Biochemistry News

The newsletter of the Department of Biochemistry at the University of Otago

editor: Bronwyn Carlisle

View from the Corner

This latest edition of our newsletter comes during a busy September and should help us catch up with what has been going on in the Department since last May. We are featuring group updates, meeting reports, the announcement of two new faculty members and the arrival of two new William Evan's Visiting Fellows. I encourage you to seek out and welcome these new people to our Department and our research family.

This past August was a busy time for grant reviewers and I am just completing my first year on the Marsden BMS panel as the convenor. It is a challenging, but rewarding task to help in the assessment of applications for Marsden funding. To realise that from 100 or so applications to each panel, only about five full applications can be funded, however, is very frustrating. If I had a magic wand, one thing I would immediately do is to increase the money available to fund Marsden Grants in New Zealand to allow about 15 - 18 % of proposals be funded. To me that is a success rate that would be easier to live with. Certainly, anything much under 10% seems punitive.

Having said that, there are valuable lessons to be learned from observing the Marsden process. For example, some researchers seem to have a gift for writing grants in this format. They rise to the top of the pool each time they submit an application. They are certainly gifted researchers, but they are also gifted writers. Some of those gifted researchers are right here in our Department, and any researcher writing a Marsden would be wise to have an experienced Marsden grantee have a look at their proposal before submission. This advice holds especially for newer researchers and notably, this year's group of Fast



Start applications were comparatively weak. Careful attention to following the guidelines is another important point to keep in mind. Applications that are too long, formatted unusually, or that present information in an unusual way can be confusing to a reviewer. Finally be cautious about overselling your proposal. One application we saw this year contained the words "novel" twice, "exceptional" twice, "highly regarded" and "unique" once and this was only within the abstract! The overuse of superlatives was noted by everyone who commented on this proposal.

Good luck to everyone as we head into the end of term. I hope you enjoy the newsletter. Finals, strategic planning, marking and a retreat await us. Then the holiday break will arrive none to soon. Take care of yourself and your family.

Kent hause

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Congratulations

to our recent prizewinners: Dr Rob Day Rhesa Budhidarmo Rowan Herridge Brie Sorrenson Nina Dickerhof Ajay Nair Rosannah McCartney

Details scattered through the newsletter

September 2011

Introducing ...

Dr José Garcia-Bustos

The Department is pleased to welcome Dr José Garcia-Bustos as a William Evan's Visiting Fellow. Dr Garcia-Bustos joins us from Tres Cantos (near Madrid), Spain where until recently he was Head of the Malaria Disease Performance Unit, Diseases of the Developing World, Glaxo Smith Kline. Although educated in Spain as a microbiologist Dr Garcia-Bustos has training also in biochemistry, drug design and lead development. He has worked in a very broad range of research areas including the structural make-up of bacterial peptidoglycan, elucidation of the in vitro targets for antibiotic efficacy, fungal molecular biology and anti-malarial drug development.

José will be with us until December and is available for seminars, group talks and collaborative discussions. For starters, next week he will be speaking on malaria drug development at the 2011 Webster Centre for Infectious Diseases Research Symposium. I hope you get an opportunity to talk with Jose. He is a wonderful gentleman and a great resource for the Department, and he would enjoy getting to know you. If you would like to meet with José he will be based in Room 205A or in the Krause lab.



Professor Paolo Visca

Professor Visca is an international leader in his field (molecular basis of bacterial disease) having published 26 book chapters and over 130 articles in peer-reviewed international journals, averaging 8 publications a year for the last 10 years. His expertise covers a wide variety of bacterial species and different aspects of infectious disease including biochemistry, genetics, epidemiology and microbiology.

Paolo is arriving next week, and will be visiting Iain Lamont for one month. He will be working in Iain's post-doc office.

Dr Anita Dunbier

Dr Anita Dunbier will need no introduction to many members of staff. She did her undergraduate degree - BSc (Hons)

- and PhD in our department. Anita did her fourth year with Warren Tate and her PhD in Cancer Genetics Laboratory using microarrays to analyse the genetic progression of gastric cancer supervised by Parry Guilford

Anita grew up on a farm in Fruitlands (south of Alexandra) and went to school at Dunstan High School in Alexandra. She was captivated by Biochemistry after extracting DNA with Tony Merriman and Jules Horsfield who were the ALs/demonstrators when Anita attended "Hands on Science" whilst she was at high school.

After completing her PhD Anita did a two-year fixed term lectureship in this department teaching and continuing with her research on gastric and Wilms tumour projects. She then moved to London to the Institute of Cancer Research and Royal Marsden Hospital and spent 4 1/2 years as part of the Breakthrough Breast Cancer Research Centre.

Anita's current research interest is oestrogen receptor positive breast cancer and understanding how tumours develop resistance to anti-oestrogenic therapies. She has a strong personal motivation for research in this area, as her family has been affected



by cancer but she also finds cancer fascinating at the molecular level as the strategies cancer cells use to evade normal cellular controls and therapies are quite amazing.

Having a husband (Mark) and three children aged 7, 5 and 2, Anita claims to have no spare time, but does manage to squeeze in a bit of running, sometimes biking, and did a "few duathlons" in the UK. She hopes to be able to go to Central Otago and see family and do some outdoorsy stuff there. She would like to get back into horse-riding but her back garden isn't really big enough for horse.

The whole family is happy to be back in New Zealand, even more so now the spring is here and the World Cup is about to start! (the boys in the family are rather rugby mad).

Dr Lynette Brownfield



Dr Lynette Brownfield is our newest member of staff. She arrived last week, and her office is 308e next to Julian's.

Lynette grew up just outside Melbourne on a small farm in a place called Nar Nar Goon North. She attended both primary and secondary school in the local schools in nearby Pakenham.

Both her undergraduate and post graduate studies were undertaken at Melbourne University. She received a Bachelor of Science (Hons) in 1998. Her PhD was completed in the Plant Cell Biology Research Centre in the School of Botany between 2001 and 2005.

After completion of her PhD Lynette moved to the UK where she did a 3 year post doc with Prof David Twell at the University of Leicester (2005-2008). She then ventured further into Europe as an EMBO Postdoctoral Fellow with Professor Claudia Köhler at the ETH in Zurich, Switzerland (2009-2011).

Lynette's research interest lies in Plant Sexual Reproduction with a focus on the male side. Her work focuses on understanding the molecular processes underlying the development of the pollen grain, the structure responsible for the generation of male gametes and their delivery to the female tissues.

She says "Pollen grains are haploid structures and consist of three cells, a large vegetative cell that contains two sperm cells. The haploid nature

and relatively simple cell lineages makes pollen an excellent system to study processes fundamental to biology such as cytoskeletal mechanisms, cell cycle progression, mitosis and meiosis, cell fate determination and transcriptional control.

"As time has moved forward I have been moving backwards through pollen biology. It started in my PhD where I worked on the pollen tubes produced when pollen germinates that deliver the sperm cells to the ovules. I then turned to the development of pollen while investigating transcriptional regulators required for the production of the sperm cells within the pollen grain. Most recently I have been exploring the on the production of pollen itself during meiosis while investigating mutants that produce diploid rather than haploid sperm. I plan to continue the work on both sperm cell specification and meiosis.

"When I started my studies I had no intention of becoming a plant scientist but from the first few classes plants began to hold a fascination for me. I was intrigued by the mechanisms plants have evolved to overcome the limitations of a sedentary life, from aspects such as the ways plants development so their body plan can adapt to the environment during growth, to the way plants defend themselves again insect and fungal attack. I particularly enjoyed learning about the evolution of flowers and seeds in higher plants and how this has enabled sexual reproduction with distant individuals in the absence of free water and the wide dispersal of offspring, both of which contribute largely to the dominance of flowering plants we see today. This interest in plant science was further developed by some excellent and enthusiastic teachers and developed into a desire to know how plant development was controlled and the molecular level.

"The reason pollen has become my main focus is not so clear but is largely due to projects on offer and my enjoyment is doing them. Or perhaps it the elegant simplicity of having only three cells to deal with appealed to me."

Lynette has moved to NZ with her husband, Thys (pronounced "Tace" to rhyme with "race"), and so far they are both really enjoying it. "The people are friendly and the scenery lovely. We are both looking forward to the Rugby World Cup with Thys already declaring he is 100% an All Black fan (being born to NZ parents in South Africa and using an Australian passport he claims he can choose between the tri-nation teams). "

Lynette's main pursuit has been Touch which she has played for a number of years in Australia, England and Switzerland. The highlight of her touch exploits was to captain the first ever Swiss Women's Touch team to an excellent 5th place at the European Championships in 2010 (she says "no comments on the level of touch in Europe!"). She hopes to play at a purely social level in Dunedin. I think there are one or two touch players in the Department who may want to snap Lynette up for their teams.

Lynette also enjoys most outdoor activities especially running and tramping, basically things where the adrenaline level is not too high. Despite living in Switzerland, she is still very much a beginner when it comes to skiing.

DJ Champion

Our new part time (afternoons) IT support person DJ is a bit of a dark horse. It turns out he's a budding rock star; he belongs to the band Thundercub, whom some of you may have seen when they supported the Mint Chicks at the Student Union a while back. Of course some of you may have seen them at other times as well, but that's when I saw them. They were good.

From their press release: "Thundercub is a three piece sound machine from Dunedin whose aural assault has its origins in the math-minded, electro-noise spectrum. If it were ever biologically possible (c'mon science!) to create a bastard love-child of Battlestar, Battles, Final Fantasy VIII, Trans Am, M-Theory, HDU, So So Modern & The Mars Volta, Robert Christgau would implode, the space-time continuum would be torn another one and you may come close to Thundercub. Thundercub has been churning out impending-space-grunge since 2009, bewildering local audiences with their operatic ear-worms built on complex guitar loops, drum beats and synthesized oddities."

Thundercub are playing his Friday the 9th of September with Alphabethead at ReFuel and next Wednesday the 14th with T54 at Refuel if you want to check them out. They have also released an EP and you can buy it on iTunes, on CD from them at one of their shows, or from bandcamp.



bandcamp: http://thundercub.bandcamp.com/

they have a music video too: http://www.youtube.com/watch?v=yCd0u5ac25I&feature=related



Graduate students find out "What's next"

Biochemistry MSc and Honours students gathered on Wednesday 27th July for a session entitled "What's next?". As we heard, there are many options for a Biochemistry graduate and no one path is right for everyone. No matter what path was chosen, be it in industry or academic environment, all of the speakers stressed the importance of loving what you do, having passion and determination to achieve your goals. Speakers included PhD students (Andrea Donaldson and Brie Sorrenson), an assistant research fellow (Kate Linterman) and Cathika Luxmanan, a PhD graduate now working for Pacific Edge Biotechnology. The event was rounded off by a discussion of PhD scholarships and how to earn them from postgraduate officer Chris Stoddart and HOD Kurt Krause. Thanks to Stephanie Hughes for organizing the event, and all the speakers and students for participating.



Kate Linterman talks to Biochemistry students about working as an ARF

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OSMS/Genetics Otago Poster Evening

Kick off occurred in very high spirits for the second annual GO/OSMS Poster Evening, with most people uber excited to be in a corporate box in the new stadium. Practically a shrine to beer and rugby, everything is set up for the drunk and the jock. About 60 posters were on display from about 5pm and at half past the hour the guest speaker, Prof Jim Sikela from the University of Colorado, regaled us with tales from the quest to determine the Human Element - the genome wide search for the essential difference between Human and higher order primates. About 2 thirds into the lecture the Otago Provincial team started their practice on the pitch proper- which mostly consisted of giving their prodigious vocal chords a vigorous workout. As the evening progressed the stadium lent a fluorescent green background glow to the room and elegantly attired wait staff roamed around offering up nibbles of various composition. Shiny polished glasses, the gentle clinking of bottles and the industrial sized extractor fans wurring away in the background contributed to the stadium ambience - least you forget exactly where you were, the pitch itself is cavernous and calm and quite oddly hypnotic.

Prof Sikela was an engaging speaker illustrating work with a beautiful correlation between array data and phylogeny. Focusing on DUF 1220, he spoke a little about his groups experience with the "DUF 1220 wheel of fortune and misfortune" – a bit of lab humor there. Questions of the speaker were posited immediately upon his conclusion and quite the wee crowd formed at the front of the room to continue discussion at the close of the open session. An interesting remark was made as to the Neanderthal – no longer can we consider the species a brute, when it appears he was a much smarter species than ever before thought; you will have to come up with a new nickname for your brother. Our hosts for the evening, AP's Catherine Day and Peter Dearden were looking spectacularly wonderful, and the crowd was large and jovial, representing a wide range of labs spread throughout the OSMS. The poster competition started in earnest at about 6:30 with 4 postdoc and approximately 55 student posters presenting to an army of about 10 judges. The posters on display covered a wide array of topics and included many beautiful designs. It is always apparent at this event just how much each student is involved, inspired by and committed to their work. Throughout the evening each attendee was visited by two judges and given the opportunity to present their work in an attempt to win one of 7 student prizes (and one Ultimate Postdoc prize).

The evening concluded with a prize presentation session, with Biochemistry's Rob Day taking out the position of Thermo Fisher Ultimate Postdoc. In the student categories, two Biochemistry students took out the Genetics Otago and NZSBMB prizes, Rowan Herridge and Rhesa Budhidarmo respectively. Represent! The Virology award went to the fabulous Estelle Baker from Microbiology, the Webster Center prize was awarded to Babasaheb Yadav from Pharmacology, and the Center for Reproduction and Genomics sponsored award went to Malinda Tantirigama from Physiology. Angela Clark from Anatomy was awarded the OSMS prize and Mike Fleete, also from Anatomy, took out the Brain Health & Repair award.

There were no tears from those unlucky enough to have missed out on bribing impressing the judges enough, and everyone departed in as high spirits as when they arrived. On the day, science was the winner. Big Ups, Science; team hug?!

Sarah Morgan



Conference Reports

Queenstown Research Week, 28-29th August 2011

Biomolecular Interactions Satellite Meeting

On the morning of August the 28th August 2011, a wonderfully clear and sunny morning, a group of researchers got together at the Crowne Plaza Hotel in Queenstown to attend the Biomolecular Interactions Satellite Meeting.

According to the program, the symposium, organized by Emily Parker, Renwick Dobson, Grant Pearce and Susie Meade, aimed to enhance "the understanding of biomolecular interactions, which is central to a range of fundamental sciences, new treatments for disease, and a wide range of highly functional products."

The first block, "Biointeractions & Health", featured interesting talks on protein misfolding and aggregation in neurodegenerative diseases. Despite the seriousness and importance of this topic, a great deal of humour accompanied most talks. And so Ashley Buckle, from Monash University, who had spend the days prior to the conference skiing with his son, commented on the inferiority of the nutcracker. After pointing out that 'in first world countries they use chair lifts to get people up the mountain', he showed fascinating movies illustrating the conformational plasticity of alpha-1 antitrypsin.

The second block "Biointeractions in Nature" commenced with Tome Laue illuminating energy frameworks in biochemistry and the importance of dipole dipole interactions in crowded solutions. Wayne Patrick, who did his honours degree in out department with John Cutfield in 1999, introduced us to 'the weird stuff in proteoms and its role in the evolution of new biomolecular functions'.

The day was appropriately concluded with a poster session and social mixer, which was a great opportunity for speakers and audience to interact. Free wine end beer helped with the exchange of ideas. Prizes were awarded to two Otago students: I won the best poster prize and the highly commended poster prize was won by Corinna Richter (Department of Microbiology).

The next morning we got together once more at the Crowne, this time to learn about "Biomolecular Interactions & Structure". This session finally featured the only two speakers from our department (in fact the only two speakers from Otago), Kurt and Julian.

Julian gave a great talk on auxiliary proteins of photosystem II. After finishing the talk, he pointed out that he had managed to condense it from 35 min that it took him when practicing over the preceding lunch break to 20 min - without taking out any slides. As a reward, he received a medal for the New Zealand Society of Plant Physiologists' Outstanding Physiologist Award, which he had won in 2005. Wayne Patrick, who was chairing this session, had made an effort to google every speaker, so that he would be able to introduce them wittily. When he came to announce Kurt's talk, he pointed out that he shared his first name with Kurt Cobain, to which Kurt replied, that people had previously told him he shared the looks, too. Of course Kurt had picked up the humours vibe from the foregoing speakers and so he was sending giggles through the audience while presenting work on Orf virus chemokine binding proteins. He assured the listeners that they were no longer at risk to contract the orthopox virus causing smallpox unless they resembled a sheep. (Thanks to the WHO vaccination campaign that led to eradication of the Variola vera virus in 1979). He also pointed out that after Tom Laue's presentation and the newly gained insights into the importance of dipoles, he was now able to understand, why they obtained protein crystals in the presence of arginine.

The meeting ended with a lecture by Nobel Prize winner Professor Barry Marshall on Helioabacter pylori in the post-genomic era and the illumina party, for which neon orange wrist bands were required for entry.

In summary, I found the meeting very stimulating and I enjoyed the humorous, friendly and informal atmosphere that encouraged for interaction with other researchers. It definitely enhanced my understanding of biomolecular interactions, just like the program had promised.

Nina Dickerhof

Australasian Winter Conference on Brain Research

The Australasian Winter Conference on Brain Research (AWCBR) satellite of the QRW was a full-on five days of brain science and socialising. The eight sessions were exciting and stimulating with the quality of Otago research and presenters really standing out. Things got loose at the conference dinner at the skyline with some crazy dance moves and interesting gondola rides down the hill. The poster session was successful with Malinda T from Physiology winning the student poster prize. The best student speaker award went to another Otago student, Kajsa S also from Physiology. There was a strong AWCBR presence at the Fashionomics with at least 3 models being brain nerds. Our own Stephanie Hughes placed third with her 'Lentiviral women' outfit. She did a great job modelling the outfit, showing off the lentivirus fascinator and 'containment facility' handbag beautifully. The lab is already designing an outfit for next years meeting so cross-dressing males beware!

First Ice-Binding Protein Conference

I was fortunate to attend the First Ice-Binding Protein Conference in Kingston, Ontario at the beginning of August. The focus of the conference was, unsurprisingly, proteins that interacted with ice. Most of the work presented discussed 'antifreeze' proteins, but a number of other molecules featured in the presentations, including some interesting lipids and carbohydrates.

This was one of those conferences with a small community (about 80 attendees), mostly well-known to each other in a field that is relatively new. Most of the grand names in the field were there along with a good number of people that I knew personally and from the literature. The range of topics was broader than usual for a small conference. There were presentations from mathematicians and statisticians, physical chemists and physicists, biochemists, botanists and even a few geneticists along with a smattering of venture capitalists and representatives of industry, all of whom presented interesting and thoughtful talks.

Among the most interesting talks (at least the ones that you, gentle reader, would find interesting) were talks about Ice structuring proteins in ice cream. These stabilize air bubbles in place of the fat typical in conventional ice cream and allow the production of creamy ice cream with a low fat content. Fish antifreeze proteins are currently used but there is considerable interest in using proteins from grasses to achieve the same end. I had a sense of disbelief when I heard this as similar work had been done in New Zealand ten years ago but did not attract the interest of Fonterra whereas Danone and Unilever are funding the work in Canada.

Ice nucleation proteins are poorly understood but have some significance as they are important in bacteria that damage many agricultural crops exposed to low temperatures. One particularly interesting paper looking at a 'cassette' protein with 140 or so repeat motifs that act as ice nucleators . The structure reported in this work give a clue as to how they might work: essentially providing a scaffold for the formation of a ice nucleus from which bulk ice may grow. Getting ice to form at close to 0 °C is remarkably difficult and these proteins may be very useful where this wanted: for example in causing ice formation around fruit buds during spray irrigation when spring frosts strike and where the latent heat of ice formation helps protect the buds themselves from freezing.

One of the most unusual applications was the production by a Japanese group of ceramic filters with controlled pore sizes. This was done by allowing ice crystals to grow in the presence of antifreeze proteins that encourage spicular or needle-like growth in a solution of ceramic powder. With a little manipulation, these needles could be aligned and the ceramic allowed to settle. The settled moulds were then baked and the spaces initially occupied by the needles was left as a void in the sintered ceramic that could be used as a controlled pore filter.

Another Japanese group was using ice-active proteins to control ice slurry formation for use in air-conditioning plants. The object here was to generate a large tank of ice slurry during the night that could then pumped around a building to cool it during the day. This helped even out air-conditioning loads which is generally interesting but of particular of use in Japan that is affected by a shortage of energy since the shutdown of many nuclear power plants after the tsunami earlier this year. Maintaining the slurries is very difficult and if they freeze in the pipes, flow stops. A number of proteins and sugar derivatives were investigated in helping maintain liquid slurries at low temperatures by lowering the freezing point but without affecting the temperature of thawing.



Chris and Adam of the Davies group demonstrating the ubiquity of laboratory design.

This part of North America was unusually hot even for boreal summer and the accommodation, the cheapest I could find (and which reminded me of my time at Unicol) was without air-conditioning, and on several days, hot water. This was all character building, and happily the laboratory that I visited (that of Peter Davies of Queens University) was nice and cool. Interestingly, they too had the same wonderful access system that we had but I'm happy to say that this could be subverted by sliding a sheet of paper under the door to fool the sensors into thinking someone had approached from the secure side and to open the door. 'Thinking' here is used in a very loose sense. The Davies lab was very wellequipped and they had lots of very nice equipment both large and small over which I lusted (and none of which would fit in my bag).

Craig Marshall

Origins 2011

ISSOL (International Society for the Study of the Origin of Life) and Bioastronomy Joint International Conference Montpellier (France), July 2011

This was the first origins of life conference I had attended, and was warned by Stephen Sowerby these meetings could be a bit of a 'bun fight', with everyone defending his or her own pet theory 'to the death'! However, this didn't turn out to be the case, with (almost) everyone attending being quite civil. Although people here seemed jealous that the conference was being held in the south of France, I actually found the weather too hot for my liking: 30°C every day and sunny! (I later discovered that Montpellier has 300 days of sunshine a year!)

Despite the absence of open warfare, there was a definite divide between the information-first (mostly RNA world-ers) and metabolism-first (mostly Fe-S/alkaline hydrothermal vent) factions, with John Sutherland – who appears to have had a recent move from Manchester to Cambridge – and Gerald Joyce representing the former camp. Sutherland, whose team published a 2009 Nature paper demonstrating a feasible chemical synthetic route to the previously problematic pyrimidine nucleotides, was something of a 'star'. Attempting to bridge the gap with the opposing side, he described the hydrothermal vent guru Michael Russell as having some good ideas, 'as long as you don't take it too far''! Perhaps needless to say Michael Russell was not at the meeting! Sutherland made the point that plausible conditions for the origin of life need to be favourable for all three major biomolecules: RNA, proteins and lipids. 2'-acetyl-RNA was discussed as a possible forerunner to RNA, due to the enforcement of a 3'-5' backbone, and also to DNA, due to the molecule having a possible preference for double helix formation.

The need to be able to fit the chemistry and biology with probable conditions on the early Earth was a constant refrain during the week, especially, it seemed, by the many geologists, atmospheric physicists etc who spoke. 2011 was the first combined meeting between ISSOL and the Bioastronomy Commission, and though the astronomy aspects were interesting, there was quite a wide gap between the two areas, and this (plus the large number of posters more directly relevant to biochemical aspects) meant that I ended up skipping some of the more astronomical talks, although I did regret passing up a panel discussion on the next few unmanned missions to Mars. And probably what was the most interesting talk of the whole conference for me, was titled 'Terrestrial planet formation: a new perspective' by Alessandro Morbidelli, who took us on a recent tour of theories on the origin of our solar system. This involved computer simulations that suggest the migration of the gas giant Jupiter to a distance of 1.5 AU (AU = the distance between the Earth and the sun), followed by Saturn. This movement towards the sun shepherded the planetoids into a narrow region between 0.7 - 1 AU, from which the inner rocky planets would subsequently form. Saturn then 'rescued' Jupiter through two-body resonance capture and pulled it out again to its current orbit (this all happening over 1 million years). This concentration of planetoids led to the formation of a planet the size of Earth, able to retain an atmosphere and water, and so evolve life. The arrangement of our solar system is actually quite unusual; most Jupiter-like planets in other solar systems exist in two main regions, either closer to their star than Mercury or at the same distance as the Earth.

Ada Yonath (a co-winner of the 2009 Nobel Prize for Chemistry for her work on elucidating the detailed 3D structure of the ribosome) spoke of some success in forming dimers from the two halves of the peptidyl transferase centre ribosomal RNA, though so far they have not uncovered any function above background. There were a number of talks dealing with the early evolution of lipid vesicles, possibly the first step in the origin of life. Early membranes were probably composed of fatty acids/alcohols as simpler precursors to phospholipids; interestingly, doping such membranes with a small percentage of phospholipid confers the ability to absorb extra lipid and grow at the expense of the non-phospholipid containing vesicles!

Two of the most interesting ideas, however, were those expressed by Andy Pratt (from Canterbury, the only other New Zealander at the conference) in snatched airport conversations on the long trip home. Biochemistry, he remarked, is what happens when chemistry doesn't/can't work; and, the reason why polynucleotides and polypeptides are prone to hydrolysis is that evolution needs not only to be able to make things but also break things down, so that something better can take its place.

Harold Bernhardt

The tale of seven cities

Dan and Jodi go to a carotenoid conference in Poland, Tracy tags along

1 Beijing: To kick things off there was the Forbidden City, the Summer Palace and walking on walls.

2 Paris: mmmm...croissants! The Eiffel Tower, the Louvre and Notre Dame, we left feeling a lot more cultured.





3 Amsterdam: Canals and Croquets, the most delicious thing you could ever dream of!

4 Berlin: BEER!



5 Krakow: Down to business, the conference!

We met a lot of interesting people and enjoyed hearing about new and important carotenoid research. The gala dinner was held 200m below ground in the ancient Wieliczka salt mines. And Jodi met George Britton (famous carotenoid guy)!



6 Prague: Palaces, pizza and BEER!

7 Shanghai: We saw some very sad Pandas at the zoo. And no, not beer, but soy bean liquor.....disgusting!

We had an AWESOME trip!

Recent Publications

A Nagarajan, R Winter, J Eaton-Rye, R Burnap.

A synthetic DNA and fusion PCR approach to the ectopic expression of high levels of the D1 protein of photosystem II in *Synechocystis* sp. PCC 6803.

Journal of Photochemistry and Photobiology B: Biology (2011) vol. 104 (1-2) pp. 212-219

Hamish G Upritchard, Jing Yang, Philip J Bremer, Iain L Lamont, A James McQuillan.

Adsorption of enterobactin to metal oxides and the role of siderophores in bacterial adhesion to metals.

The potential contribution of chemical bonds formed between bacterial cells and metal surfaces during biofilm initiation has received little attention. Previous work has suggested that bacterial siderophores may play a role in bacterial adhesion to metals. It has now been shown using in situ ATR-IR spectroscopy that enterobactin, a catecholate siderophore secreted by Escherichia coli, forms covalent bonds with particle films of titanium dioxide, boehmite (AlOOH), and chromium oxide-hydroxide which model the surfaces of metals of significance in medical and industrial settings. Adsorption of enterobactin to the metal oxides occurred through the 2,3-dihydroxybenzoyl moieties, with the trilactone macrocycle having little involvement. Vibrational modes of the 2,3-dihydroxybenzoyl moiety of enterobactin, adsorbed to TiO(2), were assigned by comparing the observed IR spectra with those calculated by the density functional method. Comparison of the observed adsorbate IR spectrum with the calculated spectra of catecholate-type [H(2)NCOC(6)H(3)O(2)Ti(OH)(4)](2-) and salicylatetype [H(2)NCOC(6)H(3)O(2)HTi(OH)(4)](2-) surface complexes indicated that the catecholate type is dominant. Analysis of the spectra for enterobactin in solution and that adsorbed to TiO(2) revealed that the amide of the 2,3-dihydroxybenzoylserine group reorientates during coordination to surface Ti(IV) ions. Investigation into the pH dependence of enterobactin adsorption to TiO(2) surfaces showed that all 2,3-dihydroxybenzoyl groups are involved. Infrared absorption bands attributed to adsorbed enterobactin were also strongly evident for E. coli cells attached to TiO(2) particle films. These studies give evidence of enterobactin-metal bond formation and further suggest the generality of siderophore involvement in bacterial biofilm initiation on metal surfaces. -

Langmuir : the ACS journal of surfaces and colloids (2011) vol. 27 (17) pp. 10587-96

B Sorrenson, R.J Suetani, V.M Bickley, P.M George, M.J.A Williams, R.S Scott, S.P.A McCormick.

An ABCA1 truncation shows no dominant negative effect in a familial hypoalphalipoproteinemia pedigree with three *ABCA1* mutations.

Biochemical and biophysical research communications (2011) vol. 409 (3) pp. 400-405

S J Sowerby, G J Mirams, P C Hill, M G Paulin.

An axisymmetric meniscus converges particles for microscopy.

Capillary rise on a tapered cylindrical rod creates a static axisymmetric meniscus that quantitatively attracts buoyant particles into a single microscopic field of view, providing a new method for small particle microscopy. This approach simplifies the visualization of micrometre-sized particles, such as pollen and parasite eggs, and has potential utility in remote location monitoring and clinical diagnosis. -

Journal of microscopy (2011) pp.

E.A Ehimen, Z.F Sun, C.G Carrington, E.J Birch, J.J Eaton-Rye.

Anaerobic digestion of microalgae residues resulting from the biodiesel production process.

Applied Energy (2011) vol. 88 (10) pp. 3454-3463

A Phipps-Green, C Mckinney, M Rossol, M.E Merriman, R Topless, J.E Hollis-Moffatt, W.R.W Taib, N Dalbeth, P.J Gow, A.A Harrison, J Highton, P.B.B Jones, L.K Stamp, U Wanger, P Wordsworth, T.R Merriman.

Analysis of association of DNASE2 promoter variation with rheumatoid arthritis in European Caucasians.

Annals of the rheumatic diseases (2011) vol. 70 (8) pp. 1512-1514

T.C Hawes, C.J Marshall, D.A Wharton.

Antifreeze proteins in the Antarctic springtail, *Gressittacantha terranova*.

Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology (2011) vol. 181 (6) pp. 713-719

N Dickerhof, T Kleffmann, R Jack, S McCormick.

Bacitracin inhibits the reductive activity of protein disulfide isomerase by disulfide bond formation with free cysteines in the substrate-binding domain.

FEBS Journal (2011) vol. 278 (12) pp. 2034-2043

Eleni Siakkou, Malcolm T Rutledge, Sigurd M Wilbanks, Guy N L Jameson.

Capturing crosslink formation with enzymatic activity in cysteine dioxygenase.

Cysteine dioxygenase (CDO) from rat and other mammals exhibits a covalent post-translational modification between the residues C93 and Y157 that is in close proximity to the active site, and whose presence enhances the enzyme's activity. Protein with and without C93-Y157 crosslink migrates as distinct bands in SDS-PAGE, allowing quantification of the relative ratios between the two forms by densitometry of the respective bands. Expression of recombinant rat wild type CDO in Escherichia coli typically produces 40-50% with the C93-Y157 crosslink. A strategy was developed to increase the ratio of the non-crosslinked form in an enzyme preparation of reasonable quantity and purity, allowing direct assessment of the activity of non-crosslinked CDO and mechanism of formation of the crosslink. The presence of ferrous iron and oxygen is a prerequisite for C93-Y157 crosslink formation. Absence of oxygen during protein expression increased the fraction of non-crosslinked CDO, while presence of the metal chelator EDTA had little effect. Metal affinity chromatography was used to enrich non-crosslink content. Both the enzymatic rate of cysteine oxidation and the amount of cross-linking between C93 and Y157 increased significantly upon exposure of CDO to air/oxygen and substrate cysteine in the presence of iron in a hitherto unreported two-phase process. The instantaneous activity was proportional to the amount of crosslinked enzyme present, demonstrating that the non-crosslinked form has negligible enzymatic activity. The biphasic kinetics suggest the existence of an as yet uncharacterised intermediate in crosslink formation and enzyme activation. -

Biochimica et biophysica acta (2011) pp.

J Lopez, S John, T Tenev, G Rautureau, M Hinds, F Francalanci, R Wilson, M Broemer, M Santoro, C Day, P Meier.

CARD-Mediated Autoinhibition of cIAP1's E3 Ligase Activity Suppresses Cell Proliferation and Migration.

Molecular Cell (2011) vol. 42 (5) pp. 569-583

R.A North, L.M.E McCowan, G.A Dekker, L Poston, E.H.Y Chan, A.W Stewart, M.A Black, R.S Taylor, J.J Walker, P.N Baker, L.C Kenny.

Clinical risk prediction for pre-eclampsia in nulliparous women: Development of model in international prospective cohort.

BMJ (2011) vol. 342 (7803)

W.W Soon, L.D Miller, M.A Black, C Dalmasso, X.B Chan, B Pang, C.W Ong, M Salto-Tellez, K.V Desai, E.T Liu.

Combined genomic and phenotype screening reveals secretory factor SPINK1 as an invasion and survival factor associated with patient prognosis in breast cancer.

EMBO Molecular Medicine (2011) vol. 3 (8) pp. 451-464

Megan J Wilson, Peter K Dearden.

Diversity in insect axis formation: two orthodenticle genes and hunchback act in anterior patterning and influence dorsoventral organization in the honeybee (*Apis mellifera*).

Axis formation is a key step in development, but studies indicate that genes involved in insect axis formation are relatively fast evolving. Orthodenticle genes have conserved roles, often with hunchback, in maternal anterior patterning in several insect species. We show that two orthodenticle genes, otd1 and otd2, and hunchback act as maternal anterior patterning genes in the honeybee (Apis mellifera) but, unlike other insects, act to pattern the majority of the anteroposterior axis. These genes regulate the expression domains of anterior, central and posterior gap genes and may directly regulate the anterior gap gene giant. We show otd1 and hunchback also influence dorsoventral patterning by regulating *zerknült* (zen) as they do in Tribolium, but that zen does not regulate the expression of honeybee gap genes. This suggests that interactions between anteroposterior and dorsal-ventral patterning are ancestral in holometabolous insects. Honeybee axis formation, and the function of the conserved anterior patterning gene orthodenticle, displays unique characters that indicate that, even when conserved genes pattern the axis, their regulatory interactions differ within orders of insects, consistent with relatively fast evolution in axis formation pathways. -

Development (2011) vol. 138 (16) pp. 3497-507

F Kalamorz, S Keis, D.G.G McMillan, K Olsson, J.-A Stanton, P Stockwell, M.A Black, D.M Klingeman, M.L Land, C.S Han, S.L Martin, S.A Becher, C.J Peddie, H.W Morgan, D Matthies, L Preiß, T Meier, S.D Brown, G.M Cook.

Draft genome sequence of the thermoalkaliphilic *Caldalkalibacillus thermarum* strain TA2.A1.

Journal of Bacteriology (2011) vol. 193 (16) pp. 4290-4291

T.R Merriman.

Editorial.

Current Rheumatology Reviews (2011) vol. 7 (2) pp. 94-96

G.T.R Merriman, N Dalbeth.

Genetic and environmental risk factors in hyperuricaemia and common gout.

Current Rheumatology Reviews (2011) vol. 7 (2) pp. 114-122

Genomic and proteomic analysis of invertebrate iridovirus type 9.

C.K Wong, V.L Young, T Kleffmann, V.K Ward.

Journal of Virology (2011) vol. 85 (15) pp. 7900-7911

Rachel J Suetani, Brie Sorrenson, Joel D A Tyndall, Michael J A Williams, Sally P A McCormick.

Homology modeling and functional testing of an ABCA1 mutation causing Tangier disease.

OBJECTIVE: To investigate the impact of the p.R1068H mutation on the structure and function of the ATPbinding cassette A1 (ABCA1) protein. METHODS: A homology model of the nucleotide binding domains of ABCA1 was constructed to identify the threedimensional orientation of R1068. Cholesterol efflux assays were performed on fibroblasts obtained from members of a Tangier disease (TD) family carrying the p.R1068H mutation and in HEK293 cells transfected with a p.R1068H mutant cDNA vector. Confocal microscopy was used to investigate the localisation of the wildtype and mutant p.R1068H protein in HEK293 cells. RESULTS: Sequence alignments and modeling indicated residue R1068 to be located in an α -helix downstream of the Walker B motif in the first nucleotide binding domain (NBD-1), in a position to form ionic interactions with D1092 and E1093. Cholesterol efflux studies showed the efflux from TD

fibroblasts and HEK293 cells expressing the mutant p.R1068H protein to be markedly reduced compared to wildtype. Localisation of the mutant p.R1068H protein in HEK293 cells showed intracellular retention of the protein indicating a defect in trafficking to the plasma membrane. CONCLUSION: Homology modeling of the ABCA1 protein showed that the p.R1068H mutation would likely disrupt the conformation of NBD-1. Functional studies of p.R1068H showed a lack of cholesterol efflux function due to defective trafficking to the plasma membrane, most likely caused by impaired oligomerisation.

Atherosclerosis (2011) pp.

Rebecca L Roberts, Andre M Van Rij, L Vicky Phillips, Sarah Young, Sally P A McCormick, Tony R Merriman, Gregory T Jones.

Interaction of the inflammasome genes CARD8 and NLRP3 in abdominal aortic aneurysms.

Our finding suggests genetic variability within the NLRP3 inflammasome may be important in the pathophysiology of AAA.

Atherosclerosis (2011) vol. 218 (1) pp. 123-6

G.C Dickson, R.T.M Poulter, E.W Maas, P.K Probert, J.A Kieser.

Marine bacterial succession as a potential indicator of postmortem submersion interval.

Forensic science international (2011) vol. 209 (1-3) pp. 1-10

K Janko, C Marshall, Z Musilová, J.V Houdt, A Couloux, C Cruaud, G Lecointre.

Multilocus analyses of an Antarctic fish species flock (Teleostei, Notothenioidei, Trematominae): Phylogenetic approach and test of the early-radiation event.

Molecular Phylogenetics and Evolution (2011) vol. 60 (3) pp. 305-316

M Dottori, C Tay, S.M Hughes.

Neural development in human embryonic stem cellsapplications of lentiviral vectors.

Journal of Cellular Biochemistry (2011) vol. 112 (8) pp. 1955-1962

K.G Anthony, U Strych, K.R Yeung, C.S Shoen, O Perez, K.L Krause, M.H Cynamon, P.A Aristoff, R.A Koski.

New classes of alanine racemase inhibitors identified by high-throughput screening show antimicrobial activity against *mycobacterium tuberculosis*.

PLoS ONE (2011) vol. 6 (5)

D.M Glubb, R.B Gearry, M.L Barclay, R.L Roberts, J Pearson, J.I Keenan, J Mckenzie, R.W Bentley.

OD2 and ATG16L1 polymorphisms affect monocyte responses in Crohn's disease.

World Journal of Gastroenterology (2011) vol. 17 (23) pp. 2829-2837

Anne von Zychlinski, Torsten Kleffmann, Michael J A Williams, Sally P McCormick.

Proteomics of Lipoprotein(a) identifies a protein complement associated with response to wounding.

Lipoprotein(a) [Lp(a)] is a major independent risk factor for cardiovascular disease. Twenty percent of the general population exhibit levels above the risk threshold highlighting the importance for clinical and basic research. Comprehensive proteomics of human Lp(a) will provide significant insights into Lp(a) physiology and pathogenicity. Using liquid chromatographycoupled mass spectrometry, we established a high confidence Lp(a) proteome of 35 proteins from highly purified particles. Protein interaction network analysis and functional clustering revealed proteins assigned to the two major biological processes of lipid metabolism and response to wounding. The latter includes the processes of coagulation, complement activation and inflammatory response. Furthermore, absolute protein quantification of apoB-100, apo(a), apoA1, complement C3 and PON1 gave insights into the compositional stoichiometry of associated proteins per particle. Our proteomics study has identified Lp(a)-associated proteins that support a suggested role of Lp(a) in response to wounding which points to mechanisms of Lp(a) pathogenicity at sites of vascular injury and atherosclerotic lesions. This study has identified a high confidence Lp(a) proteome and provides an important basis for further comparative and quantitative analyses of Lp(a) isolated from greater numbers of plasma samples to investigate the significance of associated proteins and their dynamics for Lp(a) pathogenicity.

Journal of proteomics (2011)

Lois W Martin, David W Reid, Katrina J Sharples, Iain L Lamont.

Pseudomonas siderophores in the sputum of patients with cystic fibrosis.

The lungs of patients with cystic fibrosis become chronically infected with the bacterium Pseudomonas aeruginosa, which heralds progressive lung damage and a decline in health. Iron is a crucial micronutrient for bacteria and its acquisition is a key factor in infection. P. aeruginosa can acquire this element by secreting pyoverdine and pyochelin, iron-chelating compounds (siderophores) that scavenge iron and deliver it to the bacteria. Siderophore-mediated iron uptake is generally considered a key factor in the ability of P. aeruginosa to cause infection. We have investigated the amounts of pyoverdine in 148 sputum samples from 36 cystic fibrosis patients (30 infected with P. aeruginosa and 6 as negative controls). Pyoverdine was present in 93 samples in concentrations between 0.30 and 51 μM (median 4.6 µM) and there was a strong association between the amount of pyoverdine and the number of *P. aeruginosa* present. However, pyoverdine was not present, or below the limits of detection ($\sim 0.3 \,\mu$ M), in 21 sputum samples that contained P. aeruginosa. Pyochelin was also absent, or below the limits of detection (~1 μ M), in samples from P. aeruginosa -infected patients with little or no detectable pyoverdine. Our data show that pyoverdine is an important iron-scavenging molecule for P. aeruginosa in many cystic fibrosis patients, but other P. aeruginosa iron-uptake systems must be active in some patients to satisfy the bacterial need for iron. -

Biometals : an international journal on the role of metal ions in biology, biochemistry, and medicine (2011) pp.

Hookang Im, Miriam L Sharpe, Ulrich Strych, Milya Davlieva, Kurt L Krause.

The crystal structure of alanine racemase from *Streptococcus pneumoniae*, a target for structure-based drug design.

We have solved the structure of AlrSP, an essential step towards the development of an accurate pharmacophore model of the enzyme, and an important contribution towards our on-going alanine racemase structure-based drug design project. We have identified three regions on the enzyme that could be targeted for inhibitor design, the active site, the dimer interface, and the active site entryway.

BMC microbiology (2011) vol. 11 pp. 116

J.P Sun, T Kleffmann, P.A Hessian.

The G82S polymorphism promotes glycosylation of the receptor for advanced glycation end products (RAGE) at asparagine 81: Comparison of wild-type rage with the G82S polymorphic variant.

Journal Of Biological Chemistry (2011) vol. 286 (24) pp. 21384-21392

R.D Fagerlund, J.J Eaton-Rye.

The lipoproteins of cyanobacterial photosystem II.

Journal of Photochemistry and Photobiology B: Biology (2011) vol. 104 (1-2) pp. 191-203

Rebecca E Laurie, Payal Diwadkar, Mauren Jaudal, Lulu Zhang, Valérie Hecht, Jiangqi Wen, Million Tadege, Kirankumar S Mysore, Joanna Putterill, James L Weller, Richard C Macknight.

The Medicago FLOWERING LOCUS T Homolog, MtFTa1, Is a Key Regulator of Flowering Time.

FLOWERING LOCUS T (FT) genes encode proteins that function as the mobile floral signal, florigen. In this study, we characterized five FT-like genes from the model legume, Medicago (Medicago truncatula). The different FT genes showed distinct patterns of expression and responses to environmental cues. Three of the FT genes (MtFTa1, MtFTb1, and MtFTc) were able to complement the Arabidopsis (Arabidopsis thaliana) ft-1 mutant, suggesting that they are capable of functioning as florigen. MtFTa1 is the only one of the FT genes that is up-regulated by both long days (LDs) and vernalization, conditions that promote Medicago flowering, and transgenic Medicago plants overexpressing the MtFTa1 gene flowered very rapidly. The key role MtFTa1 plays in regulating flowering was demonstrated by the identification of fta1 mutants that flowered significantly later in all conditions examined. fta1 mutants do not respond to vernalization but are still responsive to LDs, indicating that the induction of flowering by prolonged cold acts solely through MtFTa1, whereas photoperiodic induction of flowering involves other genes, possibly MtFTb1, which is only expressed in leaves under LD conditions and therefore might contribute to the photoperiodic regulation of flowering. The role of the MtFTc gene is unclear, as the ftc mutants did not have any obvious flowering-time or other phenotypes. Overall, this work reveals the diversity of the regulation and function of the Medicago FT family.

Plant physiology (2011) vol. 156 (4) pp. 2207-24

Stewart G Stevens, Paul P Gardner, Chris Brown.

Two covariance models for iron-responsive elements.

Iron-responsive elements (IREs) function in the 5' or 3' untranslated regions (UTRs) of mRNAs as posttranscriptional structured cis-acting RNA regulatory elements. One known functional mechanism is the binding of Iron Regulatory Proteins (IRPs) to 5' UTR IREs, reducing translation rates at low iron levels. Another known mechanism is IRPs binding to 3' UTR IREs in other mRNAs, increasing RNA stability. Experimentally proven elements are quite small, have some diversity of sequence and structure, and functional genes have similar pseudogenes in the genome. This paper presents two new IRE covariance models, comprising a new IRE clan in the RFAM database to encompass this variation without over-generalisation. Two IRE models rather than a single model is consistent with experimentally proven structures and predictions. All of the IREs with experimental support are modelled. These two new models show a marked increase in the sensitivity and specificity in detection of known ironresponsive elements and ability to predict novel IREs.

RNA biology (2011) vol. 8 (5) pp.

Lab News

Cycles and seasons (Wilbanks Lab)

Looking back at our last report, I see that we actually delivered on the "manuscripts in preparation" so bravely listed in the last newsletter. Eleni has got to be the star of this winter, with one paper accepted and her PhD thesis submitted. After a very brief rest, she is back to converting the final chapters to another paper and preparing for her seminar in Chemistry - circle September 23 on your calendars. Ticking off another thesis at which we hinted, Richard Ahokovi-Tukia submitted his masters thesis so we have two lab members waiting on the examiners' results.

Samuel took advantage of the opportunity to apply out of season and won a Smeaton Scholarship in Experimental Science, to support the remainder of his MSc study. On the down side, Yohan has withdrawn to regroup and plans to come back with renewed vigour in 2012. We look forward to his return.

Those data sets we mentioned also went somewhere, or are going. Madhu, Richard and Egor are all polishing up CDO structures; Egor from the X-ray diffraction data we mentioned last time, Richard from recent progress. Richard's is of rat with product bound, while Egor has solved the same enzyme from *P. aeruginosa*, only the second bacterial CDO to be elucidated. Madhu has polished off his first two structures of lumazine synthase, one with a novel inhibitor bound, the other, disappointingly, without the inhibitor.

Aimée described he own crysallographic progress at the Departmental Research Symposium and immediately flew off to Melbourne to collect more diffraction data on DnaK at the Australian Synchrotron

On his second turn around the clone>pure protein>structure>new insight cycle, Peter has just about finished his mutagenic assault on Psb27. While waiting for dozens of strains of cyanobacteria to sort out their genomes, he plans to spend some quality time with the FPLC and CD spectrophotometer.

Jess continues her own assault on Hsc70 clones and in June obtained sensible SAXS data for full-length Hsc70. Even better, she has done considerable analysis and a little modeling, generating some tantalizing hints of what the carboxyl-terminus (the bit we usually cut off and throw away) is up to.Malcolm spent most of July bonding with different SPR machines, chemically if not emotionally. Unfairly, the best data he saw was that which he helped Tracy collect for the cytochrome c:Apaf-1 itneraction, not his own project. However, all the work was worth it; he not only got an estimate of the interaction of Hsc70 with Tau, we also have made an informed recommendation about which SPR machine the department should purchase for further work. Besides swanning in to snatch the good SPR data, Tracy has completed her next manuscript (with some help from Liz, Sigurd and the collaborators in Rochester), so we have the next "manuscript submitted." We will keep you updated.

The senior expatriates in the lab escaped winter for north of the equator. Egor visited family in Moscow and Turkey, while Sigurd took his bicycle to Champagne and Burgundy. Both returned with tell-tale tans.

Finally, Colin Jackson visited us on his way back from Queenstown. After doing his honours year in our lab (not quite Sigurd's first student, but nearly!) he departed for a PhD at ANU where he is now a faculty member, following post-doctoral study in France. His seminar while visiting seemed full of JACS and PNAS papers. It is nice to see successful students return to visit.

Sigurd



McCormick Lab

It's been a good few weeks for the McCormick lab with PhD students on a winning streak and two more publications in press. Brie has won a trip to University of Queensland after taking out the prize for the best PhD Oral Presentation at the OSMS and Genetics Otago PhD Colloquium against strong competition from local and University of Queensland speakers. Meanwhile, Nina won the Best Poster at the Biointeractions Satellite meeting in Queenstown last week. Anne gave an awesome talk about the Lp(a) proteome at the Heart Satellite Meeting in Queenstown, a practise for her up and coming presentation at the HUPO meeting in Geneva this week. Angela presented a poster at the Heart Satellite in Queenstown facing some tough questions by some of Sally's old mentors. Sally was sighted in Queenstown in various dining situations seen dining with the Nobel Prize winner at a flash restaurant one night and sinking beers and pizza with students the next. She arrived back to reality and is now locked in her office writing two HRC applications. While everyone was partying it up in Queenstown, Emma was on the verge of a meltdown due to the horrors of qRT-PCR but is now in recovery after her runs finally worked. Meanwhile, Tom has taken on the position of 'lab social coordinator' and going to start organising some social events including a potential ski trip!

Emma Nolan

Cancer Genetics

Double success in HRC!

Parry has won funding for 2 projects – Journalists (and Greek wives) are very interested in an assay to detect individual cancerous cells exfoliated from the bladder or prostate present in urine samples.

The second grant will help the CGL involvement with E-Cadherin to continue with a 3 year investigation into synthetic lethal interactions to target cancer cells that do not express functional E-Cadherin. A project interesting enough to tempt Augustine back from the heat of Malaysia to the icy streets of Dunedin after his holiday.

Congratulations to Soroush who graduated this weekend. Dr Nasri will soon be practicing genetic counselling near family in Iran. We'll miss you! We're also wishing good luck to recent birthday girl Justine is off to Sydney next year to begin studying medicine. Luckily Jo will be with us for the 2nd year of her masters and we've managed to tempt Bryony back next year too – after black-mailing her to book tickets to Nepal, we'll welcome her back to start a PhD.

Tanis Godwin

Tate Lab

Warren was away for the first part of July while he spoke at a number of venues during his Rutherford lecture tour of New Zealand. The Dunedin talk was very well attended and we listened with pride as our beloved Warren spoke of his scientific progress and life adventure to date, a truly inspirational lecture. Alas the weather intervened the following week and now he has a second phase of lectures in the North Island soon.

The weather was kind for Warren to visit Wellington to meet with the Governor General at a ceremony to receive his Queens Birthday honours medal.

QMB was attended by Warren and Caillan Crowe-McAuliffe who also displayed a poster describing his work titled 'Retropepsins in Mammalian Genomes'.

Media mogul Warren has also had at least 45 minutes of fame this month when his research was featured on three shows.

National Radio 'Our Changing World' broadcast two programmes which featured Warren's research. The first programme was about Alzheimer's research and our labs role in the worldwide effort. Warren, Simon, Gary and Katie contributed to this programme which told the tale of the sAPPa protein and our work with it. The second programme looked at ME/CFS, Eiren and Warren both spoke about this disease and their work in this field.

Warren was also featured on a special brain edition of the fantastic science programme 'Ever Wondered?' which aired on TVNZ 7 Thursday teatime (prime time!!).

In the past couple of months we have welcomed to our lab Luci Schoderböck (Post doc) from Austria, Angus Mackay (PHD student) ex-biology teacher from Auckland, and Maj (rhymes with hi!) Schneider Thomsen (Masters Project) from Aalborg University, Denmark. They are really nice people and are contributing wonderfully to the cultural diversity of the lab.

Rugby fever has not quite escaped our lab as Warren has been singing (National Anthems!) with the City of Dunedin choir to welcome the Argentinean Team. On Friday he will be singing for England at their civic welcome.

Katie Bourne

The Renegade (Carne) Lab

It was the day before Christmas

Not so long ago

That the lab began wondering

Which one of us this year will be growing a Mo..... Lol, Jodie will have to use mascara otherwise she will really let the team down.

We do more than just ponder about our facial hair dreams in the Carne Laboratory. Among other things include; which pie will be brought from St. D?, whether to buy two pies from St. D?, should we eat said pies at St. D, or bring them back to the (Lab) write up room and should a bag of sweet & sour lollies be included in the daily feast.

No ladies and gentlemen of the fair Biochemistry Department, on an average day you will find Jodie spending hours and hours extracting lipids from the kina roe samples she is working with before getting high on ether in the HPLC room (this happened until the new ventilation system was installed, its rad). Specking of rad, Brad will be stressing about writing up his Honours thesis which is due tomorrow, he will be all good though. Alan has heeeeeaps of Food/ Nutritional Science kids coming and going all day. And yes it would be frustrating to have to wait at the security doors while they don't attempt HURRY UP.

Chris is moving on from being a student, always on the lookout for jobs, although the "system" is holding him back still not having released his mark, come on guys get fire wise! Dan graduated with his PhD (YEAH!), among the invited guests to his after-grad drinks was Clarke Gable, who was pointed out to Cal by Fudgy walking in the grad parade, or so Cal thought. One of the most important things established on that night was that Americans can finally do something better than the Brits, make beers. Dan has some post grad jobs in the department working with Dr Brown, he still finds time to come down to make sure that everything is going "chur" and remind us all of which time his is working on today, "Tonga time", "Fiji time" or "Samoa time"? Dan, Jodie and Tracy also spent a month overseas, wallowing it up in the northern hemisphere summer. The main event was a Carotenoid conference in Poland but many other academic activities were undertaken in France, Germany, Czech Republic, China and Amsterdam (especially Amsterdam). The Cal is enjoying his project, working hard and taking names. He is getting ready to "piss off" another set of sea urchins which he is getting very good at. Sheng is (insert actions here).

Dictionary (this one is for you Kurt, and anyone else who has not yet travelled to the most beautiful part of godzone, The East Coast, Gisborne, Turanganui-a-kiwa, where the sun never stops and sand is uncomfortably everywhere!)

Chur..... Derived from choice, generally applied to anything with a positive sense. Can be used as a substitute to: Hello, Goodbye, Thanks, Good, I Agree, Your All Good, I appreciate the work you have done and look forward to working with you again. Commonly used in conjunction with the word "cuz" (defined in the next newsletter)

This newsletter article is brought to you by the words: Pie, Ether, Uncomfortable, Island, Time and Chur, as well as the number 89

Calum



Dearden Lab

Holy Smokes Batman, third quarter already?!

Okay so the biggest news this quarter is that our resident Research Fellow, Doctor Megan, has left us to be a Lecturer in the illustrious halls of Anatomy-no-longer-the-Dept-of-Structural-Biology. Doc Megan is however, returning for an encore at the Developmental Biology Satellite meeting during Queenstown Research Week. She pops in every now and again to visit her hons student, the lovely Lisa, and her talented technician, the credible Cris, so you might still see her roaming the halls of Biochemistry.

Peter & Doc Megan had an absolutely brilliant paper published in Development (impact factor 7.5!!!) in August; "Diversity in insect axis formation: two orthodenticle genes and hunchback act in anterior patterning and influence dorsoventral organization in the honeybee (*Apis mellifera*)". A soothing evening read if you have a spare moment.

The Deaden contingent of students have been whoring it up at poster competitions, with Div Health Sci, OSMS/ GO, QMB and the NRCGD symposium to come later in the year. Fingers crossed for Dearden Lab wins across the board yeah?

A massive 9 of us from the lab are going to QMB and the Dev Bio Satellite. Renting vans and booking shared suites – war wounds expected by Saturday. Lucid Liz, durable Doc Megan, realistic Rosannah and standard Sarah have all been invited to give oral presentations; the rest of the contingent will be recapitulating their poster presentations from the OSMS/GO event mid August. The lab will be maintained in the majority's absence by oarsome Otto, likeable Lisa and charming Cris.



Rosannah McCartney and Ajay Nair receive the best speaker and best poster awards (respectively) from the Director of Genetics Otago (our own A/P Dearden).

Rosannah attended the fully funded NRCGD Writing Retreat in early August, a week of intensive paper writing tutorials in the balmy north Auckland. Keep your eyes peeled for her paper due in Nature in the coming months.

Peter's trip to China went swimmingly but he still refuses to share any photos with us, let alone the departmental newsletter. Picture him in a conical straw hat for a realistic and likely representation of the truth.

The lab's grant proposal through the NRCGD was successful, with the project looking at the molecular mechanisms of phenotypic plasticity set to continue comfortably into the future. Big ups to Peter and Liz for their bid to secure this.

The assistant on one of the honeybee projects, Tamsin, has left the lab to take up her PhD position at Harvard. We look forward to hearing of her progress and American adventures.

Update - The LED's Great QMB Adventure: was a complete success! Great talks given by our students Rosannah and

Sarah, and by Doc Megan, Liz and Peter. Congratulations to Rosannah for taking out the student speaker award. We were well represented on the poster night too, with 6 posters from our lab alone! Congratulations to Ajay for taking out the best poster prize! The meeting itself was fascinating at there were loads of really interesting talks by both local and international scientists. But we weren't all work and no play, the Lab managed to have a picnic at the Sutton salt lake on the way up to Queenstown (there were even rocks to look at / climb see photo) and we also were able to fit in some fossil hunting on our return journey!

Mad props to Sarah for the awesome picnic food (in fact awesome catering full stop).

So that's it, everyone survived, returned happy and are ready to get back to the daily grind with the new semester half. Wander down to the 101 corridor space sometime to check out the brilliant new posters.



Peter standing on a rock at Sutton salt lake pondering the origins of life and the universe (While the rest of us scoffed the yummy orange and cream cheese pound cake).

Poulter Lab

Russell has been in the news. A lot. He is variously "Professor Poulter", "Dr Poulter", and "Mr Poulter".

Russell, Iain Lamont, Margi Butler, Becky Laurie, and Les McNoe, have determined the genomic sequence of the Kiwifruit pathogen PSA.

Virulent strain of PSA only in BOP kiwifruit orchards

Updated at 5:39 am on 26 August 2011

An Otago University researcher says kiwifruit growers in all regions outside Bay of Plenty, can rest easy in the knowledge they don't have the PSA vine disease in their orchards.

Dr Russell Poulter was part of a team from the biochemistry department, determining the genomic sequence of PSA.

The research has been funded by Seeka and East Pack.

Dr Poulter says it was originally thought there were two distinct types of PSA in New Zealand, the Italian or virulent strain known as PSA V and an Asian strain

Next Article: July trade surplus firs im has found there's only one strain of the bacteria which is lent one called PSA V.

Relief for kiwifruit industry

By Owen Hembry

Business

5:30 AM Thursday Aug 25, 2011

The bacterial disease threatening the kiwifruit industry is not as widespread as thought, says listed company Seeka Kiwifruit Industries.

Seeka said research conducted at Otago University under the TaskForce Green Network - a commercially funded research initiative by Seeka and EastPak had shown that one of the two strains of Pseudomonas syringae pv actinidiae (Psa) thought to be in



Bacterial disease threatening kiwifruit industry not as widespread as thought, says Seeka Kiwifruit Industries. Photo / Supplied

New Zealand was only distantly related to the disease and was not a danger to the industry.

It had been thought there were two strains of the disease in New Zealand - one a virulent type restricted to the Bay of Plenty and another which was also in Hawkes Bay, Golden Bay and Motueka. Researchers had found differences in the genomic make-up of the two strains and believed there was now only one strain in the country - the virulent type.

"As the Psa V [virulent strain] is still limited to the Bay of Plenty, it's still worth considering the possibility of completely eradicating the

pathogen," Seeka said.

Seeka chief executive Michael F which would help the industry of





of PSA leads to virulent kiwifruit disease

s shown the two strains are not closely related to each other f Share Tweet 0 Emd to call them both PSA.

> merly known as PSA LV, which gives a positive response to een renamed PSD.

) has only ever been found in New Zealand and it's quite acteria which doesn't lead onto virulent disease in kiwifruit.

5A V has still only been found in Bay of Plenty, there's a ating the disease.

Kiwifruit disease spreading pany's chief executive Michael Franks says the team at Antibiotic vine as made a stunning discovery. 'crazy'

Related Tag

Agriculture

· Farming Seeka Kiw Limited

ready servicing the kiwifruit industry in terms of testing, but n new technology which will assist that.

e that's involved in testing for PSA says it's planning to in testing technology that will help in efforts to control the

ey have identified that the virulent strain is confined to Bay

I finding which will focus researchers on the virulent PSA V

yourne country's largest privately owned independent testing eived a \$1.5 million Technology Development Grant from Be part of thince and Innovation.

Send pics, vir tips to nzher grant to expand and improve scientific testing of products r and honey industries.

Overview	Seeka advises PSA research discovery 10:03am, 25 Aug 2011 GENERAL
	New Zealand Researchers make important PSA discovery
	Otago researchers led by Professor Russell Poulter have made an important discovery in their work determining the genomic sequence of PSA. Poulters' team, working along with Professor Lamont in the Department of Biochemistry at Otago University, are part of the TaskForce Green Network, a commercially funded research initiative by Seeka and EastPack.
	It has been thought that there are two strains of PSA in New Zealand, PSA V restricted to the Bay of Plenty, and PSA LV, found more widely including not only the Bay of Plenty but also Hawke's Bay, Golden Bay and Motueka. The PSA V has previously been referred to as the virulent "Italian strain", while the PSA LV has been referred to as the "Asian" strain. The Otago team have discovered that there are very significant differences in the genomic make up of these two strains. The differences in the sequences are significant to the extent that only one form of PSA is now thought to exist in New Zealand – the virulent PSA V. The other strain, which is only distantly related to PSA, is probably unique to New Zealand and is not virulent on kiwfruit.
	The New Zealand strain has been relabelled PSD. The team is now close to completing the compilation of the sequences for the PSA and PSD strains. The sequences of both strains will be made publicly available for research purposes and will aid in the efforts of better detection and confirmation of the bacteria. Also more advanced work can now commence with the wider team looking at ways to eradicate the bacteria. As the PSA V is still limited to the Bay of Plenty, it's still worth considering the possibility of completely eradicating the pathogen.
	Michael Franks of Seeka outlined that it was a stunning discovery and one which will help the industry develop a solution. The potential now was that researchers work towards a complete solution.
	Grant Eynon of EastPack also highlighted that this discovery was made within New Zealand's talented science community as part of the University system. The Companies and growers generally were now benefiting from the work being undertaken by the Taskforce Green Network and were grateful for that.
	For further information please contact:
	Michael Franks
	021356516
	Attachments
	PSA research discovery Attachments are available on rescond for six months from the date of release. NZX offers professional products for searching biologic perspective perspective perspective of the perspective perspective perspective of the perspective p



Krause Lab

Kurt and Michelle Krause have been very busy in and out of the office/lab, but did manage to escape for a bit and had a wonderful time in the States for a friends wedding. Karen Knapp also escaped the Dunedin freezer box for a slice of the European summer, during which she defended her thesis at Leipzig University and then honeymooned in Norway. Reports are that Dr Knapp did an outstanding job obtaining her PhD and is now "happier then a diffracting crystal". Karen also ventured to the Australian synchrotron with crystals and obtained several encouraging datasets for her and Emma Scarletti. Emma's dataset from an alanine racemace crystal goes out to 1.5 Å resolution and has her even more hyper then usual - just don't ask her about her tryptophan rings! Helen Opel-Reading has had a fantastic result in obtaining rubrerythrin crystals that will "save the world". Helen describes the crystals as "pretty girly pink" and then comments "no one will believe I said that". Sylvia Luckner has been having fun playing with the Biacore that was on trial in the department and is now eagerly awaiting its return to replicate some promising leads. Sylvia got nostalgic during the Dunedin snow season and when not frolicking the white laden streets she was seen happily building snowmen. Our fourth years Hugh McGillan, Victoria Stock and Ashley Campbell are entering their silly-season with dissertations due soon and exams fast approaching. They all did excellently in their department seminars and made us proud. Rob Fagerlund has joined the group to work on the Apobec3G project after finishing his time in the magical world of photosysnthesis in Julian Eaton-Rye's group. We also recently welcomed our Spanish matador José Garcia-Bustos to the group where he will add his wealth of experience and knowledge to developing lead drug compounds. Next lab edition - the winners and losers of the ten-pin bowling night extravaganza...

News from the office.

We would like to welcome Mathew Emmerson to the office team, Mat had been filling in for us on a casual basis but now he has a fixed-term appointment until the middle of next year. Mat is adding to the other two members of his family also employed in the department (his Mum, Elaine and Aunty, Carol) - they're on a take over bid.

Happy Birthday to Frances on Thursday 8th September. Other birthdays to be celebrated this week (5 - 11 Sept) are Bev (our lovely tea lady) and Marilyn. Hope you all have a great birthday week and get spoilt!

Robyn is on the countdown to her next luxury cruise 14 weeks away, she is going to be spending some time in the sun at Tonga and Fiji. A well deserved holiday for her. However, how the four babies (Ellie, Harry, Marley, Charlotte - her dogs) will cope is another story.

From Frances

Hi everyone....office news! You will have noticed our staffing changes, but if not Mathew Emmerson (yes he is related to some other staff members in Biochemistry) is our new receptionist. Chelsea Ivey is our new Purchasing Officer, and Sandra, Robyn and Gary (and sometimes Chelsea) are all running the Store while Tim is away (he is back Monday 19th September)

I have recently returned from a holiday on the sunshine / Gold coast of Australia. Particularly loved our time in Noosa and intend to go back. Beautiful scenery, temperatures and plenty of restaurants and shops to be had as well.



Also this year I have two new additions to my family, Jesse a male caramel coloured Chihuahua (he is 8 months old) and Lilly a white female Chihuahua (she is only 4 months old) We are building a fence for them to run outside, but at the moment they are pretty much inside dogs. Both can "stay" and "sit" (Lilly is better at sitting, Jesse is better at the toilet training.)



Movie review:

Bobby Fischer against the World (International Film Festival)

For those old enough to remember, the year 1972 is remembered for a number of things: it was the year of the bugging of the Democratic Party convention at the Watergate Hotel, the massacre of Israeli athletes at the Munich Games, and – last but not least – the world chess championship contest between the reigning Russian champion Boris Spassky and the brilliant if erratic American Bobby Fischer.

This film recounts Bobby Fischer's remarkable life, first learning chess at the age of 6 and only a year later, by his own account, 'playing seriously'. Illuminated by still and movie images from the period plus interviews with the surviving members of his extended family, Bobby Fischer offers a fascinating glimpse not only into the life of a chess genius but also the politics of the era that made the contest a sort of Cold War in miniature: when it looked like he might not play, Henry Kissinger himself rang Fischer to persuade him to do so. Fischer was extremely touchy – he had the championship moved from the main auditorium with a seated audience to a small side room with no spectators because he was bothered by the sound of the TV cameras many feet away – and the Russian team, unnerved by what it saw as deliberate psychological warfare, became quite paranoid, having Fischer's chair checked for radiation-emitting devices that Spassky thought might be putting him off his game. At the time it was the news in America, beating out the summer Olympics and the Vietnam War for top billing.

Even as a very average chess player, I thoroughly enjoyed the movie, and would recommend it if it returns to the Rialto or, possibly even better, comes out on DVD. My single criticism is that I would have liked to see more of the world championship games – the first and last were covered in detail but those in between were quickly glossed over. That said, the movie also covered Fischer's life following his historic win – his refusal to defend the title three years later (possibly because he couldn't bear the thought of losing), his absorption with Herbert W Armstrong's Worldwide Church of God and growing anti-Semitism (this despite his own Jewishness) and finally, his radical denouncement of America following September 11.

This movie left one with lots to think about: not the least, Fischer's response to the destruction of the twin towers. It is not that anyone would wish the loss of life America suffered that day on any country, but rather that one might have hoped that - having experienced an attack on their own country and the loss of their fellow countrymen - American people would have gained an empathy for other countries affected in this way. Sadly, subsequent events have mostly proved this not to be the case.

Harold Bernhardt

Biochem's Hottest Home Brewer

In a galaxy far far away, once upon a time, a long long time ago, I can still remember (only just though 'cause the meeting was at Eureka), and what a meeting it was. The CSC had gathered one cold and frosty early Autumn night for a session of banter and hilarity. On the agenda, what nibbles to masticate, what tipple to toss and somewhere along the timeline, what fun antics we could organize for our fair department. A debate was had, what would we do, card games, playstation and maybe the odd throwing of the shoe. The now fallen and able to named Scuba Steve proclaimed that Princess Diana was alive and that he was going to marry her (you now can see why he fell, or was he pushed?).

The chairman banged his gavel on the bar and called for "SILENCE" and careful consideration "the responsibility that has be bestowed on our great alliance means we have to conduct our gatherings with finesse and decorum". Several pints later we had hammered out an outline of events that should be planned forthwith, a quiz night, ping pong and poker were set in stone. Honorable member number 2 announced "By jinggos, we've don't it, a year of fun for all" number 3 replied, "I cant wait to drop the ball". Number 3 could also be in for a "fall". The chairman glared over the top of his full basket of chips and fish bites, cause responsibility always requires food kids. In a calming and deep tone suggested "a Brewing Competition could seal the deal, and ensure a smashing good year. The looks on the member's faces rose up in enthusiasm, yes they said.

Biochem's Hottest Home Brewer was born

And so it was decided, lets make science tasty. Brew your best, the worst will make you pasty. Come one, come all and join the council in brewing your very own drop, cidar, ginger beer, wine, mead, beer the choice is yours. Other fermented foods are also welcome.

 $C_{6}H_{12}O_{6}$ + O_{2} >>>>>>> CO_{2} + $C_{2}H_{5}OH$

Unfortunately the previously advertised date had to be postponed because the playground bullies (e.g. OSMS) organized dates on top of ours. Do they not know their place.

1 week to brew

2 weeks to secondary carbonate in the bottles

= plenty of time to do one now and have it ready for (most likely) October 7th

See you there

Chur



400-level presentation after-party!!!

When we finished the presentations a few weeks ago, I don't think anyone had realised that such a huge night was ahead of us. It started off slow – everyone enjoying their first free drink, when (thanks to the outstanding efforts of Katy, Gabby and Emma), things abruptly took a turn and the night really got started. It began with a boat race in which Sigurd, Ian, Julian, Kurt and Craig got amongst, although one team was sorely disadvantaged due to Jakes poor drinking skills.

Next on the cards was a big drinking game called 'circle of death', with two senior staff members (specialising in lipids and plants...) getting right on board. After the floor turned into 'lava' as part of the game, everyone was forced to get their feet off the ground – yet everyone was surprised to see the elder members of the bunch taking it to the extreme as they hung from the window sills! What wasn't surprising, however, was that a certain associate professor decided to 'work from home' the following morning. The plant in the corner is also looking a bit worse for wear now since Tom decided that was the best place jump into to avoid the lava.

The night was still young though, and these games (plus a few more that should not be discussed) lasted until the wee hours of the morning. The night ended with a bit of romance in the corridors and a certain girl was forced to pay her friends \$50 for finally succumbing to the kiss that we all knew was going to happen!

Finally, apologies to Chris Brown for everyone's slightly disheveled and pale-faced appearance at class the next morning, we might all have to do your question in the exam just to show you that we were actually listening!



Cal's Corner

Welcome to Cal's Corner, a segment of this newsletter that has been much awaited by many of the departmental members. It is an opportunity to get down to the nitty gritty of things in, around, on top, upside down, underneath and around the corner of department, University, Dunedin, Otago, South Island, Godzone, Southern Hemisphere or Third Rock from the Sun life.

Basically this section will be a tastefully worded bunch of debauchery, strung together with finesse and decorum. Depending on the actions of the weekend and how many subtly introduced rubbish comments can be woven into this intricate tapestry of literature, it will be a paragraph or two that is full of puffery and bovine scatology (translate that Google, and on a lesser note Parliament needs it's Winston back).

This week two very important issues will be brought to light.

Milk...... A delicious substitute for water packed full of Calcium (my favourite metal), protein fats and colour. The land of the long green white cloud is renowned for its milk producing abilities. Where once there were 20 odd sheep for every person in this country now there are 20 cowpats (poo) produced every day per cow (a lot of cows) (Crazystats.com, Retrieved 2011). The problems that have arisen from this overwhelming increase in bovine bottoms are unmistakably causing massive problems that would have kept Sue Bradform in Parliament for well past her expiry date, if only she hadn't thrown her toys and ripped her knickers at not being made the leader of the Greens. One thing is for sure; I can't be bothered yarning on about this, its more than enough to get some gravel under my hood. One thing I can harp on about is the blatant disregard in the equality of the milk-buying department of this department. Has anyone else noticed that by the middle of the afternoon, check that, end of morning tea, the kitchen room fridge is looking greener than a coffee house in Amsterdam. Yes ladies and gentlemen equality begins with the most basic of things and balancing out the blue to green lid tops should be of the highest priority for any scientist, why? We all know that any good scientist needs a bit of muffin under that collared shirt and full fat milk is the way to go. Its not much, its just steak sauce. So along with Prostate Cancer and Depression, this November grow a Mo to show your support for more balanced milk content within our tearoom and those across the nation. In the words of Winston Churchill "never have some many, owed so much to so few", peace out G.

Also...... there is a new person in the department working on the X-ray crystallography of proteins derived from the Tomaco plant. His name is Simba and he might be your father (don't you just love James Earl Jones). He is working somewhere on the third floor, and like everyone working up there will eventually turn into a gremlin. He has travelled here from your momma's house and at one stage was flatting with Martin Lawrence. When he is not in the lab (yeah right) he enjoys crocheting booties for his pet geckos and watching out-takes of Paul Henry telling morning television about how rats clean themselves (look this up on Youtube, it will make your day, Promise). Simba who might be your father, also agrees whole-heartedly that blue that is better than green. Look for him on the photo board before the third floor curse takes over



This is an example of what working on the third floor does. This is Simon Jackson; he began as a student about 6 years ago. He was a good kid but this is why you never see him in the tearoom anymore. Full on investigative journalism into the curse of the third floor will be explained in the next Cal's Corner.

Humour

Tips for long distance flying

It's a common enough occurrence in the Biochemistry department that people will embark on long haul flights to conferences and the like. We all know how stressful those long flights can be so I thought I would share some of my tips from my blog on long distance flying.

1. Bring young children and babies aboard and let them scream for the entire flight

Fellow travellers will delight in your children as much as you do, thinking them sweet as they scream away an entire 14-hour flight. This will also be a chance to highlight your stellar parenting skills as you ignore their shrieking and continue to watch your movies.

2. Recline your chair as far as you can

Reclining your chair back as far as it goes as soon as the seat belt light comes off is a great way to get intimate with the passenger behind you. They won't mind in the slightest when they find you sitting in their lap and unable to see their inflight entertainment screen

3. Scream during periods of turbulence

Turbulence is a normal part of any flight, but you can make it lots of fun for fellow travellers by screaming every time the plane hits a rough patch. It's a great way to make everyone feel calm and secure that the plane isn't going to fall out of the sky.

4. Keep your overhead light on during lights out.

Overhead lights are a great thing to read by, especially when the rest of the plane is dark and everyone else is trying to sleep. It's especially great for the person next to you being bathed in light while they are trying to nap.

5. Kick the back of your chair.

Instead of annoying the person in front of you, think of it as a relaxing back massage keeping them awake while they are trying to sleep.

6. Act totally surprised that you going to have put you bag in the overhead locker

You have been waiting in the transit lounge for two hours but its still a total surprise to you that you are boarding a plane. Instead of spending the time waiting in the queue getting you things ready out of your bag, do this instead in the isle of the plane so you can hold up as many people as possible trying to get past.

This also applies to security checks, you know you are going to have to take your laptop out of your bag, but instead of being prepared and taking it out before you reach the conveyer belt, you again hold up people while you fossick about trying to get it out of your bag. No one is in a rush or running late for their plane behind you so take your time!

Jessica

