



REPORT FROM CAMBRIDGE

Our Director has recently returned from Cambridge, where he spent five months on sabbatical leave.

The history of scientific discovery at the University of Cambridge includes household names from the past, such as Charles Darwin and Isaac Newton, and the present such as Stephen Hawking. Cambridge has an extremely rich tradition over the last 50 years of major discoveries in biology and medicine including discovery of the double-helix structure of DNA, pioneering work in protein structure research using crystallography, technological breakthroughs in DNA and protein sequencing, and the invention of monoclonal antibodies. It is very focused on continuing effort and achievement and there is an impressive number of cranes on the Addenbrooke's campus and elsewhere attesting to the very high level of investment in major new research facilities. At Addenbrooke's these include separate new research institutes for cardiovascular disease, cancer, and diabetes. Perhaps the most impressive level of investment however is taking place in the nearby village of Hinxton where the parklands around a stately home have been transformed into an enormous research campus devoted to the Human Genome Project. This campus was one of the major centres involved in sequencing the human genome and is now expanding to contribute to follow-on projects such as the "Hap-Map" project in which the entire genomes of representative people from all over the world are being characterised to establish the level of variation between us all and which variations are inherited together.

I worked in the Diabetes and Inflammation Laboratory (that goes by the acronym "DIL") within the Cambridge Institute of Medical Research (CIMR). The DIL is perhaps the best-funded diabetes research group in the world receiving nearly 3 million pounds sterling per year (about 7.5 million Australian dollars) from the Wellcome Trust and from the Juvenile Diabetes Research Foundation. The two leaders of the DIL, John Todd and Linda Wicker, use the latest technology in genetics and immunology in both

human and mouse experiments to address major questions about how type 1 diabetes occurs. One of the features of their program is to contribute much of what they discover to an Internet data repository called the T1D Database that is a resource freely accessible to other researchers. The T1D has benefited from the enormous generosity of the publicly funded human genome sequencing effort and extends it by adding and collating genetic information relevant to diabetes. My time with the group gave me an opportunity for first-hand experience of some of the technology they use and also an appreciation of the power of databases like T1D.

Medical research has entered what is being called the post-genome era meaning that all genes of known or unknown function have now been sequenced. The goal posts have been moved to address understanding the significance of this vast amount of information. The structure of the proteins encoded by the genes (often many different proteins encoded by a single gene) and the function of the proteins, how they interact, and how they are organised into systems and, of course how they malfunction in disease, are what is now being studied. SVI with its focus on protein structure and function and body systems and diseases is ideally placed to make a major contribution to this post-genome era.

Sabbatical leave is not (of course!) a holiday but a precious opportunity to fully focus on research questions without the distractions of administration and meetings. It has been an opportunity to visit colleagues in the UK and Europe by train without spending a day in a plane. This was especially valuable to find out the latest about transplantation of pancreatic islets for type 1 diabetes, which we are establishing in Melbourne through a collaborative program led by St Vincent's and Austin Hospitals. There were naturally other distractions in Cambridge such as exploring the extraordinarily beautiful town and its colleges and cycling to pubs in nearby villages, but not even these detracted in any way from what was a tremendous scientific experience.

Tom Kay

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CONGRATULATIONS TO PROFESSOR MICHAEL PARKER



Photography by Mark Stevens.

Professor Michael Parker receiving the ASBMB GE Healthcare Bio-Sciences Award from Mr Peter Leonard.

The 2004 GE Healthcare Bio-Sciences Medal was awarded to SVI's Professor Michael Parker and presented at ComBio 2004 held in Perth on 26 – 30 September 2004. ComBio is the major ASBMB (Australian Society for Biochemistry and Molecular Biology) conference held each year.

This medal is awarded to an Australian biochemist or molecular biologist for distinguished contributions to the field of Biochemistry and Molecular Biology.

The award is intended as a travelling Lectureship to enable the medallist to present their work at centres within Australia and New Zealand.

Professor Parker has already commenced planning his lecture tour for 2005, with the first lecture at the Institute of Molecular Biosciences, University of Queensland in April.

UNRAVELLING THE CAUSES OF BLADDER CANCER

Bladder cancer is the fourth most common cancer in the Western world, and its incidence is strongly associated with patients that smoke. One of the major complications of bladder cancer, like most cancers, is their ability to spread to other sites.

Dr Rachel Mudge rejoined the Bone, Joint and Cancer Group in January 2005, and her goal is to understand how bladder cancers spread to other organs. Rachel completed her PhD studies at SVI in 2001. She then undertook post-doctoral studies at the Institute Curie in Paris funded by highly competitive fellowships from the ARC (France) and NHMRC (CJ Martin) to initiate her studies into how bladder cancers spread.

"Living and working in Paris was a fantastic experience, in particular the exposure to a different scientific culture

in a large research institute was very rewarding. It is great to be back in Australia now though and I hope to capitalise on my experience with a productive time back at SVI whilst taking the next step in my career."

Rachel has returned to SVI for the final 2 years of her CJ Martin Fellowship and will continue with her work that identified one particular growth factor that was responsible for spread of bladder cancer to the lungs. Her long-term studies are focussed upon determining how this factor influences the tumour to spread, and to identify agents that stop this process.

Rachel received an establishment gift of \$29,428 from the Clive and Vera Ramaciotti Foundation to assist her in setting up her new laboratory at SVI.



Dr Rachel Mudge.

LiCOR ODYSSEY

SVI has recently purchased a LiCOR Odyssey infrared imaging system. This is a new technology that improves the sensitivity of detecting changes in protein expression and activity in control-versus-experimental samples. A dual channel system allows simultaneous screening with two antibodies greatly reducing time and improving efficiency.

Proteins are isolated from cells or tissue samples from various disease models and

changes in the function of specific proteins are analysed using the LiCOR Odyssey. For example, differences in AMP-activated protein kinase activity between diabetic, obese and lean animals using various drug treatments can be analysed.

We were delighted to receive a grant of \$30,000 from the Clive and Vera Ramaciotti Foundation to assist with funding this new equipment, which cost in excess of \$70,000.



Dr Belinda Michell with LiCOR Odyssey imaging system.

YERING *Station*

From its first vintage, Yering Station has received international critical acclaim for its wines culminating in the recent honour of "International Winemaker of the Year at the International Wine and Spirit Competition 2004 in London. Yering Station was also awarded Australian Producer of the Year, Best Pinot Noir Trophy for the 2002 Yering Station reserve Pinot Noir and a further six medals from six entries. St Vincent's Institute would like to congratulate Yering Station for this outstanding achievement.

The 2004 SVI wine fund raising promotion was a wonderful success with many of our supporters taking the opportunity to purchase these wonderful wines whilst supporting medical research. Thank you to Yering Station and especially Tom Carson and Nadège Suné for their continuous support.



Tom Carson – Yering Station.

BIO 21 STI INITIATIVES PROJECTS

BUILDING CAPACITY FOR HUMAN CELLULAR DIAGNOSIS AND THERAPY

The Victorian Government recently granted over one and a half million dollars for this collaborative project, to be led by SVI. Almost half will be spent at the Institute on fitting out a new PC3 laboratory, and providing equipment and staff for pancreatic islet isolation.

NANOLITRE PROTEIN CRYSTALLISATION FACILITY

This new facility will be available to several research institutions through Bio 21. It will enable very high throughput crystal making, using robots, from much smaller amounts of protein than required in the past. The facility will greatly improve our chances of success in getting suitable crystals for our experiments.



Mr Geoffrey Kong received a Student Presentation Award at the 28th Annual Conference of the Australian Society for Biophysics. He presented his studies on an Alzheimer's disease protein, with the long-term goal of preventing this disease.

Dr John Price received three years funding from the National Breast Cancer Foundation "The Role of HSF-1 and the Bone Microenvironment in the Enhancement of Bone Metastasis by the HSP90 Inhibitor, 17-AAG" (total \$265,000). John also received approximately \$200,000 from the American Institute for Cancer Research for 'Examination of Green Tea Catechin, EGCG, as a Novel Therapy for Bone Metastases'.

Ms Lorien Parker received a poster prize at the 30th Annual Lorne Conference on Protein Structure and Function.

ARC PROJECT GRANT

Professor Bruce Kemp has been awarded a five-year project grant worth \$890,000 from the Australian Research Council to study 'Coordinating energy metabolism to enhance exercise capacity'.

Diet and exercise contribute to health and ageing productively whereas high-energy diets and sedentary life styles are deleterious. The enzyme AMPK regulates energy metabolism in response to diet and exercise and by studying it we expect to learn why diet and exercise are beneficial at the molecular level. This may allow the development of nutritional, exercise and drug strategies to enhance exercise capacity and well-being during ageing as well as suppress age-onset diseases that include obesity, diabetes, cardiovascular disease, hypertension and neurodegeneration.

SVI SUPPORT GROUP ANNUAL BLACK TIE DINNER

A must for your 2005 diary will be the Black Tie Dinner being held at The Australian Club on Thursday 20 October. After the wonderful success of the dinner held at the Melbourne Club in 2004 the Committee is looking forward to another successful evening.

More details in our June Newsletter.

(Please note – The 2004 Melbourne Club dinner was held on October 21 not November 21 as reported in our last newsletter. Our apologies)



Mrs Claire O'Callaghan, Chair, SVI Support Group.

NHMRC AWARDS

The National Health and Medical Research Council (NHMRC) is the Institute's major source of funding for research. Research funding is provided on a competitive basis for Projects and Programs, and for People Support.

NHMRC funding is very competitive. For example, only 22% of Project Grant applications Australia-wide were successful in gaining funding commencing in 2005. Two SVI research groups among these successful applicants were:

Prof Bruce Kemp, Dr Belinda Michell and Dr Greg Steinberg, who were successful in gaining a three year \$574,500 Project Grant to support their work on 'Linking exercise and metabolism'.

Dr Jörg Heierhorst, who received a three-year Project Grant (\$278,400) to study 'DNA damage proteins at chromosome ends'.

The following SVI scientists and postgraduate students gained highly competitive **NHMRC People Support** awards:

Associate Professor Matthew Gillespie was promoted to Principal Research Fellow

Dr Helen Thomas was the recipient of an R D Wright Career Development Award

Peter Doherty Training Fellowships were awarded to Drs Julian Adams, Andrew Carey and Ana Traven

Drs Fran Milat and Nirupa Sachithanandan accepted Medical Postgraduate Scholarships

Mr Nic Dzamko and Ms Alisa Frew were both awarded Biomedical Postgraduate Scholarships. Nic subsequently accepted a National Heart Foundation of Australia Scholarship tenable at SVI, and Ailsa will take up a prestigious award with Peter MacCallum Cancer Centre.

SAPPHIREONE

SVI recently upgraded its SapphireOne financial management solution to a multi company system that will simplify intercompany accounting for SVI. SapphireOne was recommended by SVI's auditors and installed in 1998. The SapphireOne solution is a complete ERP system combining financials, asset management, payroll, human resources, inventory, project, support for multiple foreign currencies and companies and full GST and BAS capabilities. SapphireOne has an excellent project costing system, which is essential for a business like SVI's, which has approximately 60 research projects operating at any one time. The SapphireOne solution has a huge capacity to hold data and has unlimited history – without affecting speed. The SapphireOne solution can be used with equal efficiency on Mac OSX and Microsoft Windows XP and the reliability of the SapphireOne solution is such that SVI has been able to choose the lowest support plan over all these years. SVI is looking forward to the new upgrade which is being released mid 2005.

David Rees,
Business Manager and Company Secretary.



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SVI PEHR EDMAN LECTURE 2005

Each year SVI holds a public forum, which is designed to enhance community understanding by providing an opportunity to learn first hand about the latest developments in an aspect of medical research. This year we will have an oration by Sir Peter Morris, a distinguished Australian surgeon, on 'The History of Transplantation'.

This will be held on June 15. Further information will be circulated shortly.

Associate Professor Matthew Gillespie has been elected to the Board of Research Australia, an organisation that raises public awareness of health and medical research with a view to increasing government and private support for Australian medical research.

DIABETES FUNDING

Two SVI researchers have received funding from the **Diabetes Australia Research Trust**. Dr Helen Thomas was awarded a grant to work on "The role of NK cells in the development of rapid-onset diabetes", and Dr Greg Steinberg received a grant for the project entitled "The role of skeletal muscle AMPKa2 in obesity and type 2 diabetes."

The Diabetes lab was awarded a grant of \$13,940 from the **Rebecca L Cooper Medical Research Foundation** for the project 'Mechanisms of pancreatic beta cell destruction in type 1 diabetes'. This will enable the purchase of a new PCR system.



SVI 1000 Club

The SVI 1000 Club members attended a special thank you cocktail party hosted by the SVI Foundation, Chair, Susan Alberti AM at her home in Toorak on November 30, 2004.

We were thrilled so many of the members were able to attend and hear from our special guest speaker, Mr Tom Carson, Chief Winemaker at Yering Station. Tom gave the guests an insight into the history of Yering Station and the current status of Australian wine worldwide.

Brenda Shanahan, Chair, SVI, thanked Tom for speaking and Sue for kindly hosting the evening. Benni Aroni thanked members for their involvement, advised of the renewal arrangements for 1000 Club members from 2005 and congratulated Sue and Colin on their engagement.

SVI is pleased with the growth of the 1000 Club over the past 18 months, but is very aware that the growth needs to be maintained to enable SVI to continue its vital work in medical research.

We would encourage our members to introduce SVI to a friend, family member or business associate by presenting the 1000 Club as a means of supporting SVI while at the same time networking with fellow members. Remember, you can sign up as a Corporate Member as well as an Individual.

Benni Aroni
SVI Foundation Director
SVI 1000 Club



DONATION / SVI 1000 CLUB MEMBERSHIP

SVI 1000 CLUB MEMBERSHIP

Type of Membership:

- New Continuing
 Corporate Individual

SVI 1000 Club Member (\$1,000 per annum)

\$

- 1yr 2yrs 3yrs 3yrs+

OTHER DONATION

- Donation \$

All gifts over \$1000 will automatically qualify you as a member of the SVI 1000 Club. SVI respects your privacy. If you do not wish to receive some or all of our supporter information, please contact our office on (03) 9288 2480.

Thank you for your support.

All amounts of \$2 and over are tax deductible.

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Amount being paid \$ _____ Signature _____

OPTIONS

Please email/mail me All correspondence Newsletter Annual Report Promotions

SVI 1000 Club events Forum Invitation Yes, I would like to take a tour of St Vincent's Institute

SVI FOUNDATION POSTGRADUATE STUDENT AWARD

The SVI Foundation has generously supported a new initiative to promote St Vincent's Institute (SVI) as an excellent research institute for postgraduate training.

The Foundation has pledged to secure funding for awards of \$5,000 pa for 3 years to outstanding students who commence their PhD studies at SVI. To be eligible for this award, students are required to have obtained their own PhD scholarship from the Commonwealth Government or Melbourne University, and have committed to commencing a PhD at SVI. The successful applicant/s will be selected on the basis of academic merit and research experience. It is anticipated that this award will attract the most dynamic and creative students who want to work at a cutting edge institute.

The Foundation secures these funds from either corporate or individual sponsorship, and aims to support at least 2 new postgraduate students per year. The response to this initiative has been overwhelming this year, and we are delighted to be able to offer 3 such awards to students beginning their studies in 2005.



Dr Robyn Starr, Co-ordinator of the student Program, Professor Tom Kay, Dr Nirupa Sachithanandan, David Ascher, Michelle Kouspou and Dr John Price.

The SVI Foundation Award winners for 2005 are:

Sponsor	Student	PhD Supervisor
Major Engineering	Mr David Ascher	Professor Michael Parker
Ms Connie McKeage & Mr Michael Cole	Ms Michelle Kouspou	Dr John Price
Dansu Constructions	Dr Nirupa Sachithanandan	Professor Tom Kay (with Professor Jim Best & Associate Professor Alicia Jenkins)

Congratulations to these outstanding students and we wish them every success during their PhD studies. Many thanks to our sponsors for their generous support of postgraduate students at SVI.



SVI | ST VINCENT'S
INSTITUTE
~ continuous discovery

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