever get the chance to attend one of these conferences I recommend you take it. It has certainly got my brain working overtime! Finally I need to acknowledge the Ministry of Research, Science and Technology for establishing the fellowship scheme and the Royal Society of New Zealand for administering it, for without them I would never have had the opportunity to attend this event.

### **Niall Dinning's comments**

*Niall Dinning is National Coordinator Technology Education*

"This international research conference was well attended with representatives from 21 countries including Australia, Sweden, the Netherlands, Belgium, Japan, USA, South Africa, Canada and the United Kingdom. The theme of the conference was Teaching and Learning Technological

Literacy in the Classroom. Most of the 54 papers presented provided relevant input into the position of Technological Literacy in the New Zealand curriculum. The research presented expanded the available theoretical and practical understandings of technological literacy from a wide range of perspectives.

"This conference was extremely relevant and important to the developing New Zealand Curriculum. The issues and points raised in a theoretical context are a part of our reviewed curriculum – i.e. we will be putting them in to practice. In fact our first efforts in this area were roundly applauded by the conference participants. Many of the world's leading technology education researchers are watching our curriculum and eagerly await its implementation.

The New Zealand Technology Curriculum development process has benefited through a stronger and wider input into the design we have settled on. A number of presenters have offered constructive criticism of the design while others have added to the theoretical basis for the work we are undertaking. Of particular interest is work being undertaken in Sweden. The Swedish presentations provided a number of specific approaches to support the delivery of the Nature of Technology strand and offered insights into wider programme issues associated with an aim of developing student's technological literacy.

### **Conference papers**

All the conference papers can be downloaded in PDF format from the conference page on the ITEA website [www.iteaconnect.org/Conference/pattproceedings.htm](http://www.iteaconnect.org/Conference/pattproceedings.htm)

## Recent developments in NCEA

Steve Bargh from NZQA has alerted us to a number of recent developments relating to NCEA.

### Exemplar DVDs

Before the end of July all schools will receive a set of DVDs providing a range of exemplars for NCEA L1-3 Technology Achievement standards. It is encouraging to note that a process for adding to these on an annual basis has been implemented.

### Submission date for Assessments

The submission date for material for external assessment is 7 November and teachers are reminded that that ALL submitted student material needs to be authenticated using the appropriate form.

### External assessor applications

Applications are now being taken for external assessors at all levels. The link to the application process is [www.nzqa.govt.nz/about/jobs/contracts/index.html](http://www.nzqa.govt.nz/about/jobs/contracts/index.html)

### NCEA enhancements

Full details of the recently announced 'NCEA enhancements' are now on the NZQA website.

- There is no change to the credit criteria for gaining NCEA at each level.
- Endorsement of certificates at Level 1-3 will begin this year and was one of a package of improvements to NCEA announced by Education Minister Steve Maharey in May.
- Students will require 50 credits at Excellence to gain an NCEA endorsed with Excellence, and 50 credits at Merit (or Merit and Excellence), to gain an NCEA endorsed with Merit.

Bali Haque of NZQA says that: "The

purpose of the endorsements is to encourage students to strive to produce work of a high quality and to recognise that achievement when it occurs. This will provide students of above average ability with challenging but achievable goals."

The certificate endorsement requirements were based on candidate achievement data from the past two years. This data shows that with a 50-credit requirement, a range of 17-26% of candidates across Levels 1-3 would have gained a certificate endorsement with Merit. The range gaining an Excellence endorsement would have been 3-6%.

The improvements to NCEA also include endorsement of subjects - to begin in 2008. Details of subject endorsement are expected to be finalised next month.

Further improvements announced for NCEA include reporting "not achieved". Currently "not achieved" results for externally assessed standards are reported on each student's results notice. From 2008, 'not achieved' results for internally assessed standards will also be reported.

The number of samples of student work that is moderated will rise from 3% in 2006 to a target of 10% from 2008. Full-time moderators will be appointed to NZQA to carry out this role. Final details are being worked on but interested technology teachers should watch the Education Gazette for the advertisement.

### More...

Find out more at [www.nzqa.govt.nz/news/releases/2007/170707.html](http://www.nzqa.govt.nz/news/releases/2007/170707.html)

## British Council August events

The British Council sponsors events that connect people in countries such as New Zealand with learning opportunities and creative ideas from the UK to build lasting relationships around the world.

Their latest Enewsletter promotes three events in August which may be of interest to technology educators.

Semi-Permanent is a one day conference in Auckland which aims to insert a 'flood of inspiration' into the New Zealand design community.

For Spring Thinking, The British Council teams up with Mandarin (NZ) and Futerra (UK) to explore why communicating sustainability issues is so tricky, and how behaviours can be positively influenced. A series of one-day workshops will be held in Wellington, Christchurch and Auckland bringing professionals and advocates together to explore the latest communications approaches and to share ideas and experiences.

The third event is a two day Digital Broadcasting Conference to be held in Wellington which will feature international keynote speakers, workshops, case studies, technology demonstrations and panel discussions addressing the question: how can New Zealand achieve diversity through digital broadcasting?

To find out more about these events and how to subscribe to the British Council's newsletter go to [www.britishcouncil.org/nz.htm](http://www.britishcouncil.org/nz.htm)

## Enterprise link case studies added to Techlink

Techlink has published a series of eight Enterprise case studies focusing on mutually beneficial teacher and business relationships.

These case studies show how teachers have benefited by having organisations interact with their students and illustrate how technological skills are relevant in careers and business practice.

### Garin College/Sealord

Garin College Technology teacher Jo Calt approached seafood company Sealord to ask whether one of the company's food technologists could come and help her out with her senior classes. This enquiry built a relationship that saw Sealord acting as client for her Year 13 class.

[www.techlink.org.nz/Case-studies/enterprise/Garin-sealord/index.htm](http://www.techlink.org.nz/Case-studies/enterprise/Garin-sealord/index.htm)

### St Patrick's College/SurveyLab



Leon and Jeremy from SurveyLab were eager to assist in St Patrick's College technology classes because it was their chance to 'give something back'. Their interactions with the class were highly successful. A presentation, which included some SurveyLab prototypes, was videotaped and has become a valuable classroom resource often used as support material for the students' own technological practice.

[www.techlink.org.nz/Case-studies/enterprise/st-patricks-survey-lab](http://www.techlink.org.nz/Case-studies/enterprise/st-patricks-survey-lab)

### Havelock North High School/Heinz Wattie's

Havelock North High School has long been an advocate of having industry representatives in the classroom. To enhance learning in the food technology class, food technologists from Wattie's interacted with students. The class also visited the factory on a field trip.

[www.techlink.org.nz/Case-studies/enterprise/HNHS-watties/index.htm](http://www.techlink.org.nz/Case-studies/enterprise/HNHS-watties/index.htm)

### Havelock North High School/Edges Framers

Technology teacher Jeff Arnold asked Edges Art Framers owner Suzi Merson to act as a client for his Level 3 class. Jeff had taught Suzi's son the previous year and she was delighted to give any help she could. The students benefited from being accountable to a client from outside the school gates.

[www.techlink.org.nz/Case-studies/enterprise/hnhs-edges/index.htm](http://www.techlink.org.nz/Case-studies/enterprise/hnhs-edges/index.htm)

### Gisborne Girls' High School/Basically Bush

Gisborne Girls' High School technology teacher, Wendy Webb approached Basically Bush co-director Sue Boot about working with her class. For Sue, not only was it good for Basically Bush to be seen as community-minded, but the link was a way to make the girls, and the wider community, aware of a local industry and what it does.

[www.techlink.org.nz/Case-studies/enterprise/GGHS-Basically-bush](http://www.techlink.org.nz/Case-studies/enterprise/GGHS-Basically-bush)

### Brokering links

Ken Hird of Wanganui Incorporated discusses the mutual value of classroom links with enterprise. Ken also offers perspectives on how to maximise the effectiveness of these links. This is illustrated with case studies on two Wanganui schools, Wanganui City College and Wanganui Girls' College.

[www.techlink.org.nz/Case-studies/enterprise/wanganui-inc](http://www.techlink.org.nz/Case-studies/enterprise/wanganui-inc)

### Tararua College/Meal Innovations

When organising a link to industry sometimes things don't go to plan. This was the case when Tararua College teacher Diana Eagle created a relationship with Meal Innovations, who agreed to be her 2007 class's project client, only to have her contact person leave the organisation. This case study shows that when things go wrong, if there is enthusiasm and commitment on both sides, the relationship can still thrive.

[www.techlink.org.nz/Case-studies/enterprise/tararua-meal-innovation](http://www.techlink.org.nz/Case-studies/enterprise/tararua-meal-innovation)

### St John's College/RML Automation



St John's College teacher Steve Andrew established a number of links with a range of industries in the Hamilton area for his senior technology classes. This case study focuses on benefits gained primarily through one of Steve's students' who was mentored by RML Automation Ltd.

[www.techlink.org.nz/Case-studies/enterprise/st-johns-rml/index.htm](http://www.techlink.org.nz/Case-studies/enterprise/st-johns-rml/index.htm)

## National Leader asks for opinions about technology education

In a podcast on his website, leader of the National Party John Key calls for views on plans to reintroduce trade training. Mr Key has requested that those involved in technology education contact him.

In a speech to the Employers and Manufacturers Association in June, Mr Key expressed a keenness to “fly the flag for trade and industry training in schools”.

“In National’s view, the technology curriculum should make it clear that schools should provide students with opportunities to learn practical hands-on skills like metalwork, woodwork, textiles or any of the many skill sets demanded by modern industry.” said Mr Key of the current curriculum.

Mr Key didn’t comment on the benefits of cognitive thinking, ability to plan, responsibility and effective communication, concentrating instead on students gaining practice experience in the workshop:

“National will fix the technology curriculum by ensuring it contains references to the need for students to make things, build things and produce things.”

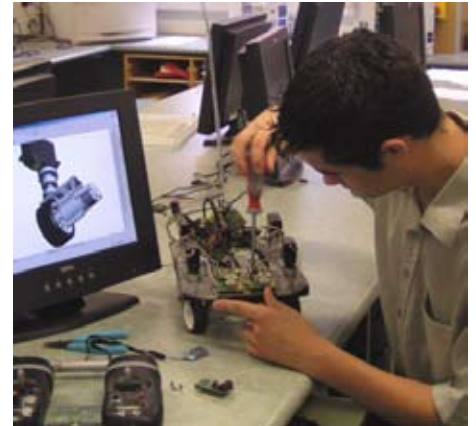
Mr Key’s speech has drawn significant comment. The Institution of Professional Engineers New Zealand (IPENZ) Chief Executive Andrew Cleland responded, “Where IPENZ would take issue with the National Party is what we see as the over-narrowing of their policy towards the manual dexterities. Within the trades areas, employers are looking for cognitive skills – the ability to solve problems, to investigate new ways of doing things and to communicate. Many say that they would rather schools developed these abilities, as the manual dexterities can be learnt in the workplace more easily than thinking skills.”

“We [IPENZ] think that the key to the success of technology lies in the basic

goals of the programme – using the context of the day to develop a broader technological literacy so that young people can adapt, pick up and use new technologies in fulfilling ways. When metalwork and woodwork were introduced, they were the contemporary technologies of the day. Technology education must embrace current and emerging technologies,” said Dr Cleland. TENZ Council Chair and Senior Technology Education Lecturer, Wendy Fox-Turnbull also responded to Mr Key’s speech. In her letter she wrote “in technology education, giving students problems that allow them to work within a specific technological culture or practice motivates them because they find it has direct and perceivable relevance to their work (technological literacy). Similarly, when children are given opportunity to solve technological problems through use of activities and practices that are authentic to or mirror a specific culture of technological practice, their knowledge and understanding of practices and issues are likely to be stronger. This is because they are able, through activity and reflection, to make connections to real needs, issues and practice within society.”

Such a policy could result in significant changes to the role of technology educators. Don’t miss the opportunity to have your say.

Mr Key’s podcast can be viewed at [www.johnkey.co.nz/index.php?/archives/175-VIDEO-John-responds-to-comments-on-trades-training.html](http://www.johnkey.co.nz/index.php?/archives/175-VIDEO-John-responds-to-comments-on-trades-training.html) and a transcript of his speech found at [johnkey.co.nz/index](http://johnkey.co.nz/index).



### Realise the Dream website

Realise the Dream is a prestigious five-day event which celebrates, rewards, challenges and showcases the work of extraordinary school students from all over New Zealand who have achieved excellence in research, and technological practice. The principal sponsor of this event is Genesis Energy.

Jonathon Platt was a participant at Realise the Dream in 2004 where he won the Institution of Professional Engineers New Zealand Award to travel to the Taiwan Science Fair in 2005. Jonathon is now in the third year of his Engineering degree at University of Auckland, specialising in Mechatronics. You can read more about what Jonathon and other young achievers are doing on the new Realise the dream website at [www.realisethedream.org.nz](http://www.realisethedream.org.nz)

<http://www.johnkey.co.nz/index.php?/archives/153-SPEECH-Putting-Trades-and-Industry-Back-Into-Our-Schools.html#c810>

Comments can be sent to John Key at [john.key@national.org.nz](mailto:john.key@national.org.nz) or posted on his website at [www.johnkey.co.nz](http://www.johnkey.co.nz)

## Bright Sparks competition time

Entry for this year's Bright Sparks Awards closes on 24 September.

Don't let your students miss this great opportunity.

The Bright Sparks Competition promises to add value to the work your students do in class and at home. Since 1998, students have been submitting all manner of projects with an electrical, electronics or computing/ programming theme to the Competition and hundreds of these young people have won prizes and recognition.

All entrants receive a Certificate, but the 50 or so who receive a cash prize each year from the \$5000 prize pool are naturally especially delighted.

Many of these winners submit projects also entered for Science and Technology Fairs, CREST and Young Enterprise – all programmes with which Bright Sparks has clearly established links. Many also submit projects that have been developed

over time with considerable effort in several different phases which have been linked together.

There are some additional features unique to Bright Sparks.

- mentoring assistance is permitted for projects, provided this is declared. As mentoring is a key driver for our hi-tech industry, this is encouraged.
- class or group projects are welcome, along with individual projects students have developed in their own time.
- Bright Sparks offers financial assistance to students who need it towards the development of their project.
- projects do not have to be complete or working; many incomplete projects

have won prizes in the past. Ideas and passion are given due weight in the judging process.

- projects are judged by and exhibited to industry. Students have the further opportunity to have themselves and their work recognised in this arena.
- there is no lower age limit, but students have to be currently enrolled in a New Zealand school or homeschool.

There are no separate categories for the competition this year. Entries will be judged over several age bands. Recommendations will be made to Realise the Dream from the Competition.

Closing date for reception of projects by ETITO is Monday 24 September. Enquiries to [rossp@etito.co.nz](mailto:rossp@etito.co.nz) for information or entry forms.

Get your students to visit [www.brightsparks.org.nz](http://www.brightsparks.org.nz) (The Bright Sparks Club and peer-mentoring forum)

## Potential to save trillions

A device that virtually eliminates earthquake building damage has won its inventor the Future Science and Technologies Award in the 2007 MacDiarmid Young Scientists of the Year Awards.

Geoffrey Rodgers, a PhD student at the University of Canterbury, has created novel technology to reduce building movement during shaking and eliminate the need for repair or rebuilding after a quake. These devices are (uniquely) small enough to fit inside building joints, cost only \$100 to \$200 each, and do not need to be replaced after an earthquake.

“My work is motivated by the need for a new design that will reduce the impact of major earthquakes and ensure critical services, such as water and hospitals, are maintained,” he says. “Relatively few lives were lost during big earthquakes in the 1990s in the United States, Japan and

Taiwan, however economic losses from each event topped US\$100 billion.”

His device provides a very low-cost solution to the large economic and social impacts of a major quake, and operates on the same principle used when children make spaghetti out of play-dough.

“In our case, we are forcing lead through the hole, not dough” says Geoffrey.

“Through careful design, this motion creates high resisting forces and dissipates large amounts of energy, helping to protect buildings fitted with the devices.” Experimental, full-scale testing and extensive computer modelling has shown 50-80% reductions in building

motion during a major earthquake.

While his research is continuing to further improve and refine these results, Geoffrey and his supervisors, Professor Geoff Chase, Professor John Mander and Dr Rajesh Dhakal, hope that these devices will ultimately be used in the building industry worldwide.

Geoffrey was awarded \$5,000 at a function in Auckland in June. The MacDiarmid Young Scientists of the Year Awards are organised by the Foundation for Research, Science and Technology (FRST) with Fisher & Paykel Appliances as principal sponsor. The Future Science and Technologies category is sponsored by the University of Auckland.

To find out more on this and other developments in New Zealand technological innovation visit the FRST website at [www.frst.govt.nz/News](http://www.frst.govt.nz/News)

## PICKERING PUBLIC LECTURE SERIES 2007

## Auckland International Airport – The Engineering Story



This year's Pickering Public Lecture Series features Steve Reidler, Auckland Airport's General Manager – Engineering, who will tell the story of its development, explain about how a modern airport functions, and the engineering that underpins it.

Auckland International is New Zealand's largest airport with \$100 million typically spent each year on engineering projects - work undertaken while the airport

continues with its normal operations.

Areas Steve will cover include:

- How Jumbo jets can continue to land while the runway is under repair
- How materials are salvaged & recycled
- Changes required to handle the new A380 Airbus
- New technology for landing in fog
- The new baggage handling system.

It's a lecture which will appeal to a wide range of people interested in engineering, technology, aviation history, security, business or travel. The free lectures are sponsored by IPENZ Engineers NZ and hosted by their local Branches.

### Lecture Schedule

1 August	Whangarei
2 August	New Plymouth
7 August	Dunedin
9 August	Hamilton
16 August	Tauranga
21 August	Wellington
23 August	Auckland
27 August	Napier
28 August	Gisborne
30 August	Nelson
4 September	Wanganui
5 September	Palmerston North
11 September	Christchurch
12 September	Greymouth

More information on the lecture series including venues and start times can be found at [www.ipenz.org.nz/ipenz/nzecal/pickering-lecture.cfm](http://www.ipenz.org.nz/ipenz/nzecal/pickering-lecture.cfm)

## Into the Dragons' Den

On a mild late July evening, eight groups of students from five Wanganui primary and secondary schools fronted up to a panel of local 'Dragons' to outline their projects and pitch for a share of \$1,000 seed funding.

Wanganui was one of the centres to benefit from a NZ Trade and Enterprise initiative combining classroom learning and participation in the community, including the commercial world. Co-ordinated by Wanganui Incorporated, the project encourages schools to work with parents and the community to create a rich, engaging and challenging learning environment.

Encouraged by a supportive audience of about 200, students from Durie

Hill Primary and Kai Iwi Schools, and Cullinane, Wanganui City and Wanganui Girls' Colleges enthusiastically promoted their enterprise activity and explained how the seed funding would be used. The remarkably high standard of presentation reflected well both on the quality of programming in the schools and the level of preparation by students and teachers.

Although not targeted at a curriculum area, the outcomes of the projects closely matched technology education objectives.



Project coordinator Jeni Rosenthal said the event provides students with the opportunity to boost their self confidence and develop communication skills. "For some students, particularly in the ESOL class, it was their first experience of public speaking. We were trying to make it both challenging and constructive... our dragons weren't breathing too much fire."

The enthusiastic response from all involved suggests that "Pitch for Profit" may well be an annual community event.

## Some home heating truths...

The RSNZ website recently had a feature on home heating in which New Zealand researchers spoke about zero-heating homes, indoor air pollution, the health effects of cold damp houses, and whether heat pumps are really good for the environment. Here are some excerpts...

**Nigel Isaacs, BRANZ Ltd, specialist in the use of energy and buildings:**

“About two-thirds of the energy used in the average New Zealand house is heating of water or air. Most of the water heating comes from electricity (75%) as opposed to about a quarter of space heating energy (24%). But other fuels can more readily supply heat, such as direct burning natural gas or wood. At present because so little of our house space heating comes from electricity, every new electric heater – whether an old fashioned resistance heater or a modern heat pump – adds to the electric load, and ultimately to the need for a new power station. One of the key energy questions we must face is how to best supply heated water and air – we need ways that will not require us to invest excessively in energy infrastructure. Do we really need to build a new power station or are there other ways we could go?”

**Professor Robert Vale, School of Architecture, Victoria University:**

“In New Zealand we’re living with over a million existing homes, most of which weren’t designed with energy efficiency in mind. If you want to keep your home warm, the thing that really works is insulation. It’s a cheap way to improve the energy rating of your home. It’s usually easy to add insulation in the roof space and under the floor. By making sure you’ve got a zoomm thickness under your house and in the ceiling, you’ll cut your energy requirement by up to 50%, depending on how well insulated the house was to start with. It works because it stops more of the heat that you’ve paid

for escaping from the house, and the added bonus is that it never goes wrong.”

**Associate Professor Simon Kingham, environmental geographer at the University of Canterbury:**

“Research has shown newer, better insulated houses appear to separate indoor from outdoor air. This is good for people who live in homes with no indoor source of pollutant and high ambient outdoor levels, but bad for other homes, especially those with unflued gas heaters, in areas of low ambient pollution levels. Homes with unflued gas heaters frequently have higher levels of nitrogen dioxide than other homes. In addition the hours of use of heaters is often related to the pollution levels.”

**Professor Philippa Howden-Chapman, public health researcher and Director of He Kainga Oranga, the Housing and Health Research Programme at University of Otago, Wellington:**

“Our community trial of 409 households all had a child between 6-12 with doctor-diagnosed asthma. They all used the kind of heating that’s normal in New Zealand: a two kilowatt heater – usually for one room in the house – or an unflued gas heater, as in one third of New Zealand households. The people who were randomly assigned to the intervention group got the sustainable heater of their choice – a heat pump, a flued gas heater or a pellet fire. Most people went for the heat pumps.

“We found that in the intervention group the temperature was raised one degree in the living room and two degrees in the

child’s bedroom. This was sufficient to improve the children’s health in terms of asthma symptoms, reduce the number of days off school and reduce the number of visits to GPs.”

### More...

More information on this and other technology related featured topics can be found on the Royal Society of New Zealand website at [www.rsnz.org/news/headlines](http://www.rsnz.org/news/headlines)

## BIG Science winners

On Friday 6 July the team from Otago Girls’ High School was announced as the winner of the 2007 Freemasons BIG Science Adventures, winning the grand prize of an expedition to the UK and remote eastern Greenland.

Year 13 students Peggy Russell, Annika Metua, and Susan Smirk – along with their film mentor Jinty MacTavish and teacher Wendy Dunn – wowed the judges with their quirky and original film on sex determination in fish “Spottie: the difference”.

The Otago team attended a week-long film school in Dunedin run by the University of Otago’s Natural History filmmaking unit, where the finalist students and teachers received special tuition to improve their film making skills.

To find out more about the competition and view the short-listed DVDs go to the Royal Society of New Zealand website, [www.rsnz.org/events/bigsci/2007](http://www.rsnz.org/events/bigsci/2007)

## Futureintech update

### Contract confirmed

With the recent signing of a second four-year contract, Futureintech now has NZTE funding until 2011.

Launched in 2003 as a response to low numbers of enrolments in technology, engineering and science courses, Futureintech has had enthusiastic support from schools, industry, and the teachers who make use of the resources it provides.

Tangible results are becoming apparent, with tertiary enrolment figures improving and several students crediting Futureintech with inspiring them in their career choice.

Futureintech Ambassadors in schools across the country provide curriculum support, help students to see the real-life applications of their study, and awaken them to varied possibilities.

Futureintech is grateful to all the teachers of Technology Education who have embraced the initiative and enabled it to flourish over the past four years. The team looks forward to continuing to work with New Zealand teachers and students over the next four.

### New faces

The team of Facilitators has expanded to eight with new appointments in the South Island. Colin Bell takes over from Neil Potter in Christchurch later this month, while Lynne Newell has taken the Dunedin based role. Futureintech is delighted to

welcome them both to the team.

### Ingenuity in the ICT classroom

Two very different but highly successful approaches to senior secondary ICT were demonstrated by St Patrick's College and Wellington High School on recent visits by the Futureintech team.

At Wellington High, Years 12 and 13 Information Science students work autonomously, developing a high degree of programming skill. Working to satisfy a client, the students develop a program or website of their own devising. Current examples include an automatic volunteer roster for Women's Refuge, and a program to establish individual carbon footprints.

Meanwhile, staff at St Patrick's College are absorbing ICT into the wider Technology curriculum. Reflecting the extent to which computer skills feature in the majority of workplaces, ICT appears as an integral element of the study of Technology. This can mean the use of PowerPoint presentations instead of written notes, or the manipulation of more creative programs such as Movie Maker.

Both schools are long-standing supporters of Futureintech and have made full and imaginative use of the initiative's industry connections to support the work of students and to demonstrate the wider importance of ICT skills beyond the classroom.

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