

Visiting **industry** professionals

2005 has been another year of action for top industry professionals involved in Futureintech's Visiting Industry Professionals (VIP) Scheme.

Initiated in 2004, Futureintech's VIP Scheme funds senior engineers, technologists and scientists to spend time in a university or polytechnic sharing their knowledge. The universities plan each visit, which usually includes guest lectures, research, course planning, and working with staff and students to show the latest developments in the private sector.

Brewing up a storm

Making the most of the VIP Scheme this year was Waikato University, who used the funding to fly in Dr Randolph Greasham, a former Director of Bioprocess Research and Development (USA).

Dr Greasham completed a three-day intensive Masters' course on industrial fermentation in July, working with MSc or MSc(Tech) students in the School of Science and Engineering. He presented three lectures, lead discussion groups, met with students studying biochemical engineering, and visited IRL Biopharm in Wellington.

According to Dr Janis Swan, the lecturer in charge, the students benefited greatly from the outside involvement.



Dr Janis Swan

"We always bring in industry people so students are exposed to what is happening in the industrial environment rather than just the academic aspect of the programme."

According to students, Dr Greasham was "very approachable and willing to talk about individual problems – something that is not always possible when you are working in a highly competitive industry."

New designs at Canterbury University

Meanwhile, Canterbury University have been using staff from engineering management firm GHD to help teach a new course on the integrated design of multi-disciplinary civil engineering projects.

Mark Milke from the Department of Civil Engineering says the teaching has focussed on real-world advice for students.

"They gave four one-hour lectures, and spent about 20 hours of tutorial time with the students. They also contributed about 16 hours of marking time and had many more hours behind the scenes preparing material and helping in organisation."

The innovative second year engineering course was a new topic on integrated and conceptual design. The students worked in teams to submit a conceptual design and costing for a microbrewery/restaurant on a rural site.

Students had to consider issues associated with water supply, wastewater, resource consents, consultation, roading, carparking, costs and scheduling. They were also asked to develop a poster along with their report, and a design showcase and competition was held recently.

The next round

At the same time as many earlier projects are finishing up, a further \$35,000 is available for up to seven new projects.

Applications for this funding are made by the host universities, and are due by 5pm on 25 November 2005.

Find out more on Futureintech's website, at www.futureintech.org.nz/VIP.cfm.

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More Ambassadors for Auckland

A new batch of young engineers, technologists and scientists will be working with Auckland schools after another successful Ambassador training day was held last month.

Futureintech Ambassadors are young people with a passion for what they do, and who have volunteered to help in classrooms on projects such as CREST and the Neighbourhood Engineers Award (see next page).

The training day covered the various projects Futureintech supports and what to expect in the classroom.

Auckland Ambassadors have been in big demand this year with a range of projects and activities underway:



Naval engineers talking to students at Tamaki College

- Several naval engineers have visited Tamaki College.
- Kane Alward, a mechanical engineer with Fisher & Paykel, has been demonstrating water pumps to students at The Gardens School.
- Environmental engineer Simone Stratton from Harrison Grierson Ltd has been helping Clevedon School students to install a sundial.
- Priya Kumar, an engineer with Metrowater, has helped Mt Eden Normal School win a merit award in the Neighbourhood Engineers Award for transforming a rocky hill into an attractive play area.



Carl Chenery **Mechanical engineer, URS, Auckland**

"I like solving practical problems and seeing tangible results. Science and technology is an essential part of understanding our world and how we can improve it."

"My job involves things like pipeline and pump design, building services, air conditioning, fire services and sprinkler systems."

"In the first few years on the job I'm trying to be a sponge. Soak up as broad an understanding as possible, and earn respect."

"I'm interested in sustainability, and I want to eventually be designing solutions that give more acknowledgement to Earth's limited resources and the way nature operates. Engineers need to learn to look for new ways of doing things so that we're being good for the environment, not just reducing or mitigating their impact."

"I'm involved in the "Future Leaders" programme, which has 60 of us between the ages of 17 and 25 working with the Excelerator programme at the University of Auckland Business School."

"Last month I went to the Philippines to take part in the first ever Eco-Minds Forum on Sustainable Development, which is backed by the United Nations Environment Programme (UNEP) and Bayer."

"We got to meet Filipino President Gloria Macapagal-Arroyo, be addressed by a number of senior UN people including Jeffrey Sachs, engage with other youth delegates from around the Asia-Pacific and visit local ecological sites."

Carl has been working as a Futureintech Ambassador with Mt Roskill Grammar School, helping Year 13 students with a unit on electronics and control technology.

NeighbourhoodEngineersAwards

David Henry School in Tokoroa has taken out the Neighbourhood Engineers Award for 2005, and with it a cash prize of \$2,000.

The winning project was developing a sun-safe sand pit with the help of local engineer (and Futureintech Ambassador) James Ravenscroft.

According to James, the project began "with a hole in the ground, a motivated teacher and a group of enthusiastic students".

After surveying their fellow students for ideas, the group decided to focus their project on installing some form of shade for the school's new sand pit. James then helped the students investigate and evaluate different options, build models, and learn more about the sun.

"I think the project has shone a light on engineering as a possible future occupation for the students, and given them an insight into what sort of work engineers do," says James.

"I believe that there is great

potential in the group to turn out some skilled future engineers."

Daphne Kirkby, the teacher in charge of the project, says having James visit the students regularly and keep in touch via email has helped to motivate the students.

"He asked excellent questions to draw forth more ideas and to help guide the project. He also set tasks to challenge them."

Merit prizes were awarded to Mt Eden Normal Primary School for their redevelopment of a rocky hill into a playground, and to St Kentigern College for their work on an alternative roading proposal for the Manukau City Council.

The Neighbourhood Engineers Award is sponsored by Transpower, and promoted in schools by Futureintech.



James Ravenscroft with students at David Henry School in Tokoroa

Howmuchareengineerspaid?

IPENZ's annual Member Remuneration survey is now into its 12th year, and is the most credible source of remuneration information for engineers and technicians in New Zealand.

The results from 2005 have been compiled and are now available for purchase via the IPENZ website www.ipenz.org.nz.

Some of the features:

- The median salary package for respondents was \$74,000, a slight decrease from 2004 but largely attributable to the increased number of graduate respondents. For engineers with the highest levels of responsibility, the median package is \$140,000.
- For recent graduates (with up to one year's experience) there was a \$5,000 increase in median salary to \$45,000, reflecting the strong demand for graduate engineers.
- 86 percent of all respondents (the same as last year) reported receiving an increase, while 50 percent reported receiving an increase of over \$5,000.
- For Professional Members and Fellows of IPENZ there was a \$4,000 increase in the overall median total remuneration for this group to \$97,000.
- Wellington salaries topped Auckland salaries for the first time. The responses suggest a gap between North and South island salaries, and a bigger spread in salaries in the cities when compared with the regions.
- The survey also showed relatively higher salaries for engineers than architects and accountants.

Futureintechnews

AgResearch launches campaign for more scientists

AgResearch is launching a campaign to attract more young people into science, saying New Zealand faces a shortage in the near future unless action is taken now.

AgResearch's Chief Executive Dr Andy West says his institute is doing its bit by launching a careers brochure and linked, information rich website, and by widely supporting the Science Fair movement.

Dr West says that around 48% of New Zealand's science workforce is likely to retire in the next 20 years, meaning approximately 7,100 scientists, research engineers and technicians will be needed in that time just to keep the scientific and technical workforce at its current level.

About a quarter of all New Zealand's scientists work at AgResearch, which carries out research to help develop the agricultural sector – our biggest industry.

Futureintech is helping by profiling AgResearch scientists in Tearaway magazine and organising a forum on science careers next year to look at science career promotion.

Promoting engineering to parents

Despite the best efforts of many young people to pretend otherwise, parents and caregivers are still the biggest influence on their career choice decisions. Which is why Futureintech is launching initiatives to inform parents and caregivers about the career possibilities in

a career in...

technology, engineering and science

A Futureintech guide for parents and caregivers

technology, engineering and science.

A guide for caregivers is now available, featuring information on the different career fields, the study options, and profiles of successful young professionals.

This publication is another step towards meeting the long term challenge of changing attitudes to careers in technology, engineering and science. Next year advertising aimed at parents will further push this message.

Contact Futureintech for a copy: enquiries@futureintech.org.nz, tel 0-4-473 2026

Flexitime – what it means for modern workplaces

Futureintech's latest Factfile and Case Studies focus on flexible working hours, as featured in the last edition of enews for industry, is now available. It examines how 'flexitime' can work, the possible benefits and pitfalls, and provides examples of New Zealand companies that have tried it.

Research from the UK shows that most companies with flexible working practices have found them cost effective, and actually increased their productivity. Other benefits include better retention, recruitment, staff morale, and great PR.

Once again, contact Futureintech for your copy.

Top scientist honoured



Professor Paul Callaghan was awarded the Rutherford Medal, New Zealand's premier science award, at the NZ Science Honours

Dinner at Te Papa last week.

According to the Royal Society, Professor Callaghan won the award not only for his work on nuclear magnetic resonance, but also for his leadership and communication of scientific principles to the wider community.

Professor Paul Callaghan is the Alan MacDiarmid Professor of Physical Sciences at Victoria University, Director of the MacDiarmid Institute for Advanced Materials and Nanotechnology, and the Sir Neil Waters Distinguished Professor at Massey University.