Its been a busy week in the School, watching the thermometer rise beyond legal limits... the perfect prompt to make an EFTS grab from the Chemistry Department by stealing their swimming pool plans and implementing them in the new atrium.

In 11th hour changes to the building plans, the ground floor will now feature an Olympic length lap pool. At the end of the pool, nestled behind the tropical gardens, will be the only bar in a New Zealand University that can be accessed only by swimming. Beyond the bar, will lie a small artificial beach, with direct access to the marine biology labs for the inspired. The atrium roof will retract on sunny days to allow us all to get a decent tan when the temperature soars.

Continuing staff will have automatic access to the complex. Dress code for the complex will be at least a bikini for women and a mankini for the guys. A lab coat should be worn to the pool edge. PLEASE NOTE: Enclosed footwear will, naturally, still be required in the complex at all times to meet OSH requirements. Safety glasses may be replaced by snorkelling gear if the snorkel mask has been approved by Selwyn or Bill.

All students* enrolled in at least 3 Biology papers will have automatic access to the pool complex and those entering the Honours stream qualify for a free Pina Colada or Tequila Sunrise in every Friday’s Splashy Hour.

*BCHM students will only be granted entry if they enrol for BIOL209 and can perform cartwheels.

I hope everyone had or is having a good break.
Happy New Year, Juliet :-)

In other news... Check out the latest book from SBS @ www.jackheinemann.com

Recent publications


and now for something completely different.....

Heard in the tearoom:
"I've grown some golden beetroot". "Wouldn't they be turnips?"
We look forward to a busy and exciting year (as my room trembles from building activities!) as we welcome new staff, a new VC, a new PVC and watch our research building taking shape. Shame about the mirage in last weeks newsletter - Juliet must have had too much sun - still it is a watch this space for the atrium in the new building!

Welcome
Please say hi to Andrew Winther our new Electrical and Electronics Technician who starts today and can be found in Room B638.

Congratulations to all those awarded UC Postgraduate Scholarships; Belinda Guo, Sarah Coxon, Cecilia Romo, Claudio de Sassi, Anastasia Shchepepkina, Ryan Catchpole, Rathishri Chandurvelan, Rocío Jana.

Congratulations also to those awarded Special Prizes:
Pilgrim Prize - Jane Gosden
Percival Prize - Jane Gosden, Ellen Hume, Rachel van Heugten, Jemma Simon-Stewart
Makepiece Prize - Ellie Butcher
Tom Anderson Memorial Trust Prize - Bridgit Kopetschny

Congratulations are also due to the four staff who were successful with Brian Mason Grants; Dr Jon Harding, Prof Dave Kelly (2), Dr Jim Briskie, Dr Chris Glover. Congratulations also to Dr Jennifer Gillette and Dr Colin Burrows whose applications were supported by the School.

We will continue with Newsletters this year and I will continue to try to encourage people to put items into this rather than emailing around the School in an effort to reduce email traffic. Occasionally items will be more urgent and a School email will result.

Happy New Year and best wishes for 2009
Paula

Building update
Stairwell has been built. No-one knows if this one leads to heaven... Walls for the first floor are beginning to emerge.
More on the atrium...

The announcement of the pool complex in the atrium has caused some considerable excitement on campus, with questions flooding in. Answers to frequently asked questions below:

**What about the egg? What will that space be used for?**

This area is still being debated. The current front running suggestion is to make an "ideas hatchery" for group learnings. The egg will have a fractal dimension and include lots of "eggcellent ideas" ovine spaces, each of which will fit 6 students. Egg shaped stationery, loud speakers and plasma screens will be available throughout the area to ensure that ideas are hatched in multidimensional media space. Artist's impression below.

**Recent publications**


**Latest theses in the school collection**


A short week this week - for those new to New Zealand and all others who'd forgotten Friday is Waitangi Day and a public holiday.

This year marks the 200th anniversary of the birth of Charles Darwin (12 February 1809 – 19 April 1882). The BioEd Conference - Evolution in Action - starts in Christchurch next week and is the forerunner of a number of activities that will occur over this year to celebrate Darwin's "Origin of the Species" and his proposal that all species of life have evolved over time from common ancestors through the process he called natural selection.

It is pleasing to see so many staff engaging in the 15 point discussions - we need a programme of teaching that is comprehensive and coherent while recognising that we cannot possibly cover all aspects of the Biological Sciences.

~Paula~

Building update
The first floor roof is nearly complete.

Our Newest Staff Member - Andrew Winther
I'm a born and breed Wellingtonian. Go the Hurricanes.
I commenced my career as a trainee Science Technician at the DSIR (later ESR), Wellington. There, I spent 15 years working and studying within the Toxicology Group, principally involved with the breath alcohol measurement team.

Afterwards I did the obligatory stint in the UK where I worked for BP Research as a Process Technician commissioning test rigs (mini refineries).

On return (and now a Dad) we decided to settle in wonderful Christchurch (cheaper houses) where I worked for Biolab as a Service Engineer for nearly six years, and now I'm working for Canterbury University.

I'm kept very busy with a five year old son (Harvey), a dilapidated borer ridden house and a clapped out Series III Land Rover. I also enjoy all sports and outdoor activities that Canterbury has to offer.

Editors note: hmmm, not that sure about that Hurricanes bit........
NB: Reference to the skills of R. McCaw have been deleted.

and now for something completely different.....
Thought for the Week:- "Live your life leaving where you've been better than you found it."
A big welcome to Dr Arvind Varsani who arrived over the weekend to take up the molecular microbiology position.

Three reminders:
At Staff Meeting on Wednesday we will have Antoine Monti discuss with us the implementation of Moodle.

Thursday 12th and 13th 7.30 pm: James Hay Theatre. There will be public performances of "Collapsing Creation" a play about two turbulent times in Darwin's life - 1848-1851: his doubts about society accepting his revolutionary theory and then 1859-1860: following publication of the Origin of the Species. The play is a public part of the BioEd Conference - Evolution in Action.

On Thursday 12th February there will be an Environmental Science Forum (including afternoon tea) at the Copper Top between 2pm and about 4pm. This is an opportunity for staff and students to meet and find out what is going on in Environmental Research at this University.

Awayness: I will be in Napier most of next week at a Plant Biotechnology meeting. Bill will be Acting HoS.

~Paula~

Recent publications


Latest theses in school collection


and now for something completely different.....

"Best winning caption" will win something from the storeroom!

And just in case you were wondering, permission was granted from above personnel.
Paula is away in the North Island this week so you are stuck with me as acting HoS. The new teaching year has stormed up on us and we are only a week away from the first lectures. I hope you have all of your handouts sorted and printed as the printery (or whatever upmarket name they now use) is likely to be busy.

Enrolments are looking quite good. By now students should have pre-enrolled, as the University has sneakily introduced a late fee for student trying to enrol after Monday 16th. First year enrolments look a bit odd, especially BIOL111 which seems to be missing about 30 students, but the other three courses look good. Second and third year numbers look excellent. We should steadily see increasing numbers of fresh bright-eyed students wandering around campus. Certainly in the School we should see a good number of international students this week as they have to enrol in person. If you see them in the School looking lost, give them a hand. An obvious corollary of this is that we are entering “stair-dancing” season, so make sure you don’t leave your room open and unattended, or if you do, make sure your laptop is secure.

New Zealand weather never ceases to amaze me. One day of rain last week and we seem suddenly to be into autumnal temperatures and the grass is growing again. Let’s hope for a few more weeks of fine and hot weather before it all turns to custard – I have an allergy to cold weather.

To all of the undergraduates reading this – good luck with the upcoming semester.

~Bill~

Building update

It's raining and we can't see the builders. But the next staircase was put in this morning, with the second in the early afternoon.

Welcome

Dr Mike Plank is visiting the School while on study leave till April from the Department of Mathematics and Statistics here at UC. Mike is a senior lecturer in maths with a special interest in mathematical biology. This has included, for example, modelling cardiovascular disease and kidney function, and most recently size-structured populations. He has just received a Marsden fast start to work on, “Aquatic ecosystem dynamics: size or species?” Mike is being hosted by the FERG, but is keen to
interact with the whole spectrum of biologists. Visit him in room 508 of the Biology building. You can find out more from his website: http://www.math.canterbury.ac.nz/~m.plank/index.html

Introducing - Arvind Vasani

I was born and raised in Nairobi, Kenya. After completing my secondary schooling in Kenya, I ventured out to England to pursue a degree program in Medicinal and Pharmaceutical Chemistry at Loughborough University (famous for inventing the ‘lufbra’) where I failed miserably to out run Paula Redcliff. While in the UK, I worked for Astra Pharmaceuticals Ltd. (now Astra Zeneca) as a preformulation research scientist for a year and drank a lot of beer.

Following the undergraduate education in England, I moved back to Kenya in search of a pharmaceutical research oriented job only to find myself working as a medical representative for a pharmaceutical company, which I must admit sucked big time and I struggled to relate to the ethics of the pharmaceutical industry - which sane person wouldn't!? I was taking strain financially and was reduced to eating the local Lepus victoriae rather than the more delicate and exquisite Tragelaphus imberbis or the odd Wazungu kutoka America (reserved for the economically empowered and members of the Felidae family).

To avoid starvation (a common theme in Africa), no Pulitzer prize breaking news photographer around and to explore new playgrounds / foraging grounds, I searched the African landscape extensively for PhD programs. I was fortunate enough to find a shelter in Cape Town, South Africa. I perused a PhD at the University of Cape Town where I investigated prospects of making Human Papillomavirus (HPV) vaccines in plants by both transgenic and transient expression. In addition, I also investigated the antigenicity and immunogenicity of chimaeric HPV-16 L1 / L2 vaccines.

I thought ‘freedom’ was in sight – freedom is a rare thing in Africa – but my romantic ideas of gallivanting around South America for a year or more (after handing in the 749.2grams of 1.5 space typed text -12pt; times new roman- on A4 paper for review) were reduced to a mere 2 months as I was suckered into academia. Hence for the last 5 years I was based at the University of Cape Town teaching on a Masters program in structural biology, set up the largest non-human pathogen project in Africa researching mastreviruses, travelled around the world (in the name of science of course – looking for viruses and sampling the local brew) and just managed to survive the Sept 2008 financial crisis.

Finally, a seemingly harmless advertisement in Nature that I answered landed me in the wild land of ‘plenty sheep’. “Don’t worry, I’m harmless even though I am from Africa” I keep telling the sheep……

Dr Varsani can be found in room 439 in the von Haast building or on ext 4667, unless he's out counting all those sheep!!


and now for something completely different.....

For the speedsters amongst us....

Man who drive like hell, bound to get there
Welcome to all our new undergraduates and postgraduates and welcome back to all those who were with us last year. The beginning of the year is always busy and can be quite daunting to many - please do chat to staff and other students if you are feeling at all in need of a bit of support. In Biology we do pride ourselves on being welcoming and helpful.

This week is the Orientation week for our new 4th year group - culminating in a seminar from our Erskine Fellow, Professor Gaines, on Thursday at 3pm, followed by a welcome party. While we will not always have a party after our weekly seminar we do expect all postgraduate students to attend the Thursday seminar which is usually at midday.

Always read instructions carefully - we just got two papers 'unsubmitted' because we put Abstract and not Summary! Moral of the story: don't work on Saturday evenings!!

Best wishes for the year
Paula

Building update
First floor complete, five to go...

Introducing - Ant Poole

I was born in Hertfordshire in the UK (my mother is Japanese, my father English). My family then moved to the Kapiti Coast when I was eight, the result being that I can’t give a straight answer when asked my nationality (and if I do, I invariably have to field 20 questions...).

I did a BSc (Hons) at Massey University in Palmerston North (in Genetics), after which time I spent two years at the University of Tokyo working under Yoshiki Hotta as a predoctoral research student in molecular genetics. I then returned to sunny Palmerston North to do my PhD with David Penny, where I worked on the RNA world and the Last Universal Common Ancestor of all life. During that time I spent two years at Stockholm University working towards a Licentiate (sort of half-way between Masters & PhD in the Swedish system) on the origin of DNA with Britt-Marie Sjöberg.

I then joined the fledgling Allan Wilson Centre for Molecular Ecology & Evolution as a postdoc before taking up a Swedish Research Council-funded Assistant Professorship back in Stockholm. In 2007 I was awarded a Research Fellowship from the Royal Swedish Academy of Sciences to look at the evolutionary origins of horizontal gene transfer, which enabled me to come to Canterbury on
sabbatical last year. I am extremely happy that I live within walking distance of the University, and even happier that the route home takes me via the Staff Club.

My location: I have given up lurking suspiciously on the 2nd floor of von Haast in favour of a penthouse suite on the 4th (Room 466, extension 3863).

See you down the Staff Club on Friday!

**Latest theses in school collection**


*(embargo completed)*


*(never entered into collection until now)*


*(never entered into collection until now)*

**and now for something completely different.....**

*Freshwater ecologist's dream river maybe!?*

Anastomosed river feature, Sunwapta River, along the Ice Fields Parkway, southern part of Jasper National Park, Alberta.

"Reproduced with the permission of Natural Resources Canada 2009 (Photo 2002-597 by Réjean Couture)."
On Saturday morning I attended the UC Welcome to Pacifica students. This was an exciting and inspiring event with a number of Pacifica students briefly talking about their experiences at UC. This gave me to the opportunity to formally welcome and congratulate Emma Poluka who was awarded the College of Science International Pacific Scholarship which, through the hard work of Russell Taylor, has had a full accommodation scholarship added to it by Campus Living; Foundation Studies also contributed a partial fees scholarship. Emma will be studying Biological Sciences. Please take the opportunity of welcoming Emma.

The School, along with Russell and EcoCare Trust Pacific will again be supporting a high school Science competition in Tonga - this focuses on biology and environmental sciences. The College will also be sponsoring another Scholarship for study in Biological Sciences in 2010 - but we have yet to build up the scholarship to $43,000 which is the full annual cost to an international student studying at the undergraduate level at UC and staying in a hostel.

Paula

Building update
It's another lovely day in Christchurch, so look out for some shirtless builders......

Why we do First Aid courses
Many thanks to your ground floor technical staff who came to my rescue on Wednesday 25th after I had tripped and fallen over a cable across the pathway outside the Von Haast building. They helped me inside the building and put ice on my knee, and gave me a cup of tea while I recovered from the shock. Their kindness and practical wisdom is much appreciated.
- Many thanks, Alison Johnston

The heroines were Jan McKenzie, Linda Morris and Wendy Hare

Recent publications

Thought for the week
Whatever you do may seem insignificant,
but it is most important that you do it.
-- M. Gandhi
Last week, those of us on the PCG (Project Control Group) met with all the consultants involved with the building and the Chief Financial Officer (Yvonne Shanahan) for a workshop to discuss Stages 2 and 3 of the building programme. This was an interesting meeting, led by Nick Courteney (Courteney Architects) and Peter Molony (from Facilities Management), as there are clearly competing demands on the University "surplus" i.e. the money available for investment in infrastructure. This was our opportunity to convince the 'powers that control the finances' that our issues around compliance and health and safety must remain top priority. There is no doubt that the entire programme will go to completion but as the fire engineer pointed out we do need to be able to access - and leave - the new building as soon as it is completed, and the services consultant pointed out that the entirety of the old zoology building needs to be gutted so that the services can be put through the central part of the building. We will continue to work through all the logistical issues as the year proceeds.

~ Paula ~

Building update

It's another lovely day in Christchurch, so look out for some shirtless builders......

Award News

Some good news. At the end of the conference Steven Gieseg was attending in Austria, he was awarded the Blair-Curtius-Pfleiderer-Waschter Award for Pteridine Research by the International Society of Pteridinology. Prof Fuchs who presented the award said it was for over a decade of research showing the properties of 7,8-dihydroneopterin. The award is very much a recognition of the outstanding work of Steven's many students over the years, the support of the Department and the University.

PhD Profile - Amy Whitehead

Threatened species are often restricted to small, fragmented areas of habitat where the presence of introduced predators or human disturbance is low. However, these areas may contain low quality habitat that results in poor survival rates and low productivity, further reducing their ability to maintain self-sustaining populations. In many cases, it is not possible to identify such relic distributions because of poor records of historical occupation. Relic distributions can give a false understanding of the habitat required to produce the greatest population growth rates for a particular species, making it
difficult for conservation managers to establish appropriate species recovery programmes and may lead to limited success from conservation efforts.

Identifying the most productive habitat for a species can help to ensure that cost-effective conservation efforts are directed to areas where the greatest gains will be made. My research applies a multi-faceted approach to conservation management, using an endangered riverine duck (whio; Hymenolaimus malacorhynchos) as a case study. Firstly, I have shown that unmanaged populations of whio have a high risk of extinction but that large scale, low-intensity predator control aimed at reducing stoat densities significantly improves whio nesting success and leads to populations that are viable long-term. I identified the contemporary and historic potential ranges of whio across the New Zealand river network using 25 years of sightings in a boosted regression tree model to assess the likelihood of whio occupying a relict distribution. Whio are confined to approximately 23 % of their historical range, with predation contributing a greater proportion of the decline than deforestation. The third aspect of this study combines measures of whio fitness with habitat characteristics from 11 whio rivers to identify areas of high habitat quality. Combining information about potential ranges and habitat quality with the expected outcome of different management options will help to make conservation more effective by identifying key knowledge gaps and allowing managers to prioritise where management efforts should be concentrated. I am currently writing up and spend much time yelling at the misbehaving virtual ducks on my computer!

Recent publications


**Thought for the week**

*Ours is a world where people don’t know what they want and are willing to go through hell to get it.*

-- Anonymous
Congratulations to Liz Wiltshire currently enrolled for BSc(Hons). She has been awarded the Doris le Roi prize from the New Zealand Federation of Graduate Women for post graduate study at UC in an area of plant biology.

All women students should look carefully at the prizes offered by the Canterbury Branch of the NZFGW - some prizes are awarded, like Liz's, but others are by application, some awarded on GPA, some for mature students taking up or returning to study at University.

~ Paula ~

Building update

Scaffolding up the side of the building must mean only one thing, there are no supermen amongst them. The walls for the 3rd floor swing by as I look out the window for the weekly report.

Postgraduates

Thanks to everyone who turned out for the BBQ on the 3rd March, hosted by Juliet's Biochem research group. Over 50 heads were counted including 7 academics! Huge thanks also to Juliet for shouting the first 20 attendees a drink!

PhD Profile - Sarah-Jane O'Connor

I am about halfway through my PhD studies, working with Dave Kelly, Marie Hale and Matthew Turnbull. I am studying the seed dispersal of matai (*Prumnopitys taxifolia*) within and among fragmented forest on the Port Hills, Christchurch.

Matai is a native podocarp; it grows up to 25 metres tall and has small, round purple-black fruits. Males and females are on separate plants (dioecious) and pollination is by wind. Matai, along with several other podocarps, was once abundant across Canterbury but is now restricted to small forest fragments, often surrounded by exotic matrices. Many of these fragments are on Banks Peninsula. I am working in seven such sites along Summit Road on the Port Hills, all of which contain adult matai.
I am interested in how matai is being dispersed in this environment. If seeds are moving between forest fragments, then this may enable populations to remain genetically linked. If not, even populations a few kilometres apart may be genetically isolated and be at risk of reduced diversity and inbreeding.

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Otahuna Reserve. A fragment of native bush on the Port Hills boxed in on either side by very exotic habitats – Pine plantation and gorse.

There are two aspects to my thesis: field ecology and genetics. In the field I am studying the distribution of adults, saplings and seedlings. I am measuring seed fall using seed traps and seed plots. This will show me not only where seeds are landing, but I can also tell where “hot spots” for predation occur (i.e. most likely under female trees with high seed density). I am also observing birds to find out which species (both native and introduced) feed on matai fruit, how often they do so, and where they are likely depositing seeds. This will give me information on “disperser effectiveness” which suggests that different dispersing species may provide different services to plants.
For the genetic portion of my study, I am using microsatellites to measure direct dispersal events. Microsatellites allow me to individually identify all the female trees in my sites. Seeds are pretty neat in that they have three types of tissue; an embryo (which is a combination of both parents’ DNA), endosperm (storage tissue with triploid maternal DNA), and a seed coat. The seed coat’s DNA is identical to the maternal parent’s DNA. So, by genotyping the females in my sites and seed coats I should be able to match seeds with their maternal parent. Then, by measuring the distance between the parent and the location the seed was dispersed to, measure a dispersal distance. In the past it has been difficult to make such a measurement, and as far as I know no one else in NZ has applied this technique here.

So far I have managed to extract DNA from matai leaves, and have had sections of DNA sequenced. The next step, once I’ve finished field work for this year, will be to identify microsatellites and begin individual genotyping.

Ahuriri Summit. The three podocarp species commonly found on Banks Peninsula: totara (left), kahikatea (right) and matai (background right).

One of my keen interests is in the roles introduced animals play in our native systems. So far I have looked into pigs as possible dispersers of native plants. Through a feeding trial at Willowbank Wildlife Park (on kunekune pigs) and a field study (collecting, for lack of a better description, pig poo) I have shown that pigs readily eat matai fruit and excrete a certain proportion of seeds intact. Many of the seeds from these trials are happily germinating in the glasshouse as I write this.

This year I hope to extend this research by looking at other mammals which may consume native fruits. I am also investigating the role blackbirds and song thrushes play in dispersal. In their native range (Europe) both species are important dispersers. In NZ they are presumed to feed mostly on introduced plants. During my bird observations I would like to find out if this is the case or not. In
addition, later this year I will be travelling to Seville, Spain on a study abroad scholarship. There I will be working with Pedro Jordano, who developed the genetic technique described above. As well as playing around in his lab, I am planning a field project looking into the behaviour of blackbirds and song thrushes there. I hope the comparison will allow a better understanding of what these birds are up to in our native forests.

Through applying genetic and GIS techniques to an ecological question I hope to develop a solid model of matai dispersal in this location. I am working on better understanding the different birds and mammals involved in such a system, and the contribution they make to dispersal. This will aid in understanding the role of introduced animals, and how our native species are coping with today’s much altered environment.

**Recent publications**


and now for something completely different.....

Liz's girls with their medals after the Weet-Bix Tryathlon

![Image of two girls with medals](image)

**Thought for the week.....**

Believe you can and you're halfway there.
- Theodore Roosevelt
Autumn seems to be upon us with a vengeance, though under the new rules, we still have a couple of weeks before daylight saving ends. We have seen an increase in the number of accidents and events happening in the School and in vehicles. The latter is a particular worry. They have involved School and private vehicles, with the other party at fault each time. If you are heading out on University business, please be careful, make sure you have insurance cover and that you are eligible to drive University vehicles. If you are using a University pool vehicle, check the warrant and registration before heading out. Accidents around the School happen, and usually we have no (or little) control over them. We are getting towards the end of the first term and no doubt people are getting tired, especially in labs. Please be extra vigilant and see if we can maintain our excellent safety record.

I spent a good bit of last week chasing EFTS. Thank you for sending in details about courses you are teaching into. Overall I have reclaimed somewhere between 10 and 12 EFTS, covering both undergraduate and postgraduate students. This all helps with the rebuilding project and of course, with the budget.

The last paragraph obviously leads into this one. Life is still very quiet regarding stage 2 of the refurbishment. As you will be aware, we had a workshop at the beginning of March where we were told everything was going to slow down. As far as I know, there has been no communication informing us of what might happen. The next Project Control Group meeting is next week – hopefully we will have some news for you after that.

~ Bill ~

Building update

The walls of the 3rd floor are almost up, appears to be moving along at a fast rate of knots, it won't be long before the view of Scarborough and the cityscape disappear out of view...

Comments from Board of Studies

The Ecology Endorsement has been returned for yet more work, but WILL go to the next Faculty meeting on April 1.

There was considerable discussion about 15 points. An interesting comment was that the Faculty of Humanities and Social Sciences has decided not to implement any 15 point changes in 2010, leaving everything until 2011. This has major consequences for those departments (such as
Geography) that have first year courses in arts and science, as the Faculty of Science will change its first year courses to 15 points in 2010. There still seems to be much confusion about changing 3rd year courses for 2010. The Dean indicated that he was not in favour of departments changing all of their courses for 2010. Maths and Stats has a complete plan to convert everything in one hit.

Course Surveys

Staff should be aware that all course surveys will be carried out on-line this year. BIOL116 was a guinea pig for this last year. It seemed to work OK, though the number of returns was small, and feedback from UCTL was very slow. Individual teacher surveys will still be conducted using paper surveys. These must be organised via the School secretaries. Note that surveys for promotion must be completed by Monday 25th May.

Staff cessation

Hugh "Harry" Taylor calling it a truce after 37 years. Harry and Chloe celebrated this occasion at the Staff Club with colleagues and friends last week.
New panel members for Marsden Fund Council

Minister for Research, Science and Technology Wayne Mapp has appointed three new members to the Marsden Fund Council.

The new members' role is to provide guidance on investments made by the fund in leading-edge research projects. The appointees will convene three panels on the Council. They are:

- Juliet Gerrard (Cellular, Molecular and Physiological Biology)
- Grant Scobie (Economics and Human and Behavioural Science)
- Rod Downey (Mathematical and Information Sciences)

"I am pleased to appoint these three leading researchers to the Marsden Fund Council. I have great confidence in their ability to help guide Marsden Fund investments," Dr Mapp said.

The Marsden Fund Council comprises ten eminent researchers - a Chair and nine convenors. Each heads a panel in their academic field. Panels work to assess applications for funding of research projects.

Research supported by the fund is investigator-initiated, and awarding of funds is based on the research merit of the proposal, the potential to contribute to the advancement of knowledge and the enhancement of research skills in New Zealand. The fund is administered by the Royal Society of New Zealand and funded through the Government's Research, Science and Technology portfolio. In 2008/09, the Council invested $54 million in research projects.

PhD Profile - Hanadi Ahmed Katouah

PhD Candidate
Free Radical Biochemistry Laboratory,
School of Biological Sciences,
University of Canterbury,
Christchurch,
New Zealand
Office z621, Lab z605 (Free radical Biochemistry Laboratory)
hhk15@student.canterbury.ac.nz
Ext.7047
I completed both my Bachelors and Master's degrees in Biochemistry at King Abdul Aziz University in Saudi Arabia.

I am currently studying towards a PhD in Biochemistry at Canterbury University, supervised by Dr. Steven Gieseg and Prof. Bill Davison. I have found the School of Biological Sciences maintains an excellent standard of research and has a committed and enthusiastic team of academic and technical staff. My PhD research is funded by a Saudi Arabia Ministry of High Education scholarship.

The topic of my thesis is to identify “Failure of cell metabolism as a mechanism of atherosclerosis”. I am interested in the uptake of oxidized low-density lipoproteins (oxLDL) by macrophages (HMDMs) as a key event in the initiation and development of atherosclerotic lesions.

In my project the human monocyte-like cell line U937 was used as a model of human macrophages. I am now working on human macrophages called HMDM cells (human monocyte derived macrophages), which I prepare from human blood. Every Tuesday I collect blood from Haemochromatosis patients from the New Zealand Blood Bank. After centrifugation of the blood, I collect the monocyte layer and then monocytes are differentiated into macrophages by incubation in nutrient media (RPMI-1640) containing 10% human serum for 14 days.

My study is characterizing the effect of oxLDL on the cells’ metabolic function by measuring the activity of glyceraldehyde-3-phosphate dehydrogenase (GAPDH) which is the key enzyme for energy metabolism, lactate dehydrogenase (LDH), lactate production, glutathione (GSH) concentration, and ATP synthesis.

The protective role of 7,8-dihydroneopterin, a macrophage generated immune marker is also a key part of my project. Our laboratory has detected this macrophage synthesized pterin in the atherosclerotic plaque and shown that 7,8-dihydroneopterin is potent antioxidant which could protect the macrophages from oxidative damage during the inflammatory response.
So I have examined the effect of 7,8-dihydroneopterin on U937 and HMDM cells’ metabolism when they are exposed to oxidized low-density lipoproteins (oxLDL) as well measuring the uptake of Dil labelled oxLDL by HMDMs.

Finally, I hope to achieve results from my research that may contribute to the development of new drugs for the treatment of heart disease.

Recent publications

This week our Ph.D. candidates run supreme:


Latest theses in the school collection


Thought for the week

"The only one who got everything done by Friday was Robinson Crusoe."
"The Mirror", 12 November 1999
Congratulations Jarred!

Jarred Arthur is the inaugural recipient of the Stewart Scholarship in 2009 and has also just been awarded an NZVCC Scholarship ($10,000) from Fish & Game New Zealand Research.

A short ceremony will be held next month so the Stewart Family can meet Jarred and his supervisory team.

College of Science Early Career Small Research Grants

Congratulations to the following recipients on their grant success. They all received funds close to the maximum.

Chris Glover
Investigating the cellular mechanisms of salinity acclimation in the gills of migratory fish

Ximena Nelson
Call in the wild: habitat, cognition and the use of vocalizations in kea, Nestor notabilis

Anthony Poole
Evolution of the unnecessary: did a key step in translation in bacteria evolve from invading selfish DNA?

Tammy Steeves
A new paradigm for old waters: incipient speciation in a highly mobile seabird

Arvind Varsani
An exploration into the New Zealand virosphere: a quest for novel DNA viruses

~ Paula ~

Building update

The screen on the 4th floor foyer in the von Haast building has updated images, provided by Neil Andrews, well worth a look.

Scaffolding for the 4th floor is going up and before you know it concrete will be poured for the floor to commence.
Introducing - Peter McHugh

Hello! I’m Pete McHugh and a new post doc in the Freshwater Ecology Research Group (FERG). For my research, I’m exploring questions relating to the influence of hydrology and geomorphology on the dynamics of stream food web architecture, in collaboration with Angus McIntosh (UC) and Ross Thompson (Monash University). I join FERG from the U.S., where I received a Ph.D. in Aquatic Ecology (Utah State University), a M.Sc. in Fish Biology (USU), and a B.Sc. in Fisheries Management (Ohio State University). My doctoral research emphasised understanding the influence of non-native brown trout on the individual- and population-level performance of a native species of high conservation value (cutthroat trout); I assessed the significance of interactions between these species using a combination of field surveys and experiments. In addition to this work, I’ve led modeling studies aimed at linking the dynamics of riverine fish populations to environmental conditions. Most recently, I spent two years in the northwestern U.S. working as a quantitative population biologist on matters relating to the conservation and management of salmon around the northern Pacific Rim.

Beyond my academic interests, I enjoy running, hiking in the hills, skiing, and cooking. I come to Canterbury with my wife Katie and (hopefully soon) our Border collie Tuco (import permit and quarantine pending!), both of whom are also quite excited to be here.

I look forward to having a productive experience here in Biological Sciences and hope to develop collaborative relationships with the school’s faculty, staff, and students in the near future. If you’re ever in the neighborhood and are keen for a chat about things-aquatic, I can be found in Biology 576 or reached at peter.a.mchugh@gmail.com.

PhD Profile - Claudio de Sassi

Global change is a big word that nowadays is widely used and misused. However, it is a matter of fact that there are no longer any ecosystems on Earth that are untouched by human influence. Anthropogenic processes are driving average land temperature increases of 0.2oC per decade, and humans are estimated to double the amount of fixed nitrogen entering the terrestrial N cycle annually. Such environmental change drivers (ECD) threaten biodiversity, but potential effects on the structure of species interactions are largely unknown. My research will combine field and laboratory experiments to test the effects of two global change drivers (warming and deposition of anthropogenically-fixed nitrogen) on the structure of quantitative networks of feeding interactions (food webs). Interaction networks are critically important for community stability and functioning, yet their fragility makes them vulnerable to ECD, even when there is no apparent change in biodiversity.

My model system is the native tussock grasslands, including host plants, caterpillars, and their parasitoid flies and wasps.
After the first six months spent dreaming and writing up the proposal, I’m now fully immersed in the field season, sampling insects in the Lewis Pass area. In this experiment, I am using altitudinal gradients (three different altitudes) to make me fit and as a proxy for warming. At the same time, I added nitrogen to half of the sampled area to assess its effect at different temperatures. Starting last October, we sampled over 3000 caterpillars, and reared over 600 parasitoids, which sounds like the experiment is going well, but also endless feeding times that would have been totally overwhelming without the great work performed by Bex. - God Bless Field Assistants, the not-to-well paid backbone of biological research (or is that the PhD students?).

I’m also responsible for the big hole in the ground that appeared up at Cass a few months ago. If you happened to pay a visit to the station lately, you might have noticed that the area now looks more like a biological experiment. Using underground heating cables (hence the digging) and the same nitrogen addition, I am exposing 20 plot transplanted with tussocks to the effects of the two drivers alone and in combination on plant, herbivore and natural enemies. Whilst the design is very similar to the current experiment on the altitudinal gradients, this experiment will provide more mechanistic, small scale behavioral responses that will be compared to the larger scale, natural set up of my work in the Lewis Pass area. This provided that I will finish the set up… a little bit of Andrew here, some more Jenny there… and we’ll get there soon!

Recent publications


Thought for the week

“A life is never ended until all the lives it has touched have ended too.” Chinese Proverb
A few of our graduates who gathered yesterday

It is Graduation Week and I would like to congratulate all our new graduates. The School held a celebratory afternoon tea on Monday prior to the morning graduation ceremony this morning (Tuesday). It was great to celebrate your successes with you!

~ Paula ~

Building update

Work will commence immediately after Easter installing electrical and data cables into the service ducts from the ground floor to level 4 switch room in the Biology (Zoology) building. This may disrupt corridor access at times. Please contact Gavin Robinson if you experience problems.

Technician recognition


Have a look on p69 where you'll find "Bathybadistes andrewsi, sp. nov." named after Neil Andrews who helped Kelly with the SEM work.

Quite a good likeness don't you think!
PhD Profile - Morten Allentoft

So, moa birds...
The ancient giants of New Zealand. Of course I had heard stories of these famous extinct creatures while growing up back in Denmark, but the thought of ever working with the beasts was probably just as remote to me as becoming the pope. Well... that was just until I met Richard Holdaway: "So you’re a population geneticist?" he asked me, while visiting at the department in Copenhagen, where I happened to stick around looking for a job. Having just defended my thesis on population genetics of amphibians (and since they had elected a new pope down in Rome anyway), I answered “yes!” to that question, and the rest is history...Now, two years later I’m halfway through my PhD working on the genetics and biology of this iconic megafauna.

My research is centred around 300 moa individuals excavated from two adjacent late Holocene fossils deposits (swamps) in North Canterbury. Having samples from that many individuals, proximate in space and time, allow us to study a whole series of biological aspects in the framework of a population. This is, for obvious reasons, quite a rare opportunity when investigating extinct species. By examining the ancient DNA preserved in the fossils and by 14C-dating a large number of the bones, we have established the correct species composition and are in the process of describing the structure and genetic diversity in the moa populations during the last 3000 years of their era. Also, by targeting sequences on the sex chromosomes, we have identified the sex of each individual, and hence started to address questions related to sex ratios and territoriality.

Since these basic components of the moa-genetics came together surprisingly easy (given the age of the DNA we are working with), we began contemplating whether we could push the DNA work a bit further. By utilizing new high throughput sequencing techniques, we have now started identifying microsatellites (hyper-variable markers in the nuclear genome, widely used in research of extant taxa and contemporary DNA). Now, not much nuclear DNA is left in the fossil record, which is why traditionally from ancient substrates only mitochondrial DNA has been examined, but the biomolecule preservation within these old moa bones has proven exceptionally good. By investigating the genetic variation in nuclear microsatellites, we hope to pave the road for moa research in a new era of high resolution population genetics. If a success, it will allow us to estimate population sizes, demographic fluctuations and dispersal patterns with much higher accuracy than previously attempted in the field of ancient DNA. Admittedly, we still have very far to go with this stuff, but promising results are emerging...

Lastly, we are collaborating with Eske Willerslev and Tom Gilbert at the Centre for Ancient Genetics in Copenhagen, Denmark, to establish a genetic profile of the botanic biodiversity of North Canterbury in the late Holocene. By extracting DNA from samples of well dated sediment layers, retrieved during our 2008 excavation at the Pyramid Valley swamp, we aim to characterise the surrounding habitat through time and demonstrate the ecological impacts by the arrival of humans in the late 13th century.
The genetics mentioned here is just one of several interlinked components of a larger Marsden funded research programme. Other scientists are working on the composition of stable isotopes in the moa bones and their contemporary environment. In time, this will allow us to investigate moa diet, their preferred habitat, niche separation etc.

While being enrolled at Canterbury with Richard Holdaway and Marie Hale as my supervisors, a substantial part of my practical work is carried out in close collaboration with Mike Bunce at his ancient DNA laboratory at Murdoch University, Perth, Australia. This is why you’ll only see me hang around campus in certain periods.

OK, I’m not going to bore you with more details – I’m presently overseas, but look forward to see you all again, when I return next time!

A Dane with the largest moa bone ever found: A 99 cm lower leg bone (tibiotarsus) from a female of the South Island Giant Moa (*Dinornis robustus*), excavated from Glenmark Swamp in 1869.

### Recent publications


### Latest theses in the school collection


and now for something completely different.....

The Nor'west arch...

... is a weather pattern peculiar to the east coast of New Zealand's South Island. For this reason, it is also often referred to as the Canterbury arch. It is shown in an apparent arch of high white cloud in an otherwise clear blue sky over the Southern Alps, and is accompanied by a strong hot northwesterly wind simply known as The Nor'wester.

The Nor'west arch can be seen as far north as Amberley and as far south as Central Otago, but it is at its most prominent on the Canterbury Plains, due to the flat and low-lying nature of the land to the east of the mountains.

Thought for the week.....

"You have to find what's good and true and beautiful in your life as it is now."
"Tuesdays With Morrie" by Mitch Albom (1997)
IMPORTANT NEWS:
At long last Bill Davison has finally made his way over to the bridge. He has taken residence on the 4th floor of the von Haast building, room 426. His old phone number remains the same. Waiting area/reception is opposite meeting room 423.

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After walking the Kaikoura Track over Easter I feel in somewhat better shape to face the winter term. 40 kms in three days (even if the heavy stuff was transported) certainly blows (or sweats) away the cobwebs. Wonderful old trees that somehow missed the timber felling when the land was broken in for farming (some of the native bush areas are now under QEII covenants) and huge cliffs filled with shells - a geologists heaven.

I hope everyone took the opportunity to enjoy the wonderful Easter weather (it's not always like that!).

This coming Saturday is ANZAC Day but unlike our Australian neighbours there is no weekday public holiday - so if you have an Invitrogen calendar, sorry but Monday 27th is NOT a holiday! However, most shops will be shut until at least midday Saturday.

Best wishes for Term 2 as it rapidly approaches!

~ Paula ~

Building update

Progress on the Atrium appears to be taking shape. The 5th floor is taking a back seat while this goes ahead.
April graduation

Dr Steven Gieseg standing amongst his newest Free-radical Biochemistry graduates; Lisa Hsu (M.Sc.), Elizabeth Crone (M.Sc.) and Dr Nic Tuckey (Ph.D.) (absent Dr Zunika Amit (Ph.D.), Elizabeth Flavall (M.Sc.) and Anastasia Shchepetkina (B.Sc. Hons) Tuesday 7th April

PhD Profile - Darragh Woodford

I am in the final six months of my PhD, working under the supervision of Angus McIntosh and Marie Hale, as well as Tom Cochrane from Civil and Natural Resource Engineering. I completed my undergrad and MSc the University of Cape Town in South Africa, and came to New Zealand in order to gain the world-class training in freshwater ecology that our Freshwater Ecology Research Group provides. My thesis is a study of the effect of trout invasion on the distribution and population integrity of native galaxiid fish, and is funded by a New Zealand Commonwealth Scholarship and a Department of Conservation research grant.
Getting ready to catch galaxiids with the magic of electricity! Electrofishing is a highly efficient (and non-lethal, if done properly) method of collecting fish for research, and is especially useful when dealing with small species that hide under rocks all day.

The distribution of fish populations across the landscape of a river catchment, or “riverscape”, can offer insights into the biotic and abiotic factors controlling population dynamics. In New Zealand, native non-migratory galaxiid fish occur in highly fragmented populations in many catchments. The introduction and invasion of trout has been implicated in the extirpation and fragmentation of non-migratory galaxiid populations in the South Island, in particular Otago. However, the Canterbury galaxias (*Galaxias vulgaris*) and Alpine galaxias (*G. paucispondylus*) co-occur with trout in several streams in the Waimakariri catchment in Canterbury, raising questions as to why they are better able to cope with trout than the more geographically restricted species to the south.

I am investigating the spatial configuration of *G. vulgaris* and *G. paucispondylus* populations within river networks partially invaded by trout in Waimakariri basin. *Galaxias vulgaris* appear to form source-sink metapopulations within trout-invaded river networks, with trout-invaded reaches becoming demographic sinks while streams above trout barriers become demographic sources. The distribution and survival of young-of-the-year galaxiid fry, together with size structuring of galaxiid populations, suggest that persistence of *G. vulgaris* in trout invaded reaches is dependent on immigration from source populations. *Galaxias vulgaris* are also excluded from small, stable trout streams that are far from potential source populations in the riverscape. These sites support high densities of large predatory trout, which were shown in a predation experiment to have a significant effect on *G. vulgaris* survival. I am in the process of modelling these spatial interactions in GIS to provide a management tool for *G. vulgaris*. In contrast to *G. vulgaris*, *G. paucispondylus* appears to co-exist with trout in most situations, although it is also eliminated from reaches containing good holding water for large trout. A principle predictor of *G. paucispondylus* populations appears to be altitude, which is probably a temperature-related habitat restriction since *G. paucispondylus* is not found in waters where the summer temperature exceeds 18°C. This species appears to be able to utilise habitat cover in order to co-exist with trout, though the exact mechanisms require further investigation.

A large and heavily gravid female Canterbury galaxias. While these fish are big enough to avoid trout predation most of the time, their offspring tend to become fast food for trout sooner or later.
Recent publications


Latest theses in the school collection


2007 addition:

2004 additions:


Thought for the week

Really great people always see the best in others; it is the little man who looks for the worst — and finds it.
- Samuel Coleridge Taylor
Congratulations to all those whose Marsden applications are into the second round. These include the following: Jack Heinemann (with Anthony Poole AI), Arvind Varsani, Jim Briskie, Tammy Steeves, Grant Pearce, and Jason Tylianakis (AI) with David Whitehead at Landcare. Commiserations to those who didn't get called through but 5/11 is an excellent hit rate. UC had highest hit rate countrywide with a 33% callup.

~ Paula ~

Building update

A lot of internal scaffolding where the atrium will eventually take center stage. Don't forget to take a look at the photos being screened in the 4th floor foyer, some excellent shots.

Radio NZ broadcast

Palaeo-biologists have studied the largest collections of moa bones to pinpoint the cause and timing of the moa's extinction. (duration: 13'03")

Go to this page to find link: [http://www.radionz.co.nz/national/programmes/afternoons/20090421](http://www.radionz.co.nz/national/programmes/afternoons/20090421) (available one more day)

PhD Profile - Saira Wilson

I am working towards completing my PhD in Biotechnology under the guidance of Dr. Ross Bicknell (Plant and Food Research, Lincoln) and under supervision by Dr. Hazel Chapman and Prof. Paula Jameson at Canterbury University. Since majority of my work is conducted at Lincoln, I am rarely on campus grounds which may explain the strange looks I receive when wandering through the Biological School corridors!

Apomixis is an asexual mode of plant reproduction through seeds. A common feature of all apomicts is the autonomous development of embryos and the generation of progenies that are exact genetic replicas of the mother plant. Apomixis fixes hybrid vigour because it avoids aspects of the sexual reproductive process that leads to genetic variation. This developmental phenomenon has been identified as having the potential to dramatically enhance yield, particularly for subsistence agriculture.
Hieracium, the plant of interest in this project is naturally apomictic and is a model system to study the molecular genetics of this trait. In Hieracium apomixis is reported to be genetically controlled. It is known that the trait in this plant is controlled by two loci, one acting at the time of meiosis in the ovule and the other active at the time of fertilization. My research aims at studying the latter step in which fertilization is avoided in Hieracium. This process is termed “Parthenogenesis”.

The aim of this research is to identify key genes that control parthenogenesis in this model species and thus contribute to the compilation of molecular tools that will aid in the transfer of this trait to economically important crops. A major part of the work during the first phase of my doctoral research has involved isolating BAC clones from a Hieracium BAC library using the most proximal markers as probes.

My work now focuses on mapping recombination around the LOP (loss of parthenogenesis) locus of Hieracium. I want to focus on the question of why the LOP locus is a region of low to no recombination in Hieracium. There are more than 20 AFLP markers known to flank this locus and I will use them to map recombination rates. My current research is focused on generating molecular maps of the LOP locus. This is being done by screening the polyhaploid and the hybrid population with secondary digest amplified fragment length polymorphism (SDAFLP), scoring the presence and absence of markers surrounding the locus controlling parthenogenesis and using a mapping programme to assign recombination rates.

I have created two populations of Hieracium caespitosum to do this work.

One comprises of polyhaploid plants (plants on either sides) that are the product of meiosis and parthenogenesis but not of recombination. They are diploids, and the product of only the mother plant. The other population is a cross between sexual plant P4 as the seed parent and the apomict (asexual) C4D as the pollen parent (plant in the centre). These plants are tetraploids and carry
markers from both parents. By comparing the two it will be possible to determine whether the parent of origin influences the rate of recombination around the LOP locus.

My project is currently funded through the University Doctoral Scholarship programme and through internal grants from Plant and Food Research.

**Recent publications**


**Thought for the week**

"I don't understand why people are scared of difference because difference is what makes life interesting."

- British singer Jarvis Cocker
It must be the coldest morning of the year so far today (Monday), as it was quite brisk walking in. Roll on winter and a decent bit of snow!! However, the day doesn’t compare with temperatures at Scott Base where it is a surprisingly mild -23 degree C with a 13 knot wind, and a beautiful sunset at 3pm. Log on to http://www.antarcticanz.govt.nz/education/2568 to see what the place looks like. Make sure to click on the Antarctic Weather Station link at the bottom of the page.

Jobs seem to be at the forefront of people’s attention at the moment. The Biochemistry lectureship is essentially down to the candidates for interview and details of this should be out soon. Applications have closed for the Marine Ecology position. This time we have about 60 applications to sift through and some of them look quite good. My favourite is actually a physiologist rather than an ecologist, but I suspect that may go against him. Information about the PVC position should be available soon, with interviews planned for late May.

It is also time for people to start thinking about deadlines. For academics the two obvious ones are for study leave/sabbatical and promotion. For potential PhD students, the deadline for the UC scholarships is very close (15th May).

And finally a big thank you to everyone who managed to supply material to Matthew for the change to 15 points. As we get closer to deadlines for this the College is likely to become quite stressed, so getting this early will hopefully earn us lots of brownie points.

~ Bill ~

Building update

Things are certainly moving ahead. The floor to level 5 was poured on Friday 1st so it won’t be too long before the building reaches its full height. The Zoology (Biology) building is certainly living in its shadow now. We have a problem with fire regulations and so the contractor needs to build temporary fire walls across the Zoology windows where the breakthrough areas will be. Expect this to happen very soon. On levels 1-4, this mainly just means that the already gloomy corridors will become even darker. On levels 5 and 6 we have problems as the walls will cover offices and labs. We are working to solve these issues. In addition we are just about to start a round of discussions on the design of the old Zoology building as part of stage 2. Comments from FM about the cost of “The Egg” – the linkway between Zoology and Von Haast has already prompted much discussion about its future.
As seen at Cafe 101...

Gerald Edwin Cuthbert, (ex-Air Force!)
Electrical, Electronics, Optical and Mechanical Workshop technician
1989 – 2009

Delightful farewell on the 2nd April was attended by a host of characters including present and past staff along with Gerald’s family. Yummy carrot cake decorated with a very eatable Swiss army knife took pride of place. Nic Etheridge remarked on the expertise and graft that Gerald put into his work. A rather touching farewell in the form of a book by Dr Seuss titled “Oh, the places you’ll go!” was read out by Selwyn Cox. Gerald thanked his colleagues and his family and ended with reading a personal note from young lad who, you never know, might one day become an electronics whiz…

"Will you succeed? Yes, you will indeed".

As seen on 'Country Calendar'

Sara Kross’ falcon work, UC Ph.D. student, featured heavily in TV One’s show "Country calendar" last Saturday. Watch the video.
April Graduation

2008 UC Teaching Awards

*Professor Bill Davison, receiving his award from the Chancellor*

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Postgraduates

Notes from the first meeting of the Postgraduate Student Committee Meeting

[http://www.biol.canterbury.ac.nz/postgrad/pg-intranet.html]
and now for something completely different.....

Cass under full moonlight at Easter. It looks like daylight except for the building lights on, stars in sky and car lights moving along the state highway in distance. About a 40 second exposure used. We think of moonlight as showing only black & white but that's a quirk of the human eye in low light, not a feature of moonlight. - photo taken by Dave Kelly -

For improved appreciation of the above photo, view it here: "Cass under full moonlight"

**Thought for the week.....**

"Be careful about reading health books. You may die of a misprint".
- Mark Twain
MacDiarmid Awards - successful entrants

Congratulations to Melanie Massaro, Jason Tylianakis and Amy Whitehead to being selected for the second round of the MacDiamid Awards. There were ten successful applicants from UC.

~ Paula ~

Building update

As sited through the window, the 5th floor is now going up.

PhD Profile - Tony Joseph

I am working towards finishing my PhD, under the supervision of Prof. Matthew Turnbull and Dr. David Whitehead (Landcare Research, Lincoln). My research is funded by Landcare Research Doctoral Scholarship and is aimed to assess carbon exchange and storage within a system undergoing land use change from pasture to shrubland.

Woody vegetation is a major reserve for terrestrial carbon, influencing regional and global carbon budgets. In New Zealand, shrublands dominated by manuka (Leptospermum scoparium) and kanuka (Kunzea ericoides) are common and these shrublands are generally characterized by serial vegetation
arising from disturbance. Because of their large spatial extent, these shrublands could be an important carbon sink and are likely required to effect significant reductions in atmospheric carbon dioxide levels. The net carbon balance of a terrestrial ecosystem is influenced by carbon gain and carbon loss processes, and small variations in these processes would have a significant impact in global carbon cycle. These processes operate on a variety of time scales and are influenced by a number of climatic and environmental variables. In New Zealand, these shrublands have only recently become recognized as a potential carbon sink, and as such relatively little is yet known about carbon sequestration of these shrubs.

My research is designed to find the processes regulating the change in net carbon exchange with respect to land use change from pasture to shrubland. My work is also focused to provide parameters for modelling net carbon exchange by determining response of components to seasonal variation in a developing shrubland. Therefore, experiments under controlled, field and glass house conditions were performed to assess the processes regulating carbon exchange.

My experimental site is located at Oxford, north Canterbury which was maintained as grazed pasture for some time. In the year 2006, kanuka saplings were planted to stimulate the natural process of reversion to shrubland. During the initial phase of my study, undisturbed samples of pasture and kanuka plants were collected from this experimental site to quantify the responses of physiological processes to environmental variables by regulating soil moisture and temperature under controlled conditions. This experiment helped me to understand the influence of major environmental drivers regulating carbon exchange within controlled conditions. The results of this experiment will further help me to model the interactive effect of these two major environmental drivers within real field condition. Field experiment was also conducted to determine seasonal variation of the components of carbon balance. This was done by measuring root zone soil moisture, photosynthesis and respiration of pasture and kanuka plants, at monthly intervals throughout the growing season. So my current research is focused on investigating and developing a model based on the response of physiological processes to environmental variables within a system undergoing land use change.
One of my keen interests is to develop carbon monitoring methods at different levels, linking physiological responses to spectral signatures using remote sensing techniques. Data analysis of experiment on rye-grass within glass house and open conditions is continuing to investigate the possibilities of linking physiological, phenological and laboratory measurements with reflectance measurements. Results of this experiment are expected to enable scaling of leaf level measurement to a landscape level.

I am currently writing up and framing my thesis, spending much time on my computer!

**Recent Publications**


and now for something completely different.....

Live like a Crusader!
Samantha Hickord lived like a Crusader last Wednesday, going to practice and having lunch with the team. On Friday 8th May Samantha got to run out with the game ball for a Crusader victory! She was also given a signed ball to keep forever and ever! Proud Dad, Michael, got to tag along too.

Thought for the week.....

"The Bible tells us to love our neighbours, and also to love our enemies; probably because generally they are the same people."  G.K. Chesterton
Congratulations to Nicole for being awarded one of the inaugural University of Canterbury Health, Safety & Wellbeing Awards 2009. This is a nice recognition by the University of the immense amount of work Nicole does on the School's behalf and also in the wider University environment. The Award will allow Nicole to attend the 2009 Tertiary Sector Health & Safety Conference and make a site visit to University of Otago which has a whole team of people employed to do what Nicole does for this University. She will also attend the annual MAF Biosecurity Summit in Wellington later this year.

Term is nearing its end which means examinations are looming. For staff this means examination papers need writing and, for students, studying will intensify. This can be a stressful time for students so please keep an eye on each other and remember there is support available if you feel the pressure is building up.

Best wishes
Paula

Building update

The walls of the sixth and final floor are now going up, the suspense is all too much...

Latest theses in the school collection


and now for something completely different.....

Neologisms
The Washington Post has an annual contest in which readers are asked to supply alternative meanings for common words. And the winners are:

1. Coffee, n. The person upon whom one coughs.
2. Flabbergasted, adj. Appalled by discovering how much weight one has gained.
3. Abdicate, v. To give up all hope of ever having a flat stomach.
4. Esplanade, v. To attempt an explanation while drunk.
6. Negligent, adj. Absentmindedly answering the door when wearing only a nightgown.
7. Lymph, v. To walk with a lisp.
9. Flatulence, n.. Emergency vehicle that picks up someone who has been run over by a steamroller.
15. Frisbeetarianism, n. The belief that, after death, the soul flies up onto the roof and gets stuck there.

Thought for the week.....

"When one door closes, another opens; but we often look so long and so regretfully upon the closed door that we do not see the one which has opened for us."  Alexander Graham Bell
Introduction
Paula is away this week so you have me looking after the place. It is likely to be a very busy period. Our plan for the change to 15 points went to Board of Studies on Friday and, of course, it has come back to us for modification. With an agenda of 400 pages, it was impressive that people had closely read our plan and found the problems. People were certainly impressed with the two course outlines that still think we are in 2006. We need to work quickly to modify our document in time for Faculty – more about this in a separate e-mail. We have interviews for the College PVC all this week – see below for details. All three applicants have the chance to tour our School. Because we are one of the biggest departments, I get 15 minutes with them. The smallest department, Gateway, gets 5 minutes!

This week is the deadline for production of end of course exam papers. It would be nice if I could get them as early as possible as my diary is very full this week. If you are a student reading this it’s a timely reminder that the semester is coming to a close. Make sure that you know where and when your examinations will be held. Every year we have students who miss an exam because they have the day or time wrong. You do have the ability in this instance to apply for a Special Pass (only one allowed per academic career), but it is much better not to need this route. If you do find yourself in this situation, come and see myself or Paula immediately, and before you do anything else.

~ Bill ~

Buildings
Every day seems to generate new dates for the timing of the breakthroughs into the Zoology building. For example on Monday (18th) we were assured that this was all solved and that breakthroughs would happen in October/November. On Friday we were told that the date has been moved to the mid-year break, which is only two weeks away. There are no details about how this will affect occupants of Zoology, as the work will require shutting down the heating each time a breakthrough is made. Gavin and Bill have a meeting on all of this with the builders and architects on Monday (25th), so watch out for further details.
Thanks to all the 4th Years that were able to turn up to Thursday's celebration of being Half Way There! Four months have flown by and in another short four months it'll be exam week. If anyone is struggling and/or would like some advice please contact Mare Hale, 4th Year Co-ordinator, Room 430.

**Thought for the week**

*Growing old is mandatory.*

*Growing up is optional.*

-- Chili Davis, California Angels ballplayer
Queen’s Birthday Special

She's back!!!!! In case you hadn't heard!

Another term has slipped by and we are now in the final week of teaching for the first semester, with only three weeks to the shortest day. Quite scary how fast this year seems to be slipping away.

Last week seemed to be especially busy. There were, of course, the College PVC interviews, but there was also the bad weather messing up people’s research, lots of behind the scenes activity relating to the move to a 15 point course structure, and production of exam papers ready for the start of the examination period in two weeks time. And of course there was the silliness of windows and breakthroughs in the Zoology building (see buildings section of the Newsletter for details). This latter activity will ensure that many of us will be kept suitably busy (and cold) throughout the mid year break. Just to top off the week the University computer system suffered a major collapse. People reliant on the P drive found themselves unable to save documents, or worse, thought they had saved documents, but hadn’t. I could almost say I was safe because I always save my files to the C drive. However, last week my computer “beeped” at me, then decided it wanted to make a noise like a 747 taking off, and it is now in the computer hospital. Hopefully it will come back healthy. It is certainly a timely reminder to everyone (especially me) to back up files.

It is the end of term and this is usually the stairdancer season where people lose things like wallets and laptops left in unoccupied, unlocked offices. We have the added problem this week that there are numbers of workmen in the buildings either fixing or destroying things. So please be safe and make sure your room is locked.

Marine Ecology Position

This is close to the stage where we will narrow the field to three or four people for interview. Copies of the thirteen candidates on the long list are available to staff via Lyn’s office, and people are most welcome to feed information to the selection panel.

Fifteen Points

Much of the hard work for this is over, other than writing new lectures. The complete package for changing all of our courses to 15 points will be discussed at Faculty this week. Assuming this all goes smoothly, Matthew and Bill have the task of changing all of the courses through the Minor Course Change System. Details of timetabling for next year will be discussed at this week’s TLC meeting.

Building Update

The final floor pour happened last week (level 6) after almost a week of delays caused by the bad
weather. The walls for the 6th floor should go up this week, followed by completion of the roof. This will mark a major milestone for the building as it signals the last of the major concrete work. Following this, work will move to making the building weatherproof. Work has already started on the internal structure with lots of wooden framework emerging on the lower floors.

Things are moving very quickly regarding breakthroughs. These will happen through the five week semester break, and in addition all of the glass in the windows looking into the atrium will be replaced. There will be major disruptions to heating throughout this week. The aim is to cause the minimum amount of disturbance, but as every room will need to be worked on, there will be some disruption. We have been promised that each window will take one day to complete. We have a major problem with compliance issues once the new glass is in place and we are working on a solution to this.

Other building news: There is a meeting this week to finalise the design of the atrium, and finally, a meeting mid June to start planning for stage 2.

~ Bill ~

Nicole Lauren-Manuera, with her UC Health, Safety & Wellbeing Award, which she received this morning from the VC Rod Carr. Nicole was awarded $1,500. The Award will allow Nicole to attend the 2009 Tertiary Sector Health & Safety Conference and make a site visit to University of Otago which has a whole team of people employed to do what Nicole does for this University. She will also attend the annual MAF Biosecurity Summit in Wellington later this year.

Recent Publications


and now for something completely different.....

- I know I'm in my own little world, but it's ok. They know me here.
- When you don't know what to do, walk fast and look worried.
- You will always get the greatest recognition for the job you least like.
- No one gets sick on Wednesdays.
- The longer the title, the less important the job.
- Machines that have broken down will work perfectly when the repairman arrives.

Thought for the week.....

On the keyboard of life, always keep one finger on the escape key.

Contact details

If you have items of news or interest that you would like included in this newsletter, contact the admin office before noon on Friday at bioladmin@canterbury.ac.nz or phone 6732.

ISSUE 100 NEXT WEEK - all contributions considered!!
The Newsletter is meant to cover all sorts of information relevant to members of the School. The idea is that it reduces the amount of email traffic and consolidates lots of bits of information into the one mail out. I encourage people to continue to use it for this purpose - it does get read judging by the number of 'hits'.

New PVC: By now you will all know that, Professor Paul Fleming will be our new PVC. I look forward to working with him when he arrives. I would like to thank many of you whose support leading up to and during the selection week and words of 'welcome back to the fold' subsequently have meant a lot to me. We have a lot of challenges ahead of us but with the good will and effort from everyone we will be able to meet them.

~ Paula ~

Paula has been our Head of School for 5 years this month, so we are celebrating with coffee and cake this Wednesday (10/6/09) at 10.30 am in the tearoom. Take a break and join us to mark the occasion.

Building Report

Breakthroughs are eminent and so is the heating, yeah right!!

PhD Profile - Sue Adkins

This is a better later than never tale. Twenty years ago I moved to Christchurch, with 3 teenagers and a baby. This was a great opportunity to complete a BSc, which took less time than first thought. By now totally hooked on uni life, an MSc in freshwater ecology seemed a good next move. A bit of a lull from study followed but a PhD was calling. The teenagers and the baby had grown up (sort of), husband was not thinking about retirement, so what could be better and here I am, thoroughly enjoying myself.
Title: Restoration and Sustainability of Intertidal Shellfish Beds

Using the intertidal marine bivalve *Austrovenus stutchburyi* as a model, this part time PhD project is investigating factors that may have resulted in current declines in shellfish beds, and methods and techniques of restoration.

Endemic throughout New Zealand *Austrovenus stutchburyi* is an important species to recreational fishers, has cultural significance and is of economic value, with commercial fisheries for cockles having existed around Whangarei Harbour since the 1970’s, at Nelson (Golden Bay) and in Otago. As well as having an impact on commercial harvesting, declining cockle numbers impact ecologically through the loss of a food source for wading birds such as Caspian terns, godwits and oystercatchers. Cockle stocks throughout New Zealand are variable with some areas showing a marked decline in numbers. Apart from the Avon-Heathcote estuary, little is currently known about cockle population in the Canterbury area.

Over harvesting is a possible reason for shellfish population declines, but beds that have been closed to harvesting for several years show low but stable population densities, suggesting that other factors such as contaminants, disease, and predation as well as nutrient availability and quality may have impacts.

With increasing development of aquaculture in Pegasus Bay and Banks Peninsula there is concern about the sustainability of local cockle beds, as the effects of aquaculture on nearshore communities is not well understood worldwide.

This project is assessing environmental influences to identify whether lack of larval recruitment is leading to the population density declines, and what may be responsible for low spat production. A number of processes are linked to larval recruitment, namely reproductive rate, post-settlement processes, the recruitment of juveniles and the growth of individual cockles. It will establish protocols and techniques for use in shellfish bed restoration.
The key questions being addressed are:

1. Do environmental conditions affect the health, growth and reproduction of shellfish? I.e. does cockle condition correlate with environmental factors?

2. Can shellfish beds be successfully enhanced by habitat restoration or improvement?

3. Can cockle transplants be used to improve or maintain the long term sustainability of shellfish beds?

In addition to my PhD research I am employed in Bridging Programmes (CBE), developing and delivering biology courses to international and domestic students. I'm also lab supervisor for BIOL112 and BIO113 here in SBS. Time away from university is spent with family, and they are my greatest supporters. Over my postgrad years my husband and 4 children have all been called on to be field assistants and I'm now thinking its time to train the 3 grandkids.

Recent Publications


Thought for the week

The difference between the impossible and the possible lies in determination.
It seems we are in the run down to exams and in waiting to see how influenza H1N1 will affect the University.

Our admin people would really appreciate it if you feel unwell to use the phone rather than drop by the office.

If you are affected by illness or other circumstances in the lead up to or during exams then you can apply for impairment or aegrotats BUT you need formal documentation from the Student Health Services or your doctor that such is the case.

Keep well

~ Paula ~

--- Building Report ---

Breakthroughs are happening today.

--- FRST post-doc - Hamish Greig ---

The grant is a NZ Science and Technology Postdoctoral Fellowship administered by the Foundation for Research, Science, and Technology (FRST). The project is entitled “How does past climate variability influence organismal and community resilience to climate change” and he will be working on freshwater ponds as a model system. The research will use a combination of meta-analysis of international studies of pond communities, and lab and field experiments to understand the effect of climate variability on the specialisation of species traits and habitat distributions, and their subsequent resilience to novel stress associated with climate change.

The total value is CAD $180,000 over three years, which includes both stipend and research costs. The research will be hosted by the Department of Forest Sciences and the Biodiversity Research Centre at the University of British Columbia in Vancouver, and will include field work in Canada, the USA and New Zealand.

CONGRATULATIONS HAMISH
This is a tale of serendipity. I arrived in New Zealand on the 10th January 2001 and reached Christchurch with $300, a bag and no particular plan. But I decided to stay. I worked for a while as a tree surgeon, security guard, secretary, workshop gopher, and truculent tele-marketeer before receiving my residency permit. A permanent resident can attend an institute of higher learning in return for much subsidized domestic tuition fees. In my native country I would have indebted myself for life. Their loss. I knew I would need a job, I liked fishing, rivers and the natural world and the growing competition for water in Canterbury and the rest of the world made my choice obvious. I came to Canterbury to study environmental science and concentrated on freshwater with Jon Harding and the rest of the FERG group. I first entered the campus on 11/9/01, the day the world changed forever.

Field work is an important part of my research and always rewarding. Getting out there and wandering about has been the key to everything I have learned and the inspiration to learn more.

Scouring the Alps for brown trout became a passion of mine and in doing so I stumbled upon the focus of the last 6 years of my research life. Braided rivers are a distinctive feature of many areas of New Zealand, no more so than in Canterbury. You can’t leave without crossing one at some point. Broad gravel beds are regularly inundated and re-arranged by huge floods of water and sediment funneling down from the mountains. What self-respecting trout would live in that maelstrom? Beneath the gravels things are calmer. The untidy confusion of surface waters enter a world of constant darkness, draining through an immovable matrix. The alluvium transforms and homogenises creating a world of stable temperature, chemistry and flow. Things live in this world, lots of things, but their contribution to ecosystem services, such as our clean drinking water, is unknown. Sometimes this water comes back to the surface; clear, stable spring creeks meander across the floodplain parallel to their bellicose big brothers before being absorbed to complete the cycle once again. That’s where the big trout live, but these sites are also hotspots of biodiversity, bio-productivity and biogeochemistry for invertebrates, fish and carbon molecules.

My PhD has involved a national scale survey of braided river invertebrates, which considered multiple habitats within multiple reaches of eleven rivers. Lateral habitats such a springs and ponds are indeed centers of diversity and we now have to re-scale our view of braided rivers to incorporate lateral and longitudinal variation, before the rivers are completely drained/damned/diverted. This survey has also given me the opportunity to address some fundamental ecological questions about metacommunities, local versus regional richness and species distribution-abundance patterns.
Prorhynchus putealis – might be a predatory groundwater flat worm. Sadly the slightest change in temperature causes it to disintegrate.

I have also been playing with a mass spectrometer. Ratios of light and heavy isotopes of carbon can be used to identify food sources of biota. I wanted to know if there were exchanges of carbon, via feeding, between groundwater taxa (see photo: the predatory worm) and surface spring taxa. The taxa feeding question remains moot, but we have observed an interesting section of the carbon cycle. Groundwater has high excess partial pressures of CO2 with a distinctly deplete δ13C signature. The origin of this carbon can only be terrestrial vegetation in the greater catchment. Organic matter is broken down in the soil and groundwater where microbial respiration releases CO2. In the surface spring, whose food-web is strongly autochthonous and algal based the entire food web from algae to fish closely tracks the isotopic signature of this CO2. This work is ongoing and I am planning to do a more in-depth longitudinal food-wed in adjacent springs; one in bush and one in the tussock. This will inform us about the relative contributions of groundwater, allochthonous and autochthonous carbon to spring systems and give me the chance to get out in the field one last time.

People are important too, not these two in particular, it was the best picture me I could find.

All that remains is to reconcile the two prongs of my work into a cohesive “thesis”. I am a citizen now with a New Zealand partner, daughter and another on the way. My Bag“gage” has grown and I don’t have $300 anymore, but maybe there is a job round the corner. This university has been a major component of my life since I arrived and I have thoroughly enjoyed most of it.
Recent Publications


Thought for the week

The language of friendship is not in words....but meaning
We are part way through the interview process with applicants for the Biochemistry position (note seminar times below) and beginning the week of 13th July we will start a similar process for our Marine Ecology position.

We are also part way through the exam period and influenza H1N1 hasn't yet swept through the University community - so hold your breath.... and wash your hands! And keep abreast of the influenza details posted by the University.

~ Paula ~

**Building Report**

All ear muffs have been sold out...

**Recent Publications**


**Thought for the week**

A stranger is only a friend you have not met.
Introduction
The examination period has finished and campus looks exceedingly quiet – students are conspicuously absent and even the School seems quiet with many staff away at conferences etc. The only busy place seems to be my room, with lots of visitors making sure I have plenty of admin tasks to keep me off the streets. This is probably just as well, looking at this morning’s newspaper with tales of gunfire and armed offenders squads in Burnside. When I can look out of my office window and see where this all took place, it makes it all very real. By-and-large the University campus is a safe place, let’s all work to keep it that way.

The selection process for the HoS is well underway. We had a single applicant, Paula, and she will be presenting her vision for the School early in July. Hopefully after that we can tidy everything up and get back to business as usual.

~ Bill ~

Building Update
The roof of the new building has now been poured, so all we need is a bit of work on the inside and we will be ready to move in!

Occupants of the Zoology building will be aware of a great deal of noise at the moment. This is a consequence of the builders cutting large bits from the side of the building to connect Zoology with the Atrium. What was supposed to be an easy job turned to custard as the builders discovered that Ministry of Works 45 year old concrete is very hard. The solution was to get bigger tools. They are currently well ahead of schedule, hacking through level 5 as I write this. Things will slow down because we don’t have level 6 ready for them. This week the builders are hoping to start reglazing all of the windows that will look into the Atrium. They have promised that there will be minimal mess and that each window will be completed in a day.

In other building news, work is to start shortly on the metal framework for the Atrium, we have some very nice drawings detailing the ground floor of the Atrium, although the water feature looks exceedingly large, and we have the first meeting this week to start planning for Stage 2. This meeting is very important as it will lead to a timetable for the move into the research building and the related steps to evacuate Zoology. Hopefully there will be some news in next week’s newsletter.
Undergraduates

Enjoy your break. Stay well, look forward to seeing you back on July 13th.

Postgraduates

Notes of June’s Postgrad Student Committee to be found here

Recent Publications


and now for something completely different.....

Field work with a difference: Rennie breaking the ice on a high country lake trying to catch freshwater crays

![](image)

Thought for the week.....

The heaviest thing to carry is a grudge.
**Wedding congratulations:** Our heartiest congratulations to Ashley Garrill on his marriage last weekend to Wendy Lawson.

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**Influenza H1N1:** Academic staff are being inundated with messages from the Registry regarding preparing Semester 2 lecture material so that in the event of a lot of students being away due to the H1N1 flu virus, or the staff member themselves being ill, that equivalent material will be available to students during the semester.

We have made it through the exam season without undue problem. Examinations have all been marked on schedule within the school. Special exams and tests are being offered for those students who did miss exams. However, Semester 2 is scheduled to start as normal on July 13th.

While many people are indicating that they 'don't mind if they get this flu' it would be good to have a very slow spread of it so we can keep functioning!! So please do keep washing your hands and stay away if you are sick.

~ Paula ~
Building Update

Not a lot to report. The breakthroughs are almost complete so the jackhammer noise should not be too unbearable this week. Work will continue on reglazing the windows. Work has started on demolishing bits of the 7th floor (starting in John Scott's computer lab).

Latest theses in the school collection


Thought for the week

A dream is an answer to a question we haven’t yet learned how to ask.

- Fox Mulder
Congratulations & Good Luck!

Congratulations to both Jason Tylianakis and Amy Whitehead who have been called through to the final round of the MacDiarmid Young Scientists of the Year Awards. They will each have 10 minutes to present their work followed by 10 minutes of questioning from a five member panel of eminent scientists. We wish them both well!

~ Paula ~

Building Update

It is there......look out your own window for further updates.

Biology-Chemistry Ball

<table>
<thead>
<tr>
<th>Date:</th>
<th>Saturday 26th September</th>
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<tbody>
<tr>
<td>Open to:</td>
<td>All Biology/Chemistry 300 level students, postgrads and staff</td>
</tr>
<tr>
<td>Tickets:</td>
<td>TBC</td>
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<tr>
<td>Location:</td>
<td>Crown Plaza</td>
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Recent publications


Thought for the week

"A fool gives full vent to his anger, but a wise man keeps himself under control."  Proverbs 29:11
Love is 'still' in the air...

Amanda & Hamish - Saturday 18th July

Thanks!
Just a note to say thank you for the card and lovely gift from the department. We had a really lovely day and a great time in the SW States on honeymoon – Ashley & Wendy

~ Paula ~

Recent publications


and now for something completely different.....

Love is...

Thought for the week.....

In the spirit of falling in love and all that gushy stuff...

"Life is not the amount of breaths you make, it's the moments that take your breath away."
from the movie, "Hitch"
Summer studentships launch: Tomorrow (Tuesday 28th at 5pm, room 456) Plant & Food will launch their summer scholarships scheme. Previously this only took place at North island venues. All interested students are invited to attend. Details and programme later in newsletter.

Watch also for the 60-plus summer scholarships that will be advertised for the College of Science.

We have almost come to the end of our series of new appointments: over the last five years we have had a one-third turnover of academic staff. This has also been the case in many other parts of the College of Science. There is a very active move, initiated by newly appointed academic staff within the College to form an Early Career Research Forum to provide the opportunity for new staff across the College to interact. Jason Tylianakis was part of a group that presented their ideas to the College Executive. These were warmly received. Thank you to all who have helped select, host and provide feedback on our academic staff appointments over the last few years - I think you will agree we have made excellent choices!!

The College of Science will shortly move into another phase as Jarg Pettinga, who has done an excellent job as Acting PVC, moves to a similar role for the College of Arts. Bryce Williamson will move from Chemistry to Acting PVC for Science until the arrival of our new PVC, Paul Fleming. Jarg has done a superb job for the College and for our School in his interactions with the Senior Management Team and the VC.

Curator appointed for the Botanic Gardens: Many of you will remember a few years ago a move by the University to have a joint appointment between the School and the City Council around their curator position and our plant systematist position. Each position essentially needed a full-time commitment and fortunately a joint appointment was not made. Now we have Pieter Pelser here as our full-time plant systematist, and last week Dr John Clemens was appointed by the City Council as their curator. As many of you will know, John is a Adjunct Senior Fellow in the School and married to the HoS.

~ Paula ~

Building update

Reglazing continues at a relatively slow pace. The major problem is the supply of new window fittings from the North Island.

During the break there will be some trench digging work in the carpark which will also potentially involve some power outages. More on this as details emerge.
Discussions are continuing about potential compliance problems in offices with the new glazing. This will be sorted this week. The seventh floor is proving to be particularly problematical.

Otherwise everything is progressing well and the priority is to get the building weather-tight as soon as possible to allow the internal linings to be erected.

**Biology Photo Competition 2009 – The Colour of Life**

Current students in the School of Biological Sciences are invited to submit their photos to the annual photo competition. This year the theme is “The Colour of Life” allowing wide scope for interpretation from molecules to mountains and beyond. The images must be your own and taken within the last 12 months.


Entries close 5pm Friday 18th September 2009.

Prize-giving and display will be on Wednesday 30th September.

**Recent publications**


**Thought for the week**

On the keyboard of life, always keep one finger on the escape key.
Invitrogen Merit Award

Elizabeth Wiltshire, is this year’s winner of the Invitrogen Merit Award, awarded for the 4th year student with the highest grade point average. She has won a personal scholarship of $1,000 and an equivalent sum to spend on Invitrogen products to use in her research. Congratulations!

~ Paula ~

Building update

Unfortunately not hot enough yet for their shirts off, but keep watching...

PhD Profile - Kristy Hogsden

Hello, I am Kristy. I moved to Christchurch last July from the east coast of Canada and am happy to be living close to the mountains in New Zealand! Just prior to moving here, I was working as an environmental consultant for an engineering firm in Saint John, New Brunswick. Before that, I completed my BSc (Honours) at Trent University and my MSc at the University of Alberta.

I am interested in understanding the impact of anthropogenic stress on ecosystem properties and processes. Over the past few years, I have worked on butterfly communities in urban areas, recovery of benthic algae in lakes acidified by atmospheric deposition, and the effects of an invasive macrophyte on lake communities. When the opportunity to work on streams impacted by acid mine drainage (AMD) came up, I took it! My PhD research is focused on food web structure and energy flow in streams affected by AMD. I am one year into my PhD working under the supervision of Jon Harding and Mike Winterbourn as part of the Freshwater Ecology Research Group.
Globally, AMD is an environmental consequence of mining that occurs as sulphide minerals and heavy metals associated with deposits of coal, copper, lead, zinc, or gold are released to weathering processes during excavation. Acidity is generated by the chemical oxidation of sulphides exposed to air and water or via the activity of sulphur-oxidizing bacteria. This highly acidic (e.g., pH < 3) runoff flows with elevated concentrations of dissolved metals (e.g., aluminium, iron, zinc) into nearby surface and ground water. When AMD enters a stream with a higher pH, the solubility of some metals is exceeded. Under these conditions, metal hydroxides in the form of loose flocs or tight plaques precipitate out of solution and coat the streambed and organisms. The precipitation of iron, termed “yellow boy”, is a visible sign of AMD impact (have a look at Garvey Creek next time you are driving through Reefton).

The complex interactive nature of chemical (acidity, metals) and physical (metal hydroxide deposition) stressors associated with AMD create a challenging environment for aquatic biota. Sensitive species of algae, benthic invertebrates, and fish are eliminated in streams receiving AMD inputs and the
stream community structure shifts to one dominated by a few tolerant species. The loss of sensitive species or entire trophic levels (i.e., fish) simplifies the food web and effectively reduces the number of interactions between species. These changes in stream community composition and structure can radically alter how energy (i.e., carbon) is processed and moves through the system and will effect how the stream functions.

My research is based on the northern west coast of the South Island where current and historic AMD inputs from coal mining activities have impacted numerous waterways. Using both survey and experimental approaches, I plan to describe the structure, trace energy flow, and investigate trophic interactions (e.g., grazing) in stream food webs affected by AMD. Approaching stressed ecosystems from a food web perspective is important because species depend on how their resources, prey, and predators respond to stress.

Right now, I am analysing food web components (i.e., bacteria, fungi, algae, invertebrates, and fish) collected from a survey of twenty streams to separate the effects of natural versus anthropogenic acidity and metals on food web structure. This means lots of time in the lab picking bugs and looking at fish guts!

**Thought for the week**

“As a culture, we seem to have trouble distinguishing science from pseudoscience, history from pseudohistory, and sense from nonsense.”

I am very happy to announce that Ren Dobson has accepted the biochemistry position and will be joining us early in 2010.

I will be in Malaysia with the Alumni group from Thursday 13th to 23rd August, seeking sponsorship, full fee undergraduates and quality postgraduates. I will be in KL, Kuching, Sibu and Bintulu and am also hoping to have a half day off to visit the orang-utan orphanage in Kuching.

Bill Davison will be Acting HoS in my absence.

H1N1 flu is definitely still around so please continue to take precautions.

~ Paula ~

Building update

Power outage for Biology and Von Haast Buildings.

On Monday the 31st August the electricians need to reroute our existing 11kv cable and install a new 400V cable. They have managed to come up with a scheme which means we will continue to be supplied with power although at a limited capacity.

This means that all non essential equipment should be turned off for the day. Lifts, the autoclave and any empty constant temperature rooms will also be shut down.

We should have enough power to run all our freezers/fridges etc as well as a limited range of other equipment.

If you can avoid any laboratory work on this day which is likely to use electricity this would be appreciated.

Hopefully everything will go according to plan and we will have full power back on the following day.

Recent publications


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**and now for something completely different.....**

**The Irish Joke**

Paddy and Mick were given a job to measure the height of the flagpole.

They duly arrived and were standing at the bottom of it trying to figure out a way to measure the height. A blonde walked passed and asked what they were doing. Paddy said they were trying to measure the height of the flag pole.

The blonde walked over to their truck, took a spanner, unbolted the flag pole and laid it on the ground and measured it. She then stood it back up, put the bolts back in, handed the spanner back to Paddy and said, "18 metres". Then walked away.

Paddy turned to Mick, shaking his head and said,

"Typical blonde, we want the height and she gives us the length."

**Thought for the week.....**

*Faced with the choice between changing one’s mind and proving that there is no need to do so, almost everyone gets busy on the proof.*

-- Galbraith's Law
Last week of term already. I have no idea where the time goes but this term has certainly gone fast, though I’m not at all sure of what I did through this time.

Looking at my garden, spring has already arrived, though some of the flowers seem remarkably early. Spring usually means increases in the amount of field work and its associated hazards. Please think hard about safety as you head out to your field site, make sure all of your equipment works before you set out rather than cobbling stuff together once you get there, and most importantly fill in your trip intentions sheet so we know where you are. Some of you are becoming quite lax about this (and a few of you have never filled one in!) and it is an area we need to tighten up on. This is an obvious lead-in to the work that Jim Briskie and others in the School are working on – field trip intentions. Central Health and Safety have got hold of this and there is currently a major review of procedures. The draft form has clearly been put together by lawyers and looks horrendous. Jim’s job is to try and get it to be more user friendly. Whatever happens, we can expect more paperwork and it will be compulsory. So start filling in the School’s intentions form.

We must be getting close to refresher training time for all of you working in PC labs. This is compulsory for all staff and students working in these labs, or dealing with restricted biological material. Expect the e-mail soon.

~ Bill ~

**Boobies found to be still bobbing**

Tammy Steeves is fascinated by boobies and she’s not afraid to admit it. The Canterbury University biology researcher has heard all the jokes about the unusually named seabird she has studied over the past decade. Now she is winning plaudits as well as the giggles after helping rediscover a species of booby that was long considered extinct.

Read the full [NZ Herald](http://www.nzherald.co.nz) story.

**Recent publications**

and now for something completely different.....

Wine DOES NOT make you FAT, it makes you LEAN...against tables, chairs, floors, walls and ugly people.

We all fail sometimes. But there's something about failing with style. Here are some of the best test paper blunders from the most clueless - and inventive - of students.

Classical Studies * Question: Name one of the early Romans' greatest achievements. Answer: Learning to speak Latin

Classical Studies * Question: What were the circumstances of Julius Caesar's death? Answer: Suspicious ones

Biology * Question: What is a plasmid? Answer: A high definition television

Geography * Question: What does the term "lava" mean? Answer: A pre-pubescent caterpillar

History * Question: Where was the American Declaration of Independence signed? Answer: At the bottom.

Mexican wave for Tammy!!

Thought for the week.....

"Most people travel to see the world, while a few simply decide to open their eyes."
- Written in 2009 by Tomislav Domacinovic, Croatia
Paula is back in the country but is away sick, presumably with some nasty virus picked up offshore, so I'm afraid you still have me looking after the shop. You will need to be vigilant if you wish to see me, as I am supposed to be at a two day H & S meeting on Tuesday and Wednesday and I aim to take two days of leave at the end of the week.

I should start this week’s newsletter by announcing our new lecturer in Marine Ecology. Sharyn Goldstien will be taking up her appointment on 7th September. Well done Sharyn and welcome aboard.

We seemed to have survived term three and the influenza epidemic remarkable well, with only a handful of our staff away sick. We have certainly fared much better than some other science departments where there have been some real problems with absent staff. We are obviously just a hardy bunch. So a big thank-you to all of our immune systems for coping so well. Hopefully, now that the epidemic is on the wane, next term should be a breeze.

Lots of things will be happening with the new building over the next couple of weeks, an obvious one being the large cordoned off area in the car park. This is about to become a series of deep trenches associated with electrical things. Don’t forget about the power outages at the end of the month.

A final comment from me: fire evacuation drills are planned for the week of Monday 21 September. Graeme Bull will be contacting you shortly to ask about times that should not be used. When the alarm goes, please make your way to the collection (assembly) point which is on the grass outside of the C lecture block. People lecturing during that week should make sure that they know the rules about clearing their lecture theatre

- Make sure your class knows how to evacuate the building and where to assemble – there should be overheads next to the evacuation info at the front of each lecture theatre.
- Make sure you know what areas you need to clear, especially in the Science Lecture Block.
- You become a fire warden and need to report to the reporting site to announce that your area is clear – don't just follow your students out
- First lecturer to reach the reporting area becomes the chief fire warden. It is this person’s responsibility to call the fire brigade, to check off cleared areas as they are reported and to communicate to the fire brigade when they arrive which areas have been cleared, and which have not (it is not your job to check any uncleared areas).

~ Bill ~
**Paper prize**

**Dr Michele Greenwood** won the New Zealand Ecological prize for the best student paper published in 2008. The prize was announced at the AGM of the N.Z. Eco. Soc. which was held at the INTECOL conference.

Read the winning journal here!

**Scholarship Success**

Out of the recent UC Summer scholarship project applications that were applied for 14/17 were successful. Congratulations to all!

**Latest Adjunct Fellow**

**Dr Julie Barcelona** has been confirmed as an Adjunct Fellow in the school. Julie is located in room 433a.

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**Building Update**

Building work is still going well and the builders report that it is about 3 weeks ahead of schedule. Over the next 2-3 weeks:

1. Reglazing should be finished
2. Rooms that will look into the atrium will have some extra work done to them to make them compliant for fire rating. Mainly this will involve changes to the doors, installation of smoke detectors and minor modifications to the windows. The plan is to do one room at a time, so one interruption rather than a series of smaller ones.
3. The loading bay area will be sealed.
4. Room 701 needs to be modified to allow access to the atrium. There are no details about this at present.
5. The major priority for the new building is to complete the glazing because much of the internal work cannot proceed until the building is watertight. The current plan is to have the atrium room installed and glazed by 15th September. It is worth heading up to level 7 in Zoology (room 705) to look at the amount of activity happening up there.

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**Recent publications**


and now for something completely different.....

A storm with a proper name: Bill

Check it out: http://www.stuff.co.nz/world/americas/2761372/Atlantic-storm-predicted-to-strengthen

Thought for the week.....

Dr. Evil: It's DR.Evil! I didn't spend six years on evil medical studies to be called "mister", thank you very much!
As many of you will know I recently spent 10 days in Malaysia - Kuala Lumpur, Kuching, Sibu and then I was supposed to go onto Bintulu. However, that campus was quarantined (H1N1 outbreak) and instead I went down river from Sibu to Dalat, then onto a longboat for several hours. We then drove to Mulah to overnight then back to Dalat and the boat back up river (40 people in a 20 seater boat!). The ethnic group we visited were the Melanau river people. I would happily eat sago biscuits made in the cottage industries but doubt I'll ever eat sago flour again. I'll elaborate if anyone cares to listen! However, this was just a short interlude in an otherwise busy trip of talks and recruitment. Unfortunately, even though I was really careful I managed to contract the flu plus pneumonia (classic - got sick on the plane on the way home) so was off work last week. However, Bill and Matthew ably took the lead in my absence.

Thanks everyone for switching off yesterday - and Nicki for her timely warnings.

~ Paula ~

Erskine Fellow visitors

On 1 September we will be welcoming Erskine Fellow Professor Evan De Lucia from the University of Illinois. Hosted by Matthew Turnbull, his areas of expertise are: physiological ecology of vascular plants; photosynthesis; plant architecture; stress; and climate change. Departing 30 September.

On 7 September we will be welcoming Erskine Fellow Associate Professor Bridget Mabbutt from Macquarie University. Hosted by Juliet Gerrard, her areas of expertise are: structure and function of proteins; protein NMR; structural genomics of the bacterial mobile metagenome. Departing 18 October.

Both visitors will be housed in the Erskine Room, Biology 508. We can expect a couple of great seminars.

CONGRATULATIONS TO AMY, JASON AND LIZ!!

Scientist honoured for native duck research

A University of Canterbury PhD student whose research has given some of New Zealand’s most endangered wildlife a better chance of survival has been recognised as a Young Scientist of the Year.
Amy Whitehead won the Understanding Planet Earth category award and was the overall runner-up in the 2009 MacDiarmid Young Scientists of the Year Awards presented in Auckland last night for research centred on the Whio, or native blue duck, an iconic species of New Zealand’s mountain rivers.

She was one of four UC researchers recognised at the awards. Senior lecturer Dr Jason Tylianakis was runner-up in the Understanding Planet Earth category for his research into food webs in coastal Ecuador.

Read the full writeup in the UC Diary.

**Invitrogen Merit Award**

The school has an award for the 4th year student with the highest grade point average, the Invitrogen Merit Award. Liz Wiltshire was the deserving winner of a personal scholarship of $1,000 and an equivalent sum to spend on Invitrogen products to use in her research this year.

Pictured: Liz Wiltshire and Abby Sukman (Invitrogen)

**Loud Shirt Day**

Friday 18 September - "Let your crazy out at work"

The school is registered for 11-25 persons, the pack will be arriving in the mail soon if you wish to participate with us, otherwise go online to register at www.loudshirtday.co.nz
The office will put together a prize for the school's loudest shirt!

This is one day a year where everyone can go crazy and commit some serious fashion crimes by stepping out in their loudest, brightest shirts. You'll have a whole lot of fun and also be helping give deaf children a voice!

Loud Shirt Day is the annual appeal of The Hearing House and the Southern Cochlear Implant Paediatric Programme, two charities who are dedicated to enabling deaf children with a cochlear implant to listen and speak like their hearing peers.

In 2008, more than 1,300 organisations participated in Loud Shirt Day raising $140,000. With your help they'll sure to be able to give even more deaf children a voice in 2009!

Postgraduate news

Announcement of PhD oral defenses

New to the newsletter will be announcements of our successful PhD oral defenders! For many doctoral students, the PhD oral defense signifies a moment of great achievement following years of rigorous study and research.

Since January 2009:

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Gerard Janssen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Factors affecting the perfusion and delivery of curcuminoids and other molecules to teleost muscle</td>
</tr>
<tr>
<td>Senior Supervisor:</td>
<td>Malcolm Forster</td>
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<tr>
<th>Candidate:</th>
<th>Shiva Rao</th>
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<tbody>
<tr>
<td>Title:</td>
<td>Amyloid fibrils in bionanomaterials</td>
</tr>
<tr>
<td>Senior Supervisor:</td>
<td>Juliet Gerrard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Candidate:</th>
<th>Sebastien Delaux - Dean’s List of Excellence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Physical and numerical modelling of particle settlement in a turbulent flow: implication for the settlement of algal propagules</td>
</tr>
<tr>
<td>Senior Supervisor:</td>
<td>David Schiel</td>
</tr>
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<table>
<thead>
<tr>
<th>Candidate:</th>
<th>Sophie Walker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>The aggregation of dihydrodipicolinate synthase</td>
</tr>
<tr>
<td>Senior Supervisor:</td>
<td>Jack Heinemann</td>
</tr>
</tbody>
</table>
Candidate: **Melissa Hutchison**
Title: Interactions between habitat fragmentation and invasions: factors driving exotic plant invasions in native forest remnants, West Coast, New Zealand
Senior Supervisor: Raphael Didham

Candidate: **Ermin Schadich - Placed on the Dean's List of Excellence**
Title: Skin peptide defences of African clawed frogs (*Xenopus laevis*) and New Zealand Litoria frogs against bacterial dermatosepticemia
Senior Supervisor: Tony Cole

Candidate: **Fiona Cross - Placed on the Dean's List of Excellence**
Title: Attentional processes in mosquito-eating jumping spiders: search images and cross-modality priming
Senior Supervisor: Robert Jackson

Candidate: **Hamish Prosser**
Title: Cardiovascular effects of novel peptides in healthy and ischemic hearts
Senior Supervisor: Malcolm Forster

**Announcement of new postgraduate students**
Also new to the newsletter will be announcements of the latest postgrads starting their degrees in the school.

*Recent entries:*

**Leighton Turner**
PhD candidate, has joined the Molecular Genetics Lab with Jack Heinemann

**Sarah Pilkington**
Recent MSc graduate with First Class Hons, has joined the Molecular Biology lab, undertaking a PhD with Paula Jameson

**Anastasia Shchepetkina**
Recent BSc Hons graduate with First Class Hons, has joined the Free Radical Group, undertaking a PhD with Steven Gieseg.

**Jenipher Cate**
PhD candidate from the States, who is undertaking her degree with Jim Briskie, and in the field based at Kaikoura Field Station.
Paul Dutton
PhD candidate, has joined Hazel Chapman's Nigerian Montane Forest Project group.

Moritz Lasse
PhD candidate from Germany, has joined the Biochemistry Lab with Juliet Gerrard.

Mauricio Foneron
PhD candidate from Chile, will be joining Malcolm Forster in his lab.

Carol Frost
PhD candidate from Canada, has joined the Terrestrial Ecology lab with Jason Tylianakis.

Krystina Sloane
MSc candidate has joined us from the States beginning Part 2 of her Masters with Raphael Didham.

Next Postgrad event
We know that you're studying hard for your upcoming final exams. Best of Luck with them all!

**BBQ : 24th September : Staff Club : 5pm**
To celebrate the end of 4th year exams, there will be a BBQ over at the staff club for all postgrads, on this occasion Steven Gieseg's Research group will be hosting the event.

Please see me on arrival for a ticket for a free drink to go with your food. Please RSVP so they'll be enough food for everyone, including the vegetarians! See you all there, Penny

Recent publications


Thought for the week

Be the change that you want to see in the world
- Mahatma Gandhi -
Brian Mason Applications

The school was successful with three out of six proposals submitted to the Brian Mason Trust. Congratulations to Melanie, Ximena and Tammy!

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Project title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanie Massaro</td>
<td>Science Communication project on Black Robin</td>
</tr>
<tr>
<td>Ximena Nelson</td>
<td>The efficacy of reintroducing the New Zealand Falcon (<em>Falco novaeseelandiae</em>) to the Wairau Valley as both a conservation scheme and a method for biological control of pest birds in vineyards</td>
</tr>
<tr>
<td>Tammy Steeves</td>
<td>Conservation genetics of a critically endangered New Zealand endemic, the orange-fronted kākāriki</td>
</tr>
</tbody>
</table>

~ Paula ~

Lecturer of the Year

Congratulations to: Bill Davison and Paul Broady for being nominated in the Lecturer of the Year 2009

Scientist honoured for native duck research (more...)

Listen to Kim Hill, National Radio talking to Amy Whitehead, who won the Understanding Planet Earth category award and was the overall runner-up in the 2009 MacDiarmid Young Scientist of the Year Award, for research centred on the Whio, or native blue duck, an iconic species of New Zealand’s mountain rivers.


Postgraduate news

The 4th year tests began yesterday and end on Monday 21st September. These are being held on the 4th floor in room 456. Please mind the creaky floorboards along the corridor and keep your talking at a hush when you walk by, thanks. Good luck to all!

Announcement of new postgraduate students

Recent entries:

Lorna Deppe

PhD candidate comes to us from Germany. Lorna is doing her research on albatross breeding on the Chatham Islands. She is with Paul Scofield from the Canterbury Museum and Jim Briskie.
Sharon Graham
PhD candidate comes from the States and is beginning her studies in the Freshwater Research Group with Angus McIntosh.

Recent theses in the school collection


Recent publications


First publication for Laura - Congratulations!

Thought for the week

When you feel yourself slipping, call before you fall.
Conference success!

Leigh Tait (PhD candidate) won two overall prizes as the best student paper at the New Zealand Marine Sciences Society conference held 2-4 September at the University of Auckland. Congratulations Leigh!

Postgraduate news

Announcement of PhD oral defenses

<table>
<thead>
<tr>
<th>Candidate:</th>
<th>Leonard Forgan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Influence of oxygen supply on the metabolism and energetics of fish muscles</td>
</tr>
<tr>
<td>Senior Supervisor:</td>
<td>Malcolm Forster</td>
</tr>
</tbody>
</table>

Announcement of new postgraduate students

Recent entries:

Simon Howard
PhD candidate in the Freshwater Ecology Research Group with Angus McIntosh. Simon received a MSc (First Class Hons) back in 2007 here at Canterbury. Welcome back!

Guadalupe Peralta
PhD candidate comes to us from Argentina. Guadalupe will be conducting her research with Jason Tylianakis in his Terrestrial Ecology Lab.

Recent theses in the school collection


**Recent publications**


**and now for something completely different…..**

This is a 2nd grade computer test in China, go ahead and test your skills!  
http://funstufftosee.com/frogleaptest.html

**Thought for the week…..**

“You don't stop laughing because you grow old. You grow old because you stop laughing.” Michael Pritchard
Merge of travel companies

BTI Signature Travel (trading as HRG NZ) and Atlantic Pacific American Express (APX) have now merged. The two businesses will operate under the APX brand. Read all about it here.

~ Paula ~

Loud Shirt Day

Approximately 15 people let their crazy out at work! The school donated $62.20 to the annual appeal of The Hearing House and the Southern Cochlear Implant Paediatric Programme.
The winners were:
Most Loudest shirt - Craig Galilee
Most Bling on shirt - Anastasia Shchepetkina
Most Daring - Liz Fitzgerald
Most Hideous - David Collings

Thanks to all those who participated and contributed to the appeal

Recent theses in the school collection

Recent publications

Another first, congratulations Denham!


Thought for the week

Work and play are words used to describe the same thing under differing conditions.
- Mark Twain
Health and Safety seems to be a major item of discussion across campus. Within the School there is much debate, and the topic came up last week in both the General Staff meeting and in Executive. Of particular concern are comments I am receiving that people are deliberately choosing to ignore basic H & S rules and guidelines. This is a serious issue. In the current climate we need to be compliant in all aspects of H & S. The alternative is that will need to close down labs until they do comply.

Continuing with the H & S theme, the College of Science has asked us to complete hazard assessment documentation for all of our labs (both research and teaching). The lab managers (technical staff) have taken on this task, and I ask all academic staff and students to cooperate with this exercise. Many thanks to all the technicians for taking on this extra work in the middle of an already busy time. This may seem like a duplication of the individual hazard assessments we all did early in the year, but it is different, as it identifies hazards associated with a physical space. We should be aware that the College is being proactive in this current exercise and it will actually save us a great deal of time in the long run, as it means we can use the Science hazard form rather than the yet-to-be finalised central H & S forms.

Many of you have noticed that I am walking with a bit of a limp at the moment, and have been asking lots of questions – so here’s the answer. The problem is that my right knee has worn out, and effectively has lost all of its articular cartilages. I have been coping with Voltaren (brilliant stuff) but I have stopped using it and my knee is complaining about that. I’m off for a bit of surgery in just over a week’s time, once I have finished my teaching, so hopefully after that I will racing around (checking on all of your H & S stuff).

~ Bill ~

**RUTHERFORD LECTURER SPENCER BARRETT VISITING BIOLOGY**

From 2 to 8 October the School will be hosting Prof Spencer Barrett from the University of Toronto. Spencer is being bought to New Zealand by the College of Science to give the second prestigious Rutherford Lecture. This year’s theme is celebrating the 150th anniversary of the publication of the Origin of Species. He is giving public talks on Monday 5th and Weds 7th, and will have some other events happening within the School during this time.

Make sure you take the chance to see one of the world’s most prominent evolutionary botanists.
His visit is being coordinated by Dave Kelly so see him for any information, and watch the newsletters for details on other events. The two main talks are described below. See the special workshop under "Postgraduate news".

**Information on Spencer Barrett:**
Spencer Barrett studies the evolution of plant reproduction, including floral form, mating systems and their interactions with speciation and biological invasions. Spencer is originally from the UK but did his PhD in California. He has been on the staff of the University of Toronto since 1977, and a professor there since 1986. He is a Fellow of the Royal Society (UK) and FRSC (Canada) and an Honorary Foreign Fellow of the American Academy of Arts & Sciences. He has collected numerous awards and grants, given many invited talks at international conferences. He has published 243 refereed publications which have attracted 8184 citations so far. He has also supervised 26 postgraduate students, including our own Linley Jesson (UC MSc, Toronto PhD).

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**Rutherford Foundation awards research fellowships to two top PhD graduates**

The Rutherford Foundation of the Royal Society of New Zealand has announced the successful recipients of two inaugural postdoctoral fellowships valued at $190,000 each.

The Rutherford Foundation is a charitable trust established to provide funding for emerging New Zealand scientists.

These postdoctoral fellowships include two years salary and research costs for two of New Zealand's top PhD graduates to undertake research at New Zealand institutions.

The inaugural recipients of the Rutherford Foundation postdoctoral fellowships are Dr Jennifer Kruger and **Dr Michelle Greenwood**.

Dr Kruger will study the mechanical and structural properties of the muscles of the pelvic floor, enabling better models of childbirth and increasing the understanding of the mechanism of pelvic floor muscle failure in some women. She will take up her postdoctoral fellowship at The University of Auckland Bioengineering Institute.

Dr Michelle Greenwood will investigate fresh water ecology of braided river systems looking at how changes to river flows impact on aquatic habitats. She will undertake her research at the National Institute of Water and Atmospheric Research in Christchurch.

These are prestigious postdoctoral awards to be made to only two top PhD graduates each year. Thus, Michelle has done extremely well to be selected against some stiff competition. Michelle
completed her PhD in Freshwater Ecology in the School of Biological Sciences in 2007 and has recently been working as a Research Associate with the Freshwater Ecology Research Group at UC.

Michelle also recently gained the 2009 award from the New Zealand Ecological Society for Best Publication by a New Researcher for a paper from her doctoral research published in *Ecology* in 2008 about how patterns of flooding affect populations of organisms living next to streams (*New Zealand Fishing Spider*) for photographs and information about that study.

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**Annual Biology Conference (ABC)**

for Doctoral, Masters thesis (year 5) and Honours students

The Annual Biology Conference (ABC) for Doctoral, Masters thesis (year 5) and Honours students is a single day symposium organised by the School of Biological Sciences, which provides an opportunity for postgraduate research students to present their findings to colleagues, peers and to the wider scientific community.

The communication of science and the presentation of research ideas and results are important skills to possess as an emerging scientist. The ABC provides an opportunity to develop these public speaking skills and gain confidence and experience in delivering presentations to larger audiences, such as that which might be experienced when presenting to an academic conference. It is the expectation of the Teaching and Learning Committee that every postgraduate research student will participate in this event.

*Details:*

**The ABC symposium has been scheduled for Thursday 22nd October 2009.**

The event consists of a day-long symposium of research as presented by current Ph.D., M.Sc. thesis (year 5) and B.Sc. Hons. students enrolled within the School of Biological Sciences. The oral presentations will be 12 minutes long with 3 minutes for questions and discussions. The preferred format is via PowerPoint presentation. There will also be an opportunity for students to present posters of their research findings.

Morning and afternoon tea with refreshments will be provided, with a BBQ to follow at the conclusion of the presentations. Prizes and awards will be presented in a number of categories.

Information regarding abstract submission will follow in due course.

We look forward to seeing you at the event.
PhD Profile - Poppy Lakeman Fraser

So, first admission, I’m an Anglo invader not officially enrolled at Canterbury. I’m actually based at Imperial College London and I’m funded by the Grantham Institute for Climate Change. However, my fieldwork is situated in New Zealand and thanks to Raphael Didham and the Zoology department some lab space at UoC has kindly been allocated to me for the next year or so. As I will be here for a while I thought I’d write a short piece about myself in case you wondered who that unfamiliar person wondering around the Zoology corridors was!

The year prior to my arrival here was based in Royal Botanic Gardens, Kew where I worked within the herbarium on an IUCN Red List scheme assessing the conservation status for a range of flora. This was followed by a stint working as a forest ranger at the Forestry Commission on the South coast of the UK. My interest in species interactions and global environmental issues led me to take on this PhD with Dr Robert Ewers (a previous Cantabrian) at Imperial in London; a brief description of my project follows.

Climate change and land use modification are two major drivers of global environmental change (GEC) which restrict species distributions, shape community assemblages and influence food web dynamics. While these two GEC drivers have globally recognised impacts on the persistence of biodiversity, very few studies have investigated their simultaneous impacts. My research concerns an assessment of the extent to which temperature and forest fragmentation interact to exacerbate their impacts on ecosystems. To do this I am looking at tri-trophic species interactions between the NZ pepper tree (*Macropiper excelsum*), the caterpillar that causes distinctive perforations in the leaves (*Cleora scriptaria*) and the wasp parasitoids attacking these moths (*Aleoides declanae* and *Meteorus pulchricornis*).

Utilising latitude as a surrogate for temperature range I am surveying in five regions in New Zealand spread from the Banks Peninsula up to the Coromandel. At each location I plan to record from 8 sites along a size gradient of forest remnants (0.1ha<100ha+) which reflects realised abundances of fragment sizes in the landscape. I will be running transects from the edge of the forest into the interior and monitoring vegetation, herbivory, caterpillar abundance and parasitoid attack rates on kawakawa trees within the specified area. Additional laboratory work rearing the moths and wasps will compliment this strategy. I plan to sample three times over the coming summer, this first time (which I started a couple of weeks ago) will involve laying of the transects at suitable sites, labelling plants every 10m into the forest, obtaining GPS coordinates, recording plant statistics and gaining information on temperature, humidity and light; the second (around Dec-Feb) will primarily involve the collection of caterpillars and the third (April-May) will document the extent to which this season’s leaves have grown and been attacked.
Paralleling this work I am involved in a collaboration with *Science Alive!* an interactive science centre in town. As part of their ‘Issues Gallery’, this exhibit profiles research into climate change related science in a manner understandable for younger age groups and presents it in the form of ‘Diary of a PhD’. If you are interested in the work Science Alive! or fancy checking out my awkward video blogs then visit:

[http://sciencealivediary.blogspot.com/](http://sciencealivediary.blogspot.com/)

If by the off chance you are enthralled but what you have read (cough) and want to find out more, then my Imperial webpage can be found at:

[http://www3.imperial.ac.uk/climatechange/research/vulnerableecosys/phdprojects/multitrophicfoodweb](http://www3.imperial.ac.uk/climatechange/research/vulnerableecosys/phdprojects/multitrophicfoodweb)

Cheers for now then, and I look forward to meeting more of you around the department.

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**Recent publications**


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**Thought for the week**

Choose a job you love, and you will never have to work a day in your life.

- Confucius
Seems like a busy time for all at the moment! Postgraduates should have sent their abstracts to Liz for the ABC; all undergraduate exam papers should be at the Registry - many thanks to co-ordinators, admin team and proof-readers (Bill and yours truly); Health & Safety remains at the forefront of everyone’s consciousness (if it doesn't, it should!); the GSRR is drawing to a close (thanks to all who have taken the time to send comments to me regarding our general staff members’ activities); preparations are underway for the postgrad retreat weekend at Cass; and we have Professor Spencer Barrett delivering the Rutherford Lecture tonight downtown and a Science Prestige Lecture on campus on Wednesday (for more details see below).

I will be away Thursday and Friday on annual leave; Bill will be off work for some time from Wednesday (see last week's newsletter); Matthew Turnbull will be Acting HoS while I'm away.

Cheers
~ Paula ~

Galilee Sweepstake

It's not every day a baby is due in the school! Enter the sweepstake to pick the Date of birth/Sex/Weight/Name of Claire & Craig's baby to be. Write down your picks in the school tearoom. No entry fee, but the closest match will win a prize from the storeroom, yeeha!

************

We would like to take the opportunity in saying a big thank you to the school for the overwhelming generosity in the gifts and vouchers that were given to us recently for baby.

Claire and Craig

Image Competition... and the winners are!

First prize: D'Arcy Webber 'The Sentinel'
Second prize: Jessica Dickinson 'Waterworld'
Third prize: Andrew Barnes 'The hairy morsel'

Merits: Richard White, Sunita Chamuyang, Craig Marshall

Spot prizes: Moritz Lasse, Ing Chia Phang, Andrew Barnes, Josh Thia, Simon Stewart
You can still view the images on the upper level foyer of the Science Lecture block till the 9th October. This year the theme is ‘The Colour of Life’ and we have over 100 student images in the competition and a wide range of staff images also on display.

**Recent publications**


**Thought for the week**

You’ll never find a better sparring partner than adversity. -Walt Schmidt
Best wishes to our Undergrads as they head into the exam season!! Naturally the weather has improved.

Congratulations to our successful Marsden Fund awardees - particularly encouraging are the awards to new staff - A Fast Start were awarded to Arvind Varsani and a full Marsden to Jack Heinemann and Anthony Poole (joint PIs). Also a Fast start to Grant Pearce. More details below. Our commiserations to those who missed out but I do encourage all staff to start thinking about the next round now!

New Research Institutes: Six proposals have been selected to progress to the full application round. We have significant interest in the Biomolecular Interaction Centre Proposal (led for us by Juliet Gerrard) and the New Zealand Institute for Cross-Ecosystem Studies (led by David Schiel), and a more minor interest in the Institute for Advanced Computational Physiology (Bill Davison waving the flag there). Congratulations to all those who have assisted in the preparation of the expressions of interest. The preparation of the full proposals will require a significant amount of time - I am sure any advice and assistance will be welcome.

~ Paula ~

**UC awarded record number of Marsden contracts**

Fifteen research projects at UC have been awarded more than $7 million in funding in this year’s Marsden Fund round. It is the most contracts awarded to the University in a single Marsden round.

Funding awarded in the school:

Jack Heinemann and Ant Poole ($620,000 over three years)

Evolution of the unnecessary: Did a key step in translation in bacteria evolve from invading selfish DNA?
Grant Pearce (FastStart) ($300,000 over three years)
Why is the most abundant enzyme in the world lacking specificity?

Arvind Varsani (FastStart) ($300,000 over three years)
Genetic diversity and recombination analysis of geminiviruses in Australasia

Postgraduate news

New Postgraduate Coordinator
Jon Harding is now the Chair of the Postgraduate committee. If you seek advice from him, he can be located in the Biology building, room 529, on x4988.

Ing Chia Phang (PhD candidate) has been awarded a travel grant from the Australasian Ecotoxocology Society to attend their 13th annual conference which was held in Adelaide. She presented a poster based on her phytoremediation study.

Latest theses in the school collection

At long last, but not printed in gold leaf alas... Thanks Annabel!

Recent publications

Congratulations to Robert and Liz on your first publications!

and now for something completely different.....

Who Wants to be a Millionaire?

A contestant Sally, on 'Who Wants to be a Millionaire?' had reached the final plateau. If she answered the next question correctly, she would win $1,000,000. If she answered incorrectly, she would pocket only the $25,000 Milestone money. And as she suspected the Million Dollar Question was no Pushover. It was, 'Which of the following species of birds does not build its own nest but instead lays its eggs in the nests of other birds?'

Is it:
A) the condor
B) the buzzard
C) the cuckoo
D) the vulture

The woman was on the spot.....She did not know the answer. She had used up her 50/50 Lifeline and her Ask the Audience Lifeline.....All that remained was her Phone-a-Friend Lifeline. She hoped she would not have to use it because...Her Friend was, Well, a blonde. But she had no alternative. She called her friend and gave her the Question and the four choices.

The blonde responded unhesitatingly: "That's easy....The answer is C: the Cuckoo." The contestant had to make a decision and make it fast. She considered employing a reverse strategy and giving any answer Except the one that her friend had given her. And considering her friend was a blonde that would seem to be the logical thing to do. But her friend had responded with such confidence, such certitude, that the contestant could not help but be convinced.

Crossing her fingers, the contestant said, "C: The Cuckoo."
"Is that your final answer?"
"Yes, that is my final answer."
"That answer is absolutely correct! You are now a millionaire!"

Three days later, the contestant hosted a party for her family and friends, including the blonde who had helped her win the Million Dollars. "Jeni, I just do not know how to thank you," said the contestant. "How did you happen to know the right answer?" "Oh, come on," said the blonde "Everybody knows that Cuckoos don't build nests. They live in clocks." Sally fainted!!

Thought for the week.....

War does not determine who is right - war determine who is left.
- Confucius
New Zealand Society of Plant Biologists: Roger Slack Award Matthew Turnbull

The Council of the Society is pleased to announce that this year's recipient of the NZSPB Roger Slack Award in Plant Biology is Professor Matthew Turnbull of the University of Canterbury. The purpose of the award is to recognise outstanding work by a society member, based on the merit of original, published research in one area over the past five years.

Matthew Turnbull

Matthew Turnbull, a Professor at the University of Canterbury, studies plant and environmental constraints on acquisition of carbon and nitrogen by plants in response to the environment. Climate change is the most pressing environmental issue facing humans, and our understanding of cycling between the atmosphere and the terrestrial biosphere is vital in efforts to predict future climate change. Using both measurement and modelling approaches, Matthew's research, published in a variety of high profile journals, including New Phytologist, Global Change Biology and Oecologia, has demonstrated that respiration by plants acclimates to temperature, but that photosynthesis does not. This surprising result, which is generating international interest, means that moderate increases in temperature favour carbon uptake by terrestrial vegetation, and may help mitigate climate change.

Matthew is a recipient of the Roger Slack Award in Plant Biology as an established researcher. He graduated with his PhD from the University of Queensland in 1992, and took up a position with the University of Canterbury in 1996. Matthew is the author of at least 60 peer reviewed publications, and is well known for his enthusiastic involvement in all aspects of teaching and research into Plant Biology, both in New Zealand and internationally. He has served on the editorial boards for a number of journals, including Journal of Ecology, New Phytologist, Global Change Biology and Functional Ecology, advisory committees for the Marsden Fund and the NZ Foundation for Research, Science and Technology, as President of the NZ Society for Plant Biologists for 2005-2006, and this year he is co-chair of the organising committee for COMBIO 2009.

In recognition of his award, Matthew will give a plenary address in December at COMBIO 2009, this year’s NZSPB annual conference.

~ Paula ~
Crane operating

On Tuesday October 29 from approximately 07.30am to 09.30am, Facilities Management will have a Crane operating on the N/E section of the Science Lecture Theatres Building. This will mean that during this period access to the Old Maths building via Level 2 of the SLB and to the Secure Bike stand will not be available. The areas unavailable will be locked or marked off with tape or barriers.

Undergraduate news

**Sam Fraser** - winner of the most beautiful protein competition in this year's BCHM301 class - is congratulated by Peter Steel and visiting Erskine fellow, Bridget Mabbutt.

The finalists...
The Cass Educational Weekend was considered a great success by the 25 students (from 4th years, Masters, Honours and PhD), who showed their competitive edge on the GPS challenge and during the Quiz! Questions provided by Juliet, Jack and Paul caused a bit of head scratching! Everyone was very appreciative of Dave Kelly's presentation on 'giving a presentation' and are feeling much more confident for ABC this week. Jason's presentation on 'getting into journals' provided great tips and that perseverance is required, but that it's well worth it in the end. A hike up Sugarloaf with Matt on Sunday morning rounded off the weekend. A further event is being planned for Kaikoura.

More Photos of Cass Weekend

Latest theses in the school collection


Recent publications


and now for something completely different.....

GPS challenge:
You have heard of needle in a haystack - this is pipe cleaner in the matagouri which is similar to piece of hay in a stack of needles.

Thought for the week.....

When we've been here ten thousand years
Bright shining as the sun.
We've no less days to sing God's praise
Than when we've first begun.

- Amazing Grace
John Newton (1725-1807)
The Annual Biology Colloquium: congratulations to all involved for a great colloquium - to all our speakers, organisers, helpers, chairs of sessions, Dave Condor for his marvellous plant display, and sponsors. Feedback on any aspect of the ABC is welcome.

Best wishes to all our undergraduates as you head into the exam season. If your preparation for, or performance in, any exam is negatively impacted on for any reason please seek advice through the student health system or any academic.

We can only take circumstances into account when awarding grades if we have formal notification. I have added below more information.

~ Paula ~

Mislaid GPS-maps CD

Dave Kelly has a CD of NZ topomaps for the Garmin GPSs which was loaned out and he can't locate it. If you know the whereabouts of this CD please give Dave or Jenny Ladley a call. It's in a tall DVD-sized black plastic case.

Overview of talks at the ABCD conference

Yesterday’s ABCD went very well and thanks to the organisers and all the students who put so much work into their talks. I have some feedback about the standard of presentations that might be useful, though with simultaneous sessions my comments are based on seeing only about one-third of the talks.

I thought three things were done very well. Firstly nobody looked nervous and the speaking style was confident. I know talking to some people afterwards that they were scared stiff, but it almost never shows. So, well done everyone.

Secondly the power-point presentations were of a high standard. There were lots of clear graphics, nice photos of organisms, and good logical flow.

Thirdly nobody ran badly over time. Nearly all the talks I was in finished at between 13 and 15 minutes. This is excellent.
I have four comments though for possible improvements. Note that these are picked because they apply to many of the talks, but I leave it up to you to think whether it applies to yours.

First is that many of the introductions were too long. An introduction should not take more than 3 minutes in a 13 minute talk, yet I saw a number of talks where more than half the time was spent on the intro. This means you run out of time for your actual results and discussion. You should be assuming your audience is scientifically literate and quick on the uptake. There is no need to justify working on your broad topic (say seed dispersal or atherosclerosis). So you should really be focusing on your very specific 2-4 questions. This means that typically your intro should not be more than 5 or 6 slides. Most of the talks with long introductions only kept to time by cutting the discussion short.

Second common problem was that many people did not have one key slide that told us concisely exactly what question they were asking. These could be in the form of a formal hypothesis, or just a clear statement of an exact goal. So for example instead of a slide saying “I am examining the role of introduced mammals as seed dispersers and measuring the importance of this in the reproduction of native plants” you should have a heading “Key questions” with two bullet points “Do pigs eat matai seeds?” and “If so, can the seeds germinate after gut passage?”. Have another look at your talk and see if you can identify the one slide that does this. Ideally it should come at the end of the introduction, ie be about slide number 4 to 7.

Third point, and I hate to sound like a stuck record, is that many slides were hard to read because of (1) too many words on a slide - more than 30 words on one slide is probably too much; (2) too small a font, usually caused by trying to fit too many words on - anything less than 32 point is too small; (3) less commonly, lack of contrast with the background - eg using a light brown background with white or yellow lettering. Have few, large, clear words with high separation (black font on white background is good).

Fourth point is that many people addressed their talk to the screens (so they could point at things) which meant having their back to the audience. It works much better if you can stand looking at the laptop screen and thus face the audience. Also when two screens are showing, if you point with the laser pointer on one screen, half the audience are looking at the other screen and have trouble seeing it. With two screens showing best is to point using the mouse on the computer screen.

These are only my views of course, but I hope you find them helpful. Best wishes for your next talk.

Dave Kelly

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**New Artwork on the 3rd floor**

For those of you that take the lift... get off a floor early and enjoy the new artwork on the third floor of the stairwell in old PAMS (von Haast).
The work, by emerging artist Nicole Bourke, is botanically themed and looks wonderful...

Latest theses in the school collection


Recent publications


and now for something completely different.....

Some little treasures from our biology students!

What is a shitzu?
A zoo without any animals.

Where did the zebra cross the road?
At the zebra crossing.

World's worst disasters:
Hiroshima '45
Chernobyl '86
Windows '98

Thought for the week.....

“When someone hurts us, we should write it down in sand, where winds of forgiveness can erase it away. But, when someone does something good for us, we must engrave it in stone, where no wind can ever erase it.”
- Anonymous
Four day weeks disappear rapidly! Congratulations again to all our prize winners from the ABC. Thanks to Invitrogen for the raffle which was won by Saira Wilson.

~ Paula ~

Movember

Full details here.

Movember is about bringing the moustache back and having some fun for two very serious causes - prostate cancer and depression in men. Now in its sixth year, we are looking forward to seeing Mo Bros & Sistas embrace the Mo once again.

The school will be hosting its own competition if you don't want to go global! Lock up the razor and you too can look like Magnum in no time...

Inaugural annual student publication awards for the period till 31 August 2008

Fiona Cross
Best PhD thesis (awarded $400)
Her thesis was titled "Attentional processes in mosquito-eating jumping spiders: search images and cross-modality priming".

I never thought I would ever study spiders for my PhD. When I was a child, spiders absolutely terrified me. However, even when I was older and no longer afraid of spiders, I thought that they were boring because, well, their brains are big enough to fit on a pinhead. It has always boggled me how *Evarcha culicivora*, the spider I studied for my PhD, proved me wrong. These little jumping spiders are from the Lake Victoria region of East Africa, and their preferred prey are mosquitoes that have recently fed on blood. No other animal is known to feed indirectly on vertebrate blood in this way, and although this is disgusting, truly disgusting, these little critters have taught us a lot about animal cognition and about spiders in general.

I’ve been really interested in exploring animal cognition for some time because I have a very strong background in Psychology. Something that makes jumping spiders so interesting, and so suitable for animal-cognition research, is that they can see remarkably well for animals of their size, and their olfactory system is also really good. It meant that, for my PhD, I could explore things like whether *Evarcha* was better at finding a hidden mosquito when it could smell mosquitoes, rather than smell something else. I also learned more about this spider’s mate-choice behaviour. For example, they apparently use blood as a perfume to attract the opposite sex. It is true that the gruesomeness will never end.
It often amazes other people why I would choose to do this kind of research, but *Evarcha* has taught me so much, and even took me to a little African village as part of my PhD research. These spiders have also kept me very busy. It feels like I’m writing about them all the time, but then I also know I’ve only scratched the surface and have to write more, *and* discover more. I completely blame the spiders for that. It really did come as a surprise, however, to find out that I am getting an award for my PhD thesis. I would really like to thank the School for this opportunity, my supervisors for putting up with me, and the spiders for giving me something so interesting to study in the first place. And of course, when I found out I was getting this award, I did what any thinking woman would do: I bought new shoes!

**Hamish Prosser**  
*Best PhD student paper (awarded $400)*

His winning paper is "Cardiac Chymase converts proAngiotensin-12 to angiotesin II: effects of PA12 upon cardiac hemodynamics".

I would first like to thank the Biological Sciences Research Committee for choosing this paper for this years award. I am very humbled to be awarded this as I know of the great scientific research published each year by PhD students at Canterbury. This publication could not have reached the level it did had it not been for the excellent guidance and support of my two supervisors, Dr Chris Pemberton of Endolab, University of Otago, and Assoc. Prof. Malcolm Forster here at Canterbury. I would have liked to be there in person to receive this award, however I am have taken up a postdoc at the Victor Chang Cardiac Research Institute in Sydney and couldn’t make it across the ditch today.
The paper itself is entitled “Cardiac Chymase converts proAngiotensin-12 to angiotensin II: effects of PA12 upon cardiac hæmodynamics” and was published in the Journal of Cardiovascular Research earlier this year. It concerns the cardiac effects of a newly identified peptide, PA12, upon both healthy and diseased hearts. PA12 shares high homology with the angiotensin family of peptides; a well established system vital for regulating blood pressure. However, when this system becomes overactive or unregulated from things like smoking, obesity and old age, blood pressure remains chronically elevated which can then cause many cardiac and vascular disorders, including hypertrophy, hypertension, atherosclerosis, and heart failure, increasing morbidity and mortality. The most commonly prescribed medication to combat an overactive angiotensin system and reduce blood pressure are ACE inhibitors, which cut the production of angiotensin peptides. However, these medications do not completely alleviate the pathogenesis of heart disease, and the reason for this is unknown. We reported that the newly identified peptide PA12 caused potent constrictive effects on coronary arteries, and further investigation revealed that its activity was mediated through the same receptor as angiotensin, however PA12 was independent of ACE activity. Instead, we found another cardiac enzyme, chymase, was responsible for PA12 activity, and taken together our findings reveal a novel pathway for the generation of a highly vasoactive and constrictive peptide. This new pathway may provide another pharmacological target in the ongoing fight to reduce blood pressure and prevent associated heart disease.

Finally thanks again to the department and the university for their support throughout my PhD, the skills I have learnt have given me the foundation for an exciting future in research.

Jon Bray
Best MSc/BSc Hons student paper (awarded $200)

His winning paper is “Periphyyton communities in New Zealand streams impacted by acid mine drainage.”

Discharges from historic and current coal mines frequently generate waters low in pH, high in heavy metals and cover streambeds in metal precipitates. Their study investigated periphyton communities at 52 stream sites on the West Coast, South Island, New Zealand, representing a range of impacts from acid mine drainage. Diversity and biomass decreased with increasing metal oxides, and diversity decreased with acidity. These findings indicate that streams affected by AMD possess a predictable assemblage composition of algal species that can tolerate the extreme water chemistry and substrate conditions. The predictability of algal communities declines with decreasing stress, as other abiotic and biotic factors become increasingly more important.

If there are a few words to be said it would be to say that the work was clearly not all mine. I would like to thank my supervisors (Jon Harding and Paul Broady) who were/are brilliant and Dev Niyogi. Dev gave the paper a kick in the pants when it needed it and was instrumental in getting it out.
ABC prize winners

Darragh Woodford
Best overall Conference talk ($250)

Davon Callander
Best PhD talk

Laura Domigan
PhD runner up

Dayle Keown
Best MSc talk

Laura Drummon
MSc runner up

Elizabeth Wiltshire
Best BSc Hons talk

Ellen Hume
BSc Hons runner up

Genevieve Evans
Best Poster

Jessica Kerr
Powerhouse award for best applied talk

and now for something completely different…..

Giant microbes
http://www.thinkgeek.com/geektoys/plush/6708/
The first College of Science training workshop for inputting PBRF data is tomorrow! See schedule below and take examples of PE and CRE to input. If PBRF eligible staff would like a workshop to remind them what PE and CRE actually are (this will be similar to the ones I have done for the School and College 'newbies') please let me know and we (i.e. Lyn) will organise a date.

Examinations and marking are underway.....

Don't forget Friday is a public holiday in Canterbury - do join the 120,000 others who visit the Royal A&P (Agricultural and Pastoral) Show on Wednesday, Thursday or Friday - and do drop past our exhibit.

~ Paula ~

Fireworks weren't the only things that went off with a bang on Guy Fawks night!!!

Bridget gave birth to two delightful girls on Thursday. I imagine Duncan is over the moon or sitting quietly in a corner somewhere... In case you're wondering, Duncan (Gray) is one of our esteemed PhD students. Congratulations to Mum, Dad and big sister Lucia!!

FRST Fellowship success

Fiona Cross has been offered a FRST Postdoctoral Fellowship! She is looking forward to working in the school again. You read her recent success in last weeks newsletter. Congratulations Fiona!!

Southern Secretarial Summit

As an outcome of my PD & R, I attended the 2-day Southern Secretarial Summit last month in town and thought it was a great experience. By day there were workshops and networking sessions, a Halloween-themed dinner, and even some fitness training. Got to meet lots of P.A.s from all over the country who worked in Parliament, CRIs, Health, Fonterra, Solid Energy, and all the universities had representation. UC was represented by Julie Hicks (PA to the PVC Science), Robyn Daly (Administrator in Psychology) and myself. Some of the workshops required a lot of interaction/role plays etc and each day was full on.
Highlights for me were: the opening address “Success Factors in Tough Times” from an employment agency point of view (how to be a highly prized employee); “Cross Cultural Communication” workshop; “Winning PA/Manager Relationship”; and “Fitter Body, Fitter Mind”!

Networking, over lunch and tea breaks, was really stimulating and I met some very interesting delegates and speakers all good for future networking.

Just about everyone dressed up for the Halloween dinner and we were entertained by Frankenfurter and “Enthuse” who had everyone up dancing by the end of the night. All in all a very worthwhile experience which has given me all sorts of tools and insights into working relationships.

- Lyn de Groot

Royal Canterbury Agriculture & Pasture Show

The School, along with Geology, Forestry and Scion, will once again have a presence at the Royal Show this week. We can be found in the Trade and Feature Pavillion T75 - 78. So if you are intending to visit the show come and look us up. Each department has come up with a small giveaway. Ours is “Seeds of Knowledge” a business sized card with cornflower seeds embedded into handmade biodegradable paper. We also have new poster strips displaying some of the winning images of the recent Imaging Competition.
Recent publications


and now for something completely different.....

THINGS YOU CAN DO WITH ABSOLUTELY NOTHING

Try to not think about penguins
(Amusement Potential: 1-5 minutes)
This is especially hard, because by trying too much, you remember what you were trying to avoid thinking of. If you try too little, you end up thinking about penguins anyway.

Pretend to be a car
(Amusement Potential: 5-10 minutes)
Make appropriate revving noises in your head as you walk along and add a racing commentary as you pass strangers in the street. Use blinking eyes as indicators for extra authenticity.

Make Star Trek door noises
(Amusement Potential: 1-2 minutes)
Stand by an electric door to a bank or something and make that silly "Scccccccchwop" sound heard whenever people popped on to the bridge to hang with Captain Kirk.

Thought for the week

Life isn't about waiting for the storm to pass...
It's about learning to dance in the rain.
The Royal A&P Show

Congratulations to Chris, Penny, Jan and their team of helpers at this year’s Royal New Zealand Show.

Despite the challenging weather this year, the combined College stand was a resounding success. The poster strips and seed giveaway were very popular and we made many connections with the general public. On the first day we were invited to the awards presentation in the evening. The stand was awarded a Highly Commended Certificate: for Best Presented Indoor Trade Site. This award will appear in the exhibitor’s information pack next year.

~ Paula ~

Recent publications


and now for something completely different.....

**Tommy Cooper jokes**

Two blondes walk into a building...you'd think at least one of them would have seen it.

Phone answering machine message - "...If you want to buy marijuana, press the hash key..."

A guy walks into the psychiatrist wearing only Clingfilm for shorts. The shrink says, "Well, I can clearly see you’re nuts." I went to buy some camouflage trousers the other day but I couldn't find any.

I went to the butchers the other day and I bet him 50 quid that he couldn't reach the meat off the top shelf. He said, "No, the steaks are too high."

My friend drowned in a bowl of muesli. A strong currant pulled him in.

A man came round in hospital after a serious accident. He shouted, "Doctor, doctor, I can't feel my legs!" The doctor replied, "I know you can't, I've cut your arms off".

I went to a seafood disco last week...and pulled a mussel.

Our ice cream man was found lying on the floor of his van covered with hundreds and thousands. Police say that he topped himself.

Police arrested two kids yesterday, one was drinking battery acid, and the other was eating fireworks. They charged one and let the other one off.

"You know, somebody actually complimented me on my driving today. They left a little note on the windscreen. It said, 'Parking Fine.' So that was nice."
The examination period is now over and all of our undergraduates are waiting patiently (and possibly nervously) for the release of grades in two weeks time. All of our course grades lists were successfully entered into Jade last week. Well done everyone for getting your marking done on time, especially for those courses with exams towards the end of the exam period. Thanks also to the secretarial team for making sure all went smoothly. And, of course, well done to all of the students.

As I am writing this week’s introduction it indicates that I am back at work, having been given clearance from my surgeon on Friday. As far as I can tell, all has gone well and I now have a nice shiny metal knee and an impressive scar, plus a card for my wallet to show the people at airport security when I set off their alarms. I’m still hobbling a bit, but getting better every day.

I have come back to an impressive amount of compliance and health and safety issues. We have just run a couple of training sessions for people working in PC2 labs. We had quite a good turnout, but too many people were missing, especially academics. These training sessions are compulsory for all students and technicians working in PC2 level facilities, and all academics working in these labs or who have students working in these labs. Note that we have two major audits coming up. Over the next couple of weeks Nicole and I will be carrying out internal audits, and then sometime in early December the MAF inspector will be coming in for an external audit. Please make sure your facilities are up to date.

~ Bill ~

Welcoming Kate...

It is with wonderful delight that we welcome Baby Kate who came into the world on Tuesday 17th November.

Parents Angela and John (Pirker) along with big brothers William and Thomas must be more than overjoyed at the birth of their lil girl. Welcome to the world of pink!!!
Welcoming Sabrina...

And Monday's will never be the same after the excellent news that yesterday, 22nd November, Our Claire gave birth to a wee girl, Sabrina, weighing 7 lb 6oz. I bet mum and dad (Our Craig) are over the moon!! Welcome to parenthood. Photo to come.

Congratulations to both!

Introducing Payal Diwadkar

Whilst Claire is on maternity leave, Payal is stepping in take her role. She will be based in room 300, Biology building. Payal has just completed her PhD at the University of Otago with the Biochemistry Department. She has experience in demonstrating with undergrad labs and tutoring biochemistry papers. Welcome to the school!

Recent publications

Check out the 'New York Times' article on noticeboard


and now for something completely different.....

Chicken, beef or lamb
A man was sitting on the sofa watching TV when he heard his wife's voice from the kitchen. "What would you like for dinner Love? Chicken, beef or lamb?" He replied, "Thank you, I'll have chicken."

"Don't be stupid. You're having soup. I was talking to the cat."

Thought for the week

“Aerodynamically the bumblebee shouldn't be able to fly, but the bumblebee doesn't know that so it goes on flying anyway.”
—Mary Kay Ash (1918-2001), businesswoman
Almost the start of summer and winter seems to be back – of course that seems not to be an unusual occurrence once the heating is turned off for the ‘summer’!!

Many thanks to everyone for getting the exam marks over to the Registry well on time. And many thanks to Selwyn for organising the trips through the new building – many people have taken advantage of this and feedback is very positive.

Coming up: all those involved in the next PBRF round are asked to ‘populate’ their PE and CRE folders by 12th December. If you don’t know what this means please email me!

Also, staff in the College of Science are being asked to fill out the College of Science Staff survey. The more responses the more robust the survey. This will provide useful information for our new PVC. The following is the online link to the College of Science Staff Survey http://www.voiceproject.com.au/cos.aspx.

Next week is the large COMBIO conference. Matthew Turnbull is the Conference Chair and reports over 900 people have registered. Keep an eye out for the public talks – see below. As some 10 academic staff will be involved at the conference I have decided we should cancel the Staff Meeting and also defer Paul Fleming’s visit to the School into the New Year.

~ Paula ~

The promised picture of Duncan's twin girls

One twin is on the left the other is on the right.
Recent publications


and now for something completely different.....

See how long you can hold a note
(Amusement Potential: 4-20 minutes)
Not that much fun, but it sure passes the time. Play with a friend, or try to beat your own personal best. Inhale deeply and then try and make a noise for as long as you can. Earn extra points for making your partner laugh or ending on an amusing note.

Rate passers by
(Amusement Potential: 10-15 minutes)
Secretly award passers by marks out of ten as you go along, offering (unsaid) expert criticism over their clothing, hairstyle and footwear choices.

Pick up a dog so it can see things from your point of view
(Amusement Potential: 3-5 minutes)
Think about it: your dog has only seen the house from a viewpoint from 6” to 2’ high (15 to 60 cm for all you metric fans). It’s never seen the tops of counters, what you keep on your desk, the tops of shelves, etc. Try looking at things from its point of view, too.

Thought for the week
"Five frogs are sitting on a log. Four decide to jump off. How many are left? There are still five - because there's a difference between deciding and doing."
"Five Frogs On A Log" by Mark L Feldman & Michael F Spratt
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**Academic promotions round announcements**: Congratulations to Jon Harding who is our newest Associate Professor! Also congratulations to Dave Collings who has been promoted to Senior Lecturer Above the Bar, to Jason Tylianakis who gained accelerated promotion with the Senior Lecturer scale, and to Profs Davison and Turnbull who were awarded salary progressions. I would like to take this opportunity to thank my promotions panel who put in a lot of hours and presented well considered advice.

As mentioned last week, many of us are involved in COMBIO downtown. The conference started today (as I write this after attending the lecture by Nobel Prize winner Professor Sir John Walker) and runs until late Thursday.

~ Paula ~

**Dates to remember next week**

**Tuesday 15th December**
Graduation Afternoon Tea, 3.30 p.m.

**Wednesday 16th December**
Graduation Ceremony

**Thursday 17th December**
School Christmas BBQ lunch
Tickets will be available from Monday.
Special diets can be catered for.
Secret Santa presents can be brought in on the day to the office for the ‘sack’.
Wednesday 23rd December
Christmas morning tea, 10.30 a.m.
Bring a plate of warm fuzzies

FERG Student Success

FERG students won student prizes for the top two student talks at the NZ Freshwater Sciences Society conference in Whangarei last week (again!).

Phillip Jellyman won the SIL Trust prize for overall best student paper, and Kati Doehrning won the SIL prize for the best MSc/Hons student paper. This continues a remarkable record, as a different UC Biology student has won the overall best paper award six out of the last nine years.

Well Done.

Recent publications


and now for something completely different.....

Thought for the week

All of us could take a lesson from the weather. It pays no attention to criticism.
The School had a strong presence from both academic staff and postgrad students at the COMBIO meeting downtown last week. Matthew Turnbull did a fine job as the primary organiser and gave a superb Keynote Address (required by the recipient of the Roger Slack Award). At all stages of preparing for and during the conference, the Conference Committee was ably supported by the (now under threat) UC Conference Office. The UC Conference Office personnel knew exactly what was required to run a 900+ delegate scientific conference, and did it brilliantly.

Congratulations to Ari Kornfeld for being awarded the Best Student Oral Presentation by the New Zealand Society of Plant Biologists.

As the year winds up (sorry down) we have a few functions on the radar. See below! Nicki has threatened Christmas will be cancelled if no-one purchases a ticket to the barbeque - and yes, it's true, members of the professoriate will be cooking.

~ Paula ~

Dates to remember this week

Tuesday 15th December
Graduation Afternoon Tea, 3.30 p.m.

Wednesday 16th December
Graduation Ceremony

Thursday 17th December
School Christmas BBQ lunch
Tickets will be available from Monday.
Special diets can be catered for.
Secret Santa presents can be brought in on the day to the office for the ‘sack’.

Wednesday 23rd December
Christmas morning tea, 10.30 a.m.
Bring a plate of warm fuzzies
The long awaited picture of Sabrina Galilee

Recent publications


and now for something completely different.....

Christmas joke from Bill

The game show contestant was only 200 points behind the leader and was about to answer the final question -- worth 500 points!

"To be today's champion," the show's smiling host intoned, "name two of Santa's reindeer."

The contestant, a man in his early thirties, gave a sigh of relief, gratified that he had drawn such an easy question."Rudolph!" he said confidently, "and ... Olive!"

The studio audience started to applaud (which the little sign above their heads said to do), but the clapping quickly faded into mumbling. The confused host replied, "Yes, we'll accept Rudolph, but could you please explain 'Olive'?"

"You know," the man circled his hand forward impatiently and began to sing,"Rudolph the Red Nosed Reindeer had a very shiny nose. And if you ever saw it, you would even say it glows. *Olive,* the other reindeer...

*******

The Shoebox

A man and woman had been married for more than 60 years. They had shared everything. They had talked about everything. They had kept no secrets from each other except that the little old woman had a shoe box in the top of her closet that she had cautioned her husband never to open or ask her about.

For all of these years, he had never thought about the box, but one day the little old woman got very sick and the doctor said she would not recover.

In trying to sort out their affairs, the little old man took down the shoe box and took it to his wife's bedside. She agreed that it was time that he should know what was in the box. When he opened it, he found two knitted dolls and a stack of money totaling $95,000.

He asked her about the contents. 'When we were to be married,' she said, 'my grandmother told me the secret of a happy marriage was to never argue. She told me that if I ever got angry with you, I should just keep quiet and knit a doll.'
The little old man was so moved; he had to fight back tears. Only two precious dolls were in the box. She had only been angry with him two times in all those years of living and loving. He almost burst with happiness.

'Honey,' he said, 'that explains the dolls, but what about all of this money? Where did it come from?'

'Oh,' she said, 'that's the money I made from selling the dolls.'

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**Thought for the week**

Jacob (to Bella): "I will be there until your heart stops beating".
The Last Issue for 2009

Last week was a busy and successful week for the School with Graduation (see photos below) seeing a number of our students being capped, the announcement that the BIC has been named one of the new University Research Centres, and a successful Christmas Barbeque, primarily organised by Penny Moore.

So our congratulations to our new graduates, congratulations to Juliet and her team, and many thanks to Penny for organising the Christmas function (see photos below), the professors for cooking and of course to our Mother Christmas!

I would like to take this opportunity to thank everyone for their hard work, enthusiasm and loyalty to the School, and to wish you all a safe and relaxing holiday break.

~ Paula ~

Hot off the Press! University Teaching Award

The Teaching and Learning committee have awarded Jason Tylianakis a University Teaching Award. The committee were impressed with the impact Jason was having with students and colleagues. The Teaching Award will be presented at April 2010 graduation.
Graduation

Dr Ermin Schadich, one of our latest Doctorates

Doctor of Philosophy

Melissa Hutchison
Interactions between habitat fragmentation and invasions: factors driving exotic plant invasions in native forest remnants, West Coast, New Zealand

Ermin Schadich
Antimicrobial peptides and disease resistance in Leiopelma frogs

Master of Science

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<tr>
<th>Name</th>
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<td>Louise H. Crawley</td>
<td>Environmental Science</td>
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<td>Anna K.M. Doehring</td>
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<td>Tania D. Hurley</td>
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<td>First Class Honours</td>
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<td>Emma M.L.A. Kallqvist</td>
<td>Environmental Science</td>
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<td>Kishore B. Mitra</td>
<td>Microbiology</td>
<td>Second Class Honours (Division Two)</td>
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<td>Sarah M. Pilkington</td>
<td>Biochemistry</td>
<td>First Class Honours</td>
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<tr>
<td>Tong Zhu</td>
<td>Biochemistry</td>
<td>First Class Honours</td>
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Bachelor of Science in Biological Sciences

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Hanaa Achram</td>
<td>Waseem A. Al Matar</td>
<td>Kevin Q. Carter</td>
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<td>Leonie A. Carter</td>
<td>Sanjeet Chandra</td>
<td>Vashneel P. Chaudhary</td>
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<td>Patrick P. Collins</td>
<td>Carina L. Davis</td>
<td>Faezah B. Esa</td>
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<td>Charlotte J. Giles</td>
<td>Keely O. Gwatkin</td>
<td>Alexander D. Henshaw</td>
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<td>Ian D. Isaac</td>
<td>Patrick Lees</td>
<td>Tamas Major</td>
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<td>Jane E. McAulay</td>
<td>Robert T. McGee</td>
<td>Bradley G. Meads</td>
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<td>Leslie M. Poulson</td>
<td>Freddie L.M. Prebble</td>
<td>Karen A. Renouf</td>
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<td>Kimberley J. Roberts</td>
<td>Colleen E.M. Sandison</td>
<td>Breanna C.G. Sowman</td>
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<td>Munesh Subash</td>
<td>Sally A.H. Tipple</td>
<td>Kyleah H. Traber</td>
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<td>Jennifer R. Vallance</td>
<td>Rachel A. van Heugten</td>
<td>Matthew J. Van Voorthuizen</td>
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<td>Rayna Vijayan</td>
<td>Rachael M. Warren</td>
<td>James B. Wewege</td>
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<td>Stephanie L. Wheal</td>
<td>Louise E. Wightman</td>
<td>Thomas M. Williams</td>
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<td>Samuel T. Williams</td>
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School Christmas BBQ - Thursday 17th December
**Latest theses in the school collection**


**Announcement of PhD oral defenses**

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Fiona Cross - Dean's List of Excellence (Confirmed)</th>
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</thead>
<tbody>
<tr>
<td>Title</td>
<td>Attentional processes in mosquito-eating jumping spiders: search images and cross-modality priming</td>
</tr>
<tr>
<td>Senior Supervisor</td>
<td>Robert Jackson</td>
</tr>
<tr>
<td>Candidate</td>
<td>Amy Whitehead - Dean's List of Excellence</td>
</tr>
</tbody>
</table>
## Announcement of new postgraduate students

**Rathishri Chanduruvelan**
PhD candidate, has joined Islay Marsden in her lab.

**Tengku Azizan**
PhD candidate, has joined Hazel Chapman in her lab.

**Danladi Umar**
PhD candidate, has joined the Freshwater Ecology Research Group with Jon Harding.

**Dorien Coray**
After completing her MSc in Biotechnology recently, Dorien has now commenced her PhD, again in the Gene Ecology Lab with Jack Heinemann

**Jennifer Peters**
PhD candidate, has joined Raphael Didham in his lab.

**Liz Deakin**
PhD candidate, has also joined Raphael Didham in his lab.

**Scott Graham**
PhD candidate, has joined Jason Tylianakis in his lab.

**Carol Frost**
PhD candidate, has also joined Jason Tylianakis in his lab.

**Tejraj Janmale**
After transferring his MSc in Biochemistry recently, Tejraj has now commenced his PhD, in the FreeRadical Lab with Steven Gieseg
Jen Skilton
PhD candidate, has joined the Marine Ecology Research Group with David Schiel.

Recent publications


Thought for the week

"You are educated.
Your certification is in your degree.
You may think of it as the ticket to the good life.
Let me ask you to think of an alternative.
Think of it as your ticket to change the world."
*Tom Brokaw*

Contact details

If you have items of news or interest that you would like included in this newsletter, contact the admin office before noon on Friday at bioladmin@canterbury.ac.nz or phone 6732.

The Editors would like to thank all contributors over the past year who provided text and photos.
See you in 2010!