



N E W S L E T T E R

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Local and international perspectives key to Chlamydia vaccine progress

Professor Ken Beagley, Deborah Kay and Erin Meyers
Institute of Health and Biomedical Innovation Queensland University of Technology

Major research aimed at developing a Chlamydia vaccine is being conducted by the Chlamydia Research Programme at the Institute of Health and Biomedical Innovation (IHBI) within Queensland University of Technology (QUT). The research programme's progress to date has been significant, with promising vaccine trials underway in koalas. Collaboration with leading pharmaceutical companies and other research institutions in Australia and around the world mean that the group is now a key participant in global research progress.

The Chlamydia research team

Professor Ken Beagley, head of IHBI's Infectious Diseases Research group, is co-leader of IHBI's research programmes into human and animal Chlamydia vaccines together with Professor Peter Timms. Professor Timms' conducts epidemiological research into the disease. The other senior member of the team is Dr Willa Huston, whose work focuses on developing better diagnosis and treatments for infertility due to Chlamydia. The Chlamydia Research Programme is also developing researchers of the future, with eight early career researchers and higher degree students contributing to the research.

Research objectives

The IHBI Chlamydia Research Programme's objective is to gain a greater understanding of the immune mechanisms elicited by a natural infection, which contribute to inflammatory diseases such as salpingitis, pelvic inflammatory disease and infertility, and examine the essential protective immune mechanisms that must be elicited

by vaccination.

IHBI's research is seeking to produce vaccines that protect against infection without enhancing inflammatory disease, since the most severe sequelae associated with chlamydial infections are due to inflammatory immune responses. IHBI's research makes use of mouse and guinea pig models of chlamydial infection to address multiple research aims including:

- Identification of antigens that are highly conserved across multiple serovars of Chlamydia trachomatis
- Develop routes of immunisation that effectively target female and male reproductive tracts to provide local protection at the site of initial infection
- Determine if vaccination protects against both infection and inflammatory disease
- Development of novel skin-based (transcutaneous) vaccine delivery systems
- Determine the effects of natural infection on vaccine-induced protection
- How antibiotic therapy affects the development of immunity.

The need for a vaccine

Development of an effective vaccine will have an enormous impact on this aggressive infection that the Australian Institute of Health and Welfare Report (2010) states affected 62,000 people in Australia in 2009, tripling its incidence over the past decade.



Chlamydia Research Programme leaders Professor Peter Timms and Professor Ken Beagley



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Website

The ASI web site (www.immunology.org.au) has been fully remodelled and updated. New services include:

- Downloadable forms for ASI awards,
- Positions vacant pages,
- Jobs wanted pages,
- Upcoming conferences listings,

as well as a plethora of links to sites of immunological interest at home and abroad. If you'd like your lab home pages linked to the site, would like to advertise a job or conference, or have a favourite immunology-related site that doesn't currently appear on the ASI site, please email Judy Greer at j.greer@uq.edu.au

Email bulletin board

To subscribe to the ASI bulletin board, send an email to majordomo@explode.unsw.edu.au with the message: subscribe anz-imm.

EDITORIAL



Ken Beagley and Peter Timms have set themselves quite a challenge. But they are well on the way to producing an easily delivered vaccine against Chlamydia. Humans aside, that Australian icon must be saved. What a contrast with New Zealand where the marsupial import runs rampant throughout the country! Yes – possum vaccines are being trialed to prevent the spread of TB and to try to curb fecundity but replacing that crude but effective aerial poison will be difficult. Delivery is a major problem, essentially defining the route of immunization. How appropriate that there

should also be an item on the 20 year-old Mucosal Immunology Special Interest Group on page 5.

There is a plethora of conference reports in this issue many of which cover the recent Kobe International Immunology Congress. They are all published in full because, extraordinarily, apart from the facts and figures on attendees, each one focuses on a different area of immunology. Each reflects specific interests from NKT cells to intravital imaging, from auto-inflammatory conditions to innate/acquired communication in viral disease and they are all infused with infectious enthusiasm. That scholarship money was spent well!

This is my last ASI Newsletter as Editor and so it is a particular pleasure to announce the prize for the best article in 2010. This goes to Greg Woods and Kathy Belov for ‘Devil Facial Tumour Disease’. Well done! Simon Apte from QIMR will put the Newsletter ‘to bed’ for the next three years and I’m sure he will do an excellent job. He is so fortunate to have Judi Anderson there to guide him

through. Judi, you have been simply fantastic. The trans-Tasman enterprise could never have worked without you. Many electronic thanks from across the ditch.

Finally, may I wish everyone a very happy ‘festive season’ with a wee starter for that party: “On the first day of Christmas my true love sent to me ... a tube full of pluripotent cells ...”

Margaret Baird



Best wishes to all ASI members and their families for the holiday season and the New Year from Judi at the Secretariat



Introducing the New ASI Newsletter editor



Taking on the role of ASI Newsletter Editor gives me both great pleasure and mild trepidation. The Newsletter has thrived under the stewardship of Margaret Baird and her predecessors Miles Davenport and Phil Hodgkin and I congratulate them on their work. They have, of course, left very big boots for me to fill and I am mindful of the central role the Newsletter plays as the face and fibre of the Society. I will strive to keep the Newsletter vibrant and engaging for all members and look forward to an even greater involvement with the Society and its members.

Simon Apte

Chlamydia vaccine progress, cont.

Chlamydial infections are also a major threat to the survival of the koala, providing a “natural” animal model of chlamydial disease. Professor Beagley and his team are using what they have learned from the mouse and guinea pig models to develop vaccine strategies that can be used to protect this iconic native marsupial. Two new trials are currently underway in co-operation with Australia Zoo and a third is due to start at Lone Pine Koala Sanctuary in Queensland. The animal research is important as Chlamydia is a significant cause of infertility and urinary tract infections in koalas and their survival is under threat due to the spread of the disease. The disease can also cause inflammation in the conjunctiva of the koalas’ eyes, which can lead to blindness – a major challenge to the koalas’ survival in their native habitat.

“As many as 30 to 50 percent of koalas coming into care in both Queensland and New South Wales are showing signs of Chlamydia, and the trend seems to be increasing,” says Professor Beagley.

Vaccine trial results

Results from the group’s current clinical trials at Australia Zoo and Lone Pine Sanctuary are expected in April 2011. To date, the results look very encouraging.

“Initial trials of an anti-Chlamydia vaccine on koalas at the Lone Pine Koala Sanctuary showed positive results,” says Professor Beagley.

While trials of a human chlamydial vaccine are some years off, Professor Beagley states, “We think that broadening our focus beyond only finding vaccines that elicit sterilizing immunity to developing vaccines that prevent chlamydial disease can have major benefits for both human and koala populations, a view supported by our modelling studies.”

*The Chlamydia Research Programme Team:
(Back row LtoR) Ken Beagley, Dean Andrew,
Charles Armitage, Connor O’Meara,
Peter Timms, Ashkan Amarshahi, Avinash
Kollipara.
(Front row LtoR) Willa Huston, Helen
Iconomu, Marina Harvie, Carmel George,
Melanie Barnes*

Collaborative research outcomes

The need to deliver vaccines to wild koala populations has led to collaboration with Dr Tim Dargaville and Professor Dietmar Hutmacher in the biomaterials research group at IHBI aimed at developing one-shot slow release vaccine implants for use in animals being relocated to new habitats.

The development of human and animal chlamydial vaccines has prompted collaborations with a number of pharmaceutical companies, including Pfizer Animal Health, to test new adjuvant systems for inducing mucosal immunity in the female and male reproductive tract.

Professor Beagley’s team is also working with colleagues at the UNSW to model the impacts of vaccines on the incidence of chlamydial disease in both human and koala populations in order to develop optimum strategies for use of vaccines.

Impacting global research through an international alliance

The IHBI Chlamydia Research Programme is a key participant in a coordinated international research initiative – the newly established Australia-Canada-India Chlamydia Research Alliance. This major international organisation was set up to bring together researchers from Australian, Indian and Canadian universities and companies to progress the understanding of the infection and develop vaccines.



Vaccines trials in koalas are currently being conducted

The Alliance takes a holistic approach to reducing Chlamydia infections by applying a combined approach of vaccine development, improved diagnosis, sexual health education and translating research findings into public health practices to halt the increasing spread of Chlamydia worldwide.

The project has already been successful in attracting a \$1.88 million National and International Research Alliances Program (NIRAP) grant from the Queensland Government to develop effective treatment and infection control for the disease.



20 Years of Mucosal Immunology: A Brief History of the Special Interest Group in Mucosal Immunology

Allan W Cripps

At the ASI Annual Scientific Meeting held on the Gold Coast in December 2009, another highly successful Mucosal Immunology Special Interest Group (MI-SIG) satellite meeting was conducted. At this meeting I retired as Chair of the MI-SIG after what I thought was 14 years. During the MI-SIG's Annual General Meeting it was suggested that I write, for posterity, a brief history of the SIG for the ASI Newsletter.

I am, by nature an obsessive archivist but I think my family would describe me as an obsessive hoarder! Whatever my affliction, it has allowed accurate documentation of the SIG's history. Going through these files was an interesting experience, especially to re-discover that the MI-SIG was formed in 1992 – some 18 years ago and not the 14 that I had been telling everyone. Furthermore, I had chaired the MI-SIG for 15 of these years. Ken Beagley gave me reprieve and chaired the MI-SIG in 1998 and 1999. In 2009, on my notice that I would not be continuing as Chair of the MI-SIG, a more formalised structure was set up to run the MI-SIG with an executive team including a Chair, Chair-elect and representatives from each State and Territory. At the meeting last year, Phil Sutton was elected as Chair of the MI-SIG 2010 – 2011.

Early in 1992, the ASI raised the possibility of establishing special interest groups. I had a discussion with Geoff Shellam about the possibility of an SIG in mucosal immunology. In correspondence to me dated March 18 1992 Geoff states, "ASI is particularly keen to establish these SIGs and Mucosal Immunology is the logical one to be established first. If you are willing to take the initial step I wonder if now might be the right time to begin...." He attached to his letter information from the latest British Society for Immunology Handbook describing the BSI Mucosal Immunology Affinity Group which had been formed in 1987, just five years before the ASI MI-SIG. The remainder of 1992 was clearly a very busy period with the files containing numerous faxes and letters from my office generating support for a special interest group in mucosal immunology.

With great support from Roger Booth who chaired the ASI organising committee for the Auckland meeting in 1992, the MI-SIG was formed in December 1992. A Symposium on Mucosal Immunology was held and Jerry McGhee from The University of Alabama at Birmingham and the then President of the International Society for Mucosal Immunology, attended and gave an ASI plenary lecture. The prominence given to mucosal immunology at the Auckland ASI meeting was a great launch for the MI-SIG. Over 50 people attended the first AGM and the membership was established. The principle goals of the MI-SIG were developed at this meeting and these have remained the same over the years and that is to:

- (i) Provide a forum for mucosal immunologists to meet through workshops and symposia to advance the research of mucosal immunology through debate and collaboration;
- (ii) Be recognised as a specialist group within the ASI and to create a formal association with the International Society for Mucosal Immunology; and
- (iii) Organise a network of Australian and international researchers in the field of mucosal immunology.

Over the years the MI-SIG has continued to provide a forum for mucosal immunologists and colleagues with associated interests to meet at ASI symposia and workshops as well as a number of mini-symposia organised around international visitors.

At the eighth International Congress of Mucosal Immunology (ICMI) held in San Diego in 1995 we won the bid to host the ninth ICMI in Sydney in January 1997. The late Graham Jackson and I were appointed by the MI-SIG to co-chair the 9ICMI organising committee. This meeting was the high spot for the MI-SIG. Over 1000 delegates attended the Sydney meeting. The success of this meeting and the international acclaim that it brought for Australian researchers in the mucosal immunology field demonstrates beyond a doubt the value of strong special interest groups within the ASI.



The 9ICMI contributed to the establishment of an investment account that has supported the activities of the MI-SIG in subsequent years. It was possible through the support of corporate donors and by keeping the organisation of the MI-SIG within a university department, to preserve these funds which have mostly been used to support young researchers to attend ICMI meetings and visiting speakers to the annual ASI meetings.

On Graham Jackson's untimely death in mid 1997, the MI-SIG introduced an annual Graham Jackson Memorial Mucosal Immunology Prize for the best poster or oral presentation given by a student or early-career researcher in the mucosal immunology workshop or poster session at the ASI Annual Scientific Meeting. One or two of these awards have been given out annually since then and in recent years the International Society for Mucosal Immunology has matched these awards.

Thumbing back through the files that I have accumulated over the years, it is interesting to read the very substantial contribution the MI-SIG has made to the ASI community through workshops, symposia and more recently full-day satellite meetings and in supporting young researchers through awards and travel grants to attend both ASI and International Society for Mucosal Immunology conferences. It has been my honour to have taken the baton almost two decades ago to establish the MI-SIG. I feel very privileged that my colleagues

in mucosal immunology continued to support the MI-SIG and my leadership of the group for so many years. I now handover this leadership to the next generation of mucosal immunologists and I have every confidence that they will continue to build the MI-SIG and take it into new fields of mucosal research. The next decade will bring great advances in mucosal vaccines for infectious diseases and mucosal therapeutics for treatment of allergic, autoimmune and life-style induced diseases.

(August 2010)

Correction

We have been advised of an error in the September newsletter, in the caption of the photo accompanying the Queensland news of the winner of the Peter Doherty Medal with Nilesh Bokil, Xinsheng Ju and Steve Broomfield (age 18). In actual fact, the 'man in the middle' is really Steve Su, School of Biomedical Sciences, University of Queensland. Apologies for the misidentification.

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All manuscript submissions to ICB should in future be made online via this web site to speed up the reviewing and acceptance of manuscripts.

Chris Parish, Editor-in-Chief
 Immunology and Cell Biology

HONORARY SECRETARY'S NEWS

Travel Bursaries to attend the ASI Meeting in Perth

It is with great pleasure we announce the winners of this year's student and early post doc travel bursaries to attend the annual meeting in Perth. ASI has traditionally funded a number of students to attend the annual meeting. This is the second year that we have extended the bursaries to early career (up to 3 years) postdocs. Of course applications are viewed relative to opportunity. So don't worry if you are in your first year of a PhD – you are not directly competing against a postdoc in their third year!

As always it was a difficult task for the judging panel to select the best out of all the good applications. We were able to fund 20 applicants, adding up to almost \$18,000. Money well spent! The successful applicants are listed below:

First Name	Surname	Location
Students		
Julia	Prier	NZ
Andrew	Highton	NZ
Daniel	Pellici	Victoria
Adam	Collison	NSW
Stacey	Walters	NSW
Vivian	Turner	NSW
Chun Ping	Yu	SA
Jesscia	Moffat	Victoria
Wai Yan	Sun	SA
Emma	Job	Victoria
Hamutal	Mazrier	NSW
Nicole	Messina	Victoria
Kim	Pham	Victoria
Shirley	Seah	Victoria
Vanessa	Yenson	NSW
Hayley	Croom	Victoria
Patricia	Illing	Victoria
David G	Hancock	NSW
Postdocs		
Di	Yu,	NSW
Daniel	Ruiz	Victoria

Second Round International Travel Awards

We again received a number of incredibly high quality applications. The judging of these is still in progress while this is written and the successful awardees will be announced in the next newsletter.

Council Positions

A number of State Councillor positions as well as the Newsletter Editor were called for nomination. We had a great deal of interest in the positions and I'd like to take this opportunity to thank everybody who has offered their valuable time to ASI! Your support is greatly appreciated! All positions

have now been filled. Our new Councillors are:

New Zealand

Anne La Flamme (University of Wellington)

Queensland

Ashraful Haque (QIMR)

Victoria/Tasmania

Stuart Berzins (University of Melbourne)

Newsletter Editor

Simon Apte (QIMR)

ICI 2016

Most of you will have heard by now that the IUIS has officially accepted our bid to hold the International Congress for Immunology (ICI) 2016 in Melbourne! This is exciting news for ASI and will hopefully further raise the profiles of Australia and NZ, ASI and the great immunological research done here to the level they deserve. It will be an honour to host our colleagues from all over the world and the preparations to get the organisation on track have commenced. I'm sure a call for help will be sent out at some stage during the process!

ASI on Facebook!

ASI has moved into the 21st century! Baca Chan, our ASI student representative, has been the driving force to create a 'student members of ASI' Facebook site. Please see her article in the last newsletter for details. Although created from students for students, all ASI members are welcome to join. Have a look and I'm sure Baca will appreciate your comments!

ICI 2010 in Kobe Japan

2010 saw the 14th ICI held in Kobe, Japan. The meeting was a great success with >5000 delegates. Australian and NZ scientists were well represented and we contributed 147 abstracts in total. Relative to population, this may well be one of the largest contributions after Japan itself (Germany 142, UK 118, US 504). I have to agree with Jose Villadangos, who forwarded these numbers to me, that they can't just be explained by differences in travel costs but by commitment.

ASI Annual meeting in Perth

At the time of writing, the organisation of the Perth meeting was in its final stages and it promises to be a great meeting! I'm looking forward to seeing you there!

Susanne Heinzl

ASI STUDENT PAGE

Ah, December. A month of festivities, including the annual ASI conference, and a time for reflection. Every year, this month reminds us that another year has seemingly whizzed by. Don't worry, this is just a momentary dip into sadness, because I think this month should represent an opportunity to reflect on the achievements of the year. Think of the new techniques learnt, data obtained, and any, small or ground-breaking, insights into your research. I admit that a year on, I'm still not sure what is going on with my gene of interest, but I will concede that I now know more about it than this time last year (thank goodness!).

Most of all, this year has been unique for me because of my involvement in ASI. Including agonising over words for the newsletter every quarter, I have thoroughly enjoyed this experience as student representative. Besides the opportunity to take time out from the dreaded thesis (let's face it, we all become

experts at doing 'anything-but-PhD'), it has been an educating glimpse behind the scenes. From the first event involving the Day of Immunology activities to the student function at ASI (which with foresight I proclaim – everyone had a wonderful time!), this opportunity has allowed me to interact with senior researches, invited speakers, all the important people who fall into the category of 'people you should talk to if you ever plan to be employed'.

Organising events is an integral component of any successful society. It's what fosters communication between members and reinforces the presence of a society. Attending organisation meetings is interesting and can be great fun. I'd never realised the effort that goes into running an event, and the seemingly mundane details that have to be discussed. You can spend ages going back and forth on a certain detail, to find that it was a non-issue on the day!

From the experiences I've had this year, I strongly urge all those interested (and those lukewarm interested) to get involved. Here in the west, we have a student committee that has been previously responsible for organising a student workshop and most recently the ASI student function. I think it is a fantastic structure to allow maximal involvement of students. After all, the new year is right around the corner, so there's no better time to sign yourself up for something novel.

Thanks for having me!

*Baca Chan
ASI Student Representative 2010*



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The People Who Are ASI

Joanna Kirman – Outgoing NZ Councillor

Clinging to the side of one of Wellington's steep hills overlooking the harbour is the Malaghan Institute of Medical Research, home to my research team: the Infectious Diseases Group. My team's interests lie in the initiation and maintenance of the protective memory CD4+ T cell response against mycobacteria.

My first encounter with mycobacteria was as a summer student in the Deer Research Lab with Frank Griffin at the University of Otago, studying antibody responses in bovine Tb-infected animals. At no time in my career since have I ever been able to (or wanted to) eat my experimental controls, but we did have some fantastic BBQs that summer. I then spent my Honours year in the lab of Sam Hou, who had recently published with Peter Doherty that clonal burst size determined the magnitude of the CD8 memory response. Sam's work got me

excited about memory immunity and then later, when I moved to Wellington to do my PhD at the Malaghan Institute under the guidance of Graham Le Gros, I was introduced to the curious world of transgenic and knock-out mice that would shape my research thereafter.

Not many postdoctoral fellows get the chance to work in as many different and prestigious labs as I did, during my time at the NIH, USA. Working with Bob Seder at the Vaccine Research Center, we had plenty of ideas and plenty of resources but limited Biohazard III space to do Tb experiments. For a while I was nicknamed the vagabond scientist, as I did my work cross-country in the labs of Ian Orme, Clif Barry and Sheldon Morris. A lot of my time at NIH was spent testing vaccines and analyzing the ensuing responses, and I became increasingly frustrated at the lack of any immunological correlate of immune protection against Tb. Our work in TCR transgenic mice suggested that effector Th1 cells fail to survive and this led me to focus my attention on subsets of memory T cells that have not been full-effectors, but seem to

survive long-term in vaccinated animals.

When I returned to New Zealand from the US, I was fortunate to be awarded a Sir Charles Hercus Fellowship from the Health Research Council of New Zealand, which gave me the opportunity to set up my own research group. My research is focused on deciphering the memory response to Tb, and understanding the cells involved in initiating and regulating that response and I am continuing this work as the Malaghan Haematology Fellow from the Wellington Medical Research Foundation.

It is hard to believe that my term as the ASI Councillor for New Zealand is over already. It has been a rewarding experience, a chance to get to know my Australian colleagues well and, I hope, to have represented New Zealand members to their satisfaction. But my work for the ASI is far from over – my next task is to work with the in-coming councillor, Anne La Flamme, to organise a memorable (for all the right reasons!) ASI Meeting for 2013, here, in Wellington.



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IMMUNOME RESEARCH

Vaxine is a multi-award winning Adelaide based biotechnology company developing novel vaccines against a range of infectious diseases, diabetes, allergy, autoimmunity and cancer. Vaxine's Advax™ adjuvant platform is at the forefront of vaccine development, and last year Vaxine made headline news with its clinical trial of the world's first recombinant pandemic influenza (2009 H1N1) vaccine. With major funding from the US National Institutes of Health, Vaxine has several open postdoctoral positions on its vaccine research team.



Charlotte LeLan PhD (BioChem/BioPhysics), recently graduated from Paris 7 Denis Diderot University where she investigated the structural properties and interactions of domains of membrane protein caveolin-1 in different mimetic environments.



Fadi Saadé PhD (Virology), gained his PhD in 2008 from INSERM in Lyon, studying novel genetic immunization approaches for viral hepatitis based on *in vivo* transfection of DNA. More recently has worked on CMV antiviral molecules.

Vaxine has recently welcomed two new post-doctoral research fellows from France. We continue to seek additional applications from postdoctoral researchers from Australia and internationally. Please send expressions of interest together with your CV to jobs@vaxine.net or to The Manager, Vaxine Pty Ltd, BOX 18, Flinders University Post Office, Bedford Park, South Australia 5042.

ASI Councillors' News

N.Z. News

NZ ASI/Immunet Meeting 2011

The date has been set for the 2011 NZ Branch meeting in Wellington: June 30/July 1. We'll be announcing the exciting line-up of international speakers for the meeting in the New Year!

New Senior Scientist at the Hopkirk Research Institute

We're delighted to welcome Dr Axel Heiser back to NZ as Senior Scientist in AgResearch's Animal Health Section (in the Buddle group) at the Hopkirk Research Institute. Axel is originally from Germany and his PhD in cell biology/immunology was undertaken at the University of Kiel. Axel then spent several years as a fellow in NZ at Christchurch Medical School. Following this Axel's truly international career has led him to the USA (Duke University), back to Germany (University of Kiel), then back to the USA (University of Florida) and now back to NZ! Axel brings with him vast experience working with dendritic cell based cancer vaccines. He will be researching cellular immunity in relation to treatment of infectious diseases and vaccine development for livestock.

Alan McDiarmid Building opens

The Centre for Biodiscovery at Victoria University of Wellington has completed its move into the impressive new Alan McDiarmid Building, which officially opened in August. This move brings the immunologists at Victoria University and the Malaghan Institute in proximity to the other biologists and chemists in the Centre.



The stunning new Alan McDiarmid Building on a typical cloudless and serene Wellington day

2011 Conference on Formulation and Delivery of Bioactives

With immunologist Roslyn Kemp on the steering committee, this meeting to be held in Dunedin on February 16-17, 2011 will likely be of interest to many NZ ASI members. Invited speakers include immunologist Prof Ken Beagley (University of Queensland). For information, please contact: roslyn.kemp@otago.ac.nz

Handing over the reins

This is my last report as Councillor for NZ. It has been an interesting role, and I'm looking forward to continuing to support the ASI as an organizer of the 2013 Annual Scientific Meeting in NZ. I am pleased to announce that our new Councillor is fellow Wellingtonian, Anne La Flamme, whose creativity and boundless enthusiasm for all things immunological will serve NZ well!

*Joanna Kirman
Councillor*

Sustaining Membership

ASI Inc acknowledges the support of the following sustaining member:

- Jomar Bioscience

N.S.W. News

First, congratulations to all NSW immunologists who were recipients of ASI Travel Awards to attend recent conferences, including the ICI in Kobe, as well as the upcoming annual ASI2010 meeting in Perth. Well done, and no doubt well deserved.

And second, congrats to Jose Villadangos for overseeing the successful bid for Australia (Melbourne specifically) to host the ICI in 2016 – this will be a great opportunity to showcase Australia to the international immunology community and we should all give Jose a huge round of applause for all the hard work that he has been putting into this over the past few years.

Now, to re-cap on recent highlights of activities for ASI NSW. September saw the 2nd ASI NSW/ACT Combined Retreat take place in Bowral in the Southern Highlands of NSW, half-way between Sydney and Canberra. This meeting was a great success, with ~80 delegates attending from most of the major research institutes and universities throughout the greater Sydney area and the ACT. This was a similar turnout to 2009 – so although numbers were down from some centres, it was great to welcome delegates from new places.

The meeting was opened by Prof. Carola Vinuesa (John Curtin School of Medical Research) and closed by Prof. Dale Godfrey (Dept Microbiology & Immunology, University of Melbourne), who gave excellent presentations on T follicular helper cells and NKT cells respectively. In between these talks were 36 high-quality talks by PhD students, Honours students, and early career scientists.

We were fortunate to have very generous sponsorship from Miltenyi (the major sponsor), Jomar Bioscience, Becton Dickinson, StemCell Technologies, Invitrogen and Australian Biosearch – this meant that the meeting could be heavily subsidised and also that we could offer substantial prizes for the best student and post-doc presentations. And the winners were – Best Student Presentation: Charis

Teh (JCSMR); Runner up: Souvik Das (JCSMR); 2nd Runner up: Heidi Schilter (Centenary Institute; formerly of Garvan Institute). Charis, Yogesh and Heidi will be awarded travel bursaries to defray some of the costs to attend this year's ASI conference in Perth in December (or an equivalent conference). And Dr Marcel Batten (Garvan Institute) was awarded a cash prize for the best presentation by an early career scientist. Well done!

The meeting wasn't all just science – there were many laughs and guffaws over the entertainment provided (?) by some of the delegates during THE “Pub Science” competition, and gnashing of teeth (and cursing) over the accuracy of some of the answers for the compulsory trivia questions.

I was greatly assisted in the organisation of this meeting by Pablo Silveira who put together the scientific program, as well as Steve Daley, the ASI ACT councillor who corralled a busload (or more) of Canberran immunologists to come along. I'd also like to thank all the session chairs and judges, and several lab heads who really supported the meeting by sending most if not all members of their groups. Most importantly, thanks to everyone for coming along and making it an enjoyable, relaxing and successful few days. I look forward to the 2011 meeting, which will be held around the same time with hopefully a few surprises to make it even more enticing and interesting to attend.

2010 also heralded the implementation of a NSW Visiting Speaker Program initiative which saw Joe Trapani (Peter MacCallum Cancer Centre), Steve Nutt (WEHI) and Gabrielle Belz (WEHI) come to Sydney, spend the day meeting with like-minded researchers and present a seminar at Garvan Institute. This was a great success, with the seminars being well attended, and plenty of people wanting to meet and greet our interstate visitors. I will look forward to continuing this program in 2011.

I hope to see many of you at the upcoming ASI annual conference at Jupiters on the Gold Coast.

*Stuart Tangye
Councillor*

W.A. News

Just a short update from the West this time around. West Australian immunologists on the Annual Scientific Meeting organising committee and those on the more focused workshop committees have been working hard in the past year to bring you an interesting and hopefully successful meeting. Thanks to all involved. By the time you read this report the meeting will have finished and we hope that those of you who attended enjoyed the conference and your visit to Perth. Hopefully some of you took the opportunity to have a bit of a holiday and perhaps even visit the wine and surf regions in the south west of the State. Perhaps now that you know what you have been missing and how to get here, you will want to come back.

Other functions of the ASI have also been going on in the background. In our seminar series, Gerard Hoyne from the University of Notre Dame has told us about the “control of T cell homeostasis by RNA splicing” whilst Miles Davenport, our current ASI President, gave us a talk about the role of cytolysis in HIV infection.

That's it from this side of the country, more in the next report.

*Alec Redwood
Councillor*

An invitation and a request to all ASI members

to contribute copy that they think might be interesting, useful, historical, humorous or thought provoking.

- We invite our student membership to voice their views on issues that interest or directly concern them.
- It's our newsletter, so let's support it and strive to make it even better.
- The ASI newsletter comes out 4 times a year and we welcome your contributions.

➤ **AND YOU COULD WIN \$200 FOR THE BEST ARTICLE PUBLISHED IN THE NEWSLETTER!**

Victorian News



IgV Retreat

The Annual IgV retreat returned to the Yarra Valley Conference centre in September where we had approximately 60 attending two days of scientific talks. The format was a little different this year with talks at the start of the meeting that covered the latest systems biology technologies including next-generation sequencing and proteomics. A big thank you to Stephen Nutt and Jose Villadangos for providing some terrific insights in these areas.

Our invited speaker was Kate Stacey from the Institute of Molecular Biology at the University of Queensland. Kate gave a terrific talk on the recently identified HIN innate receptors and their role in sensing infection.

The standard of selected talks from students and postdocs was outstanding with every talk generating significant interest and discussion. The IgV branch awarded four bursaries to go towards travel to the ASI meeting in Perth this year. Winners were Courtney McDonald from Monash University, supervised by Claude Bernard; Jessica Moffat from WEHI, supervised by Jose Villadangos, Daniel Pellici from the University of Melbourne, supervised by Dale Godfrey and Olivia Susanto from the Peter MacCallum Cancer Research Institute, supervised by Joe Trapani. Congratulations to all the winners.

This is my last report for the newsletter as my term is finishing this year. I would just like to say thank you to all the members of the ASI Council for their mentorship, support and friendship over the last three years. I would also like to personally thank Judi [at the Secretariat] for answering repeated queries from me. Thank you to the Victorian Branch of ASI for continued support and, finally, I would like to welcome Stuart Berzins from the University of Melbourne as the new ASI Victorian Councillor. There is no doubt he will do a great job.

*Stephen Turner
Councillor*

S.A./N.T. News

Brief Report: 6th Adelaide Immunology Retreat

The 6th AIR 2010 was held at Vine Inn, Nurioopta, 3–4 September and it was again a huge success in 2010 and continued its tradition of allowing students and young scientists to get to know not only each other but also the science going on in Adelaide.

We were absolutely delighted that Professor Dale Godfrey from the Department of Microbiology and Immunology, University of Melbourne, could join us as our 'national' guest and that Dr Claudine Bonder from the Department of Human Immunology, Centre for Cancer Biology, SA Pathology, also participated as our 'local' guest. Their presentations were inspiring and allowed us insights into their own personal career journeys in immunology. Two additional highlights of our program this year included a wine tasting at Seppeltsfield Winery and a trip to Venom Supplies Snake Farm. Special thanks to Dr Peter Mirtschin and Nathan Dunstan who provided us with a tour of the snake facility and a demonstration of extracting venom from one of the snakes (see photographs).

I would like to congratulate all the students and research assistants for outstanding presentations. Judging was almost impossible but congratulations go to Erin Lousberg for best PhD student presentation (winning flights and early registration for the ASI National Conference in Perth, December 2010), Anastasia Yu for Qiagen 2nd Prize PhD student presentation (winning \$100),



Susan Christo for Best Honours Presentation (winning \$100), Kevin Fenix for Qiagen 2nd Prize Honours student presentation and Michelle Turvey for best presentation by a research assistant (winning \$50).

It is an absolute honour to run these events but it would not be at all possible without generous financial support. For AIR 2010 we would like to sincerely thank Miltenyi Biotech, Qiagen, Enzo Life Sciences, Genesearch, Sapphire Bioscience, BD BioSciences, Stemcell Technologies, Jomar Scientific and UniSA). A big thank you to the organising committee for helping pull it all together (especially Cara Fraser, Iain Comerford, Erin Lousberg, Lachlan Moldenhauer, Anastasia Yu and Kate Parham) and we are already looking forward to AIR 2011!

Update on Program for ASI Annual Meeting 2011 to be held in Adelaide 11–15 December

ASI 2011 will be held at the Adelaide Convention Centre and so far we have secured the participation of the following international speakers:

- David Artis (University of Pennsylvania, USA),
- Lisa Coussens (University of California, San Francisco, USA),
- Richard Flavell (Howard Hughes Medical Institute, Yale, USA),
- Paul Kubes (University of Calgary, Canada),
- Alberto Mantovani (University of Milan, Italy),
- Claudia Mauri (University College London, UK),
- Ed Palmer (University Hospital, Basel, Switzerland),

- Shigeru Saito (University of Toyama, Japan),
- Joachim Schultze (LIMES Institute, Bonn, Germany) and
- Megan Sykes (Harvard Medical School, USA).

Our conference themes include: immune regulation and functional genomics, inflammation, autoimmunity, mast cells, reproductive immunology, transplantation, intravital microscopy and leukocyte trafficking, regulatory lymphocytes (B & T cells), innate immune responses and more ...

Special thanks to our organizing committee: Dr Claudine Bonder (Convenor), Simon Barry, Toby Coates, Maurizio Costabile, Lindsay Dent, Boris Fedoric, Antonio Ferrante, Cara Fraser, Claire Jessup, Erin Lousberg, Gabriela Minigo and Lauchlan Moldenhauer.

Regular updates on the meeting are available at www.asi2011.org.

We hope to see you in Adelaide at ASI 2011.

*Michele Grimaldeston
Councillor*



Interested in Immunology? Just graduated in life science? Searching for an exclusive and top-quality PhD program?
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Research Program in Immune Regulation & Human Immunology for PhD Training

Program Content

- Joint initiative of SgN (A*STAR) & School of Biological Sciences (NTU)
- Intake – August 2011
- **Scholarship granted for 4 years** (university fees + stipend)
- Thesis: Research project in human immunology / immune regulation as a core curriculum
- International program board (SgN PIs and NTU Professors)
- Opportunity to attend international summer school in advanced immunology
- Opportunity to attend a PhD annual training workshop and international scientific conferences
- Degree delivered by Nanyang Technological University (NTU)

Interested candidates should visit www.sign.a-star.edu.sg/PhD-Program for details on the application process

Deadline for applications: 7th January 2011

For enquiries about this PhD Program, please contact Program Manager Barbora Fricova at SgN_PhD_Program@immunol.a-staredu.sg

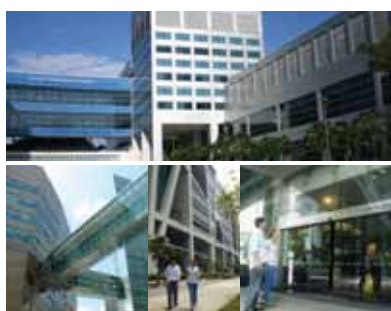
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- Support for overseas attachment
- Medical insurance
- Subsidized campus housing for the 1st year



About SgN

- New immunology hub: launched by Agency for Science, Technology and Research (A*STAR) in January 2008 in Immunos building at Biopolis (Singapore)
- Rapid growth, international environment: 200 investigators coming from 25 countries
- Cutting-edge technological platforms and core services: Multiphoton imaging, Monoclonal Abs, Flow Cytometry, Mutant mouse collection, Genomic etc.
- Main research areas: Infection, Inflammation and Immunoregulation with emphasis on human immunology and translational research
- International networking & collaborations: important partners in Biotech industry as well as clinical, research and academic partners

SgN PIs

- | | |
|------------------------|--------------------------------|
| • Jean-Pierre ABASTADO | • Philippe KOURILSKY |
| • Subhra K. BISWAS | • Maria A. CUROTTO de LAFAILLE |
| • Paola CASTAGNOLI | • Lucia MORI |
| • Keh-Chuang CHIN | • Lai Guan NG |
| • John CONNOLLY | • Lisa Fong Poh NG |
| • Gennaro De LIBERO | • Ee Chee REN |
| • Anna-Marie FAIRHURST | • Laurent RÉNIA |
| • Katja FINK | • Olaf RÖTZSCHKE |
| • Florent GINHOUX | • Cheng-I WANG |
| • Alexandre GOUAILLARD | |

About NTU

- A research-intensive university with globally acknowledged strengths in science and engineering
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- School of Biological Sciences (SBS) – established in 2001. www.sbs.ntu.edu.sg
- New campus of 30000m2 containing lab space, core facilities & animal facility opened in 2004

NTU SBS Professors

- | | |
|--------------------------|--------------------|
| • Peter Ching For CHEUNG | • Christiane RUEDL |
| • Alex Sai Kit LAW | • I-Hsin SU |
| • Klaus KARJALAINEN | • Suet Mien TAN |



Image courtesy of the Singapore Tourism Board

Singapore Is...

- an island city-state in the vibrant Southeast Asia region
- world's 4th leading financial centre and a cosmopolitan world city
- the most globalised country in the world - 42% of foreigners
- one of the wealthiest country in the world
- a city with the best quality of life in Asia
- currently the fastest growing economy in the world (for the first half of 2010 reached 17.9%)
- a popular travel destination with English as the dominant official language

Singapore Immunology Network (SgN)
8A Biomedical Grove,
Immunos Building, Level 4
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Travel Award Conference Reports

2009 Gordon Ada Senior Travel Award Recipient Schnitzel and ChIPs in Vienna

Dr Stephen Nutt

Walter & Eliza Hall Institute of Medical Research, Melbourne

There is nothing better for research than to get out of the ordinary environment and think a little more broadly, so with this in mind I came up with a cunning plan to spend the early period of the European summer on sabbatical in Vienna, Austria. Vienna was an obvious destination for me as I did my PhD there at the Research Institute of Molecular Pathology (IMP) from '94-'98, yet I had hardly been back in the intervening period. Once the plan was hatched I was delighted to be awarded the 2009 Jacques Miller Senior Travel Award from the ASI to fund my expenses.

So in April 2009, the whole family set off to Vienna for two months. First stop however was the Cold Spring Harbor Conference on "Gene Expression and Signalling in the Immune System". This conference has evolved to be the premier molecular immunology meeting on the calendar and as usual was packed with impressive talks from the leading immunologists. Of particular relevance for my sabbatical was that the first wave of ChIP-seq data was being presented for a number of the master regulators of lymphocyte biology. The competition was hotting up and I had not even landed in the lab yet.

After New York, we flew to Vienna and were greeted by old friends and taken to our lovely apartment in the centre of the city and a 15-minute walk to the IMP. The IMP is a basic research institute sponsored almost entirely by the pharmaceutical company, Boehringer Ingelheim. The IMP was founded about 20 years ago in an abandoned building next to the derelict Vienna abattoirs and has developed in this time into one of Europe's leading research institutes with state of the art facilities and a publication record to match. Equally impressively is the leadership shown by the city of Vienna, which has resulted in the establishment of several new institutes and biotech companies in the precinct that now is home to over 1000 researchers. The IMP even has a local connection, with the director, Barry Dickson, being both a prominent neuroscientist and an Aussie. The focus of the IMP on areas such as neural function



It was not all work. Stephen cycling along the Austrian-Hungarian border

and cell cycle control are very different to the usual immunological milieu I operate in, and so it was a pleasant challenge to explain my research in a jargon free manner. Another positive about the IMP was that the institute operates a kindergarten, so my twins were able to have a couple of months of full immersion in the German language.

My host for the visit was Meinrad Busslinger. Meinrad is a world expert on the molecular mechanisms of gene regulation in the immune system and has long been at the forefront of using new genetic technologies to understand the lymphocyte development. Importantly, about a year ago Meinrad and I had established a collaboration to apply next generation sequencing technology to map the binding sites in B and T cells of two of my favourite transcription factors, PU.1 and Blimp1.

My research interest is to understand how master regulatory transcription factors such as PU.1 and Blimp1 control cell differentiation decisions within the immune system. Previously we have tackled this problem in a "boutique" manner using a combination of mouse genetics and biochemistry to show glimpses of how these factors work. Next generation sequencing technologies have revolutionized this field as now we can examine, on a genome wide scale all DNA

binding sites occupied by a transcription factor (termed ChIP-seq) and the gene expression changes that result from deficiency in this factor (RNA-seq). ChIP-seq, as the name suggests, usually relies on the immunoprecipitation of transcription factor/chromatin complexes, followed by the sequencing of the bound DNA and is typically limited by the availability of high-specificity antibodies. The Busslinger lab has used a trick to overcome this problem by creating mice where our factors of interest are tagged with biotin. This nifty strategy allowed us to use streptavidin, instead of an antibody, as a pull-down reagent for the ChIP-seq. Next generation sequencing has become an obsession for the Busslinger lab and I was surrounded by many students and post-docs who were busily sequencing many cell types and transcription factor binding sites. All this activity was geared towards occupying the capacities of the four Illumina Genome Analyzers the institute possesses and the mountain of data generated was analysed by a team of four eager bioinformaticians. The result of all this is a large set of data mapping chromatin modifications, transcription factor binding and RNA levels that begins to show us how a lymphocyte is put together.

So most days in the lab focused on the issue of how to generate the huge numbers of B and T cells needed for the sequencing (more than 100 million a go!). Luckily, my introduction to the techniques was helped by the assistance of Martina Minnich, a very impressive PhD student in the lab. Between us we managed to prepare the material from activated B and T cells and sent it for sequencing. So soon enough we will know where PU.1 and Blimp1 work in lymphocytes. The challenge for our ongoing work both back in Australia and in Vienna is to make sense of the data. This will not be easy as we found that PU.1, for example, binds to approximately 30,000 sites in the B cell genome. These factors are not called master regulators for nothing. As usual,

it is back to the lab to try and figure out the biology that underlies it all.

Finally I would like to thank the ASI for the valuable support; it is truly an honour to receive an award named after Jacques Miller. Hopefully it has played a significant role in us learning something about how a T and B cells function.

*Our nearest neighbours, the
Belvedere Palace*



14th International Congress of Immunology, Kansai (Kobe), Japan, 22–27 August 2010

Angela Chan

Microbiology and Immunology, University of Melbourne

My colleagues and I recently attended the 14th International Congress of Immunology in Kobe, a vibrant city, a little over an hour's drive from Osaka. The conference featured an outstanding lineup of world-renowned Immunologists to address the theme of "Immunology in the 21st Century: Defeating Infection, Autoimmunity, Allergy and Cancer". Conference proceedings began on a high note on Sunday night in the concert hall of Kobe Portopia Hotel. At the opening ceremony, Peter Doherty announced to an excited audience that the 2016 Congress would be held in Melbourne. David Baltimore gave a plenary lecture on the hot topic of microRNA regulation of immune cell development and cancer, which was followed by a performance by the Osaka Philharmonic Orchestra.

The first day of concurrent symposia were on the topics of TH17/Treg, Genetics of Autoimmunity, Early Lymphocyte Development, Lymphocyte Signalling, Cell Therapy and Innate Immunity. We were definitely spoilt for choice with

speakers such as Alexander Rudensky, Jurg Schopp, Avinash Bhandoola and Gary Nolan to name a few, all talking in concurrent sessions, and I certainly worked up a sweat dashing back and forth between meeting rooms in the conference centre and the hotel. The NKT cell workshop was also held on the first day of the Congress. Sanda Stankovic spoke about a new marker that identifies NKT-17 cells, Dale Godfrey introduced a novel population of type 2 NKT cells, Mitch Kronenberg showed that NKT cells can be activated by *Streptococcus pneumoniae* and house dust extract and Masaru Taniguchi described the promising effects of NKT cell activation in lung cancer patients. We acclimatised to the heat and humidity by downing litres of water and cold tea and sneaking the odd pastry here and there between talks. Other symposia highlights included Diane Mathis who discussed the molecular mechanism of Aire by identifying aire-interacting proteins; Kirsten Hogquist's use of Nur77 GFP reporter mice to study TCR signal strength in thymic selection; and Anne O'Garra's talk on the transcriptional signatures of active and latent TB.

The symposia and workshops were flanked by master lectures which I found to be an inspiring way to start and finish the long days. Highlights included Max Cooper's talk on the evolution of alternative immune responses and Charles Dinarello's seminar on the clinical efficacy of IL-1b receptor antagonists in autoinflammatory diseases. The poster sessions held each afternoon provided good opportunities for students and postdocs to network with peers and senior scientists. Our evenings frequently ended with a refreshingly cold beer and cold noodles or sushi.

The conference party was held on Thursday after a stimulating day of talks. We were bused to Meriken Park where we boarded the Luminous Kobe 2 for a dinner cruise around the harbour and treated to an impressive display of fireworks. It was a fitting way to end an inspiring week and I am grateful to the ASI for the opportunity to attend this memorable conference.



*Angela Chan, Sanda Stankovic & Sumone Chakravarti
enjoying the ICI conference cruise*



Dominique Gatto
Garvan Institute, Sydney

Together with another 13 ASI members, I received a travel award contributing to my attendance of the 14th International Congress of Immunology (ICI) in Kobe, Japan. The generous distributions of these travel bursaries helped ensure that a big Australian delegation was present at the congress. In addition, the publicity for ASI and Australian immunology was greatly strengthened by the setup of an ASI exhibition booth, in which the awardees had the honour to represent the Society during breaks and poster sessions. The cute koalas that decorated the booth were a good incentive to attract people initially, but even after they quickly ran out, many congress participants showed interest in the Society, in particular young scientists looking for PhD and post-doc positions.

ICI was an innovative and invigorating international congress reflecting the direction of immunology in the 21st century. The organizers provided a comprehensive yet focused program with an intellectually stimulating combination of presentations, symposia, discussions, sessions and exhibitions. The congress was opened by the enthusiastic address of members of the organizing committee, which also took the occasion to announce that ASI had been successful with the bid to host the 16th International Congress for Immunology in 2016 in Melbourne. The Keynote lecture was held by the Nobel Prize Laureate

in Physiology and Medicine, Prof. David Baltimore on “MicroRNAs and the Immune System”. It was followed by a live performance of the Osaka Philharmonic Orchestra and a reception with Japanese specialities and performances.

As expected for this large international congress, the scientific program offered a wide range of topics for participants of all backgrounds and provided the opportunity to see international leaders from various immunology fields present their recent work and long-standing expertise. Thus, there were multi-faceted scientific highlights for all tastes. I personally enjoyed the many presentations using intravital imaging to address various aspects of the immune response. In a very popular talk from Michel Nussenzweig’s lab, a model in which germinal centre cells express a photoactivatable form of green fluorescent protein and can be labelled *in situ* within a living mouse using multiphoton laser scanning microscopy was presented. With this system, B cells in the germinal centre light and dark zones were selectively activated and their redistribution tracked in time. More applied clinical topics and interests were also well represented. Rafi Ahmed showed interesting data on the human memory B cell response to pandemic H1N1 influenza virus infection and Antonio



Lanzavecchia presented methods his lab has developed to dissect the functional heterogeneity and antigenic repertoire of human T, B and plasma cells.

The congress was held in a very well organized, modern and culturally unique environment. The city of Kobe lies in the Kansai region of western Japan, a region that offers an unparalleled wealth of attractions that include traditional cultural sites, superb hot springs and world-renowned cuisine. The country provides an unmatched combination of exceptionally modern infrastructure, a rapid and efficient transportation system, and latest technologies in a rich set of traditions and culture. Last, but definitely not least, Japanese people were extremely welcoming, kind and helpful, despite the clear language barrier.

Dr Joshua Ooi
Monash University, Melbourne

I was recently afforded the opportunity by the ASI to be a participant at the International Congress of Immunology, otherwise known as the Olympics of Immunology, in the city of Kobe, Japan. It was an amazing experience. Not only was the sheer quantity of basic immunology astounding but also the quality and genius of the works presented. There was a little bit of everything and a whole lot on regulatory T cells. There were master lectures, symposiums, workshops and poster sessions which were well attended. The symposiums, in particular, were often packed and the international speakers were very good, presenting very recent, mostly unpublished, novel findings which I am sure will be finding their way into *Nature*, *Science*, *Cell*, *Immunity* and the like. There were also very interesting debates that would go on within these symposiums and workshops, in

particular regarding the recent controversy surrounding the plasticity of Foxp3 T regulatory cells. There were proponents for and against the hypothesis that Foxp3 T regulatory cells were plastic. The proponents for would say that the murine evidence was irrefutable while the proponents against would say that if the hypothesis were true we would all die of severe autoimmunity. This continuous debate led ultimately to Dr Shohei Hori proposing a reconciling conclusion that the natural Foxp3 T regulatory cell lineage is stable but Foxp3 as a transcription factor is not.

I presented both a poster and an oral. There were a thousand different posters on display each day and the halls would be a buzz of activity even though the poster sessions were held at the end of the day. My poster

presentation went well, generating some interest within the renal autoimmunity field. The oral presentation, which was held in the evening of the last day of the conference, was surprisingly well attended. I managed to defend my presentation in front of some very senior researchers and in the process made a few more friends.

I also had the opportunity to stand in the ASI booth on one of the days and met quite a few people from various countries, including Peru, Taiwan and India, who were very much interested in pursuing post-doctoral positions in Australia. Again, I am grateful to the ASI for this eye-opening mentally-stimulating opportunity.

Kate Graham

Immunology and Diabetes Unit, St. Vincent's Institute, Melbourne

In late August 2010, 6000 immunologists gathered in Kobe, Japan for the 14th International Congress of Immunology. The theme for the conference was "Immunology in the 21st Century, Defeating Infection, Autoimmunity, Allergy and Cancer" and the extensive program catered for all these areas and more. Each day was jam packed with master lectures, concurrent symposia, lunchtime lectures (complete with bento boxes), workshops and poster sessions. The meeting was conducted with an amazing efficiency that only the Japanese could arrange and this made finding session locations easy even though we were spread over three huge exhibition halls and the next door Portopia Hotel.

There was an amazing array of speakers catering to all flavours of immunology from the innate to clinical, lymphocyte development and differentiation, tolerance and autoimmunity with the strong focus on new technologies. In particular there were some exciting sessions on imaging the immune system in real time. The master lectures and symposia showcased some of the world's most respected immunologists and it was a remarkable experience to have so many collected together in the one location.

Each day had a dedicated poster session which, once you navigated the two massive exhibition halls and located the posters of interest, was a worthwhile experience. The posters followed the matching workshop and having a dedicated poster time was a great way to meet the speakers from each workshop,

ask further questions and see other posters covering each topic.

At the meeting I presented my recent work examining how autoreactive cytotoxic T lymphocytes acquire the ability to kill pancreatic beta cells. To date it has been unclear whether this is driven by signals received in the lymph node only or also in the inflamed tissue. The role of the beta cells in stimulating cytotoxicity has also been unclear. We have identified that primary activation of CTL and the high level expression of molecules associated with cytotoxicity appear to be distinct steps separated by location and driven by different stimuli. My data highlights the role the inflamed islet plays during generation of fully active and destructive CTL in type 1 diabetes. My oral presentation was on the last day of the conference and my poster on the first day, which was a bonus because I got two different audiences, those that dropped by my poster for discussion and then those that attended my oral presentation.

My highlights from the program included:

- Prof. Charles Dinarello's (the father of IL-1) master lecture covering the role of IL-1 in autoinflammatory diseases, in particular Type 2 diabetes and gout.
- Prof. Emil Unanue's master lecture focussing on the function of intra-islet dendritic cells in development of type 1 diabetes and how they process and present antigen and peptides obtained from secretory granules resulting in autoreactive CD4+ T cells and beta cell destruction. The conclusion of his talk finished with a very cute cartoon of their hypothesis!

- Prof. Michael Bevan's symposium presentation covering the formation and function of tissue resident memory T cells in the brain. In fact this entire symposium was excellent with other interesting presentations from Prof. Rafi Ahmed and Prof. Stephen Schoenberger.
- The symposium and workshop covering immuno-imaging and some novel presentations covering introducing abdominal windows into mice so we can image T cell interactions with beta cells in the pancreas resulting in beta cell destruction and diabetes.

The last night of the meeting featured the Meriken Park Party, held on the Kobe waterfront. We enjoyed fried noodles, Kobe beef skewers, Asahi and Kirrin beers and were entertained by the Awa-odori dance performance by Kekusui-Ren from Tokushima prefecture and the aptly named "Negative Selection", a rock band of Japanese Immunologists. The night concluded with an incredible fireworks and laser light show that lit up the Kobe sky and finished with a message for all of us: "Immunology Forever."

Attending the International Congress of Immunology was a fantastic experience and I thank the ASI for the funding to support attending and presenting at the meeting.

Submission of photos with articles

When submitting articles, reports, etc. to the newsletter, please do not embed the photos in the Word article, but always send as separate jpeg files – preferably around 300–400kb. Embedded photos/graphics cannot be imported into the desktop publishing program nor edited if required and delays occur in requesting photographs to be re-sent.

Thank you for your co-operation.



Rachael Terry
University of Sydney

I was lucky enough to receive an international travel award from ASI which allowed me to attend the International Congress of Immunology, 2010. So, on August 21st, several of my colleagues from the King and Campbell laboratories at Sydney University and I packed our bags and left for Kobe, Japan. My travel companions were Zheng Lung Ling, Amanda Yeung, and Aline Nocon – fellow battling PhD students, and unfortunately, Japanese-illiterate.

We arrived in Kobe for conference registration much later than expected on Sunday afternoon, to temperatures that winter had made us forget were even physically possible, but we managed to register, pick up our large overfilled backpacks and equally large stacks of abstracts and begin the treacherous trek to our accommodation in Sannomiya. Two hours later we had finally found our hotel, despite some fundamental issues with communication and deciphering street signs and maps. I won't deny that this was primarily due to our rather limited knowledge of the local language (and perhaps was not helped by my lack of the innate skill to read maps in any dialect). For so many months, the Japanese language book thoughtfully bought for me by my partner sat untouched, unloved, and alone on our bedside table – but that was half the fun of it to be honest!

We later realized that we had done a big loop around most of the entire city, and that our hotel was only ten minutes away from Sannomiya subway station! But we had made it in the end, done a bit of sightseeing in the process, and that is all that matters ... although the time that we spent aimlessly wandering the streets lost meant that we had unfortunately missed the opening ceremony – not to mention that the hot weather and hours of walking had made Aline's legs and hands swell up like balloons!

The promise of inspirational, motivating talks (as well as a Starbucks stall) drew us to the conference first thing Monday morning. Throughout the conference I have to confess that I most benefited from, and also particularly enjoyed, the symposia sessions. In general, these talks gave a good, broad overview of topics that I am both familiar and unfamiliar with, so they not only refreshed and updated my current knowledge, but also introduced me to some new concepts and ideas in such as way that

were easily understood and absorbed.

I particularly enjoyed “Roles of TLR-inducible genes revealed by gene targeting”, presented by S. Akira, which gave a good overview of the regulation of M1/M2 macrophage polarization by various microbial stimuli and cytokines. This talk was very applicable to my PhD project, as I primarily investigate monocyte/macrophages infiltrating the brain and their pathogenic role during viral infection. I also was very interested by “Akt1/2 kinases differentially regulate M1/M2 polarisation”, presented by A. Arranz, in which Akt2 KO mice were shown to exhibit an M2 macrophage phenotype, are hyporesponsive to LPS stimulation and are protected from endotoxic shock. Another talk that I both really enjoyed and benefited from was “Differentiation and function of mononuclear phagocytes *in vivo*”, by F. Geissmann, which was really well presented and gave a nice overview of the development of inflammatory monocytes from bone marrow progenitors.

I found “Real-time imaging of T cell migration/activation using the calcium biosensor TNXXL” presented by M. Mues, very interesting, in which not only the trafficking, but also the reaction of a T cell to antigen presentation could be visualized *in vivo* during EAE. I currently use CD115-eGFP transgenic mice to track migration of monocytes in mice, so I found it fascinating how the use of fluorescent transgenes *in vivo* continues to have so many exciting, novel applications.

As I am now beginning to investigate the role of NK cells in our model of viral infection, “NK cells in viral immunity”, presented by L. Lanier, and “Communication between innate and adaptive immune responses to viral infections”, spoken by C. Biron, stood out to me as presentations of interest. In particular, the importance of Ly49H expression by these cells to control CMV replication in the spleen, and how it can undergo affinity maturation to generate “memory” NK cells



was very interesting. In addition, the critical roles of activating receptors NKG2C/E and inhibitory receptor NKG2A during smallpox infection was also very informative, and has definitely broadened my knowledge of the roles and functions of NK cells during viral infection.

In general, I really enjoyed most aspects of the conference. The conference party at Port Kobe was particularly fun; we all thoroughly enjoyed the sights of Kobe harbour at night, the traditional dance performances, the spectacular “Immunology Forever” laser show, the funny Italian DJs, and the fireworks although my favourite part of the evening by far was *Ode to a Dying Thymocyte* performed by the immunologist band “Negative Selection” – very funny!

The only downfall of such a large conference was that it was impossible to go to all of the talks and posters that were on display and of interest, but nevertheless I found the conference not only very interesting but also very motivating; I could almost not wait to get back to the lab to work on some new ideas and start new experiments again.

Luckily, when the conference drew to an end, a few of my colleagues and I had a couple of extra days to travel around Japan. Some of the highlights of our adventures include visiting the beautiful temples of Kyoto, catching the bullet train to Tokyo, and feeding hoards of rather rambunctious deer in the park of Nara (picture many terrified small children and

the accidental exposure of undergarments when antlers are misplaced in the quest for biscuit acquisition). I feel very grateful to have had the opportunity to attend the conference as it has definitely given me new ideas and motivated me to finish my PhD so I can continue to advance in my career as a researcher.



ASI online immunology quiz

As part of the World Day of Immunology, we have developed an online immunology quiz (see <http://www.immunology.org.au/immquiz1.html>) on the ASI website. This quiz is targeted at the general public, but it would be good to add a few more questions (especially some with an Australasian flavour), and maybe even add an “Advanced Level”, with questions that undergrad students might find useful for revising for exams. All that’s needed now are the questions and answers.

If you would like to contribute any multiple choice questions for either the general quiz or an advanced version, please send them to Judith Greer at j.greer@uq.edu.au.

Ivan Poon LaTrobe University, Melbourne

Japan was truly an amazing country to visit! Although I have been to Japan twice before, you can never have enough of their food, temples, shrines, crazy neon signs and, of course ... shopping. Prior to and after the conference other ASI members (Ben Quah, ANU; Mark Hulett, La Trobe University; Jon Tan, Kyoto University) and myself visited Osaka, Nara and Kyoto for two to three days. We went from temple after temple, shop after shop, and non-stop eating (which included raw horse meat!!). After a few days, as much as I could trust my supervisor Mark Hulett’s research directions, I subtly avoided following his navigation through the Japan subway system and followed his wife instead to ensure a safe and painless trip.

As expected, the International Congress of Immunology was an extremely big conference with over 6000 attendees. Luckily, it was well planned with plenty of supporting staff to guide us through the entire conference. The quality of science, presentations and discussions was of high standard and very stimulating. The conference opened with a keynote lecture by Professor David Baltimore, a Nobel Prize Laureate who discovered the enzyme reverse transcriptase and made a significant contribution to virology. Prof. Baltimore discussed the importance of microRNAs in the immune system and how their dysregulation could lead to the development of various pathological conditions. Another outstanding talk of my interest was presented by Professor Ruslan Medzhitov from Yale University, discussing the importance of studying co-infection (e.g. influenza virus and a bacterial pathogen) and how an inflammatory response is being controlled under these conditions.

Besides the numerous talks that presented groundbreaking data, surprisingly, the most memorable presentation was from a lunchtime session titled “In memory of Professor Tomio Tada”. To be honest, the initial reason why I went to this session was because (i) I was already information-overloaded from the non-stop innate immunity marathon in the morning and (ii) a free lunchbox. This special session was dedicated to Prof. Tada, who passed away earlier in 2010. Unaware of who he was initially, I soon appreciated the impact Prof. Tada had on immunology around the world and, in particular, Japan. Prof. Tada was the founder of the journal *International Immunology*, contributed to the concept of immune suppression and many more. Importantly, the role that Prof. Tada played to connect immunology in Japan to other countries (e.g. through the exchange of post-docs and the organization of International Congress of Immunology) was truly inspiring. All the invited speakers in this session (including Fred Alt, Max Cooper, Masaru Taniguchi, etc) left us a compelling realization – life-long friendships were formed through their common interest in “immunology”.

I would like to thank ASI again for providing young researchers with the financial support to attend national and international conferences. It was a fantastic opportunity to showcase our work at the international level and I believe that experiences such as these would be valuable for junior scientists.

Finally, organizers of the 14th International Congress of Immunology left us with this message “...IMMUNOLOGY FOREVER...”

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*Yuka Harata-Lee
University of Adelaide, Adelaide*

This year I was one of the fortunate students to receive the ASI Postgraduate International Travel Award to attend the 14th International Congress of Immunology. Although I was born and grew up in the country, I had never experienced near 40 degree weather, especially at the end of summertime. Indeed, they had the hottest summer on record this year.

Over five days, the congress was attended by some 6000 scientists from diverse backgrounds and I was exposed to almost all aspects of research, including clinical immunology infection and immunity, tolerance and autoimmunity, lymphocyte development and differentiation, tumour immunology, immunotherapy; and the list goes on. Each day started with two concurrent master lectures where we had the opportunity to attend seminars given by renowned immunologists, followed by a few concurrent sessions of symposia divided into different themes. There were several lunchtime seminars for those who were quick

enough to book a ticket in the morning, and then we had workshops and poster sessions in the afternoon. Then, each day ended with yet another master lecture session.

One of the highlights for me was the seminar given by Dr Laurence Zitvogel from the Institut Gustave Roussy in France during the symposium on "Immune surveillance and tumour immunity". She discussed her recent work on the molecular mechanisms of how tumour cell death caused by some chemotherapies and radiotherapies is recognised by DCs to trigger anti-tumour immune response. Although the field of tumour immunology is where my primary interest is, this congress opened my eyes to other fields of immunology. Some of the seminars that were particularly interesting to me were given by:

- Dr Ulrich von Andrian on the technology to visualise the interaction between DCs and T cells in LNs using multiphoton intravital microscopy (MP-IVM),

- Dr Vijay Kuchroo on the relationship between induction of Treg cells and Th17 cells as well as on how Th17 cells can activate B cells to initiate class switching and germinal centre formation, and

- Dr Rudolf Valenta on allergen-specific immunotherapy for IgE-mediated allergy which is based on vaccination with the disease-causing allergens to induce generation of allergen-specific IgG, but it is free of T cell-mediated side effects.

I also had an opportunity to present some of my work during the tumour immunology poster session, where I received several questions and valuable suggestions. Overall it was such a rewarding experience for me to attend this conference and I would like to thank ASI for supporting this trip.

*Gerard Kaiko
The University of Newcastle, NSW*

The 14th International Congress of Immunology (ICI) held every three years in a new location was this year hosted by Kobe, Japan. Roughly 6500 delegates attended the meeting on an artificial island connected to the port city of Kobe by monorail. Despite what was at times somewhat oppressive heat and humidity, the conference was well organised and a wonderful experience.

Being the pre-eminent meeting for immunology worldwide, the content of the meeting was of the highest quality. The master lectures and symposia were very diverse in nature including sessions with a purely clinical focus. As someone involved in basic research, I found this to be a welcome addition to the program and a chance to gain a different perspective on many of the clinical problems immunologists seek to remedy. Perhaps the only problem with meetings of this size and quality is also their great advantage, that is, there is such an abundance of choice it is an impossibility to see everything of interest.

The keynote lecture on the opening night of the conference was presented by Nobel

laureate Professor David Baltimore, who described the critical role played by the small master regulators of translation, microRNA, in the control of inflammation. The first full day of the conference got off to a great start with Professor Tadimitsu Kishimoto opening the presentations with an overview of his work on IL-6 from lab bench to the clinic. This was a wonderful example of immunology at its finest. He described the initial discovery of IL-6 and its role in Th17 cell differentiation to the current place of IL-6 inhibition in clinical trials for the treatment of arthritis and other autoimmune diseases. Ruslan Medzhitov discussed how influenza infection can imprint a long-term pattern into the innate immune system that impacts on the lethality of future bacterial infections. Although the story was left rather open-ended, perhaps this was an insight of what is likely to be a significant challenge for the future of immunology given recent flu epidemics. This was followed back-to-back with a presentation by Jurg Tschopp who nicely detailed a mechanism by which Type I interferon regulates the NALP3 inflammasome and IL-1 β . This work potentially explains how innate antiviral

cytokines may increase susceptibility to secondary bacterial infection while also reducing the inflammation associated with certain autoimmune diseases including multiple sclerosis.

A few of the other significant highlights and most interesting presentations included an inspiring talk by Rino Rappuoli, head of Novartis Vaccines and Diagnostics, who really placed the future of immunology in its real-world clinical context. He eloquently showed that the most significant increase in the history of human life expectancy has been achieved through early-life vaccination, and that most likely the greatest improvement in future human health will come from more technically-evolved adult vaccinations targeting cancers and other age-related processes. Shigeo Koyasu presented recent work identifying a novel innate lymphoid-type cell (the 'natural helper cell') within the gut that is responsible for producing Th2 cytokines and protection against Helminth infestation. This was a theme repeated throughout the conference as several other groups have

also independently identified a markedly similar novel cell-type. Marco Colonna outlined the recently discovered NK-22 cell population, which are predominately found in mucosal-associated lymphoid tissues. These cells specialise in IL-22 production but can also demonstrate a high degree of plasticity to combat different pathogens.

Finally, perhaps two of the most timely and insightful presentations were provided by Bali Pulendran and Bart Lambrecht. Bali Pulendran spoke about novel approaches to vaccinology using a gene array systems biology approach. Cells isolated from vaccinated patients and assessed for gene expression were compared to vaccine efficacy on an individual basis. Using this unique approach it was possible to identify critical innate immune gene signatures that were predictive of effective CD8 T cell and B cell responses post-vaccination. Bart Lambrecht mounted a compelling defence for a critical role of dendritic cells in the induction of Th2 immune responses. Given the publication of four recent *Nature* papers disputing whether dendritic cells are anything more than impotent bystanders to basophils in Th2 immunity, his presentation showcased

several significant discoveries and created great interest and debate.

The social activities and events staged by the organising committee were spectacular to say the least. This began on the opening night with a banquet, a performance by the Osaka Philharmonic Orchestra, and a lively display of traditional Japanese drums. Throughout the meeting the organisers provided delegates with the opportunity to experience different aspects of traditional Japanese culture. On the final night, the Meriken Park party was concluded with a fireworks display over the harbour and, as a one observer described it, a “quirky” laser light show.

ICI2010 provided me with a vibrant learning experience and one which has stimulated many new project ideas while also enabling the discussion and presentation of my own PhD research. Furthermore, the conference instilled an active interest in several other areas of immunology. This meeting also provided me with the opportunity to speak to a couple of international researchers about potential post-doctoral positions overseas. I am extremely grateful for the support from the ASI travel award that made these experiences possible.

In some ways ICI was incredibly overwhelming – how could I possibly decide which session was best to go to and how could I see 1000 posters in the space of an hour? However, it was also amazing to have so many immunologists all together in one place and to have the chance to hear experts in a huge range of topics. This allowed me not only to go to talks in my specific area, but also to learn about areas of immunology that I don’t always have as much time to think about. And often it wasn’t just the talks that were important to hear but also the questions and comments from the audience afterwards.

This applies to my own talk and poster presentation as well. It was great to be given a chance to present my work to such a large audience but it was even more valuable to receive feedback from people afterwards and to be able to discuss the work in more depth.

I was also incredibly grateful to have the opportunity to catch up with collaborators past and present and to form new connections, which will hopefully lead to successful collaborations in the future.

All in all, I couldn’t help but come away from the meetings in Japan inspired and full of new ideas on questions to ask, techniques to try and concepts to ponder further. Now if only I had the time to follow up on them all ...

Elissa Deenick
Garvan Institute, Sydney

Thanks to a travel grant from ASI, I was able to attend the International Congress of Immunology in Kobe, Japan. While I was there I decided to attend one of the satellite meetings – B cells and Autoimmunity. This was a small meeting held in Nara – a town about an hour from Kobe.

The two meetings were incredibly different. The B cell meeting had about 150 people with only a single session running at any time. ICI had almost 6000 people and up to 12 concurrent sessions. Each meeting had its own strengths and weaknesses.

At the B cell meeting it was great to spend a few days looking at an array of B cell topics – antibodies as therapeutics, inherited and acquired immunodeficiencies, localization and migration of B cells during immune responses, links between

B cells and innate immunity, just to name a few. And all in a setting which made it easy to interact with everyone else at the meeting to discuss what was being presented. It was also a great reminder of the strength that Australia has in the field of B cell biology.



Some of the Australian contingent at the B cell meeting drinking sake at the dinner on the final night.

*14th International Congress of Immunology, Kobe, Japan
7th Options for the Control of Influenza, Hong Kong*

Sophie Valkenburg

Dept of Microbiology & Immunology, University of Melbourne

I recently attended two conferences focused on immunology and influenza. Both were widely diverse in topics and saturated in cutting edge research.

The 14th International Congress of Immunology, in Kobe, Japan, was the Olympics equivalent to a conference. The size of attendance and breadth of topics was a feat, with 12 concurrent workshop sessions, posters spread across two halls, plus morning and evening master lectures. Whilst there were more sessions and posters than could be absorbed in the one conference, there were many outstanding projects. Kristen Hogquist, from the University of Minnesota, had a fabulous system whereby Nur77, a TCR signal responsive orphan nuclear receptor, was coupled to a GFP reporter system in transgenic mice to probe TCR signal strength during thymic development, and response to infection versus regulatory T cells, and NK cells. The results from these studies will really be a leap in our understanding of T cell signaling from thymic development and response to infection.

Mark Davis' group at Stanford, as part of the 'Human Immunology Project', use a new technique called *FloCyt*, (a combination of flow cytometry and mass spectrometry) is almost science fiction. The procedure involves labeling cells with specific markers coupled with metal isotope encoded beads, allowing up to 30,000 different parameters to be determined from antigen specific populations. Talks from Yoshi Kawakao, Rafi Ahmed, Michael Bevan, and Marc Jenkins were also conference highlights, setting the benchmark for immunology of the next decade as technology progresses and research fields shift focus.

The 7th Options for the Control of Influenza, in Hong Kong discussed public health policy, and the animal interface for the 2009 H1N1 influenza pandemic and H5N1 HPAI. With over 1400 attendees, and 400 people on a waiting list to attend the conference, there was much interest in the conference in the wake of the recent influenza pandemic. Many presentations focused on ferret challenge and transmission models, HA antigenic drift, mechanisms of pathogenesis and vaccine efficacy. One of the presentations which resonated with

me was from Susanne Mackay who, as a strategic communications expert, emphasized the need to communicate science "without blinding the public with science and statistics". She proposed actively engaging the public, and even the media, in prevention and vaccination strategies, especially in the face of the sensationalist "Twitter-age" where the most outrageous rather than true story gained the most public interest.

Presentations from Derek Smith, Lorena Brown, Albert Osterhaus, Jon McCullers, Michael Osterholm and Michael Katze piqued much discussion and interest. Michael Osterholm from the CDC warned at the labeling of the pandemic as 'mild', as the years of lives lost rather than the total death toll was distressing with the virus targeting pregnant women and young adults. He also discussed how in the modern age of ICU care, anti-virals, vaccine use and more effective public health measures helped reduce the death toll of a potentially worse situation.

I am very grateful to ASI for awarding me a Postgraduate International Travel award which allowed me to attend the conferences and expose me to such great science. And thank you to ASI members and sponsors for the ability of ASI to provide such travel awards which support young researchers like myself.



Junk on Victoria Harbour, Hong Kong

The XXIII International Congress of The Transplantation Society Vancouver, Canada, 13–19 August 2010

Dr Nicole Mifsud

Dept of Medicine, Monash University, Melbourne

This year I was able to escape the Australian winter and head to the northern hemisphere for the dual purpose of consolidating international collaborations in France and to present at the XXIII International Congress of The Transplantation Society (ICTS) in Vancouver, Canada. This travel was supported by an ASI International Travel Award.

In 2008 our laboratory had the pleasure of hosting a French respiratory clinician, Dr Arnaud Bourdin, for 12 months. During this time Arnaud initiated research investigating the role of Clara cell secretory protein (CCSP) in injury/repair mechanisms following lung transplantation and he generated exciting preliminary data that facilitated an ongoing collaboration between our two research groups. Following his departure, Arnaud extended an invitation for me to visit his laboratory at CHU Arnaud de Villeneuve Hospital in the beautiful and modern city of Montpellier (south of France). During my visit I was able to meet with several research staff and students working on the CCSP project and present my research at a seminar relating to cross-reactive anti-viral T cells and their role in mediating adverse clinical outcomes following lung transplantation. Not to waste a good opportunity, I also travelled to visit another collaborator, Professor Pascal Chanez at the Université de la Méditerranée in Marseille. Pascal's research group has developed an *in vitro* culture system of a bronchial epithelial cell injury model, which our laboratory is interested in adopting as an experimental model for the CCSP project. Again during my visit I was able to present my research on anti-viral T cell cross-reactivity and engage with fellow immunologists in valuable discussions following my seminar.

Having bathed in the historically enriched and beautiful, but sometimes unbearably hot (>40°C), surroundings of Europe, I headed to Vancouver for ICTS. The program was extensive and featured

cutting edge knowledge, innovations and breakthroughs in transplant procurement, surgery, medicine and science.

The Plenary Symposia were undoubtedly the highlights of the congress with four themes encompassing (i) The Genome and Beyond – Systems Biology, (ii) Allorecognition and Tolerance, (iii) Stem Cells and Regeneration, and (iv) Innovations in Immune Suppression.

Of particular interest to my own area of research was the exceptional presentation by Prof Phillipa Marrack (USA) on “Why is the alloresponse so strong?” Prof Marrack focused on the interactions between the TCR and MHC/peptide complex. Prof Marrack showed exquisite evidence of the cross-reactive nature of a TCR, using a combination of functional and structural analyses, in a murine model.

One of the benefits of attending a prestigious international congress such as ICTS is the opportunity to be exposed to novel, exciting and sometimes controversial areas of research. One of the Plenary Symposia was given by Prof Doris Taylor (USA) on “Advances in Regenerative Biology and Organ Biogenesis”. Although I have not had any exposure to the area of Regenerative Medicine, I dare say that the entire audience was captivated by Prof Taylor's demonstrations of how they build murine bioartificial organs (heart, liver, kidney, bladder, tongue). Even more engrossing were the images showing that they could use a non-viable human heart attached to a rig and remove all the cells using a detergent solution leaving an empty structural frame. This frame could then be reperfused with cells and given appropriate electrical stimulation to make the heart beat once again. Truly mind-blowing! Considering that donor organs are in short supply world-wide, this may provide an alternate source of organs for patients on the transplant waiting list. What was probably once conceived as science fiction has amazingly turned into a possible reality for the not too distant future.

Both the invited speaker and oral presentation sessions were rich with outstanding clinical and scientific research. The sessions

of particular interest to me included (i) allorecognition and response (Prof Lakkis, USA), (ii) immune regulation and tolerance (Prof Rudensky, USA; Prof Bluestone, USA; Prof Hall, Australia; Prof Sachs, USA; Prof Sykes, USA), (iii) HLA immunology (Prof Doxiadis, The Netherlands; Prof Duquesnoy, USA), and (iv) women in transplantation (Prof Wood, UK).

My ICTS abstract, “Do cross-reactive anti-viral T cells mediate allograft rejection in lung transplant recipients?”, was selected for an oral presentation, which I gave on the second day of the conference. You should never underestimate the power of an oral presentation; although nerve racking and sometimes terrifying, it provides a platform to meet fellow researchers who offer invaluable feedback and opens the possibility for new collaborations. I was also invited to submit a manuscript, based on my abstract, for a special edition of ICTS to be published in Transplantation later this year, which has just been accepted.

One of the emerging areas in transplantation, and a recent focus in our laboratory, is the use of remote ischemic preconditioning (RIPC), usually achieved by applying a tourniquet to a hind/lower limb, to circumvent early graft dysfunction caused by ischemia-reperfusion injury.

A presentation by Dr Warle (The Netherlands) highlighted the benefits of this approach in a rodent model of renal transplantation. In essence, following RIPC renal damage was reduced as measured by urea and creatinine levels and histopathological examination of renal tissue. Whilst there are good animal models demonstrating the positive effects of RIPC, it was of interest to note that there were no reports in human transplant patients and no investigations of the immunological mechanisms associated with these favourable outcomes. Undoubtedly, this provides our laboratory with a unique opportunity to add knowledge to this area of research with our current lung transplant model.

Of course, the congress dinner is always a worthwhile event to mingle with old and new

friends but, with close to 5000 delegates, it was not possible to have everyone at the same event. I had selected to attend the dinner at the Vancouver Aquarium. We were welcomed to the Aquarium by some of the residents, with Beluga whale and dolphin exhibitions that excited and captivated the audience with their intelligence, beauty, tricks and speed. The evening was full of intrigue with both the outdoor pools and indoor tanks displaying the many wonders of the sea, my personal favourites being the Beluga whales and sea horses and dragons.

Finally, I would like to thank ASI for providing the opportunity to enrich my international collaborations in France and attend the prestigious ICTS congress in Vancouver.



Kate Markey
BMT Laboratory, Queensland Institute of Medical Research

The program was even busier than the previous TTS congress I attended (in Sydney, 2008) with daily Sunrise Symposia prior to the opening plenaries. As I expected, the plenary lectures were of excellent quality, with the highlight being Doris Taylor's presentation on Wednesday morning. She discussed her lab's work on the use of "decellularised organs" as tissue scaffolds for the generation of stem-cell derived organs. She discussed experiments where she has successfully re-seeded these decellularised scaffolds with stem cells from the rat, pig and human. Coming from an engineering background where there has been intense focus on scaffold development for such a purpose, her incredibly elegant solution to this long-standing problem was really quite awe-inspiring. For further reference, some of the work she discussed is described in a *Nature Medicine* paper from 2008 (Feb;14(2):213-21), however the remainder is unpublished to date.

Despite being a meeting with a solid-organ transplantation focus, there were certainly some highly useful talks with relevance to bone marrow transplantation and tolerance induction. Of particular interest was the

work presented by David Sachs in which recipients of renal grafts were treated with combined BM transplantation (from the same donor) for the purpose of inducing haematopoietic chimerism and hence, transplant tolerance. He described promising results in which some of the patients treated were able to maintain organ tolerance in the absence of immune suppressive drugs, which represents an important advancement in the field.

Of note regarding the non-scientific events, the lunchtime Women in Transplantation (WIT) Networking event keynote speech was delivered by Toronto cardiologist Heather Ross who described her fundraising trip (undertaken with one of her cardiac transplant recipient patients) to the North Pole, which was an extremely challenging (and at times life threatening) experience. Dr Ross describes the journey in detail in her blog: <http://www.tgwhf.ca/sites/testyourlimits>.

I would like to thank ASI for the travel award that allowed me to attend this meeting.

UPCOMING LECTURES & CONFERENCES

10th World Congress on Inflammation:
 Translating Basic Research to Patient Care
 June 25–29, 2011
 Paris, France
www.inflammation2011.com
info@inflammation2011.com

VI World Congress on Immunopathology
 & Respiratory Allergy
 September 15–18, 2011
 Moscow, Russia
info@wipocis.org
www.wipocis.org

V World Asthma & COPD Forum
 April 21–24, 2012
 New York, USA
info@wipocis.org
www.wipocis.org

British Society for Immunology 2011
 Summer School
 July 5–8, 2011
 Llantwit Major (Wales), UK
<http://bsi.immunology.org/summer-school-2011>

5th Asian Congress on Autoimmunity
 (ACA 2011)
 November 17–19, 2011
 Singapore
 Online abstract deadline:
 Wednesday, June 1, 2011
aca@kenes.com
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