NEWSLETTER

Australasian Society for Immunology Incorporated

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Solar Powered Research

Scott Byrne and Gary Halliday

The Dermatology Research Laboratories and The Department of Infectious Diseases and Immunology, The University of Sydney

The Dermatology Research Laboratories at The University of Sydney were established in 1989 as the first dermatology wet laboratories in Australia. They are headed by Professor Gary Halliday who has devoted the past 20 years to studying the effects of sunlight exposure on the skin. His research team is currently made up of four senior research fellows, two postdoctoral fellows, four research assistants and seven research students. Gary and his team are interested in how the ultraviolet (UV) part of the solar spectrum causes skin cancer.

Sunlight contains three types of UV radiation; UVA, UVB and UVC. All of the UVC and most of the UVB is blocked by the ozone layer, which means that the sunlight reaching the Earth's surface is made up primarily of UVA (95%) and some UVB (5%). Sunlight exposure leads to the growth of skin tumours by not only causing DNA damage but also by suppressing the host anti-tumour immune response. While it has been recognised for sometime that exposure to UVB causes considerable skin DNA damage and immune suppression, the contribution of the vastly more abundant UVA wavelengths is more controversial. For a long time, the UVA portions in sunlight were considered harmless and even beneficial. The UVA waveband is responsible for tanning, and who doesn't feel better with a "healthy" tan? This probably explains the fact that until recently the majority of sunscreens on the market protected only from UVB, therefore allowing 95% of the sun's UV rays to penetrate the skin with unknown and potentially harmful consequences.

UVA is not so good for you after all …

The scientific establishment was convinced that UVA was "safe" as it didn't have the required energy (unlike UVB) to cause DNA damage, nor could it suppress immunity. A few years ago, using a combination of murine and human models, we demonstrated that UVA can indeed suppress the immune system. All of sudden, not 5% but possibly 100% of the UV rays reaching our skin could be damaging. Gary and his team went on to show that UVA was also responsible for causing genetic mutations in human skin. The contribution of UVA to genetic damage proved to be far greater than anyone had previously thought possible. Proof of

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LtoR: Gary Halliday, Diona Damian, Carling Chan, Naomi Delic, Scott Byrne, Lai Fong (Chris) Kok, Seri Sarchio, Sabita Rana, Clare Beaugie

2010 Renewal Enclosed

Do not discard – Renew early

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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

Another year almost done, another Newsletter put to bed. The most difficult task this time was identifying the best article published in 2009. In the end it was "Juggling Immunology and Parenthood: becoming an Immunologist Mum (IgM) or Dad (IgD)" that took the line honours. This was a trans-Tasman collaboration that put a whacky immunological spin on an all too common problem for new parents. Congratulations Aude, Bernadette and Jo. And here's some good news – the prize has doubled to $AUD200. This should fund a treat for you all.

This issue contains some good reading on just what Vegemite could do for your skin as well as some delightful conference reports including one on freewheeling through Belgium pondering the role of Vitamin D in the immune response. Berlin was clearly the place to be in September on the 20th anniversary of the 7th Immunology Congress – the event that collapsed The Wall.

Speaking of the power of immunology, surely we can make something from the camel invasion in the Outback. Don't they have peculiar antibodies? All that culling will give tons of tissue. I know Phil Hodgkin has an international reputation as an 'emu-nologist' but could he do something with a hump? A strange thought strikes: this could be the Aussie answer to the NZ possum problem – bigger, bolder and thirstier, of course.

Stay cool (in Oz) or warm (in NZ) this summer and keep those grant applications rolling.

Margaret Baird



Authors of the winning newsletter article for 2009: LtoR Aude Fahrer, Bernadette Saunders, Joanna Kirman

Solar Powered Research, cont.

the harmful effects of UVA has had far reaching implications for skin cancer prevention as it became clear that in order to prevent the possible formation of skin tumours, one needed to block both the UVA and UVB portions of sunlight. Indeed, we have discovered that protection from the immune suppressive properties of sunlight is absolutely dependent on the use of broad-spectrum sunscreens. For these reasons, the Cancer Council now advises on its website: "Look for sunscreens labeled 'broad spectrum'. This means it blocks out UVA and UVB rays, both of which contribute to sunburn, skin ageing and skin cancer." Consequently, the majority of commercial sunscreens now available are all broad-spectrum.

How does sunlight suppress anti-tumour immune responses?
While the mechanisms of UV-induced DNA damage are well known, the mechanisms underlying UV-immunosuppression are not fully understood. Over the years, our group has made significant contributions to the understanding of the complex cellular and molecular processes involved. Since the late 1970s we've known that exposure to UV results in the activation of a suppressor T lymphocyte. However, induction of T regs takes days to weeks to develop. We discovered that much earlier than this (48-72h) an IL-10 secreting B cell subset is activated in skin draining lymph nodes. This B cell population expresses significantly higher levels of surface MHC II and B220 and when transferred into naïve recipients they can suppress the induction of immunity. Our current research efforts are focused on identifying the mechanisms of how these B regs are activated and how they mediate their suppressive activities. This has important implications not only for preventing the immune suppression associated with UV, but may also facilitate novel therapies for autoimmune diseases and allogeneic transplants.

We have also identified other cellular and molecular players involved in this pathway. Ground-breaking research over the last 10 years by Dr Prue Hart (at the Telethon Institute, WA) and Dr Michele Grimbaldeston (at the Hanson Institute, SA) has clearly shown that dermal mast cells play a key role in UV-immunosuppression. In light of this, we recently discovered that another way UV causes immune suppression is by inducing these dermal mast cells to migrate from the irradiated skin site to the skin-draining lymph nodes. Here the mast cells were found in close association with B cells in the space between the B cell follicle and the subcapsular sinus. This migration was important because when it was blocked using a CXCR4-specific antagonist we could inhibit UV-induced immune suppression. We are currently investigating the consequences of mast cell migration to lymph nodes for the down stream activation of suppressor lymphocyte populations and the development of skin cancer.

It doesn't take much …
One of the surprising findings from our research is the amount of sunlight required to observe these immunological effects. Exposure to as little as one third the amount of sun that causes a barely detectable sunburn (or roughly five minutes of midday summer sun) is all that is needed to significantly suppress the anti-tumour immune response. Indeed, we've discovered that rather than inducing T regs, these low doses of UVB suppress the activation of effector and memory T cells so that a robust anti-tumour immune response fails to develop. This has profound implications not only for the sun-safe health message but also for successful immunisation strategies.

While low UVB doses suppress the activation of effector and memory T cells, UVA suppresses via a different mechanism. We have recently discovered that low doses of UVA suppress immunity by activating the alternative complement pathway in exposed skin. This novel observation will allow us to target the unique components of this pathway (for example Factor B or Properdin) in an attempt to prevent UVA-induced immune suppression.

We're happy little Vegemites …
We are privileged to have the opportunity to collaborate with some the finest dermatologists in the world. This has enabled us to extend our animal based research into human models and the clinic. Recently we discovered that males are much more susceptible to UV-induced immune suppression which may explain why the incidence of skin cancer is so much higher in men.

In other exciting human studies we have found that topical nicotinamide (better known as Vitamin B3) can actually prevent the immune suppressive properties of UV. While the exact mechanisms are not entirely clear, it would seem that nicotinamide-induced alterations to energy metabolism is involved. While we aren't necessarily advocating lathering up with vitamin B3-rich Vegemite before going to the beach, these findings do offer us an opportunity to tackle the skin cancer problem in novel ways.

What's next?
Going forward one can easily fall into the trap of being overwhelmed by the enormity of the task. "How do you cure cancer?" The answer is not a simple one and perhaps even the wrong question. Fortunately skin cancer is preventable. If we understood how UV damages the immune system we may be able to prevent this damaging event. This will enable us to live healthy lives under the harsh Australian and New Zealand sun!

Contributions sought for the ASI Newsletter

You could win $200 !!

Deadline for the next issue : 1st February 2010

Please email your contributions to the Secretariat by the above date.
asi@21century.com.au

The ASI Visiting Speaker Program

Coming visits

November/December, 2009
Janko Nikolich-Zugich MD, PhD
University of Arizona, Department of Immunobiology, Tucson, USA.

This visit was unfortunately cancelled due to unforeseeable reasons.

February/March 2010

Professor Jean-Laurent CASANOVA
Rockefeller University, New York, USA
Laboratory of Human Genetics of Infectious Diseases, Rockefeller University
University Paris René Descartes, *Hôpital Necker – Enfants Malades*

Professor Jean-Laurent Casanova is an extraordinary paediatrician and immunologist who identified genetic mutations predisposing individuals to specific pathogens, a finding that has both challenged and brought together divergent theories. Here are some selected publications from his laboratory in the last five years.

Marodi, L., and J. L. Casanova. 2009. Primary immunodeficiency diseases: the J Project. ***Lancet*** 373:2179-2181.

Chapgier, *et al.*2009. A partial form of recessive STAT1 deficiency in humans**.** ***J Clin Invest*** 119:1502-1514.

Casanova, J. L., and L. Abel. 2009. Revisiting Crohn's disease as a primary immunodeficiency of macrophages. ***J Exp Med*** 206:1839-1843.

Alcais, A., L. Abel, and J. L. Casanova. 2009. Human genetics of infectious diseases: between proof of principle and paradigm. ***J Clin Invest*** 119:2506-2514.

von Bernuth, *et al.* 2008. Pyogenic bacterial infections in humans with MyD88 deficiency. ***Science*** 321:691-696.

Vogt, G., *et al.* 2008. Complementation of a pathogenic IFNGR2 misfolding mutation with modifiers of N-glycosylation. ***J Exp Med*** 205:1729-1737.

Rottman, M., *et al.* 2008. IFN-gamma mediates the rejection of haematopoietic stem cells in IFN-gammaR1-deficient hosts. ***PLoS Med*** 5:e26.

de Beaucoudrey, *et al.* 2008. Mutations in STAT3 and IL12RB1 impair the development of human IL-17-producing T cells. ***J Exp Med*** 205:1543-1550.

Zhang, S. Y., *et al.* 2007. TLR3 deficiency in patients with herpes simplex encephalitis. ***Science*** 317:1522-1527.

Quintana-Murci, L., A. Alcais, L. Abel, and J. L. Casanova. 2007. Immunology in natura: clinical, epidemiological and evolutionary genetics of infectious diseases. ***Nat Immunol*** 8:1165-1171.

Ku, C. L., *et al.* 2007. Selective predisposition to bacterial infections in IRAK-4-deficient children: IRAK-4-dependent TLRs are otherwise redundant in protective immunity. ***J Exp Med*** 204:2407-2422.

Filipe-Santos, O., *et al.* 2006. X-linked susceptibility to mycobacteria is caused by mutations in NEMO impairing CD40-dependent IL-12 production. ***J Exp Med*** 203:1745-1759.

Casrouge, A., *et al.* 2006. Herpes simplex virus encephalitis in human UNC-93B deficiency. ***Science*** 314:308-312.

Yang, K., *et al.* 2005. Human TLR-7-, -8-, and -9-mediated induction of IFN-alpha/beta and -lambda Is IRAK-4 dependent and redundant for protective immunity to viruses. ***Immunity*** 23:465-478.

Vogt, G., *et al.* 2005. Gains of glycosylation comprise an unexpectedly large group of pathogenic mutations. ***Nat Genet*** 37:692-700.

February 26, WEHI, Melbourne (Phil Hodgkin)
March 2 & 3, Brisbane (J. Alejandro López)
March 8, Dunedin (Joanne Kirman)

This visit is sponsored by the Royal College of Pathologist of Australia who invited Prof. Casanova at its annual meeting in Melbourne and the ASI.

Dr Jack BENNINK
Chief, Viral Immunology Section, Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, (MD), USA

Jack Bennink and Jonathan Yewdell co-jointly run the Viral Immunology Section/ Cell Biology Section labs at the Laboratory of Viral Diseases, NIAID, NIH. Jack and

Jon are considered world experts on antigen processing and presentation. Jack has made major contributions to viral immunology using various virus and mouse models. His current interests are:

1. Real-time imaging of virus-host interactions using multiphoton microscopy with the immediate goal of rational design of vaccines for inducing CD8+ T-cell responses.
2. Unraveling the role of the sympathetic nervous system in adaptive immune responses.
3. Understanding the generation of MHC class I peptide ligands from endogenous and exogenous viral antigens.
4. Defining mechanisms that contribute to antigenic drift in the influenza A virus hemagglutinin.
5. Understanding how PB1-F2, the 11th defined influenza A virus gene product, modulates host immunity.

These are some selected publications from their lab in the last five years:

Hensley, S. E., *et al.* 2009. Hemagglutinin receptor binding avidity drives influenza A virus antigenic drift. ***Science*** 326:734-736.

Lev, A., *et al.*. 2009. Efficient cross-priming of antiviral CD8+ T cells by antigen donor cells is GRP94 independent. ***J Immunol*** 183:4205-4210.

Grebe, K. M., 2009. Sympathetic nervous system control of anti-influenza CD8+ T cell responses. ***Proc Natl Acad Sci U S A*** 106:5300-5305.

Haeryfar, S. M., *et al.* 2008. Terminal deoxynucleotidyl transferase establishes and broadens antiviral CD8+ T cell

Visiting Speaker Program cont.

immunodominance hierarchies. ***J Immunol*** 181:649-659.
Lev, A., *et al*. 2008. The exception that reinforces the rule: crosspriming by cytosolic peptides that escape degradation. ***Immunity*** 28:787-798.
Hickman, H. D., *et al*. 2008. Direct priming of antiviral CD8+ T cells in the peripheral interfollicular region of lymph nodes. ***Nat Immunol*** 9:155-165.
Berglund, P., D. Finzi, J. R. Bennink, and J. W. Yewdell. 2007. Viral alteration of cellular translational machinery increases defective ribosomal products. ***J Virol*** 81:7220-7229.
Qian, S. B., *et al*. 2006. Tight linkage between translation and MHC class I peptide ligand generation implies specialized antigen processing for defective ribosomal products. ***J Immunol*** 177:227-233.
Tscharke, D. C., *et al*. 2006. Poxvirus CD8+ T-cell determinants and cross-reactivity in BALB/c mice. ***J Virol*** 80:6318-6323.
Tscharke, D. C., *et al*. 2005. Identification of poxvirus CD8+ T cell determinants to enable rational design and characterization of smallpox vaccines. ***J Exp Med*** 201:95-104.

February 23, Dunedin
February 25, Sydney
February 26 – March 1, Melbourne
March 2, Adelaide
March 3 & 4, Canberra
March 4, Brisbane

The visit is being co-ordinated by Dr Guna Karupiah from the ANU, Canberra (Guna.Karupiah@anu.edu.au).

ICB Online Manuscript Submission

Online manuscript submission for Immunology and Cell Biology now available via:
http://mc.manuscriptcentral.com/icb

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 for ASI meeting
It is with great pleasure that we announce the winners of this year's student bursaries to attend the ASI meeting at the Gold Coast. Earlier this year the ASI Council had decided to include early career post docs in this travel bursary. There were a large number of high quality applications. It was a difficult job for the judging committee to select the best of the good ones. The successful applicants for this round were:

Students:
Adeline Foo, University of Newcastle
Alison Thorburn, University of Newcastle
Annie Xin, WEHI
Charis Teh, ANU
Danika Khong, Monash University
David O'Sullivan, School of Biological Science, Victoria University of Wellington
Hui Yee Greenaway, University of New South Wales
Joanne Lisciandro, Telethon Institute for Child Health Research, University of Western Australia
Marie Fletcher, Monash University
Marina Harvie, Malaghan Institute of Medical Research
Mark Robinson, University of Otago
Melanie Hince, Monash University
Olivia White, Telethon Institute for Child Health Research, University of Western Australia
Phillip Fromm, School of Pharmacy and Molecular Biology, James Cook University
Robert Weinkove, Malaghan Institute of Medical Research
Santi Suryani, Garvan Institute
Sara McKee, University of Otago
Sarah Saunderson, University of Otago
Sarah Moneer, University of Melbourne
Sarah Oracki, WEHI
Sara Baratchi, Deakin University
Sidonia Eckle, University of Melbourne
Timothy Schlub, University of New South Wales
Ushakiranmayee Nivarthi, University of Melbourne

Post docs
Elizabeth Forbes, Malaghan Institute of Medical Research
Stephen Daley, ANU

Council Positions
A number of council positions were called for election. We received a lot of interest and positive feed back, particularly regarding the call for the non-voting positions. Thanks to all who have nominated and offered their valuable time to the society.

The outcome of this round of nominations is set out below.

Welcome on board!

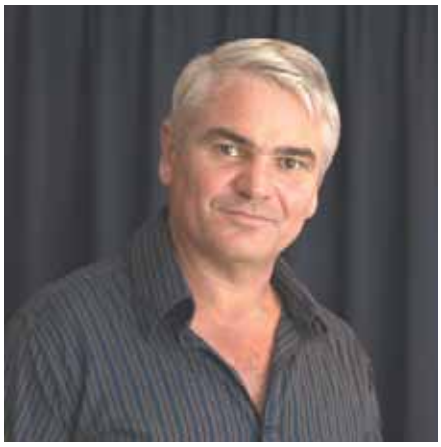
Hope to see you at the Gold Coast!

Susanne Heinzel

Position	*Name*	
Vice President	David Tarlinton	WEHI, Melbourne
Treasurer	3 nominations received & voting underway at time of writing this report	
WA Councillor	Alec Redwood	University of WA
SA/NT Councillor	Michele Grimbaldeston	IMVS, Adelaide
ACT Councillor	Stephen Daley	JCSMR, ANU
Meeting Co-ordinator	Bernadette Saunders	Centenary Institute, Sydney
DoI Co-ordinator	Delia Nelson	Curtin University, Perth
FIMSA	Guna Karupiah	JCSMR, ANU

The People Who Are ASI

ASI Past President – Alan Baxter



Alan Baxter is based at the Comparative Genomics Centre at James Cook University in Townsville, North Queensland. The Comparative Genomics Centre (CGC) was originally founded in 2003 and Alan is its foundation and current elected head. At foundation, the overall aim of the CGC was to use a variety of genetic models, including staghorn coral, fruit fly and mice, to study human disease from an evolutionary perspective. As the Centre has grown, it has become a focus of resources and expertise in genetics for the University and the region. The member laboratories now cover a much broader range of applications of genetics and genomics, including the science of coral reef management and biotechnological applications. Its member laboratories span three Schools in two Faculties.

The CGC has an annual research income in excess of $8.2m from peer-reviewed grants and research contracts. This represents a five-fold increase in research income over a five year period. The Centre's 13 laboratories accommodate 21 honours students, 57 postgraduate students, 17 postdoctoral fellows and 12 research assistants. Over the last fifteen months, the CGC has had 103 scientific manuscripts published in internationally recognised scientific journals.

Alan is a medical graduate who completed a PhD in immunogenetics at the Walter and Eliza Hall Institute under the supervision of Tom Mandel. He has worked as a Research Fellow at Harvard Medical School and at Cambridge University, where he was a Supervisor in Pathology for Trinity College and was funded by the Australian National Health and Medical Research Council on a CJ Martin Fellowship. He established the Autoimmunity Research Group at the Centenary Institute, where he worked for nine years before taking up his current appointment.

Alan works on gene/environment interactions in conferring risk of autoimmune disease; at the boundary between immunology, genetics and microbiology. His laboratory houses the broadest range of models of autoimmune disease in Australia, including: type 1 diabetes, gastritis, lupus, multiple sclerosis, and haemolytic anaemia, all of which his group has both published and been funded for; as well as arthritis, sialadenitis and thyroiditis. His group has collected or produced over 100 mouse lines on NOD, B6 or BALB/c backgrounds, including targeted mutants deficient for TLR1, 2, 4, 6, 9 and MyD88 on C57BL/6 and NOD backgrounds.

Many of the projects in the laboratory involve the genetic analysis of an autoimmune disease or a subphenotype that contributes to autoimmunity. Typically, such projects would involve linkage analysis, production of congenic lines, expression analysis, production and immunological characterization of subcongenic lines, and candidate testing by transgenesis or targeted gene deletion.

While not generally at the cutting edge of genetic/genomic technologies, Alan's lab has contributed in a positive way to improving their application. In collaboration with Corbett Robotics, Alan demonstrated that that the intellectual property describing the specific binding of DNA to glass was a misdirection; the conditions under which DNA was reputed to bind were those under which it precipitated. This resulted in Corbett undertaking a major redesign of their robotic DNA extractor, swapping to a vacuum extraction system. Alan's lab developed the chemistry for the platform, which has been marketed by Corbett, Sigma and now Qiagen.

Similarly, through the careful application of biological and molecular QA processes, Alan's lab has achieved the best (and second best) signal-to-noise ratios ever published for microarray studies. By avoiding conditions under which cells would be induced to undergo apoptosis or activation, Margaret Jordan and Julie Fletcher have achieved chi squared values of 1,000 ($P<10^{-300}$) using Affymetrix 430_2 arrays. Similar effort has gone into improving the precision of quanitative PCR assays; in general his laboratory can reliably detect a 20% difference in levels of gene expression.

Although to date no product from his laboratory has reached clinical trial, the laboratory has affected clinical practice. Alan's observation that several preparations of the Bacille Calmette-Guérin (BCG; the vaccine for TB and leprosy) can induce lupus in autoimmune prone mice has led to the closure of many of the independent vaccine producers, and a reliance on the Pasteur strain, which does not show this property. Nevertheless, this complication is now listed in the product literature packaged with the preparation. Similarly, the group's demonstration that the transcutaneous immunization strategy applying cholera toxin as an adjuvant enhanced ongoing inflammation associated with type 1 diabetes and multiple sclerosis in mouse models halted the planned application of the system to childhood vaccinations.

One of the most important projects in the laboratory studies the genetic control of NKT cells. NKT cells are a small but influential T cell subset that controls the strangth and character of many – perhaps most – immune responses. For example, NOD mice which are prone to the development of autoimmune type 1 diabetes mellitus are deficient in NKT cell. Boosting the numbers of these cells prevents the onset of diabetes. Similarly, in a range of infection and tumour models, NKT cells have been shown to play a pivotal role in control of immune responses. Alan's lab is the world leader in dissecting the genetic control of NKT cell numbers. The phenotype has been mapped using inbred mouse strains, these loci confirmed by congenesis, microarrays have identified a limited range of candidate genes and these are under investigation by transgenesis and targeted deletions.

Much of the work in the laboratory is performed in collaboration with other

groups. The work on NKT cells depends heavily on a 15-year collaboration with Dale Godfrey (Microbiology and Immunology, University of Melbourne) and the two groups frequently co-publish. Similarly, the groups work on the genetic control of susceptibility to autoimmune gastritis is performed in collaboration with Ian van Driel (Bio21); Alan and Ian have collaborated for over 20 years. The group also benefits from friendly and collaborative input from Robyn Slattery (Pathology and Immunology, Monash University), Shaun McColl (Molecular & Biomedical Sciences, University of Adelaide), Shane Grey (Garvan) and Richard Boyd (Monash Immunology and Stem Cell Laboratory).

Alan's laboratory is extremely well equipped, with Vantage Diva and LSR Fortessa flow cytometers, Affymetrix 7G plus microarray system, extensive automated liquid handling platforms, two quantitative PCR machines, 10 conventional PCR machines, AutoMACS, cell harvester, cryostat, ELISA plate washer etc. Perhaps the most important infrastructure asset is the immunogenetics research facility, a custom built environmentally controlled small animal house run by Nicole Fraser. This facility was designed to support the study of gene/environment interactions, with extremely fine environmental tolerances. It has a capacity of 15,000 mice including two quarantine certified rooms.

If you would like to join the laboratory or discuss potential collaborations, please contact Alan Baxter at Alan.Baxter@jcu.edu.au. A number of possible mechanisms of funding are available, including postgraduate stipends and postdoctoral fellowships. From time to time (and this is one of those times) the Centre has vacancies for senior academic staff - if you are interested, please drop a line.

On a personal note, I have been a member of ASI since 1994 and on Council since 2005. During my presidency from 2006 - 2008, I helped continue the strategy initiated by the previous President, Phil Hodgkin, to concentrate Society resources on providing services to members. Substantial increases were made in numbers and value of travel stipends, small meeting support and revenue to regional branches. The most advanced application of this policy was at the 2008 Annual Scientific Meeting, for which all eligible applicants for a travel bursary were successful – an outcome unheard of in Australian scientific history. The response to this focus for the Society was most gratifying; Society membership rose from 823 to 934 members, falling just shy of our hoped for 1,000th member.

One of the longer term decisions made by Council at that time was to support a bid for the International Congress of Immunology in 2016. Although it seems a long way off, already a great deal of work has gone into preparing the bid, co-ordinated by José Villadangos.

My personal experience of my time on Council is that it has been most rewarding. I have had the opportunity to visit every regional branch, in most cases contributing to a regional meeting. I have enjoyed the most generous of hospitality and the most vigorous of debate. Perhaps most importantly of all, I have found my scientific family extended from Perth in the west to Wellington, 5500km to the east; from Hobart in the south to Darwin 4000km to the north. And through the whole of that territory – probably the largest of any "national" Immunology Society in the world, we have members prepared to chip in, take a chip shot, spit the chip, or just show the chip on their shoulder; all working together to help ASI support its members better. It has been an honour and a privilege to serve the membership and I cash my chips with some pride at what we have done together over the last four years.

ASI Councillors' News

N.S.W. News

The recent highlight of activities for NSW immunologists was the combined ASI NSW and ACT Branch meeting that was held at Bowral in the Southern Highlands of NSW on 3rd and 4th September. This meeting was a great success with 85 delegates attending from the north (University of Newcastle), south (University of Wollongong) and west (Children's Hospital Westmead, Westmead Hospital, Westmead Millenium Institute) of Sydney as well as numerous institutes within Sydney (Garvan, Centenary, St Vincent's Centre for Immunology, University of Sydney, University of NSW) and Canberra (John Curtin School, ANU).

The meeting was book-ended by excellent keynote presentations given by Rob Brink (Garvan Institute) and Patrick Bertolino (Centenary Institute) and in between there were 43 high-quality talks by PhD students, Honours students, research assistants and early career scientists.

We were fortunate to have generous sponsorship from Miltenyi, Jomar/eBioscience, Becton Dickinson, StemCell Technologies, 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: John Altin (John Curtin School); Runner up: Adam Collison (Uni of Newcastle); 2nd Runner up: Alexis Vogelzang (Garvan Institute). John, Adam and Alexis were awarded travel bursaries to the value of $1000, $500 and $250 respectively to defray some of the costs to attend this year's ASI conference on the Gold Coast. Celine Deffrasnes (University of Sydney) was awarded $500 for the best presentation by an early career scientist. Well done!

The meeting wasn't all just science – the evening entertainment (organised by Kylie Webster – thanks for the idea and for doing a great job) over dinner consisted of a "Pub Science" competition. Contestants had two minutes to give an overview of their research project in language that would be digestible by a very lay audience. After much deliberation, the judges awarded 1st prize to Thomas Guy (Centenary Institute) while the People's Choice went to Laura Cook (St Vincent's Centre for Immunology). Special mention must also go to Elissa Deenick (Garvan) and Daniel Chan (UNSW) for bravely stepping up to the microphone and giving it a go, and to Kylie Webster for showing us all how it's done!

This was the first meeting that I had the pleasure of organising as the ASI NSW Councillor, so I would like to thank the co-organisers – Scott Byrne, Marian Fernandez, Pablo Silveira, Simon Phipps, Kumi deSilva, Bernadette Saunders – for all their help, Gerard Hoyne for rounding up a good number of Canberran immunologists, all the session chairs and judges and, most importantly, everyone for coming along and making it an enjoyable, relaxing and successful few days. I look forward to the 2010 meeting, which will be held around the same time and at the same venue.

ASI NSW is also pleased to be a sponsor for a symposium that will recognise and celebrate the contributions (and retirement) of Professor Bob Raison (University of Technology, Sydney) over his research and academic career. Bob was a great mentor to many undergraduate and postgraduate students and has worked with many esteemed immunologists over the past ~25 years, so it is quite fitting that this symposia will feature presentations from several of Bob's former students and colleagues including Tony Basten, Alan Edmundson, Chris Goodnow, Chris Parish, Mauro Sandrin and myself. This event will take place on 27th November at UTS and all are welcome.

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

Stuart Tangye
Councillor

Sustaining Membership

ASI Inc acknowledges the support of the following sustaining members:

- Freehills Patent & Trade Mark Attorneys
- Jomar Diagnostics

W.A. News

The two major events the WA-ASI committee ran this year were an early career workshop and the Global Day of Immunology interactive lectures. The early career workshop was held on Friday 25th September at the Flying Squadron Yacht club. The invited speakers were Ranjeny Thomas and Gabrielle Belz who worked really hard for us; not only did they present their talks, they were also involved in the career session and the social event. The latter event, a 'My Generation' quiz night, was organised by the students and we found ourselves in all sorts of situations that will remain undisclosed, with the exception of Alec Redwood doing the "Locomotion" dance steps, and that image will stay with me forever! The Baby Boomers won, thanks only to the remarkable paper plane making skills demonstrated by Gabrielle; on the other hand, Ranjeny was the only participant whose plane consistently flew backwards!

The aim of the workshop was to provide a forum for local PhD students and early career post-doctoral scientists to present their research. Another aim was to gain insights into the directions that Perth-based laboratories are taking to study various aspects of immunology. We hoped the workshop would provide participants with new ideas for their research and promote collaborations. I believe the day was a success. We had 44 registrants. There were 14 talks by students and early career postdoctoral scientists, plus a 1½ hour career session that included John Finlay-Jones, Gabrielle Belz and Ranjeny Thomas on the panel. The students reported that they really appreciated career advice offered by the panel. Thanks go the organising committee: Angela Rate, Andrew Currie, Scott Cornwall, Alec Redwood, Angela Fuery, Tony Scalzo, Olivia White, Jane Allan, Kristen Wiqvist, Philip Stumbles, Laura Masters, Matthew Wikstrom and Paul McMenamin.

The Global Day of Immunology was held on September 2nd in partnership with SciTech. Sixty-nine members of the public were registered on books but more came in a bit late, so around

75 people attended. The event included interactive lectures on the generation of an immune response by Andrew Currie and myself. Members of the audience found themselves acting as dendritic cells or T cells and imitating the formation of the immunological synapse in a lymph node. We used GlitterBug (a product that fluoresces brightly under UV illumination) to illustrate the spread of infection by contact and to demonstrate correct handwashing techniques. Peter Richmond discussed swine influenza and vaccines. Paul McMenamin described autoimmunity, and Henning Johannsen discussed allergy. All of the speakers were rapidly surrounded and enthusiastically questioned by members of the audience. We received very positive reports after this event.

Finally, WA-ASI and MariaPia Degli-Espoti co-hosted a talk by Herbert Schwarz titled 'Regulation of myelopoiesis by the cytokine receptor CD137' on October 9th.

Delia Nelson
Councillor

ASI online immunology quiz

As part of the recent 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.

S.A./N.T. News

Well, this is my final report as ASI Councillor for SA/NT. My four year term has come to an end and it is time for me to hand over the baton to Dr Michele Grimbaldeston who will do a fabulous job over the next 3-4 years. Being State Councillor has been a very rewarding experience for me. I have met many wonderful scientists who are so amazingly generous with their time and totally dedicated to promoting immunology in Australasia and around the globe. I have had the privilege of being on Council with a very inspiring group of people who are the backbone behind the very successful society of ASI. One of my favourite highlights includes our annual Adelaide Immunology Retreat (AIR) which is the brainchild of Dr Su Heinzel and has allowed us to invite some very inspiring national guests; including Profs Eugene Maraskovsky, Ian Frazer, Anne Kelso, Richard Boyd and Alan Baxter. Furthermore, our local guests (Mik Petrovsky, Simon Barry, Bruce Lyons, Hamish Scott and Toby Coates) provided the students with a local network of well accomplished mentors. Since joining Council, ASI has also begun contributing to the World Day of Immunology which has allowed us to disseminate the importance of immunology to the general public. Most of all, being State Councillor has presented me with opportunities to mentor the younger students and scientists as well as to learn from those who are more successful, advanced and accomplished than I (e.g. ASI sponsored speakers). Thank you to all who supported me during my time on Council and I look forward to serving ASI in another capacity when the time is right.

Brief Report: The Fifth Adelaide Immunology Retreat (AIR) 2009 was held in Murray Bridge, 4–5 September 2009

AIR was again a huge success in 2009 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 Assoc/Prof Toby Coates from the Transplantation Laboratory, TQEH could join us as our 'local' speaker and that Prof. Alan Baxter could join us from the James Cook University in Townsville as our 'national' guest. They could not be a more wonderful, humble and easy-going couple of guests. Alan and Toby's generosity of their time exemplifies what wonderful role models they are for us all.

Prof. Alan Baxter

I would like to congratulate all the students and research assistants for outstanding presentations. Judging was almost impossible but CONGRATULATIONS go to Dr Daniel Thomas for best PhD student presentation (winning flights and early registration for ASI National Conference at the Gold Coast, December 2009), Miranda Coleman for best Honours presentation (winning $100) and Kiwi Sun for best presentation by a research assistant (winning $100).

It is an absolute honour to run these events but it would not be at all possible without financial support (for AIR 2009 we would like to sincerely thank Miltenyi Biotech, Sapphire Biosciences, Enzo Life Sciences and Australian Biosearch). As important, a big thank you to the organising committee for helping pull it all together (Cara Fraser, Erin Lousberg, Sarah Haylock-Jacobs and Kiwi Sun) and we are already looking forward to AIR 2010!

See you at a seminar and enjoy the annual meeting! Adios amigos

Claudine Bonder
Councillor

AIR2009 participants

Victorian News

The Immunology Group of Victoria
A branch of the Australasian Society for Immunology

This year was a successful one for the IgV branch. There was a full list of events supported by IgV and they were all well attended.

First up there was the Careers Development Workshop, held in May of this year and organized by student members of the IgV committee, Evelyn Tsantikos and Sarah Oracki. This was a tremendous success with PhD students and junior postdoctoral fellows hearing from more senior colleagues the sort of milestones and approaches that are required for success as an independent researcher in the fellowship and grant funding schemes.

In the middle of the year IgV held two masterclass workshops on basic and clinical immunology. For the basic immunology masterclass, organizers brought together leading local researchers in the areas of Dendritic Cell biology (Ken Shortman), cytotoxicity (Joe Trapani), T regulatory cells (Ian van Driel), B cell differentiation (Lynn Corcoran), structural immunology (Jamie Rossjohn) and immunological memory (myself). For the clinical immunology masterclass, there were experts talking about allergy (Jenny Rolland), autoimmune diseases such as diabetes (Tom Kaye) and coeliac disease (Bob Anderson), immunodeficencies and autoimmnity caused by B cell defects (Fabienne Mackay), infectious disease (malaria, Ross Coppel) and immune regulation (Paul Hertzog). Both days were a tremendous success with the events over subscribed. This was in part due to the quality of speakers and their willingness to present an overview of the current state of their respective fields. This meant that those attending were brought up to date with the cutting edge research going on, including the controversies and what important questions still remain. I'd like to take this opportunity to thank the invited speakers for helping make the masterclasses such a wonderful event. Furthermore, on behalf of IgV members, I would like to congratulate members of the IgV committee, particularly John Stambas and Rose Ffrench, for the organizing such wonderful events and making the masterclass series such a success.

The masterclasses were quickly followed up with the annual IgV-Miltenyi Winter Seminar presented this year by Professor Babara Fazekas. The topic of her talk was "Dendritic cell initiation and regulation of the CD4+ T cell response". IgV members were able to spend time with Prof. Fazekas talking about aspects of their research during the day. The seminar presented by Prof. Fazekas generated a lot of interest and discussion that was carried on into the reception held afterwards. I'd like to thank Prof. Fazekas for taking the time to come to Melbourne, spend time with some of our both senior and junior researchers, and then present a talk that stimulated much discussion.

Finally, the year was capped off with the annual IgV retreat at the Yarra Valley Conference Centre. It wasn't until we got there that were learned how close the Black Saturday fires earlier this year came to claiming the conference centre. Prior to the start of the meeting we were briefed on how close the fires came. It was the efforts of the owner, his son and his son's friends that managed to save the buildings as the fire that had claimed Kinglake came over the ridge. During the conference, there was the constant reminder of how close it came with burnt trees visible only metres away.

Scientifically, the meeting was a tremendous success, partly due to the fantastic talks given by invited speakers. It was kicked off with Lyn Corcoran (WEHI) giving a wonderful keynote presentation on the Sunday night, followed up with a great talk from Brent McKenzie (CSL Ltd). On the Monday, the 2005 ASI Young Investigator, Tri Phan, gave a terrific talk about the anatomy of B cell activation using 2-photon microscopy. Other invited speakers included Axel Kallies (just awarded an ARC Future Fellowship) speaking about transcriptional regulation of T cell immunity, Steve Rockman (CSL Ltd) who examined the latest evaluation of adjuvants for Bird Flu vaccines, Sumone Chakravartispeaking about her new data regarding the role of NKT cells in EAE, and David Izon from St Vincent's talking about where T cells come from. The high quality of talks was matched on Tuesday with presentations from Meredith Okeefe on bone marrow dendritic cells and Steve Gerondakis about transcription factor control of T-reg development.

Of course, all those students and junior postdocs selected to give talks did a fantastic job. A lot of the dinner conversation was about how high the presentation standard was for those still learning the ropes. The enthusiasm and command of their topics was matched by the enthusiasm of the discussion generated after the talks. The involvement of all those who attended, particularly the students and junior postdocs, is really what makes the IgV annual retreat such a success.

It was a difficult decision but the invited speakers were asked to judge the best student presentations and questions with the winners' bursaries awarded to Michelle Aston (Brodnicki Lab, St Vincent's Institute), Danika Khong (Boyd Lab, Monash Uni), Sarah Oracki (Tarlinton Lab, WEHI), Sarah Overall (Gleeson Lab, Bio21/Uni Melb) and Annie Xin (Kallies/Nutt Lab, WEHI).

Congratulations to all the winners.

Finally, it remains to thank all of the IgV committee members for their continued support this year. Remember, we are always looking for new members, particularly students, to contribute in someway. I am sure that the success we have seen this year will be continued in 2010.

Steve Turner
Councillor

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.

Upcoming Lectures & Conferences

9th International Conference on New Trends in Immunosuppression & Immunotherapy
February 4–6, 2010
Geneva, Switzerland
http://www2.kenes.com/immuno/pages/home.aspx?ref2=db1

BIT 2nd Annual International Congress of Antibodies 2010 (ICA-2010)
March 24–26, 2010
Beijing, China
http://www.bitlifesciences.com/ica2009

BIT Life Sciences' Annual World Congress of Vaccine – Next Generation Vaccines
March 24–26, 2010
Beijing, China
http://www.bitlifesciences.com/wcv2010/default.asp

III World Asthma & COPD
April 24–27, 2010
Dubai, UAE
www.wipocis.org
Email: info@wipocis.org

7th International Congress on Autoimmunity
May 5-9, 2010
Ljubljana, Slovenia
autoimmunity@kenes.com
www.kenes.com/autoimmunity

Immunology 2010
97th Annual Meeting of The American Association of Immunologists
May 7–11, 2010
Baltimore, USA
www.IMMUNOLOGY2010.org

BIT's 1st Annual World Congress of Immunodiseases and Therapy
Theme: Boosting Health and Vitality
May 15–17, 2010
Beijing, China
http://www.bitlifesciences.com/WCIT2010/Program.asp

BIT Life Sciences' 1st World Congress of Virus and Infections-2010 (WCVI-2010)
July 31–August 3, 2010
Busan, South Korea
http://www.bitlifesciences.com/wcvi2010

XI International Congress in Reproductive Immunology: Reproductive Immunobiology at the Great Barrier Reef
August 15–19, 2010
Cairns, Queensland
www.icri2010.org
Chair of local organising committee:
sarah.robertson@adelaide.edu.au

40th Annual Meeting of the German Society of Immunology (DGfI)
September 22–25, 2010
Leipzig, Germany
immunologie2010@conventus.de
www.immunologie2010.de

8th Asia Pacific Congress of Allergy, Asthma and Clinical Immunology 2010 (APCAACI 2010) – From Bench to Bedside: Evidence-based Practice
November 6–9, 2010
Singapore
admin@apcaaci2010.org
http://www.apcaaci2010.org/

Travel Award Conference Reports

2nd European Congress of Immunology, Berlin, September 2009

Marian Turner, Walter & Eliza Hall Institute, Melbourne

In September 2009 I travelled to Berlin for the 2nd European Congress of Immunology. The ECI is held every three years, and is designed to replace the annual meetings of each individual country's Immunology Society in that year. Approximately 5000 delegates attended this year's ECI, and Australia was well represented with 48 abstracts. There were four concurrent sessions each morning and up to 16 concurrent sessions each afternoon over three days. The meeting ran smoothly and presenters kept well to time – my only criticism of the organisation was that all B cell sessions were relegated to tiny rooms, which inevitably overflowed!

The meeting presented an excellent mix of lymphocyte, innate, mucosal, infection and clinical immunology. The topics were well confined to their respective sessions which was useful for targeting which session to go to, but meant there was little serendipitous knowledge acquisition. There was a poster session straight after lunch each afternoon – only one hour for the hundreds of posters presented each day, but at least it got a devoted time slot. The posters were well collected by subject which made finding relevant abstracts surprisingly easy, and I had a handful of people seek mine out to discuss with me.

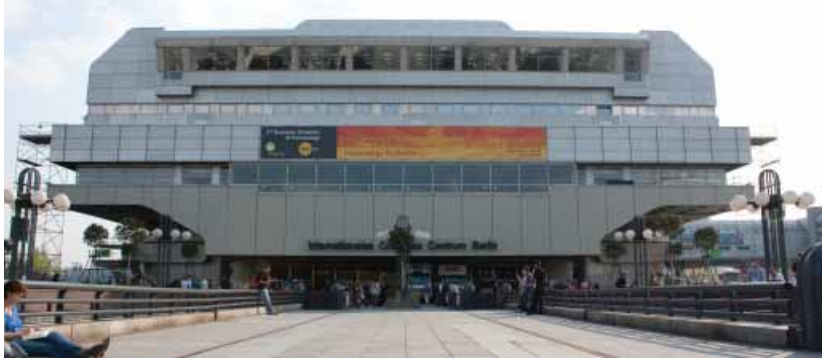
Lunchtimes were filled with a variety of "bonus" sessions, mostly focussing on new technologies. I attended the session on Women in Science held during one lunchtime. Just as we are in Australia, the European societies and institutes are trying hard to increase the number of women progressing to higher career levels in science, and the same themes of role models, networking, flexible working hours, flexible grant funding and affordable child care are being discussed. It was slightly disheartening to hear few novel ideas, although it was good to hear that the UK Wellcome Trust senior fellowships are now up to a 50:50 gender ratio. Two concepts that I found interesting were (a) the need for agencies and individuals to be "gender blind" and (b) the comment that no-one should work full-time for only part-time pay. The session included a lively talk by Fiona Powrie, this year's winner of the Ida Askonis Prize, who added a personal touch to her serious talk with an amusing anecdote about a child in tears over a missing hamster 10 minutes before her taxi was due to take her to the airport for this meeting.

Some scientific highlights of the meeting for me included:

- Dirk Busch's (TU, Munich) presentation of his results on the plasticity of mature T cells – that a single transferred naïve CD8+ T cell into a RAG KO host can mount an effective response to Listeria and clear the infection within five weeks.
- Arturo Zychlinsky's (MPIIB, Berlin) description of "netosis", a new form of cell death distinct from apoptosis or necrosis, that occurs in neutrophils when they excrete neutrophil extracellular traps. Zychlinsky's most recent work on NETs was to characterise their protein composition – they were found to be made up of chromatin, which led to the exploration of whether a neutrophil excretes its own DNA. They indeed do, and the formation of these effective funghi-engulfing traps leads to death of the neutrophil.
- Klaus Rajewsky's (Harvard) finding that the PI3K pathway is necessary for the tonic BCR-mediated signalling that is essential for survival of mature naïve B cells. Rajewsky generated 15 transgenic mouse lines with Cre-dependent simultaneous BCR knock out and transgene (including IKK, MEK, Rac genes) expression to find that P13K is the candidate. Apparently he's happy to share these mice if anyone wants them. P13K expression completely rescues B cell death, and B cells in these mice develop, localise and function normally. They remain dependent on BAFF, however, supporting the knowledge that both BAFF and BCR signalling are required for mature B cell survival.
- Caetano Reis e Sousa's (Cancer Research UK) description of DNGR-1 (Dendritic cell NK lectin Group Receptor 1), a receptor on CD8alpha+ DC and pDC that binds a ligand that is constitutively expressed in all cells but sequestered in live cells and only revealed when the cells die. Thus, these DC are specifically activated when this receptor senses dead cells, helping to explain the immunogenicity of dead cells. Reis e Sousa interestingly linked his finding to Polly Matzinger's old "danger signal" hypothesis.

A final important session of the meeting was our lunchtime bid to present Melbourne as a venue for the 2016 ICI. José Villadangos did a fantastic job organising the lunch, which was hosted by the Australian ambassador to Germany and was well attended by Australian meeting delegates and many conference dignitaries and invited speakers. Hopefully our beautiful images of Melbourne and the Australian wine will have helped the bidding process, although I'm not sure that the offer of VB will have swayed many.

All in all, the ECI meeting was somewhat overwhelming but also a fantastic showcase of international immunology. After the conference I met with Hedda Wardemann at the Max Planck Institute for Infection Biology in Berlin, Jean Pieters at the Biozentrum in Basel and Thomas Brocker and many of his colleagues at the LMU in Munich to discuss potential post-doc projects. I'm still working on the final decision of where to go, but being able to visit these labs was an invaluable help and I'm sincerely grateful to the ASI for supporting me by funding this trip.



The 14th Vitamin D Workshop
October 4 – 8, 2009, Bruges, Belgium

Shelley Gorman, Telethon Institute for Child Health Research, Perth

So I wanted to learn a bit more about the way that vitamin D modulates the immune system, and set off to do so by travelling a torturous 26 hours from Perth, Australia to Bruges, Belgium, which included three international flights and two train rides to attend the 14th Vitamin D Workshop. For this trip, I had prepared myself by watching the very instructive movie *In Bruges* and learnt a smattering of French so I could pretend to be less of a tourist than I actually was. Picturesque Bruges is located on the Western side of Brussels, where the streets are lined with cobblestones, and most of the locals speak Dutch. So much for my French! (FYI – Bruges is the French spelling, while Brugge is the Dutch version.)

I had a few days to see the sights before the conference started and, luckily for me, the weather was fine so I hired a little bike (with only three gears!) and rode to a nearby village of Damme through the very green Belgium countryside along a long stretch of canal lined with trees. My few days before the conference coincided with the weekend and also a huge influx of day-trippers from around Europe, who I fought with constantly to see some of the more touristy sights in Bruges, including the Groeningemuseum (filled with art from the Flemish Primitives) and the Choco-Story Museum (filled with chocolate facts and a bit of chocolate too).

Then the conference began and there was really an enormous variety of vitamin D research on exhibit, not only into the effects of vitamin D (both in deficiency and excess) on innate and adaptive immune responses, but also the effects of this hormone on different body systems including bones, intestine, heart, muscle and the brain. It was great to get a more systemic view as to importance of vitamin D throughout the body. There were no concurrent sessions during the conference, and while I worried that sessions such as those on osteoporosis would have little relevance to my research, there were often little gems of immunology-related information within each talk that highlighted the influence that immune cells and related processes have in many different disease settings.

But of course, the immunology sessions were great and, in particular, a wonderful talk by Chantal Mathieu ("Regulation of the immune system by 1,25-dihydroxyvitamin D_3; is this a two-edged sword?") from Belgium (Catholic University of Leuven) was especially helpful at putting vitamin D and adaptive immunity in perspective. Some other great talks included:

* Daryl Eyles' (University of Queensland) talk on the effects of vitamin D deficiency *in utero* on immune organ morphology and function in adult rats.
* Martin Hewison's (University of California, Los Angeles) plenary on the ability of vitamin D to regulate antimicrobial production for the modulation of both innate and adaptive immunity.
* Bruce Hollis' (Medical University of South Carolina) very controversial talk on determining the safety of supplementation of pregnant and lactating women with substantially higher quantities (>10-fold) of vitamin D_3 than that currently recommended by health authorities in most countries.

I presented a poster of some of our recent vitamin D-related research at the conference. We are currently researching the effects of vitamin D applied to the skin on immune responses, with a focus on dendritic cell and T cell responses. In particular, we find that topically applied 1,25-dihydroxyvitamin D_3 subverts the ability of CD11c+ cells purified from the skin-draining lymph nodes to prime Th1/Th17 immune responses *in vivo*. These results seem to be dependent on the ability of vitamin D-modified CD11c+ cells to increase the suppressive activity of CD4+CD25+ regulatory T cells and to also switch the immune response towards a Th2 phenotype. In comparison to some other conferences I have been to, the poster sessions were very busy, and for two hours I was bombarded with questions and lots of helpful suggestions for the future.

The vitamin D workshops only occur once every three years, and perhaps because of this there is a very supportive and collegial atmosphere, which made networking (almost) a pleasure. In particular, it was great to meet so many other Australians who had made the long trip. Some other highlights of the conference included:

* The conference dinner, which was held in the ancient (1240 AD) Bell Tower and had a medieval theme.
* The heated debate on how much vitamin D we need for not only maintaining calcium homeostasis but also preventing cancer and optimising immune function.
* A visit to the apothecary in the Memling museum, one of the oldest hospitals in Europe and now a medical and art museum.

I finished my trip by visiting Chantal Mathieu's laboratory at the Catholic University of Leuven, a short 20-minute train trip east of Brussels. I was able to give a seminar of my research to this group, who probably are the leading group in Europe investigating the effects of vitamin D on immunity particularly with respect to effects on type-1 diabetes. We have now some excellent feedback, and new friends in Belgium, who we hope to collaborate with in the near future.

Overall, the trip was a very enjoyable and interactive experience, which allowed me learn a lot more about vitamin D and the scientists that research it throughout the world. I am looking forward to going to the next vitamin D workshop in 2012!

2nd European Congress of Immunology
13-16 September, Berlin, Germany

Cara Fraser, Experimental Therapeutics Laboratory, Hanson Institute/IMVS, Adelaide

The Australasian Society of Immunology postgraduate international travel grant gave me the opportunity to attend the second European Congress of Immunology (ECI) which was held from 13 to 16 September in Berlin. The event, held in Berlin's International Conference Centre (one of the largest conference centres in the world), attracted over 5000 delegates. I found it interesting to learn that, 20 years earlier, the Seventh International Congress of Immunology (ICI) was hosted in this same venue in what I can only imagine would have been a very different Berlin, as it was then divided by the Berlin wall.

The opening ceremony gave a good introduction into the conference. One of the points raised was the responsibility of immunologists to communicate the importance of this field to the general public. This was of interest to me as I had participated earlier this year in organising the South Australian "Day of Immunology". A copy of a book compiled by the Japanese Society for Immunology to simplify immunology into lay language was available to all attendees. I think that providing these resources to scientists is a great idea as immunology is a particularly hard area to communicate to lay people and this book will help me to be able to simplify my work when explaining it in the future.

The large size of the conference meant that there were always interesting presentations to attend. In fact, there were so many that at times it was difficult to decide which session to go to. The broad spectrum of topics presented during the conference meant that I was able to attend many presentations in my current area of interest, tumour immunology, as well as presentations that could be useful for my future postdoctoral position, which is in the field of infectious diseases.

One of the presentations I found most useful for the completion of my PhD thesis was given by Professor Kingston Mills from Trinity College Dublin who spoke on the topic of inhibiting regulatory T cells to promote immunotherapy via vaccination. His laboratory had performed experiments in the same tumour model I have worked with throughout my PhD and presented data demonstrating that the elimination of regulatory T cells could reduce the number of lung metastases. This was particularly interesting to me as I had performed a very similar experiment but did not obtain the same result. Intrigued about the differences between our experiments, I sought out Dr Neil Marshall, a post-doctoral researcher from the same laboratory, at his poster. Luckily for me, he had actually been involved in the experiments and was able to discuss, in detail, the protocols they had used. The information I learnt from this, and the correspondence that led on from it, saved me from doing additional experiments in my PhD.

The highlight of the conference for me was presenting my poster and having several people come to talk to me who were really interested, and had specifically sought out my poster. This was great as I could discuss my work with others who were either doing similar experiments, working with similar drugs or analysing similar concepts from a clinical point of view. This gave me fresh ideas as well as personal communication references to add to my thesis. I had a very valuable conversation with one researcher who had made a very similar observation to a perplexing result I had obtained. Although he was also unsure about the mechanism responsible, it was good to get some more clues into the pathways that might be involved. Following the conference he kindly sent me a copy of his unpublished manuscript so that I could get a more in depth understanding of his work to cite in my thesis.

There were also disappointing aspects of the conference as a result of its large size. It was very difficult to change between sessions, as often lecture theatres were full, which meant that I missed out on a few presentations that were of particular interest to me. In addition, the large size of the conference made it difficult to network with people, due to the large degree of anonymity. I was also disappointed in a number of presentations I attended where much of the results presented were already published and familiar to me.

On a personal note, it was fantastic to have the opportunity to visit Berlin which is an extremely interesting city, with so much history to learn about. I didn't have much time to sightsee but I enjoyed a free walking tour around Berlin which showed me the key landmarks and taught me about Berlin right from its origin as a 'swamp city' through to World War I and II and the Cold War. A particular novelty was seeing the Brandenburg Gate and I have included one of the many photos I took of it.

Following the conference I made my way to the UK where I visited the laboratory of Professor Freda Stevenson at Southampton University. This is one of the leading laboratories the area of DNA vaccines for cancer immunotherapy. When I arrived they were very interested to learn more about my work, which studies the immunomodulatory effects of the tyrosine kinase inhibitor dasatinib, as they are soon to start clinical trials vaccinating patients treated with the tyrosine kinase inhibitor, imatinib. I presented the majority of my PhD results and it was good to get some outside opinions on my observations.

After my visit to Southampton, I continued on to Wales where I visited the BTG manufacturing facility and laboratories. It was a lucky coincidence that I was travelling to the UK as sometime after organising my trip I got a post-doctoral position (starting upon completion of my PhD) working in collaboration with the

pharmaceutical company BTG. So it was a great opportunity to visit their UK facility and see first-hand the extensive technical resources for protein analysis that I can take advantage of during my post-doctoral position. It was also useful to meet with people who I would be communicating with over the following year for technical expertise. The laboratories were in the quiet countryside, which was a nice change from the cities I had spent most of my time in. I also presented my PhD results and a research plan for the following year's work.

I then returned to London with only one and a half days to see as much as possible. In just one day I visited the Tower of London, St Paul's Cathedral, Big Ben, the Houses of Parliament, Westminster Abbey, walked through the state rooms in Buckingham Palace and finished the day with a sunset ride on the London Eye.

I would like to thank the ASI for awarding me this travel grant which has given me the opportunity to widen my horizons both personally and professionally. This trip enabled me to make several contacts with scientists from abroad and learn invaluable information that couldn't be gained from the literature. This has been very useful for the completion of my PhD thesis and has also given me a great start to my future post-doctoral position.

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 NOW YOU COULD WIN $200 FOR THE BEST ARTICLE PUBLISHED IN THE NEWSLETTER!**

ASI Student Page

Another successful ASI annual meeting was held on the Gold Coast. This success was certainly holistic and 24/7, because beyond the walls of the highly beneficial conference workshops, it was discovered that scientific learning continued. Therefore, in the interest of ongoing professional development, I would like to share with you those 'real world' scientific phenomena that can be experienced on that world famous tourist strip: Surfers (Science) Paradise.

The most obvious science-based option would be to attend an open lecture at either the Gold Campus for Griffith or Bond universities. However, because we will be there during semester break, 'sadly' we must look outside the box to find our science fill.

Now, as diligent researchers it is essential to activate the brain's scientific segment as soon as possible after the sun has started shining on those golden sands ... although activation needs to be in a gentle, thoughtful manner. Consequently, my first suggestion is for you to start the day with a simple early-morning experiment. For example, try floating in your hotel pool, followed by a dip in the waves, to determine fluid which you think is most dense. To gain more from this particular experimental task, open your eyes under the water to clarify which liquid has the higher chlorine concentration!

After a dip in the water you can head to one of the main theme parks for some research for further experimentation. A great starting place would be DreamWorld. In this magical, yet highly scientific park you can experience centripetal force, with the theory of acceleration being tested on the many rides.

Alternatively (or, as well), visit MovieWorld's stunt shows. These will give you an insight into pyrotechnics and you can see for yourself all the physics involved in the saying 'lights, camera, action!'

With more time in hand, go next-door to Wet 'n Wild and discover how water eases friction and the wave pool aptly demonstrates transverse wave motion. Although, a word of local advice: make sure to apply plenty of sunscreen or you will soon find out about the effects of UV on skin!

The theme park SeaWorld would also be a valuable addition to your scientific research venture. This scientific hub will fulfil your inner marine biologist, plus give you more marine insightfulness for the next day's first-hand sea experience, which of course is that all-important scientific 'balance in motion' surfing session.

Fortunately, for hardworking, conscientious research students, science doesn't hide away once the sun goes down and the neon (fluorescent!) lights come out on the Gold Coast. While researchers aren't normally fond of statistics, a night at the casino might provide a valuable numerical understanding. As you experiment with the casino's numbers and probabilities, don't forget that you need to repeat these experiments a number of times to get a statistically significant result!

Another evening's work activity on the Gold Coast could be one of transferring laboratory techniques to authentic settings. For example, those many hours spent ficolling blood will come in handy when pouring drinks – see if you need to overlay or underlay that cocktail – and, of course, practice makes perfect!

Then, just before another highly scientific day ends and ahead of another glorious Gold Coast sunrise, make sure you experience the biomechanics of dancing at one of the many clubs on Cavil. Once you have completed this essential experiment you can head off back home, arms linked with fellow scientists, satisfied that you have all had your science fill, while swapping research notes from the day and together, as you walk, testing your immune system with one of the Gold Coast late night kebabs!

So, with all this information in hand, I look forward to catching up with you at the next ASI event or in my local play (work) ground of Surfers (Science) Paradise.

All the best for 2010.

Imogen Gillions
ASI Student Representative 2009