Institute of Fundamental Sciences Newsletter — Issue 36

IFS & Bits

In this Edition of 10 May 2001

Deadline for Next Issue

8 June 2001

Editor

Terri Palmer

Message from the Head of Institute

Callaghan and Burrell Resignations

Staff will already know that Paul Callaghan and Tony Burrell have resigned to take up appointments at VUW and Los Alamos National Laboratory respectively. These represent wonderful new opportunities for both members of staff and all of us wish them every success in their new ventures. Clearly, the departure of world leaders in NMR imaging and synthetic chemistry will have an adverse effect on IFS in the near future in that we will lose two highly valued members of staff with international reputations and proven grant-winning ability. There will be ample opportunity for us to pay tribute to both Paul and Tony before they leave us in July. A farewell ceremony for Paul is planned in the Russell Room on Monday, 18 June 2001 at 10.00 am. Tony's farewell function will also be held in the Russell Room and will be on Wednesday, 11 July 2001 at 10.00 am.

We must now look forward to the future and not dwell on the past. I am encouraged by informal discussions with a number of staff that they see new opportunities for themselves and their Disciplines. We are very fortunate in IFS to have such a depth of talent and I am planning to restore research leadership later this year. More on this in due course.

Teaching Awards

Congratulations to all those winning a Distinguished Teaching Award for 2000. Once again, it needs to be stated that these awards arise from student voting only. Management has absolutely no say on the choices made. The awards are a clear indication of the thought, care and inspiration that the winners give to their classes. Next year the awards, all of which will be at 200-level, will be based on SECATs except in those cases where the class size is too small to generate a report. In this instance the Student/Staff Liaison Committee may distribute a questionnaire along the lines that they currently employ. The final choice will be my responsibility from this year onwards, and this represents a significant change in our procedures. The important point to make, however, is that the selection will still be based on student voting.

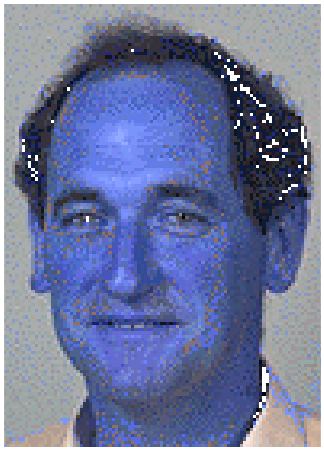
Tony Wright
100-Level Chemistry Award

Robert McLachlan
100-Level Mathematics Award

David Parry
100-Level Physics Award

Emily Parker
200/300-Level Chemistry Award

Bruce van-Brunt
200/300-Level Mathematics Award



Bob O'Driscoll
200/300-Level Physics Award

Robin Dykstra and Mark Hunter

Congratulations to Robin and Mark on gaining their Masterates in Physics. The titles of their respective theses were "The development of a portable Earth's field NMR system for the study of Antarctic sea ice" and "Modifications to a Scanning Tunnelling Microscope", and their supervisor was Craig Eccles. In both cases the thesis was highly regarded internally and externally, and heartiest congratulations go to them both on achieving this important milestone.

Postgraduate Matters

On 4 April 2001 Andrew Brodie and Paul Gardner convened a meeting of the postgraduate students in IFS. A number of recommendations were formulated and these were raised at the recent Management Committee meeting. Virtually all of these were approved and action will be taken over the next month or so to implement them. The key features of the proposals are as follows:

- Free tea and coffee will be made available to all postgraduates.
- After hour tea and coffee-making facilities will be available in Science Tower B, Level 3, Rm ScB3.20.
- Photocopier cards for the library will be made available for both Technical staff and research postgraduates. These can be obtained by seeing Tracey Royds, Science Tower B, Level 4, Room ScB4.12.
- The purchase of a pool table was suggested. Subsequently one has been found at a very reasonable price and will be installed in the common room shortly.

We hope that these changes will improve the quality of life for our postgraduates. Thanks go to Andrew Brodie and Paul Gardner for bringing these matters to the attention of the Management Committee.

Social Matters

Bob Parsons has kindly agreed to convene the Social Committee now that Jonathan Owens has left us and moved to Hamilton. Later in this edition of IFS and Bits Bob has listed some of the future functions that are planned and I would strongly encourage as many staff as possible to become involved. The Social Committee are always looking for full participation across all parts of the Institute, both Academic and Technical and from Chemistry, Mathematics and Physics. Please come along and have fun.

Submission to the PVC and VC

As a result of repositioning and the recent resignations from the Institute it has become important for us to consider our future direction as regard both teaching and research. TEAC has also highlighted the need for us to identify networks of excellence. Critical mass in research has always been important and has been emphasised yet again in this report. Each of the Disciplines has been asked to consider our research emphases and the types of academic programme that we offer which will draw upon the strength of the Institute, and hence provide new and innovative areas that could prove attractive to students and staff. You will see that this is an important issue for the Institute. I am currently drafting a document to go to the Pro Vice-Chancellor and to the Vice-Chancellor which indicates the strategic direction for the Institute, particularly with regard to its physics component. IFS members will understand that the staffing situation in Physics is extremely difficult. New appointments will be required in the near future to maintain the contribution of physics not only to its own degree programmes but as a service to those in technology, engineering and veterinary science. I am hoping that a positive response will allow us to advertise a new Chair in Biophysics/Biomaterials later this year. I am also pushing hard to regain the capacity of research leadership that we had prior to the departure of Robert McKibbin to Albany, of Paul Callaghan to Victoria and Tony Burrell to USA. In other words, I am looking at ways in which we can restore the three chairs to IFS. I hope to report progress on this matter within the next couple of months.

Massey Accident or Incident Report Forms

Please note that in the case of an accident or incident (causing injury or non-injury) a report form needs to be filled in straight away. Forms are available from Fiona Davies and should be handed to Andy Trow (Institute Safety Committee convenor). "Serious harm" means death or harm of a kind being more than trivial.

Steve Denby & Humphrey O'Hagan

Steve Denby heads off to East Timor on 21 May 2001 for a six month deployment with the New Zealand Army. All of us wish him every success in what we hope may not be too exciting an experience. On behalf of all the staff we trust that Steve will have a safe trip, and we look forward to seeing him back again with us in late November. I am sure that he will have loads of stories for us on his return and will be able to fill the pages of several editions of IFS and Bits.

We are very fortunate to have Humphrey O'Hagan with us during the period of Steve's secondment. Many of you would have met Humphrey already and would have come to appreciate the very considerable skills that he has brought to the Engineering Services Workshop. I trust Humphrey will enjoy his time with us and I know that all staff will make sure that he is made very welcome in the Institute.

Gavin Hedwig

Congratulations to Gavin Hedwig for not only gaining a Royal Society of Chemistry grant to enable him to continue his collaborative research at the University of Lethbridge, Alberta but also for his appointment as an Adjunct Professor in the Department of Chemistry and Biochemistry at the same University. Gavin remains extremely productive research-wise and has rightfully gained an international reputation for the quality of his work. The Honorary appointment is yet another indication of his high standing in the field. Congratulations Gavin, a well deserved recognition.

Rod Lambert

Rod Lambert is currently on overseas leave in Canada and will return in mid-August. Just before he left he heard that he had been funded by the Asthma and Respiratory Foundation of New Zealand to the tune of $16 000. This is an excellent result for Rod and represents another external recognition of the quality of his research in the area of bronchial mechanics. Congratulations Rod.

Professor MacDiarmid – Nobel Laureate

I can now confirm some of the arrangements regarding Professor MacDiarmid's visit to Palmerston North. He will give a College of Sciences Distinguished Visitor Lecture in Ag/Hort 1 at 11.00 am on Tuesday, 3 July 2001. Afterwards he will be taken to lunch. Staff representation will be included amongst those attending. At 1.30 pm Professor MacDiarmid will meet with staff and postgraduate students in Aston 1 where the postgraduates will be asked to make short presentations of their work. Tea will be served at 3.30 pm. Shortly afterwards, Professor MacDiarmid will leave campus in preparation for his evening discourse at the College of Education Auditorium on the Hokowhitu Campus. The Public Lecture is scheduled to start at 7.00 pm. A very large turnout is expected and I trust that staff will arrive sufficiently early to get a seat. It should be a great day for us all and my thanks go to David Officer and Andrew Brodie for their help in putting the Massey side of the programme together. The Royal Society of New Zealand will be responsible for the evening programme.

Internal Reviews

I would like to thank those members of staff listed below for contributing last year to the internal reviews of the 300-level papers offered by IFS:

Chemistry	Michael Carter (PI) and Simon Hall (AI)
Mathematics	Tony Signal (PI) and Peter Kelly (AI)
Physics	Ken Jolley (PI) and Paul Callaghan (AI)

There is a considerable amount of work involved in this undertaking and I really do appreciate the efforts that staff have put into ensuring that our papers continue to represent our very best efforts. The reports that came in were excellent and I am delighted to see the very high professionalism of our staff that this indicates.

Professor Anant Vyawahare Visiting Scientist

I would like to welcome Professor Vyawahare, who is here on a Rotary Volunteer Programme, from M. Mohota Science College (Nagpur University), India. He will be with us for about five to six weeks and will contribute to our teaching programme in mathematics over that period. He is also planning to do some collaborative work with several members of our staff. We are delighted to have him with us and we hope that he will find his stay amongst us both enjoyable and productive.

Professor Rao Bhamidimarri Principal

I have invited the Principal to attend one of our coming Management Committee meetings to discuss with him the marketing of BSc and BInfSc degrees and also of the Palmerston North Campus in general. There has been considerable concern amongst staff and the Management Committee that Massey University seems to have been emphasising our Albany and Wellington Campuses and not that at Palmerston North. Furthermore, it is felt that the BSc and BInfSc courses are not receiving their fair share of the Massey advertising dollar. For these reasons it seemed appropriate for us to discuss our concerns with Professor Bhamidimarri so that the situation can be addressed.

Possible Visit by Council

The Chancellor indicated, during her visit to Science Tower A, that other members of the University Council would appreciate the opportunity of looking around. Consequently, I asked Mrs Croxson to invite the Council en masse during one of the Council meetings. We will see later whether this invitation will be taken up. I hope that this can be arranged at a time so that we can also invite Council to have lunch with us in the Common Room. This would provide an ideal opportunity for staff to meet Council members and share in a two-way exchange of views on various matters.

School Visits

Recently an elite group from Napier Boys High School visited the university and we hosted high performers in both chemistry and physics. I would like thank those involved in meeting the students and for showing them around — Andrew Brodie, Ken Jolley, Tony Signal, Tony Wright and Ryan Cormier. A visit from Ruapehu College is scheduled for May or June. While these visits are time-consuming it is important that we build strong relationships with the High Schools. We have a lot to offer their students and it is very much to our advantage that we encourage them to undertake their studies at Massey University.

Equipment

The Computer and Equipment Committee is currently involved in evaluating equipment requests from Institute members. It is also considering requests for monies to support lecture demonstrations. I hope that we can report the results of their conclusions in the next issue of IFS and Bits.

TEAC

The College of Sciences and the University have spent a considerable amount of time discussing TEAC and the implications that it might have for our activities. It is felt that a total sum of about $20M might emerge in the coming budget for Centres of Excellence. Bearing in mind that a Centre would require at least $2M in funding if "excellence" is to be achieved then we are only talking about 10 nationwide. With eight universities in this country it is unlikely that Massey will gain more than two or three. We would undoubtedly argue that the College of Sciences has the most impressive record in research and would be expected to gain most if not all of any Centres that came to the university. Even still it is clear that most Institutes are unlikely to receive additional funding. For all these reasons we should not get too excited about the Centres of Excellence concept. Of course, any new monies that support research are extremely welcome. Time alone will tell how this initiative works out in practice.

Security at the Chemical Services Store

Currently I have established a group of staff (Bob O'Driscoll, David Harding, Bob Parsons, Andy Trow and Penny Abercrombie) to re-evaluate our security systems, particularly with regard to the potential theft of chemicals from the Institute. Staff will be aware that in the refurbishment of Science Tower A a number of security cameras were installed. In addition there are other security measures in place that I will not speak about here. Suffice to say I think that we are in a good position but that is not to say that we cannot do better still. Once I receive the report of this group we will action their recommendations and, if necessary, seek funding from the university to improve matters beyond our financial ability to pay. Nonetheless, I would strongly suggest all staff be both active and vigilant, especially in Science Tower A. You represent the very best security that we could have.

David A D Parry

First Annual Chemistry Research Symposium

The First Annual Chemistry Research Symposium was held on Wednesday, 21 February 2001, in the Aston Lecture Theatre. This evolved from the "Graduate Student Seminar Day" which has been held previously. Fifteen minute presentations were given by graduate students and postdoctoral researchers. There were nineteen talks and the standard was consistently high. Topics ranged from "Polymeric Drug Delivery Systems" to "Development of Textile Sensors and Actuators Using Conductive Polymers."

The symposium was attended by all staff and students involved in chemistry research and also attracted a number of people from CRIs and institutions outside Massey.

The symposium was followed by dinner at Costa's Restaurant.

Carol Taylor

Web Developments

Have you seen the new IFS Research News page?

Try it from http://IFS.massey.ac.nz/

If your exciting piece of research news is not there, please send details to me (BestChoice@massey.ac.nz), so I can advertise it . If your news is already elsewhere on the web please send me the URL and I will link to it.

I have recently added former recipients to the Scholarships and Prizes page.

Remember to email me with any additional/ updated information you want on your personal page. Some personal pages have not changed in a very long time.

Judy Edwards

Puzzle Answer to February Issue of IFS and Bits

In the closing days of World War II, your enemy is hiding in a line of n foxholes. You can shoot at any of the holes, which either kills him (if he was in that hole) or prompts him to move to an adjacent hole.

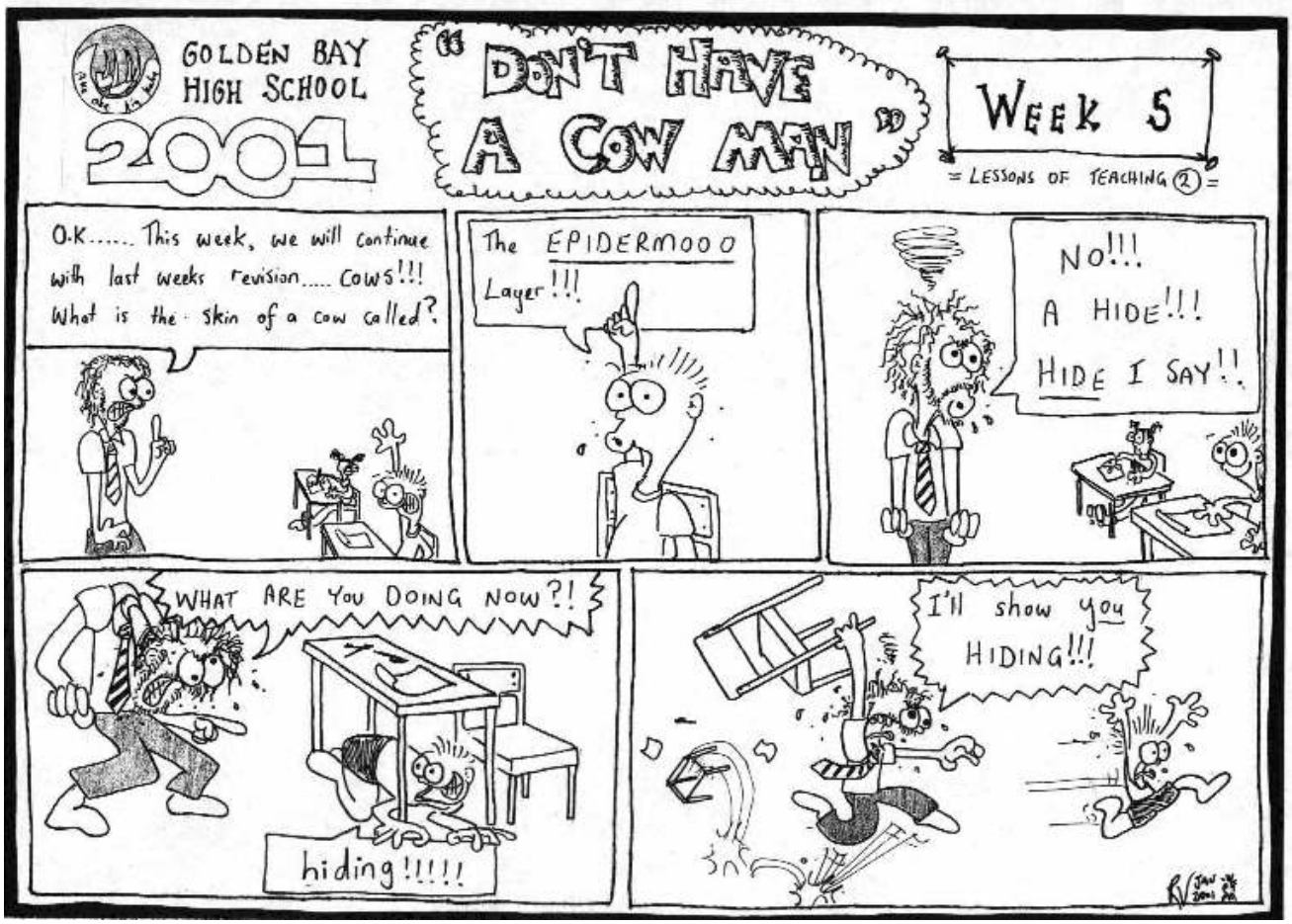
Give a strategy which guarantees a hit after a minimum number of shots. (Example: for 3 holes, fire twice at the central hole.)

The answer to the above puzzle is:

2n-4

Anyone wishing to know how this is obtained please see Brett Ryland. who managed to successfully solve this one.

Terri Palmer



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Bits and Bobs

Science Tower A

Science Tower A is operational at long last, albeit with a few teething problems. A lot of effort was put in by IFS staff and graduate students to meet the deadline of Monday, 26 February 2001, just in time for the start of Semester 1.

The official opening was a testament to the willingness of staff to go out of their way to enhance their laboratories and be in attendance to answer questions posed by the visitors. Of course, some staff beavered away behind the scenes to prepare the luncheon and keep an eye on the rest of the Institute.

There are still some problems with the fume cupboards and I request that staff and graduate students keep a note of what the problem is, when it occurred and the fume cupboard number which is on the left hand side above the power points. Just the last four digits will do.

Chemical Store

The Chemical Store is almost re-established on level 1, though some nasties are still to be relocated. Requisitions for chemicals and other items can be left in Penny's mailbox on level 4 if you wish to do so.

Problems and Needs

One of my functions is to try and resolve issues relating to the well-being of the staff. If you have any complaints about heating, how your office/lab is cleaned, or any other matters please let me know. Also, if you require a special stationery item or whatever then talk to me. I cannot always oblige but I do have some contacts and resources.

Fire Extinguishers

The Fire Extinguishers are located throughout the science towers and are for use in an emergency. If you use one then please advise either the Engineering Services Workshop staff or myself. The used extinguisher will be removed and refilled. During my short spell of annual leave before Easter I saw the following note pinned to the wall above a cooker in the Kawhia Motel unit I stayed in:

In case of Oven Fire
Use Extinguisher in Office Only

Digital Video

An iMac with a digital camera is available for use in the 100-Level Physics Laboratory. The camera is available for *boni fide* Institute use but any editing should be done using the 100 Px iMac unless a suitable computer is available elsewhere. Please discuss the use of this equipment with Dave Peterson.

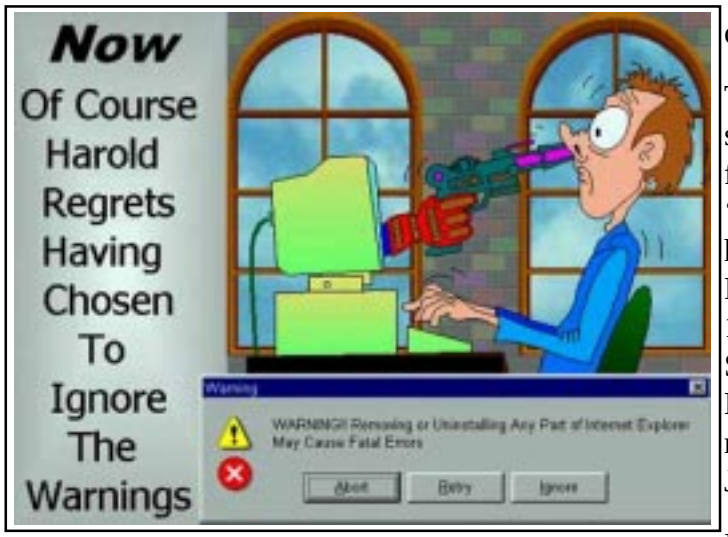
Common Room

The IFS Social Committee has been organising a roster for the putting out of tea, coffee, etc. I state again that it is in everyone's interest for the users to be considerate of others. I mean don't leave dead tea bags in the sinks or on the bench and please put used milk containers in the hand crate. Simple, really, but a number of Common Room users just abuse the facilities. I wish to remind users again that IFS and IMBS are only required to provide three hot drinks per day and that if you want an extra cup then please put 50 cents in the Honesty Box.

- Tea - Coffee - Milo -
Are available during the following times
9.40 am - 4.40 pm

Social Committee

I have taken on the role of Convenor of this committee. The first function for the year was held to coincide with the opening of Science Tower A and was well supported by Institute staff. A good time was had by all with the door prize being won by Barry Evans and Penny Abercrombie. Luckily for them David Parry was away.



The Social Committee has asked itself the question, what is its purpose? After a fair bit of discussion it was decided that its purpose was to try and provide an opportunity for IFS staff members to meet in a range of social and outdoor activities. These pursuits range from inter-disciplinary sports challenges, outings to the theatre with perhaps a meal beforehand and trips to Kapiti Island, Martinborough and tramping in the Tararua Ranges. These activities would be self-funded by the participants. It was also agreed that arrangements for smallish groups should be considered, say, a group of 15 to see the latest production at Centrepoint. Some small savings may be available for group bookings to shows. This is being investigated. One suggestion that can be implemented almost immediately is for IFS staff and graduate students to meet at Wharerata after work on Fridays.

The Committee has scheduled the following dates for the 'Happy Hour' usually held in the Common Room: 23 May 2001, 18 July 2001, 19 September 2001, 21 November 2001 and a mid-winter dinner 21 June 2001.

I know it has been done before but we wish to canvass IFS staff for suggestions as to what is required of the Social Committee and suggested venues for the mid-winter dinner. A questionnaire has been distributed and we would appreciate you taking the time to make your views known.

That's all Folks

Bob P

Welcome to Dr Renaud Hardre

Renaud has recently joined Carol Taylor's research group in the new lab in Science Tower A. He is a Marsden postdoctoral fellow and his project will involve the synthesis of collagen mimetics and the study of their physical properties. This work will help to identify how post-translational modifications (such as hydroxylation and glycosylation) affect collagen structure and stability. This information might ultimately be useful in understanding the molecular basis for collagen-related diseases such as arthritis.

Renaud comes to us from France where he has recently completed his PhD at the Universite Paris-Sud, Orsay. His research there was concerned with the synthesis and evaluation of carbohydrate-based inhibitors of phosphoglucose isomerase. His work has helped to define the mechanism of catalysis and the compounds may be useful as anti-trypanosomatid drugs.

Carol Taylor

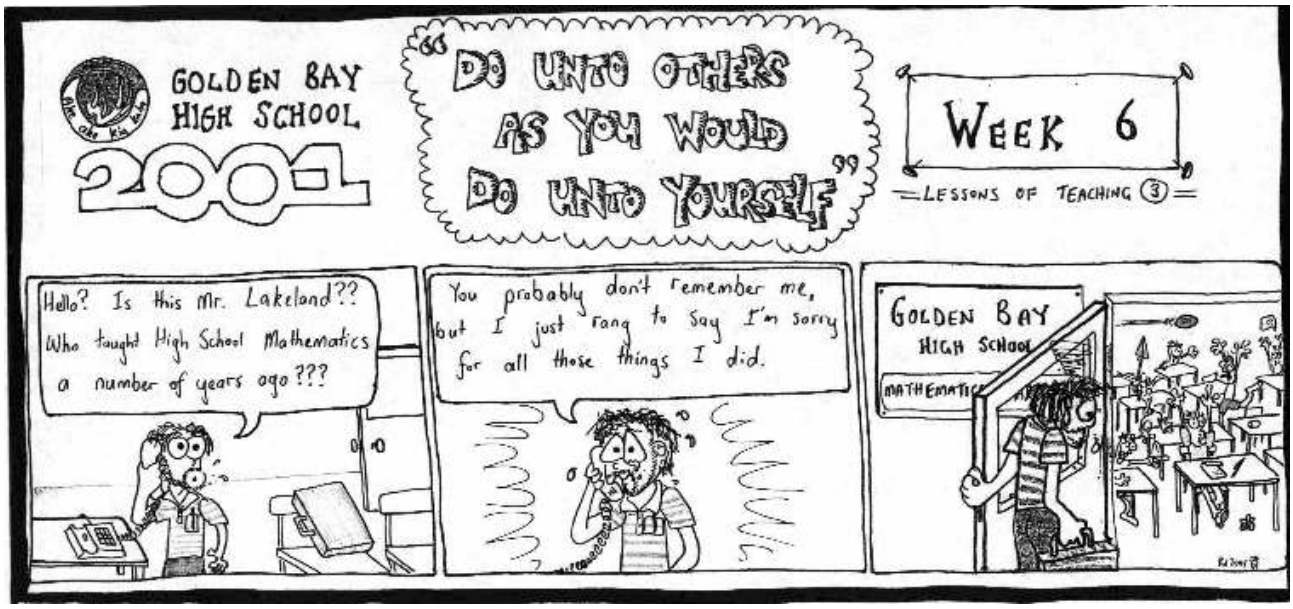
A Fortnight in China

Some of you may know that my partner Fiona McKergow and I are expecting a baby in August. That means (inter alia...) that there won't be quite so much travelling from now on. However, an invitation from the Chinese Academy of Sciences to a conference on Structure Preserving Algorithms was too good to pass up. Not only is this exactly my field, but the whole field was initiated there in the 1980s and remains a strength. Besides, it worked for Nixon.

Before I went my ideas about Beijing were pretty foggy. I'm thinking freezing, windy, dusty streets, miles of concrete communist-style apartment blocks, huge crowds of rushing shouting people. Well maybe Ulan Bator is still like that but Beijing sure ain't. It's a really pleasant city. Relaxed, spacious, easy-going. Even the ubiquitous bicycle-truck delivery guys (often with huge piles of 20" monitors on the back) seemed pretty cheerful. The smartly dressed, casual crowds milling around the campuses and malls, the diners discussing the spy plane crisis in elegant sandblasted restaurants, we could have been anyway in the west.

These are great years for the Academy of Sciences. It's got about 130 institutes and all of them are expanding and building furiously. Is this the only place in the world where new physics buildings are going up? One twelve storey stainless steel cylinder was occupied by a single physics experiment. There were about 20 westerners and 100 Chinese at the conference and an atmosphere of great excitement. Some of the older westerners thought it was like "science in the old days". Despite the lavish funding, the students tend to do 3 year Master's and then go to the States, usually permanently, but surely that will start to change soon. A minor drawback for me was that the organizers had filled nearly all the item with talks by foreigners, whereas I would have preferred to hear more Chinese, but then, they were paying for us after all.

The food bill alone must have been pretty stupendous. The first plate at the first lunch was already the most amazing Chinese food I'd ever eaten. Such subtle and distinct flavours, and completely unlike any other Chinese food I'd tasted. Plate after plate arrived. After 15 or 20 dishes we were all slowing down. Then the



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A Fortnight in China continued...

whole fishes and soups start arriving, a signal that the end of the meal is near. This is just the first lunch, remember. Dinner was different again, and the next lunch, in fact, only after 3 days did 1 or 2 of the dishes start repeating. (Understand that these were just the usual meals at the Academy's hotel - there were also numerous special banquets.)

Although the schedule of talks was pretty rigorous, there was time for the odd excursion, amongst which I'll just mention one, to the Great Wall, about 80 km north of Beijing. (Which reminds me, I'm supposed to be organizing an excursion here for the NZ Maths Colloquium... hmm...) A bus to Badaling was organized, the most visited part of the wall, and we left town on the flash new Badaling Expressway, a very well engineered modern freeway. As you enter the mountains the freeway spans huge viaducts and goes through quite long (2km?) tunnels. The opposing lanes are so far away as to be invisible. The wall is impressive, not so much the part we walked on, which is mostly reconstructed and full of tourists, but to see it snaking away straight up the side of steep mountains. OK, so back on the bus, and we're surprised to see the bus continuing in the same direction. Still no opposing traffic, more long multilane tunnels, views of villages with terraced orchards. Gradually we leave the mountains and it dawns on us that this freeway in fact ONLY goes to the Great Wall, and then loops around back to Beijing. It is in fact the Great Freeway. So much for central planning.

Coming home, I take the free bus tour of Singapore for transit passengers. It looks pretty boring but the tropical trees are great. Chugging along the river in a bump boat, I meet a Chinese woman on her way to Otago for six months medical research; it's her first trip out of the country but she seems confident. She is pleased to find that her local dialect is spoken in Singapore. Also an Indian micro-device programmer from the Bay Area. He's just got his green card so is able to go back to India to visit his family. How long the world can go on at this break-neck pace is anybody's guess, but as they say, if you're on the Titanic, why travel steerage?

Robert McLachlan

This Month's Puzzle

1 Five friends, Andrew, Bernard, Claude, Donald, and Eugene, each have a son and a daughter. Their families are so close that each has married his daughter to the son of one of his friends, and as a result the daughter-in-law of the father of Andrew's son-in-law is the sister-in-law of Bernard's son, and the son-in-law of the father of Claude's daughter-in-law is the brother-in-law of Donald's daughter. But although the daughter-in-law of the father of Bernard's daughter-in-law has the same mother-in-law as the son-in-law of the father of Donald's son-in-law, the situation is simplified by the fact that no daughter-in-law is the sister-in-law of the daughter of her father-in-law.

Who married Eugene's daughter?

2 Can you create a solution using fewer plus and minus signs than this?

98+7-6+5-4+3-2-1=100

Don't forget that the numbers must stay in reverse order from 9 down to 1.

Research Funding Opportunities

Unless otherwise specified guidelines for contract applications under this programme are available from Miralie Thomas Vincent on extn 5945 or e-mail your request to M.E.Thomas@massey.ac.nz.

Royal Society of New Zealand

International Science and Technology (ISAT) Linkages Fund Programmes

Bilateral Research Activities Programme (BRAP)

This sub-programme aims to support the development and enhancement of relationships with other economies, particularly those of the Asia-Pacific and South American regions (excluding USA and Germany), with an emphasis on supporting new activities and relationships. BRAP facilitates bilateral research through the provision of funding (up to $5,000 including GST) for New Zealand researchers to travel overseas or overseas researchers to travel to New Zealand to work on joint projects. Travel-related costs will be generally supported, but not direct research costs. [Please note that this round is subject to 2001 Budget decisions].

***EIGHT (8) copies** of the application must reach Research Services by **FRIDAY, 25 MAY 2001** for activities which are to be completed before 30 June 2002.*

New Zealand/United States of America Co-operative Science Programme (NZ/USA CSP)

This sub-programme aims to support an agreement for Scientific and Technical Co-operation (STC) between the USA and New Zealand. Applications for funding under this programme are sought from scientists and technologists wishing to establish or enhance collaborative projects with their American counterparts through support for New Zealand researchers to travel to the USA or American researchers to travel to New Zealand. Travel-related costs will be supported, but not direct research costs. Individual contracts do not generally exceed $5,000 (GST inclusive). [Please note that this round is subject to 2001 Budget decisions].

***EIGHT (8) copies** of the application must reach Research Services by **FRIDAY, 25 MAY 2001** for activities which are to be completed before 30 June 2002.*

Research Awards for Academic Women (AWA)

The above awards are granted annually by Massey University to assist women lecturers and senior lecturers in the advancement of their careers. The award, which consists of up to $8,000 in casual assistance, is made to the institute/school/department to enable the staff member to be relieved of some of her normal teaching and administrative duties. Guidelines and application forms are now available on the University website and may be downloaded either from MOPPS or the following Research Services web page: http://www.massey.ac.nz/%7Earfa/download.htm

***SEVEN (7) copies** of the completed application must be forwarded to the Secretary, University Research Committee, c/o Research Services, Turitea, by **FRIDAY, 1 JUNE 2001**. Interviews will be held on **FRIDAY, 8 JUNE 2001**.*

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Technology New Zealand

TechNet Funding

Technology New Zealand is currently providing limited funding to allow companies to access Massey University expertise to solve technical problems. Up to $2,000 (including GST) is available to cover the costs (including professional time) of each consultancy.

For further information on this scheme, please contact John Henley-King on extn 5568 or email at J.S.Henley-King@massey.ac.nz.