



## Welcome to the December 2006 CREST Newsletter

Kia Ora! Hello Everyone.

### News from the CREST Desk.

We have a new CREST administrator! A warm welcome to Evan Thorne.

Evan provides help and invaluable support for a variety of RSNZ programmes: CREST, Young Achievers, BP Challenge, Realise the Dream, Talented School Students Travel Award as well as helping with the various competitions organised by RSNZ. Evan's CREST work involves processing orders and payments, maintaining the CREST database (students, schools and approvers) as well as printing certificates and sending badges. Evan can be contacted at [evan.thorne@rsnz.org](mailto:evan.thorne@rsnz.org) or 04 4705765

### AgResearch Awards

AgResearch are offering two \$250 encouragement awards for CREST projects that best demonstrate any aspect of agriculture or life sciences. To apply for this award, please get your student(s) to write a letter describing their project to: Jessie McKenzie, National Manager of CREST, Royal Society of New Zealand, PO Box 598, WELLINGTON

### Futureintech Support

Futureintech has seven full-time facilitators in Auckland, Wellington, Canterbury and Otago, to engage industry support and to work with teachers, careers advisors, students and their caregivers. The Facilitators can help you with your CREST projects. Visit <http://www.futureintech.org.nz/facilitators.cfm>.


### CREST and the Gifted and Talented

CREST is particularly relevant for gifted and talented students. Students are given authentic experiences in technological practice or scientific investigation, working with consultants and experts from industry, carrying out projects focussed on finding creative solutions to practical problems that are of real significance in their lives. Students work at their own pace and to their own potential.

Refer to these sites to help develop a school policy on gifted and talented students:


 The National Administration Guidelines (NAGs) at

<http://www.minedu.govt.nz/index.cfm?layout=document&documentid=8187&data=1>

 Gifted and Talented Students: Meeting Their Needs in New Zealand Schools at


[http://www.tki.org.nz/r/gifted/handbook/index\\_e.php](http://www.tki.org.nz/r/gifted/handbook/index_e.php)

 The Extent, Nature and Effectiveness of Planned Approaches in New Zealand Schools for Providing for Gifted and Talented Students at <http://www.minedu.govt.nz/index.cfm?layout=document&documentid=8912&data=1>

 Initiatives for Gifted and Talented Learners at [http://www.tki.org.nz/r/gifted/initiatives\\_e.php](http://www.tki.org.nz/r/gifted/initiatives_e.php)

 Gifted Education Advisory Support – School Support Services at

[http://www.tki.org.nz/r/gifted/pedagogy/providers\\_e.php](http://www.tki.org.nz/r/gifted/pedagogy/providers_e.php)

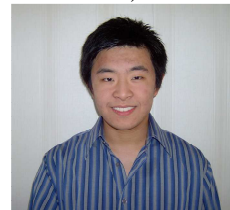
 Check out the articles for parents and educators from gifted education professional Dr Bertie Kingore. There are also learning activities available to download. <http://www.bertiekingore.com/articlesed.htm>

## Gold CREST Winner

In the October newsletter, we congratulated Benson Chen for completing his Gold CREST. Benson's project was **Ethnopharmacology, Entheology and Biotechnology** –Application of traditional techniques to solve new problems, and preserve ancient knowledge. Benson identified his **Aim, Need and Opportunity as being:** The purpose of this investigation is to apply traditional Maori plant and herbal medicines (Nga Rongao) to produce a natural product which can be used as an alternative to modern medicine. This will be done by looking at the ways in which Maori and early settlers to New Zealand used the native flora for its medicinal properties, and developing it into a cream or lotion suitable to sell and use, in an ongoing production process (a hypothetical outcome).

Benson writes:

“I was the recipient of the Gold CREST Award from the Royal Society of New Zealand earlier this month at the annual Science Honours Dinner. It was a pleasure and a great honour to receive the award in front of many distinguished scientists of New Zealand.



For my Gold CREST I worked on developing a ‘cosmeceutical’ based on native Maori herbal remedies for a chosen client. The project involved aspects of scientific enquiry in determining the antimicrobial properties of specific native plant extracts, and also the technological development of two products incorporating the native plant extracts. All in all, the project took approximately 18 months to reach completion but has the potential to be continued in the future. The New Zealand market has a niche for herbal remedy products so I will be considering taking this project further in the future.

Through the CREST programme I have also had the opportunity to work with many people in not only the science community but also the broader community. I have made valuable contacts that have remained even after the completion of the investigation. I worked with several consultants from several organizations and backgrounds. Working with Dr Graham Taylor at Shieling Laboratories in Onehunga, Auckland has given me a greater insight into the cosmetic manufacturing industry and has also shown me the opportunity for science and business to work in partnership. With his valuable knowledge and support I was able to develop a cream based product from initial concept right through to a functional product.

The aspect of my Gold CREST experience that I will remember the longest would be the willingness of people to assist and support me along my journey.

Working with the national CREST assessor Carol Pound was also an excellent opportunity as I was constantly challenged to improve the way I carried out aspects of my project. This ensured that the final product was of extremely high standard – the expected level of work for all Gold CREST investigations.

Gay Watson, South Auckland Facilitator for Futureintech is also such a person who assisted me along the whole project; putting me in contact with industry experts; accompanying me during site visits; and just being supportive the whole way through! I would definitely recommend CREST students make contact with the Futureintech facilitator for their region.

I would thoroughly recommend the CREST programme to any students and teachers in New Zealand. Today's science and technology curriculum is not only concerned with theory but also practice, and it is therefore crucial that science and technology students experience what they are learning in the ‘real world’. The CREST programme makes this happen as students are partnered with industry experts who provide advice and expert help in the student's own projects. Furthermore the CREST programme goes beyond the scope of the New Zealand curriculum by encouraging CREST students to develop networks with their chosen industry and experience real science and technology in action.”

Read more about Benson's project on <http://www.crest.org.nz/case.htm>. Benson was awarded his Gold Medal as part of the Royal Society of New Zealand's prestigious Science Honours Dinner on November 15th.

### Interesting sites for Gifted and Talented students

- Support for Students at [http://www.tki.org.nz/r/gifted/support/index\\_e.php](http://www.tki.org.nz/r/gifted/support/index_e.php)
- Studyit at <http://www.studyit.org.nz/>
- Future Problem Solving New Zealand at <http://www.fpsnz.co.nz/index.htm>
- The Royal Society of New Zealand at <http://www.rsnz.org/education/secstudents.php>
- Bubble Dome at [http://www.bubbledome.co.nz/bubbledome.asp?Action=Solve\\_it](http://www.bubbledome.co.nz/bubbledome.asp?Action=Solve_it)
- NEXUS Research Group: FUN Science at [http://www.nexusresearchgroup.com/fun\\_science/fun\\_sci.htm](http://www.nexusresearchgroup.com/fun_science/fun_sci.htm)
- NASA Quest at <http://quest.nasa.gov/index.html>

### News from NZIFST

- NZIFST Members can register for these courses at the IPENZ member rate Courses on Negotiation, Mentoring Project management, Finance, Ethics, Leadership, etc [www.ipenz.org.nz/ipenz/nzecal/ks.cfm](http://www.ipenz.org.nz/ipenz/nzecal/ks.cfm) or email [cpd@ipenz.org.nz](mailto:cpd@ipenz.org.nz)
- "FOOD - the challenges" NZIFST Conference 2007. Next year's conference will be held at the Wellington Town Hall from 19-21 June. NZIFST is now calling for papers - if interested please contact conference chairman Charles Brennan [c.s.brennan@massey.ac.nz](mailto:c.s.brennan@massey.ac.nz)
- Check out the NZIFST website <http://www.nzifst.org.nz/careers/unistudents.asp> for information about Careers in Food Science, Technology and Engineering.
- Check out <http://www.nzifst.org.nz/careers/secondaryresources.asp> for resources and experiments

### CREST and Young Designers

Visit <http://www.yda.org.nz/design-brief.asp> for ideas for technology briefs- and an extended use for CREST.

### CREST and EMAP

RSNZ is delighted to announce that the December EMAP newsletter is now online on the fresh new web site at [www.emap.rsnz.org](http://www.emap.rsnz.org). EMAP (Environmental Monitoring and Action Project) combines the delivery of NWP (National Waterways Project) and GLOBE (Global Learning and Observations to Benefit the Environment) and is funded through the Ministry of Education LEOTC fund. In this issue: Begin your planning for 2007 starting with our exciting upcoming events and competitions; Learn how to predict the weather by identifying clouds; Lots of interesting droplets of useful environmental information - and more.....

While online make sure you browse around the new website. The new website has case studies, resources for download, funding opportunities, and links to websites of interest.

EMAP activities can be the basis for inspirational projects for CREST Awards. Your students may choose to carry out an authentic, hands-on project and work in the field and in class. Their project can support community decision making and raise the profile of your school with media coverage and student action.

For ideas for projects linking CREST and EMAP check out: <http://www.emap.rsnz.org/EMAPnews2web.pdf>  
<http://www.crest.org.nz/botany-skool.pdf>  
and <http://www.niwascience.co.nz/edu/students/projects>

EMAP has regional coordinators who have extensive networks in their regions, so if you are looking for a consultant to support an environmental CREST project they may be able to help. Their contact details are available on [www.emap.rsnz.org](http://www.emap.rsnz.org) or email [aaron.fleming@rsnz.org](mailto:aaron.fleming@rsnz.org)

## CRESTing to Realise the Dream

Realise the Dream is a six 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, technological practice and problem solving. Go to <http://www.rsnz.org/education/dream/> for more information about this prestigious event.

This year there are 40 participants who have been selected to come to Wellington for six days of activities in December. It is a real achievement for the students involved as the organisers had over 80 nominations. You can find out more about the participants and their research on [www.rsnz.org](http://www.rsnz.org)

Read about the following students who have CRESTed their way to Realise the Dream.

Samantha Eagle Tararua College

[Soy Yog-it](#)

Jessie Lineham James Hargest College

[Dairy'n Riparian](#)

Sophie Zhang Palmerston North Girls High School

[Undercover](#)

Read about how Emily Webster, from St Cuthbert's College, is going to further her project [Which Trees have the best lungs for our planet](#), by continuing this experiment for her silver CREST Award as she believes that trees should have an 'oxygen rating'.

## Student Showcase

Check out <http://www.rsnz.org/education/showcase/> for three new profiles.

## Some interesting websites that could generate CREST projects....

New Gamma on **Battery Electric Vehicles**. This, and other Gammas can be found at <http://www.rsnz.org/education/gamma/>

**About Science** An interesting web site : <http://www.senseaboutscience.org.uk/index.php/site/about/11/>

**Seaweeek 2007**. Go to <http://www.seaweeek.org.nz/> for further information.

**Toys** are a great way to learn about science, engineering, and the design process! As girls and boys create a toy or game, they experience engineering as a fun, creative, collaborative process, relevant to everyday life. Try this website for some ideas for possible CREST projects <http://www.TOYchallenge.com>

## CREST and Personalised Learning

What is personalising learning? A 21st century education system must be responsive and flexible to ensure every young person can achieve their potential and be set up for lifelong learning. Personalising learning provides a useful framework to connect the many good things we do now in education while preparing our young people for their future. Personalising learning succeeds when students know what they know, how they know it, and what they need to learn next. By personalising learning we are involving all of the New Zealand's education system in ensuring that our children and young people are successful.

- Children and young people will know how to take control of their own learning.
- Parents and family/whanau will be partners in their children's learning.
- Teachers will have high expectations of every student, know how they learn and adjust their teaching to meet students' learning needs.

Go to [http://www.tki.org.nz/r/personalising\\_learning/](http://www.tki.org.nz/r/personalising_learning/) for further reading.

## 2007 Freemasons BIG Science Adventures

This a nationwide DVD competition for Year 11 to 13 students sponsored by Freemasons New Zealand in association with the Royal Society of New Zealand

**Win a trip to Greenland - here's what you have to do ....**

- Get together a team of three students and a teacher (to act as advisor and facilitator only, but not to be actively involved in the production of the DVD)

- Produce a five-minute DVD on a local climate and/or energy story – use your own ideas but here are a few examples to get you started:
  - a local wind farm
  - scientists researching the impacts of climate change in your local area
  - energy saving devices in the home – are retailers encouraging people to buy energy saving goods?
  - Can we conserve energy by careful driving or monitoring usage in the home?
  - Impacts of flooding, landslips, erosion
- At the end of the DVD, record each team member (no more than 30 seconds each) talking about his/her individual contribution to the DVD and the research and why we should choose your team for the film school.

Six winning teams will have the opportunity to attend a **week-long science film school in Dunedin in June 2007** run by the University of Otago's Natural History filmmaking unit. The students and teachers will receive special tuition to improve their skills and they will be set a task from which we will choose the winning team. A graduate from the Natural History Filmmaking course will join each of the teams to help with the exercise.

**The Big Science Adventure of 2007 is a trip to Greenland** where the winning team will produce a ten-minute documentary focussing on climate change issues. This will be used widely as an educational and publicity resource. They will have substantial assistance from the film mentor to produce this documentary. All expenses will be covered for both the film school and the expedition.

Each school may submit **two** entries, which must be endorsed by the Principal. The teachers must be in a position to take up the Prize if selected, and able to cope with the possible physical demands of the expedition. A different teacher must be assigned to each team.

All the competition guidelines and further information is available on the RSNZ website at <http://www.rsnz.org/events/bigsci/>. On the website you'll find a competition checklist which lists all the forms that need to be returned with the DVD entry. Please make sure you read all the instructions carefully and please contact Faith Atkins ([adventures@rsnz.org](mailto:adventures@rsnz.org)) at the Royal Society if you need to clarify anything.

### **CREST Surveys**

We are looking at ways CREST has impacted on the teaching and learning processes and have initiated pre and post CREST student surveys. We also have a web-based survey for our CREST teachers. We would appreciate you taking the time to complete the surveys and sending them back to us.

**There is always an open invitation for you to contact us to tell us about your CREST experiences and/or for us to answer any of your queries.**

**We look forward to hearing from you.**

**We look forward to working with you in 2007.**

**We extend the Season's Greetings to you and wish you a most relaxing holiday.**

☺ **Jessie and Evan**