NEWSLETTER

Australasian Society for Immunology Incorporated

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Innate Immunity in the Sunshine State

Matthew Sweet
Institute for Molecular Bioscience, University of Queensland

I returned to Oz after a post-doc in "sunny Scotland" about 10 years ago. Before leaving Australia my wife and I had a vague (very vague) idea that it would be nice to end up in Melbourne when we returned, but I guess counting more than 100 days in a row of Glasgow rain was enough to send us straight back to Brisbane whence we came. Since 2007, I've had my own research group in the Institute for Molecular Bioscience at the University of Queensland, which focuses on innate immunity in the context of inflammatory pathways and responses to Gram-negative bacterial pathogens.

Currently the lab is comprised of three post-doctoral researchers, five PhD students, three research assistants and two honours students. Our primary interests relate to the signalling pathways and target genes downstream of Toll-like Receptors, with the view that basic research in this area will provide insights into infectious and inflammatory disease processes. Kate Schroder's recent return from a CJ Martin Fellowship in Jurg Tschopp's lab in Switzerland has also added Nod-like Receptors and the inflammasome to our pattern recognition receptor repertoire. There are three distinct research themes within the group: TLR signalling/TLR-mediated inflammation (Melanie Shakespear, Divya Ramnath, Greg Kelly, Daniel Hohenhaus); macrophages and Gram-negative bacterial pathogens (Steve Broomfield, Kolja Schaale, Nilesh Bokil, Juliana Ariffin, Tam Nguyen); and Kate Schroder's recently established team working on inflammasome-mediated neutrophil activation (Kate Schroder, Kelly Masterman, Alina Zamoshnikova,

cont. p4

LtoR: Kaiwen Chen, Steve Broomfield, Juliana Ariffin, Kolja Schaale, Nilesh Bokil, Matt Sweet, Alina Zamoshnikova, Kate Schroder, Melanie Shakespear, Divya Ramnath, Daniel Hohenhaus, Tam Nguyen, Kelly Masterman

Dr Matthew Sweet

2012 Renewal Enclosed

DO NOT DISCARD – RENEW EARLY

(RECEIPT ENCLOSED FOR AUTOMATIC RENEWALS)

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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

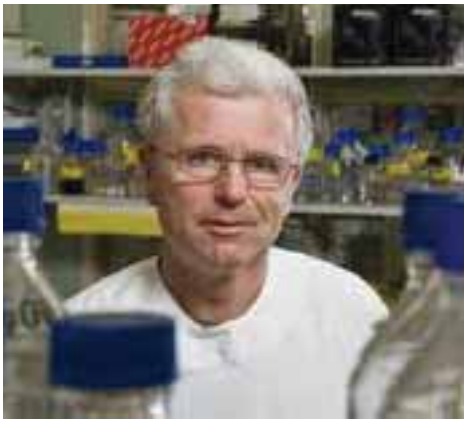
I must start by thanking the outgoing ASI Council Members for their fantastic contribution to the Society. In particular, Susanne Heinzel deserves a special mention; the role of Honorary Secretary is one that is easy to under-appreciate from the outside. I have been very impressed by Susanne's capacity, endless good-humour and steady hand. On behalf of the Society, I extend a warm welcome to the incoming members Dale Godfrey (Vice President), Rose Ffrench (Hon Secretary) and Marcel Batten (NSW Councillor). The Society could not function without so many capable people giving their time and energy – thank you!

We have another bumper Newsletter to finish off the year with highlights that include a snap-shot of Matt Sweet's Lab; the announcement of the *Immunology and Cell Biology* Publication of the Year Award (pp 6–7); an obituary to Nobel Laureate Ralph Steinman (pp 8–9); an article describing an event held to honour Jacques Miller and the 50th anniversary of the discovery of the role of the thymus (pp 10–11); an article describing the latest advances in flow cytometry (pp 18–19); and, not least, a swag of travel reports and our publication list.

In breaking news, congratulations to Andreas Strasser, the winner of the prestigious Victoria Prize for 2011 – Victoria's highest honour for science. Andreas was awarded the $50,000 prize in recognition of his groundbreaking work.

To quote from the press release announcing his award: "By exploiting mouse genetics Professor Strasser and his team in 1989 were the first to show that abnormalities in the control of apoptosis can cause autoimmune disease or cancer and prevent tumour cells from responding to anti-cancer therapy. In doing so, he revealed the molecular mechanism fundamental to immune tolerance as described by Sir Frank Macfarlane Burnet who was awarded the Nobel Prize in 1960 for this work.

Since then he has gone on to identify several other critical components of the cell death mechanism and uncovered their functions in health and disease. These include the discovery that mammalian cells have two distinct signalling pathways that lead to apoptosis and that the BH3-only protein Bim is essential for the death of cells during their development. This research underpins current thinking in basic cell biology and biomedical research. It also has major implications for new therapeutic strategies for cancer, autoimmune and degenerative diseases."



Professor Andreas Strasser

The winner of the best article of the year is usually announced in the December issue but the standard has been so high this year that I am still trying to make a decision as to who will receive the $200, so you will have to wait until the March issue to learn the outcome.

Finally, thank you to all of our contributors for the year and I wish everyone a safe and relaxing holiday season.

Simon Apte

ASI STUDENT NEWS

Hi all,

This will be our last instalment for the ASI newsletter as the student representatives for the ASI Annual Meeting in Adelaide!

In September the Adelaide branch of the ASI held the 7th Annual Immunology Retreat (AIR-7), which was held at the picturesque Warrawong Wildlife Sanctuary. It was a weekend full of great local science and an opportunity to meet fellow young immunologists from Adelaide. Again, we would like to thank our interstate speaker Dr Jose Villadangos and local speaker Dr Michele Grimbaldeston for sharing their scientific journey with us. Apart from the scientific presentations, we had a blind wine tasting session and wild-life guided night walk. For a more details, including the local prize winners, please see Michele Grimbaldeston's report in this newsletter!

The bottles all set up for the blind wine-tasting

It is approaching crunch time with only a few weeks to go until the 41st meeting of the Australasian Society for Immunology and organisation of the social activities, especially the student function, is in full swing. We are excited to announce that we have sold out all Student Function tickets with over 90 participants expected. A/Prof. Simon Barry is our quiz master for the night and we are all looking forward to a night full of fun, networking and the odd drink! The weather will be perfect and there is some talk of a Fun Run around the River Torrens during the meeting. We hope you will enjoy the SA wine and weather. Thank you all for taking the time to read our updates, as I know a PhD student's time is very precious!

We wish the early career researchers the very best for the coming years and hope to meet some of you in December and at future ASI events!

Kate Parham and Kiwi Sun

Innate Immunity in the Sunshine State (cont)

Kaiwen Chen). In addition, I collaborate extensively with Kate Stacey (also at the University of Queensland), who also has a major interest in inflammasome-dependent innate immune activation.

The Institute for Molecular Bioscience is an amazing place to work. It houses 34 research groups covering a bewildering array of biological systems, approaches and technologies, and we are truly spoilt by incredible facilities and infrastructure support. It's like being a kid in a candy shop!

I have to say that the invitation to put an article together about myself and the lab filled me with some amount of dread. Fortunately, however, I have some talent in that most useful of arts, delegation. Everyone has a story to tell, so I have asked a few people from my lab to give you an overview of how they came to end up working with me, and what research projects keep them lying awake at 3am. In addition to their own stories, here's a snippet on each of the five people profiled: One has climbed Mt Everest, one interviewed for a position with me over the phone from afar whilst dressed in pyjamas, one is routinely attacked by a vicious magpie every time he gets on his bike to ride to work, one is an avid bird-watcher who enjoys scrutinizing the wild life with a pair of binoculars at hand (not sure if he routinely watches said daily magpie attack), and one excels at fancy dress (a Geisha and Ziggy Stardust were particular highlights). On the latter point, I have to admit that I myself have a penchant for a good fancy dress party, and am quite proud of my track record in this area; past efforts include Nana Mouskouri, Monica Lewinsky, the Queen Mother and Marilyn Monroe to name but a few. I live in hope that a local ASI organizing committee will one day take on the task of co-ordinating a themed fancy dress dinner at the annual ASI meeting … And now, introducing a few members of my group:

Dr Kate Schroder: CJ Martin Fellow

"Although I went to university with the idea of doing Maths (yes, what a geek!), during my studies I quickly became fascinated with Biology, and Immunology in particular. So I decided to take the road travelled in enclosed footwear instead of the road travelled in no footwear at all, and embarked on a career in Immunological research. My past and current research interests are the interactions between host and pathogen during the initial stages of infection and the development of inflammation. My PhD studies (2002–2005) with David Hume investigated cross-talk between innate immune signalling pathways (cytokines and toll-like receptor ligands) in macrophages. My subsequent postdoctoral position (2005–2008), focused on transcriptional programs triggered by macrophage differentiation and toll-like receptor ligation. Simultaneously, I was heavily involved in investigating various aspects of macrophage biology as part of a large international consortium, FANTOM4. I joined Jurg Tschopp's group in Switzerland in 2009 on an NHMRC CJ Martin Fellowship, to learn about another innate immune signaling pathway, 'inflammasomes'. Inflammasomes are molecular machines that control the activity of caspase-1, to regulate cytokine production and innate immune system activation. I returned to Australia earlier this year, and have established a semi-independent group within Matt Sweet's laboratory. My team is investigating the signalling pathways engaged by characterised inflammasomes, and their protective roles during *in vivo* infection. We are also characterising the function of novel candidate inflammasomes during infection and hereditary inflammatory disease."

Dr Kolja Schaale: Post-doctoral Researcher

"As a former student of the 'Molecular Life Science' program at the University of Lübeck in Germany, my research interests have been focused early on upon cellular and molecular processes in the context of inflammation and infection. During my graduate studies at the Research Center in Borstel I was dealing almost exclusively with pathogen-macrophage interactions in the context of *Mycobacterium tuberculosis* infections. Specifically, my PhD studies focused on the elucidation of pathogen-induced pathways driving the expression of Wnt-family member proteins, description of Wnt-induced signaling pathways in macrophages and determination of the importance of Wnt and its pathways for inflammatory processes. As a new member of the Sweet group, I am now transferring my expertise in the field of intracellular pathogens to infections with uropathogenic *E. coli* (UPEC), which is able to reside in intracellular reservoirs to evade host immune responses, as well as antibiotic treatment. Special attention is being paid to the role of macrophages, which have so far been notoriously/habitually neglected in UPEC infections."

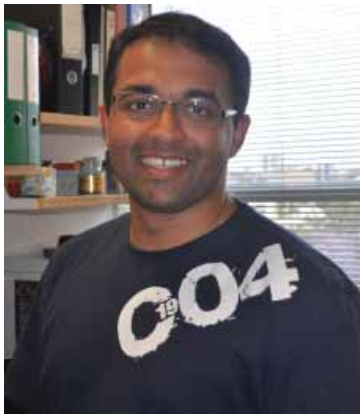
Dr Steve Broomfield: Post-doctoral Researcher

"Having been fascinated with science at school and spending my time investigating various insects and assorted bugs in my backyard as a child, I began a Bachelor of Science in Biology at Murdoch University in Perth, Western Australia (after initially having a stint in the defence force). However, I quickly realized I was keenly interested in the application of the biological sciences to industry and medicine and subsequently changed my degree to Biotechnology, completing honours in Biomedical science. Following a period of time working as a research assistant in the field of tumour immunology at Sir Charles Gairdner Hospital in Perth, I completed my PhD investigating the effect of toll-like receptor 7 ligands on tumours in a mouse model of mesothelioma. Currently I am working as a post-doc in the Sweet laboratory at the Institute for Molecular Bioscience, investigating macrophage autophagic antimicrobial responses to *Salmonella typhimurium*, amongst others. This relatively new field of autophagy research, which is involved in a number of key cellular processes and diseases, is both exciting and challenging!"

Melanie Shakespear: PhD student

"I've been part of the 'Sweet-est' group at the Institute for Molecular Bioscience since 2006. My interest in science was sparked during high school Biology, helped by an encouraging teacher who made the subject interesting and fun. I did a Bachelor of Biotechnology at the University of Queensland followed by honours at the Diamantina Institute before heading off to London where I worked as a research assistant. I'm currently finishing off my PhD thesis, which focuses on characterising the role of histone deacetylases (HDACs) in the TLR4 pathway in macrophages. More specifically, I'm interested in identifying HDACs that positively regulate TLR4-inducible inflammatory responses as we hope this will enable new approaches to anti-inflammatory drug design (given that broad-spectrum HDAC inhibitors are already used clinically as anti-cancer drugs). Life is pretty hectic right now as I juggle the final two chapters of my PhD thesis, as well as my newborn daughter!"

Dr Nilesh Bokil (MBBS): PhD student



The joy and beauty of science was instilled in me from a very young age. I was fascinated by the inner workings of the human body and this led me to medical school at M.S. Ramaiah Medical College (Bangalore, India). Though I enjoyed the clinical work, I had a nagging desire to do research. After successfully completing my medical training and working in the UK and in India, including a stint as chief resident in the department of emergency medicine, I decided to satiate my desire for research. I undertook a Master of Biotechnology program at the University of Queensland. As part of the course I had the opportunity to get my hands dirty in two lab-based projects, one with A/Prof Kim Summers and the other with Dr Matthew Sweet and, once I started generating results, I was hooked. My primary PhD project aims to understand the differences between human and mouse macrophage antimicrobial responses to infection. My project involves the study of a TLR-inducible zinc transporter and zinc in human macrophage antimicrobial responses to *Salmonella typhimurium*. In addition, I also study the role of macrophages in the pathogenecity of chronic urinary tract infections caused by uropathogenic *E. coli*. In addition to Matt (my primary supervisor), Dr Kate Stacey and Prof. Mark Schembri act as co-supervisors for my PhD studies. When I am not in the lab slaving away to satisfy the whims of my supervisor, you will find me either playing sport, bush walking or stargazing with my astronomy club. My other guilty pleasure is video games; 4-player battles on my PS3 with my flat mates can get really violent."

PS: If you are interested in the roles of pattern recognition receptors in health and disease then don't miss TLROZ2012, a conference dedicated to exactly this – this meeting will be held in Melbourne from 2–4 May, 2012. Never miss the chance for a free plug I say!

Immunology and Cell Biology Publication of the Year Awards 2010

It is a great pleasure to announce the winners of the *Immunology and Cell Biology* Publication of the Year Awards. Recipients of the awards must be a first author on one of the following *ICB* manuscript categories: Original Article, Outstanding Observation, Theoretical Article or Brief Communication. They must also be financial members of the Australasian Society for Immunology Inc. (ASI) by October of the year in which the article was published. Two awards have been established for outstanding publications. The winner of the *Chris and Bhama Parish ICB Publication of the Year Award* is awarded a AU$1000 scholarship provided by the Nature Publishing Group and the runner-up is awarded a AU$500 scholarship provided by Thermo Fisher Scientific.

This year, a small committee consisting of the ASI President and Executive Board Members of ASI selected the two best articles based on scientific excellence. I am pleased to announce that Dr Daniel Andrews was chosen by the committee as the winner of the *2010 Chris and Bhama Parish ICB Publication of the Year Award*, and Dr Patrick Reading was chosen as the runner-up.

The winning paper by Dr Andrews is an Outstanding Observation entitled 'A potential role for RAG-1 in NK cell development revealed by analysis of NK cells during ontogeny', published in the January/February 2010 issue of *ICB*.[1] In this study, Drs Andrews and Smyth explore the role of adaptive elements in the education of NK cells. Little is known about the development of NK cells in hematopoietic and visceral organs during ontogeny and whether organ-specific niches alter their development. Dr Andrews clearly shows that maturation of NK cells occurs very early in life. In the absence of B and T cells, key components of the adaptive immune system, NK cells do not develop in the bone marrow or spleen but rather accumulate in the liver. Thus, this work reveals that NK cell development in the liver occurs independent of NK cell development in the bone marrow and these cells are then able to seed the spleen and bone marrow.

Dr Daniel Andrews, recipient of the 2010 Chris and Bhama Parish ICB Publication of the Year Award

Dr Andrews completed his PhD at the University of Western Australia with Professor Mariapia Degli-Esposti in 2004. During these studies he was able to demonstrate that Murine Cytomegalovirus (MCMV) could functionally impair dendritic cells, a finding that resolved the issue of how MCMV induced immunosuppression. In addition, he investigated the critical interactions that occur between dendritic cells and NK cells in mediating immune protection during cytomegalovirus infection. This later work on NK cells led him pursue research on the development of NK cells with Professor Mark Smyth (Peter McCallum Cancer Centre, Melbourne) as a Peter Doherty Fellow. He has continued to explore his interest in NK cells and has now expanded this work to understand regulation of NK cells through Ly49 interactions with non-classical Major Histocompatibility Class I molecules and to understand novel roles of granzymes during inflammation and cytokine release.

Dr Reading's study entitled 'Influenza viruses differ in ability to infect macrophages and to induce a local inflammatory response following intraperitoneal injection of mice' was published in the July/August 2010 issue of *ICB*[2]. He analyzed the capacity for different influenza viral strains to infect the macrophages and induce cytokine production. Intriguingly, he found that different influenza viral strains differed significantly in their ability to recruit and activate other leukocytes and to induce the production of particular types of cytokines. His work suggests that the ability of influenza strains to infect macrophages, and elicit cytokine production, may be critical factors regulating the extent of the inflammatory response.

Dr Patrick Reading, recipient of the runner-up award for the 2010 ICB Publication of the Year

Dr Reading completed his PhD at the University of Melbourne where he investigated the role of mannose-specific lectins in innate host defense against influenza. He then moved to the Sir William Dunn School of Pathology, Oxford, UK, where his focus changed to understanding the elegant strategies used by poxviruses to elude immune detection. It was here he developed a keen interest in the contributions that the innate arm of the immune system might make to protecting against pathogens. In 2003, Dr Reading returned to the University of Melbourne (Microbiology and Immunology) where he began to investigate the role of NK cells and other innate cell types following influenza and herpes virus infections. He now holds a joint appointment as a research fellow at the University of Melbourne and as an educator at the WHO Collaborating Centre for Reference and Research on Influenza. This allows him to continue to pursue research into the innate immune system in addition to making a significant contribution to influenza pandemic planning and preparedness in the Asia/Pacific Region.

The award winning papers of Dr Andrews and Dr Reading highlight the very high standard of both the Outstanding Observations and Original Articles published in *ICB*. I hope these publications encourage others to submit their outstanding research to the journal.

References

1 Andrews DM, Smyth MJ. A potential role for RAG-1 in NK cell development revealed by analysis of NK cells during ontogeny. *Immunol Cell Biol* 2010; **88**: 107-116.

2 Reading PC, Whitney PG, Pickett DL, Tate MD, Brooks AG. Influenza viruses differ in ability to infect macrophages and to induce a local inflammatory response following intraperitoneal injection of mice. *Immunol Cell Biol* 2010; **88**: 641-650.

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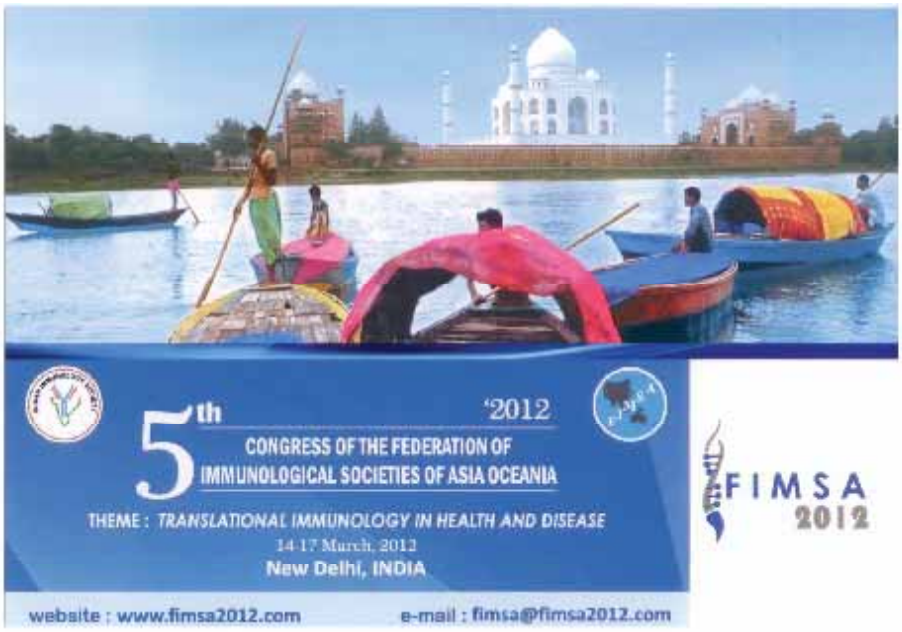
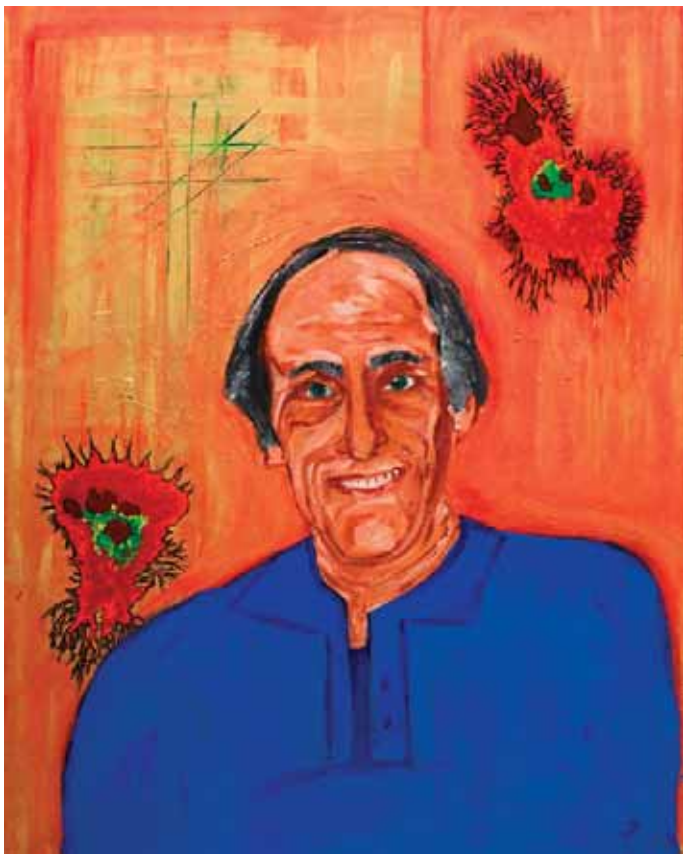


Ralph Steinman: A Nobel Prize gained, but an inspiring scientist lost

Immunologists were delighted to learn on October 3rd that Ralph Steinman had been awarded the 2011 Nobel Prize for Physiology and Medicine, a prize shared with Bruce Beutler and Jules Hoffmann. But this was almost immediately overshadowed by the news that Ralph Steinman had finally lost his battle with pancreatic cancer, and sadly had passed away before even knowing of the award. ASI members will remember well his valuable contributions to our 2010 Conference in Perth. Several of us involved in dendritic cell (DC) research wish to make this tribute to Ralph as the father of our research field and as a valued friend and advisor. Our sympathies go to Ralph's wife and family, to his friends and to his colleagues at the Rockefeller University.

Ralph Steinman was a Canadian, although most of his research career was at the Rockefeller University, New York. He began there as a post-doctoral fellow and progressed to be the Henry G Kunkel Professor. His research on DC began in 1973 with Zanvil Cohn when he identified cells with the characteristic dendritic form in spleen cell preparations. He considered them a special cell type, but few were convinced at that time. It took over 10 years before the special antigen-presenting role of DC was generally recognised; the pivotal finding was that virtually all of the capacity to stimulate T cells in mixed leucocyte reactions could be attributed to the numerically minor DC component of lymphoid cell suspensions. Steinman was not the only one to describe cells with dendritic or veiled cell morphology, nor the only one to investigate their functions. However he was the one who showed the greatest persistence in these early years, who designed the clearest experiments and who established a remarkable school of research into DC biology. Steinman devised the early procedures for DC isolation, was the first to use flow cytometry to characterise the DC by surface markers and he produced the first mAb against DC surface molecules. Steinman together with Gerald Schuler and Niki Romani demonstrated that epidermal Langerhans cells were an "immature" form of DC that could develop into "mature" T-cell activating DC on migration into lymph nodes. Steinman's early work on antibodies against DC surface molecules with Michel Nussenzweig, his first PhD student, eventually led to their recent collaboration on enhancing vaccines by targeting antigens to DC in situ. Much of our current picture of DC as the antigen-collecting sentinels of the immune system, as the sensors of pathogen invasion, as the most efficient cells for processing antigen for MHC presentation and as the initiators and regulators of T cell responses, we owe to Ralph Steinman.



Portrait of Ralph Steinman with his Dendritic Cells, by Carol Hill

All of us have strong, positive memories of Ralph as an inspiring scientist and friend. Derek Hart remembers his perception and determination to distinguish DC from other cells in the early days when this view was considered laughable. Andrew Lew also notes the remarkable power of his convictions at this time. Derek Hart and Gabrielle Belz both found that, despite his strong convictions, Ralph was willing to change his mind in the light of data. We have been told that Ralph dismissed early evidence for antigen processing, but this certainly changed as he investigated the process in collaboration with cell biologists such as Ira Mellman. Ralph had an exceptional ability to absorb and process information from lectures and personal discussions at scientific meetings, and integrate it all in his meeting summaries. Andrew Lew remembers the look of intensity as Ralph listened carefully to Andrew's own scientific story, but also how that focus immediately shifted to Bill Heath and Frank Carbone when they arrived!

We all believed that convincing Ralph Steinman was an essential step in having our model of DC function established. Bill Heath appreciates the support his work received in the mid '90s when Ralph was keen to identify studies that placed DC in a key tolerogenic mode. Ralph was in a position where his opinion had additional, and what some considered as excessive, weight, since he was also editor of the *Journal of Experimental Medicine*. So it is worth recounting a recent experience of Ralph in editorial mode. Barbara Fazekas and her colleagues have produced evidence that Langerhans cells are always tolerogenic, a concept that met considerable resistance and certainly contradicted Steinman's earlier models. Nevertheless, having read their manuscript, Ralph agreed to guide it through the review process of *Proceedings of the National Academy of Science*, and one of his final actions was to approve its acceptance for publication.

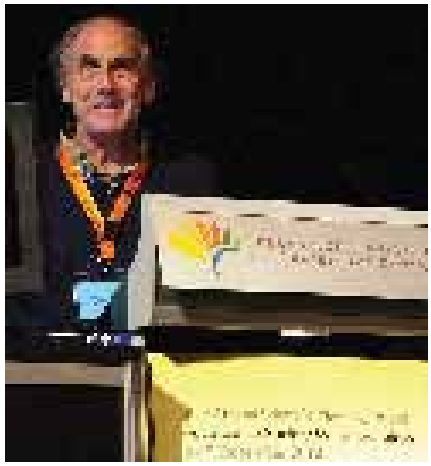
Barbara Fazekas considers that for Ralph the science and the people involved were inextricably linked. Ralph's extended

scientific family, which included not only the many students and post-docs who had trained in his laboratory but also long-standing collaborators and colleagues, would meet every two years at the International DC Symposia. His introduction of speakers at these meetings involved carefully researched personal background with appropriate slides. Ken Shortman recalls chairing the opening symposium with Ralph Steinman at the Kobe International DC Symposium. It was Ralph's first venture from his home base after treatment for pancreatic cancer, but he was determined this conference organised by his Japanese colleagues would start on the right note. Ken received beforehand a detailed script and slides to ensure this was the case! Ralph's energy, enthusiasm and commitment were unabated by his illness.

Ralph also had considerable personal charm. Ken Shortman's wife Carol responded to this and asked if she could paint his portrait from a photograph; her tribute to Ralph is included. Ranjeny Thomas will always remember the way Ralph would ask, whenever they met at meetings, about their "passions in common"; this went beyond DC, since both Ralph and Ranjeny had twins, and both loved to dance the tango.

For Jose Villadangos and Ranjeny Thomas, one of Ralph Steinman's main contributions was championing translation of basic research on DC into medical application. He mentored many clinical scientists in translational projects in his laboratory, including Nina Bhardwaj, Paul Cameron and Madhav Dhodapkar. His lectures on taking DC into medicine were inspirational, as are his articles on this subject with the like-minded Jacques Banchereau. One of Ralph's recent activities was to found and promote the International Society for Dendritic Cell and Vaccine Science (http://www.dc-vaccine.org/) with the goal of advancing this field and attracting young scientists to the discipline. Ralph even applied DC immunotherapy to his own tumour, an intervention that may have extended his life.

Ralph Steinman has left us with a substantial legacy: an in-depth knowledge of DC biology and new ways to apply this knowledge to medical practice. Our final tribute to Ralph will be to build on the foundation he provided.



Ralph Steinman at the 2010 ASI conference (Photo: Alan Baxter)

Contributed by: Derek Hart, Ranjeny Thomas, Barbara Fazekas de St. Groth, Bill Heath, Frank Carbone, Jose Villadangos, Gabrielle Belz, Andrew Lew and Ken Shortman.

Honouring Professor Jacques Miller

Robyn Slattery
Head, Diabetes Research Team, Dept of Immunology, Monash University, Alfred Hospital, Melbourne

On 26th August, 2011, the Australasian Society of Immunology sponsored a very special event to commemorate the 50th anniversary of the discovery of the role of the thymus, and to honour the man who made the discovery – Professor Jacques Miller. This unique celebration of creativity in science and art was an initiative of the Department of Immunology, School of Medicine, at Monash University and held at their Alfred Hospital Campus.

Dr Norman Swan, from ABC's *Radio National Health Report,* was the Master of Ceremonies, generously donating his time to travel from Sydney for the event. Norman's insight into medical research and style gave the evening gravitas and humour. He introduced the evening, and Jacques, to the crowd of ~100 attendees by commenting on Jaq's trademark shyness as he sat quietly, in the shadow of his brightly lit portrait, suggesting he might come out a little later in the evening to say a few words. Norman paid great respect to the work Jaq had done 50 years earlier and reminded all that, without an understanding of how the thymus functioned, and how T and B cells collaborated to form the army that is our adaptive immune system, we would not understand how HIV ravages the body, how vaccination works or why some people develop autoimmune diseases. Norman's deep understanding of human health and his eloquence of communication allowed every person in the audience to comprehend the magnitude of Jaq's discovery in the context of everyday life. Norman introduced Laureate Professor Peter Doherty to give the opening address and tell the deeper story of what it was that Jaq did 50 years ago and published in September 1961 in *The Lancet*.

Having shared, in 1996 with Rolf Zinkernagel, the Nobel Prize for elucidating how T cells kill viruses, Peter was well poised to comment on the importance of Jaq's discovery, pointing out that "Not only had Jaq discovered that the thymus produces T-cells that circulate through the blood but he also

identified B-cells. There isn't a single advance in vaccine, immunotherapy or auto-immunity research that doesn't incorporate Jaq's thinking". Finally, with his typically positive outlook, Peter pointed out that not only did Jaq deserve a Nobel Prize, but that he is still in the running – at least for five more years, since Peyton Rous, who in 1911 discovering that cancer could be transferred by viruses, had waited 55 years to receive the Nobel Prize – indicating, as Peter put it "that the Nobel committee didn't think much of chickens". The audience clearly appreciated the sentiments Peter expressed and his fitting tribute to the contribution Jaq has made to Immunology, Medicine and humankind. The person who appreciated Peter's words most may have been Jaq himself, who smiled with gratitude from the corner of the room.

Richard Boyd, Professor of Immunology at Monash, and once a long-haired, seventies, surfing bum come Immunology student, spoke about riding the crest of the Immunology wave in the decade that followed Jaq's momentus discoveries of the thymus which lead to the dichotomy of the origins of T cells and B cells. They were heady days for a young wild student, and though Jaq is known for his love of long hair, Richard reminisced that his own salty tangled mane may have presented as somewhat of a culture shock for the serious scientist and hard-task-master Jacques Miller! For those in the audience who had been privileged to work closely with Jaq, Richard's words rang true and roused much laughter. Richard spoke also of the founding impact Jacques had on the establishment of Immunology as a discipline for science students, leading to the formation of the Department of Pathology and Immunology, now Immunology, at Monash, and on many of the careers of those in the audience and Australia wide. He also acknowledged the remarkable inspiration Jaq was as a scientific mentor but all the time remaining a truly modest gentleman.

The final tribute to Jaq was delivered by the organizer and author of this event coverage, A/Professor Robyn Slattery, who spoke on behalf of Jacques' biographer, Ms Maryna Blankenstein-Gabert.

'Writing about Jacques Miller one is constantly reminded of Shakespeare's lines from Twelfth Night:

".... some are born great, some achieve greatness and some have greatness thrust upon them".

This evening we celebrate the 50th anniversary of his discovery of thymus function but even without the greatness of his epic discovery he was always destined for a life of prominence.

This evening he is surrounded by eminent friends and illustrious colleagues, here to honour his achievements in the world of immunology and to celebrate his art. But with a different twist of fate we could likewise have assembled to mark the elegance of his writing or the eloquence of his lectures or even his mastery of the Italian language.

His wit is marvellously illustrated by the anecdote of him sitting an oral exam in Italian: after much effort to help Jacques overcome his nerves, the examiner finally set the question:

"*What would you do if you returned home to find your wife in bed with another man?*"

Anticipating an outraged Latin reaction he was overcome with admiration for Jacques' reply:

Jaq and Jill
(Photo: Monash University)

"Salterei subito a letto insieme con loro"
'I would immediately hop into bed with them.'

This evening, we might have just as easily been celebrating Jacques' 80th birthday and his success as a musician ... or chess master ... or why not ballet critic?

Some are born great and some do indeed have greatness thrust upon them but Jacques Miller would have achieved greatness, whatever his chosen field.

Let's raise our glass to celebrate Jacques' gift of friendship and contribution to mankind.'

At the close of the three tributes to Jacques, Norman Swan introduced Ms Jill Steenhuis, the artist who was commissioned to paint Jacques' portrait, and had travelled from the South of France to donate the portrait to Monash to raise funds for the Jacques Miller Foundation. Jill spoke about the artistic process and the journey to be at-one with nature, to perceive its beauty and to create. The challenge in art – to take the risk to be truly creative – Jill likened to creativity in science, quoting Emily Dickinson: "It might be easier to fail with land in sight than gain – my blue peninsular – to perish – of delight".

LtoR: Prof Stephen Jane (new Head of Central Clinical School at Monash), Dr Norman Swan (MC), Peter Doherty, Richard Boyd, Robyn Slattery, Jacques Miller (Photo: Monash University)

The centrepiece of the art exhibition was Jill's impressionist style portrait of Professor Jacques Miller contemplating cells of the immune system. After Jill spoke, the silent auction was announced, and after a flurry of bidding by three competing interests, the portrait was sold to Mrs Tina and Mr Sam Germana, for $4100. Tina had studied Italian with Jaq some 20 years ago and said of the portrait, "It will be like having our friend at home with us".

The exhibition, which continued over the weekend, also showcased many of Jill's impressionist landscape pieces, and a number of Jaq's brush and ink nude sketches, the sales from which Jacques donated to the Jacques Miller Foundation. The event raised revenue of $6,318 for the Jacques Miller Foundation. This ASI-sponsored event raised funds that will be used to support the training and research of young immunologists at Monash University.

Publicity surrounding the event such as ABC's *Radio National* broadcast by Norman Swan (http://www.abc.net.au/rn/healthreport/) and an article in *The Australian* two days later (http://www.theaustralian.com.au/news/health-science/nobel-prize-on-the-cards-for-immunologist/story-e6frg8y6-1226143044716), and since the announcement of the 2011 Nobel Prize in Physiology and Medicine (http://www.theaustralian.com.au/news/health-science/a-sorry-case-of-nobel-neglect-as-a-pioneering-scientist-misses-out-again/story-e6frg8y6-122616683), have all helped to raise awareness for Jaq's groundbreaking work 50 years ago and the wonderful legacy Jaq and his contemporaries have created; that is Immunology in the world today.

Sam and Tina (who purchased the portrait) with Jaq and Jill
(Photo: Monash University)

4th Australasian Vaccines & Immunotheraputics Development Meeting

Brisbane Convention & Exhibition Centre

INVITED SPEAKERS

Professor Helen Heslop
Centre for Cell and Gene Therapy, Baylor College of Medicine, The Methodist Hospital and Texas Children's Hospital,Houston (USA)

Professor Rafi Ahmed
Director, Emory Vaccine Centre, Emory University, Atlanta (USA)

Professor Alexander Von Gabain
Chief Scientific Officer, Intercell AG and Professor of Microbiology, Max Perutz Laboratories (Vienna)

Professor Ed Mocarski
MedImmune Inc. and Emory Vaccine Centre, Emory University, Atlanta (USA)

Dr Sally Mossman
Head of viral vaccine program at GSK Biologicals,Rixensart (Belgium)

Professor Robert Seder
Vaccine Research Centre, National Institute of Allergy and Infectious Diseases (NIH),Bethesda (USA)

Early bird and abstract submissions date:
MONDAY 19 MARCH

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ASI Councillors' News

N.S.W. News

First, congratulations to all NSW immunologists who are recipients of ASI Travel Awards to attend the upcoming annual ASI2011 meeting in Adelaide. Well done, and no doubt well deserved. And second, congrats to those immunologists fortunate enough to be recipients of NHMRC funding for 2012 – it's a cut throat profession we have all chosen!

Now, to re-cap on recent highlights of activities for ASI NSW. In August, the third ASI NSW/ACT Combined Retreat took place in Bowral in the Southern Highlands of NSW, half-way between Sydney and Canberra. This meeting was another great success, with ~90 delegates attending from most of the major research institutes and universities throughout the greater Sydney area and the ACT. Please see the report by Steve Daley for all the details. But I will just reiterate Steve in thanking the invited speakers (our President David Tarlinton; Cecile King; Chris Goodnow, Julia Ellyard and Tri Phan), our very generous sponsors (Miltenyi, the major sponsor; Jomar Bioscience; Becton Dickinson; StemCell Technologies; Invitrogen and Australian Biosearch) and, of course, all those who attended and presented and made the meeting a great success. I'd also like to thank Steve for rounding up a busload of Canberrans to attend (whilst juggling the arrival of baby #3), and Scott Byrne for putting together the scientific program.

One goal of mine in taking on this position was to increase exposure of immunologists from different sites to the research being done across the State, with the hope that this will lead to new collaborations and interactions. And hopefully that goal has been fulfilled by the combined NSW/ACT retreat. So I would like to thank all the lab heads who have contributed to the success of this meeting by encouraging (and paying for) attendance by their lab members at this meeting.

Sydney has recently hosted visits by several invited speakers as part of the ASI-sponsored Visiting Speaker Program. These have included Assoc Prof Shane Crotty from the La Jolla Institute for Allergy and Immunology (California), who presented his lab's latest findings on T follicular helper cells, and Prof Emil Unanue from Washington University (St Louis Missouri) who updated us on his studies on Ag presentation and diabetogenesis. Both of these seminars were very well received and both speakers seemed to really enjoy their brief time in Sydney. Next will see Dr Warren Leonard (National Heart Lung and Blood Institute, NIH) arrive in town to give a seminar on a topic close to the heart of many Australian immunologists: the common gamma chain family of cytokines. I'm sure this visit will be highly successful as well.

After three years, this marks the end of my tenure as ASI NSW Councillor – and I am very pleased to be passing the baton to the very capable hands of my colleague Dr Marcel Batten (Garvan Institute) who I know will do an excellent job in this position.

All the best.

Stu Tangye
Councillor

W.A. News

The last quarter has been a busy time for immunology in Perth. We held the second Perth Immunology Group (PIG) meeting from 20–21 October. The event was held on the banks of the Swan River at the Perth Flying Squadron Yacht Club in Dalkeith. The feedback from the 49 delegates and invited speakers was that the meeting was a success. Stuart Tangye from the Garvan Institute for Medical Research in Sydney and Thomas Gebhardt from Microbiology and Immunology at the University of Melbourne both kindly flew to Perth to give very impressive plenary talks. Locally, Mariapia Degli-Esposti, Lloyd D'Orsogna, Anthony Bosco and Anna Nowak also gave impressive invited seminars.

Purposefully, the meeting has a laidback atmosphere with the intention that local immunologists can get together and catch up with old friends and colleagues as well as to make new contacts and collaborations. The vast majority of people responding to the survey indicated that they would prefer this meeting to be held annually and for two days. We are in the process of determining if this is feasible and how we would incorporate the student and early career workshops. If others in the Perth community have a view on this, please let me know.

In other news, the ASI hosted a talk by Professor Marc Dalod from the Centre d'Immunologie Marseille-Luminy, Université de la Méditerranée on October 31st. Professor Dalod was in Perth to visit the laboratory of Mariapia Degli-Esposti. In December the ASI will also be hosting Astrid Westendorf so keep an eye out for the flyer announcing the time of her talk, "Induction and expansion of regulatory T cells at mucosal surfaces". This is Astrid's first visit to Australia so I hope you all make her feel welcome.

Well, that's a wrap for WA news, I'm off to watch the Melbourne Cup.

Alec Redwood
Councillor

Plenary speaker Stuart Tangye being presented with hand made pens as a thank you by local ASI committee member and chair of the session Andrew Currie.

A.C.T. News

NSW/ACT Retreat:
The 3rd Annual ASI NSW/ACT Combined Branch Retreat held on 25-26 August 2011 was another highly successful retreat for ACT and NSW immunologists. As in the two years preceding, the meeting was held in idyllic surrounds at Craigieburn Resort & Conference Centre, Bowral.

Special thanks go to the invited keynote speakers, Cecile King and David Tarlinton, who gave excellent presentations. There were also insightful and exciting talks by Chris Goodnow and Julia Ellyard on the latest in Deep/Next Generation sequencing, and by Tri Phan on Intravital/2-photon imaging.

The bulk of the Scientific Program, kindly put together by Scott Byrne, was devoted to a string of impressive presentations from students and post-docs. The strength and depth of the science made it difficult for the judges to allocate prizes, but the deserving winners were Lucinda Berglund, John Altin and Monika Srivastava who received travel prizes to the value of $750, $500 and $250 respectively to attend a scientific meeting of their choosing. Congratulations also to Dr Tyani Chan for taking out the Post-doc/early career fellow prize, which is a cash prize of $250.

Our thanks go to the following companies for their generous sponsorship of the meeting: Miltenyi Biotec, Becton Dickinson, JOMAR Biosciences, Invitrogen Life Tech, Stem Cell Technologies and Australian Biosearch. Special thanks must also go to Stuart Tangye who initiated this meeting in 2009 and established it on the calendar of NSW and ACT immunologists, not least due to Tangye Trivia, his distinctive brand of evening entertainment.

Stephen Daley
Councillor

Queensland News

Ranjeny Thomas, Emil Unanue & Michael Good

Since 1999, an important event of the Queensland ASI calendar has been the Brisbane Immunology Group Annual Retreat. This year was no exception, with the event being held on August 18-19 at Sea World, Gold Coast. ASI continued its support of this event by subsidizing registration for the 57 ASI members who attended. ASI was also honoured to award the Peter Doherty Medal for best postgraduate presentation to Dr Siok-Keen Tey (Tumour Immunology Lab, QIMR), and the prize for best poster to Dr Motoko Koyama (Bone Marrow Transplantation Lab, QIMR).

Also, in an effort to increase Interstate communication amongst Australia-based immunologists, the ASI Queensland branch funded trips for various speakers such as Dale Godfrey, Frank Carbone, Steve Turner (Department of Microbiology and Immunology, University of Melbourne) and Jose Villadangos (WEHI) to visit and speak at QIMR.

Like many other State branches, the Queensland ASI branch has been very keen to participate in the International Visiting Speakers Program. Early in October, Emil Unanue, a veritable Pillar of Immunology himself, wowed a pack seminar room at the Institute of Molecular Bioscience, UQ, with his studies on antigen presentation in a murine model of Type I diabetes. Emil also enjoyed the company of eminent immunologists Ranjeny Thomas, Michael Good and Jon Sprent over an informal dinner. The Queensland branch members benefitted greatly from Emil's visit who, as a die-hard baseball fan, is no doubt ecstatic that his team, the St Louis Cardinals, won the World Series this year!

At the time of writing, the Queensland ASI branch is looking forward to welcoming Prof Warren Leonard from the National Heart, Lung and Blood Institute, NIH, USA, on November 9, when he will be giving a seminar at QIMR. And from then, it'll be a short hop, skip and a jump to Adelaide for the ASI Annual Congress. Hope you can make it.

Best wishes,

Ashraful Haque
Councillor

S.A./N.T. News

The organizing committee is now in the final preparation stages for the 41st ASI Annual Scientific Meeting to be held in Adelaide, 11–15 December. We have an excellent array of top international speakers (Lisa Coussens, Richard Flavell, Michael Karin, Paul Kubes, Alberto Mantovani, Ed Palmer, Shigeru Saito, Joachim Schultze, Megan Sykes, Andrew McKenzie, Prof Michal Schwarz and Prof. Raz Yirmiya). The scientific and social programs are now set and we hope that the conference will be scientifically stimulating and provide multiple opportunities to network and hear about the excellent research being undertaken around the country.

7th Adelaide Immunology Retreat (AIR-7) 2011 Report
Once again, the Adelaide Immunology Retreat (AIR) was a great success. It was held at Warrawong Wildlife Sanctuary on September 2 & 3. The retreat was opened with a terrific seminar on DCs by Prof. Jose Villadangos (WEHI), our invited national speaker. This was followed by presentations from PhD students, Honours students and research assistants. Overall the standard of the presentations was exceptional. Congratulations go to the following students who received awards: Mark Bunting (AIR-7 Best PhD Presentation), Wai Yan Sun (2nd PhD Presentation Prize), Ervin Kara (Best Honours Presentation) and Carly Gregor (2nd Honours Presentation Prize).

In addition to the science presented, we also participated in some terrific social activities in the lovely surrounds of Warrawong Wildlife Sanctuary. A very popular wine tasting function was held and prizes awarded

for guessing the vintage, type of grape and winery that produced the wine. Special thanks to Cara Fraser and Erin Lousberg who organized this fun activity. Following this, we were treated to a dusk walk around the sanctuary and we were privileged to see two platypuses in the sanctuary's lake. This is a rare occurrence and was certainly one of the highlights mentioned by many of the students after the retreat. Another memorable event was the extreme weather we all experienced overnight. Very few of us slept as our tent-cabins were nestled amongst large gum trees and the stormy gale-force winds threatened to rip the tents off their moorings. Apparently Jose lay awake in his tent-cabin wondering if one of the very large gum trees was going to drop on his head. And I, on the other hand, worried all night about insurance if anything untoward did occur. Fortunately, we all emerged bleary-eyed the next morning and very much relieved that no incidences were reported. Needless to say, this is one retreat many of us will never forget for many reasons!

Finally, I would like to thank the AIR-7 organizing committee members Cara Fraser, Erin Lousberg, Iain Comerfold, Sarah Brice, Anastasia Yu, Kate Parham, Kiwi Sun, Susan Christo, Siti Noordin and Sally Sun for all their hard work and enthusiasm for the meeting. Also a BIG thank you to all our sponsors: Miltenyi, Sapphire Bioscience, Jomar, UniSA, Adelaide Uni, Invitrogen, Biacore, AdeLab Scientific, DKSH, Geneworks, BD Biosciences and Genesearch. Without their generous financial support the event each year could not be held.

Michele Grimbaldeston
Councillor

Victorian News

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

2011 was a great year for immunology in Victoria. The main highlight was probably the maintenance of federal research funding when many had initially thought it would drop by 20% or more. Instead, federal funding remained largely unchanged, thanks in no small part to those among us to who put a public face to science and lobbied through the 'Discoveries need Dollars' initiative. Well done to all those who got involved.

We had another series of excellent speakers come to Victoria through the ASI Visiting Speakers Program. I don't wish to single out any one in particular, but the most memorable for me was the talk by Professor Warren Leonard at the GTAC centre in Parkville. Prof. Leonard talked about the role of common gamma chain family of cytokines in immune regulation, and the interest in his seminar saw the lecture theatre packed to overflowing. All went smoothly in his seminar until a mobile phone rang out from the audience, sending the offending party into a frenzy of panicked pocket slapping and fervent button pressing as he tried desperately to shut off the offending phone. Fortunately, I eventually managed to find my phone and to hit the mute button and the attention thankfully shifted back to Prof Leonard.

The IgV annual meeting was held this year in Geelong. Previous meetings had been held at Beechworth or the Yarra Valley and the IgV committee had hoped that the Geelong venue would see a new batch of immunology people from the west of Melbourne attend and become ASI members. The venue and the meeting itself proved highly successful (great job by the organizing committee) with plenty of folk coming from Deakin and CSIRO who hadn't previously been to an IgV meeting, and we even had a few intrepid visitors from Tasmania, which was fantastic. There won't be an IgV meeting next year because the ASI Annual meeting is coming to Melbourne, but there will be plenty of IgV sponsored events and awards, so please keep an eye out for announcements.

Although the 2012 meeting is over 12 months away, preparations are well underway and it looks like being a great success with over 800 people expected to attend. Keep your eye on the ASI website for details (http://www.immunology.org.au/). Speaking of the website, we expect to be updating it in the New Year and may yet dip our toes into social media such as Facebook and Twitter as IgV has already done. I'll let you know if and when that happens.

That's about it. Thank you to all who have helped me this year with encouragement and advice, and the occasional terse email reminding me to do things I should have done yesterday, but hadn't. Please feel free to contact me (berzins@unimelb.edu.au) should you wish to distribute any notices relating to immunology among the ASI/IgV membership. Merry Christmas to everyone and see you at this year's ASI Annual meeting in Adelaide!

Stuart Berzins
Councillor

Sustaining Membership

ASI Inc acknowledges the support of the following sustaining member:

• Jomar Bioscience

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.

Gabrielle Belz, Editor-in-Chief
Immunology and Cell Biology

HONORARY SECRETARY'S NEWS

ASI annual meeting in Adelaide

The organisation of the Adelaide meeting is in its final stages. I've been told that registration and abstract submission numbers were going extremely well. It promises to be a fantastic meeting. I think the ASI annual scientific meeting is a great way to end the year with the opportunity to present and listen to the work that has been done over the year, to catch up with and meet new friends and collaborators. I'm looking forward to seeing you in Adelaide.

Travel bursaries to attend the ASI meeting in Adelaide

It is with great pleasure to announce the winners of this year's student and early post doc travel bursaries to attend the annual meeting. ASI has traditionally funded a number of students to attend the annual meeting. A couple of years ago we 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 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. This year we were able to fund 24 applicants (20 students and 4 early career postdoc), adding up to a little over $18,000. Money well spent!

Students

Pheh Ping	Chang	ACT
Jie	Chung	Vic
Andreas	Kupz	Vic
Renee	Robb	Qld
Rachael	Terry	NSW
Courtney	McDonald	Vic
Thi	Vu	NSW
Yogesh	Jeelall	ACT
Jonathan	Chee	Vic
Danushka	Wijesundara	ACT
Royce	Ng	WA
Louis	Tsai	Vic
Julia	Marchingo	Vic
Koichi	Ito	Qld
Sau	Lee	ACT
Kok Fei	Chan	Vic
Chin	Lee	Vic
Latasha	Abeynaike	Vic
Natalie	Lorenz	NZ
Natalie	Payne	Vic

Postdocs

Tyani	Chan	NSW
Motoko	Koyama	Qld
Victor	Peperzak	Vic
Stephane	Chevrier	Vic

Second Round International Travel Awards

We again received a number of incredibly high quality applications for our ITAs. 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

Nominations were called earlier this year for a number of Councillor positions in voting Council including ASI Executive, as well as the non-voting positions of VSP co-ordinator and the FIMSA Councillor. 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 listed below.

This is my last contribution to the newsletter as Hon Secretary. I say this with mixed feelings. While I'm very much looking forward to that extra spare time on my hands (sorry, Rose), I'm also sad to leave the ASI Council and Executive. It has been a great experience for me and I enjoyed working with and for the Society very much. Welcome on board to Rose Ffrench and Dale Godfrey to the ASI Executive!

So long, and thanks for all the fish.

Susanne Heinzel
Hon Secretary

New Council members

Vice President	Dale Godfrey	University of Melbourne
Hon Secretary	Rose Ffrench	Burnet Institute
Councillor, NSW	Marcel Batten	Garvan Institute
VSP Co-ordinator	Alejandro Lopez	QIMR (re-nominated)
FIMSA Councillor	no applications received	

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Save the Date
CYTO 2012
June 23 – 27, 2012
XXVII Congress of the International
Society for Advancement of Cytometry
Congress Center Leipzig • Leipzig, Germany
www.isac-net.org • www.cytoconference.org

What's New in the World of Flow Cytometry Relating to Immunology? Update from CYTO2011 Baltimore, May 2011

Grace Chojnowski
Queensland Institute of Medical Research

Where would immunology be without flowcytometryandwouldflowcytometry have advanced as far without the world of immunology? Over the last few decades flow cytometry and fluorescent activated cell sorting (FACS) have had a close working relationship with immunology. The relationship between immunology and flow cytometry has been a highly productive one with the partnership facilitating our knowledge in immunology and the development of sophisticated instrumentation used in disciplines other than immunology.

As instrumentation technology in flow cytometry advances so does the ability to gain valuable information on the immune system. The ability to perform polychromatic flow cytometry using multiple excitation lasers and simultaneous detection of 18 different colours and beyond has given scientists a more detailed understanding of individual cells and how they relate to one another and to different disease states. It has allowed us to isolate different subsets of cells and the relevance of these subsets within the immune system. Also samples are precious so the ability to acquire more information on less samples is the goal of many new methods. There are many challenges, including: finding the most appropriate combination of labelled antibodies with optimum staining index and, of course, the challenge of getting the correct spectral compensation. The addition of new laser lines to bench-top instruments has eased this process by allowing more fluorochrome choices and combinations but it can still be a challenge, especially when studying cells which have low expression of receptors being studied. Qdots have also helped with compensation due to their narrow emission spectra with very little spectral overlap, resulting in the requirement for little or no compensation. Introductory and more advanced tutorials have been prepared by the education committee of the International Society for Advancement of Cytometry (ISAC) to help members better understand and hence design experiments involving polychromatic cytometry.

Tutorials on polychromatic flow cytometry as well as other tutorial material on flow cytometry applications will be available on the new ISAC website http://www.isac-net.org which should go live at the end of 2011.

Pre-congress courses and tutorials are run a couple of days before the main congress. These courses are designed with a range of topics to cater for researchers new to cytometry as well as those of us who are more experienced. One that would be of value to immunologists is the series of tutorials on Polychromatic Flow Cytometry that were presented by Pratip K. Chattopadhyay at CYTO 2011. These and more are planned as part of the CYTO 2012 pre congress course which will be held in Leipzig, Germany, June 23–27, 2012 http://cytoconference.org/CYTO . http://www.discoverymedicine.com/Pratip-K-Chattopadhyay/2009/06/29/the-colorful-future-of-cell-analysis-by-flow-cytometry/

Invivo Immunocytometry was one of the hot topics at CYTO 2011 in the Immunology stream with world class research being presented in the frontiers lecture series.

Total Internal Reflection Fluorescence microscopy: TIRF was a technique used by Takashi Saito in his presentation Visualizing the Dynamics of Immune Synapse by TIRF. The immune synapse of T cells and antigen presenting cells (APC) the "T cell-APC interface" where dynamic regulation of the activation process was analysed using the planar system and TIRF. The technology allows a researcher to study changes occurring at the single molecule level (for example changes occurring at the plasma membrane) (refs: Yokusaka,T et al, ***Nat Immunol***. 6:1253, 2005; Saito,T and Yokusaka,T. ***Curr.Opin Immunol*** 18:305,2006; Yokusaka,T et al, ***Immunity*** 29:589,2008; Hasimoto_Tane,A et al. ***Mol. Cell.Biol*** 30:3421,2010; Yokusaka,T et al, ***Immunity*** 33:326,2010).

Grace Chojnowski

Fellow ISAC councillor and organizer of the conference Andreas Radbruch gave a brilliant presentation entitled "**Cytometric tracking of Immunological Memory – It's not in the Blood"**. Andreas presented his work that utilised new cytometric technology that can be used to identify rare cells and show how they regulate immune responses depending on their antigen specificity; also that many of these cells involved in orchestrating the responses and maintaining the immunological memory are found in niches within the lymphoid tissue, inflamed tissue and bone marrow, but not in the blood. Taking that into account, cytometric tracking of immunity offers the exciting perspective to catch the cells on the move and generate a dynamic picture of immunity (Koji Tokoyoda, Anja E. Hauser, Toshinori Nakayama & Andreas Radbruch Organization of immunological memory by bone marrow stroma. 2010 Nat. Rev. ***Immunol*** Mar;10(3):193-200).

There were also a number of presentations on the hot topic **Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for Multi-parameter Cell Analysis**. This has the ability to perform well beyond 30 parameter cytometry on single cells without the need to perform complex compensation usually required when performing conventional polychromatic flow cytometry.

The technique is being led by Scott Tanner from the University of Toronto, Canada. Individual cells are stained with stable isotypes attached to antibodies instead of fluorescent dyes or quantum dots (there are over 100 stable isotypes that are suitable for this type of analysis); Garry Nolan and his team in Stanford California have made immense progress with applications and advancing technology development. A video of Garry is available on Youtube giving an excellent introductory explanation of ICP-MS (http://www.youtube.com/watch?v=hAZBg0naPBg). Both Garry Nolan and Scott Tanner presented work that utilised ICP-MS and its superior sensitivity; applying it to studies of immune responses or different infectious disease states and the immune system (Ornatsky O, Bandura D, Baranov V, Nitz M, Winnik MA, Tanner S. Highly multiparametric analysis by mass cytometry.*J Immunol Methods* . 2010 Sep 30;361(1-2):1-20; Sean C. Bendallhttp://www.sciencemag.org/content/332/6030/687.full - aff-1 et al. Single-Cell Mass Cytometry of Differential Immune and Drug Responses Across a Human Hematopoietic Continuum Science 6 May 2011: Vol. 332 no. 6030 pp. 687-696).

With the introduction of mass multiparameter cytometry comes the challenge of how does one analyse the volume and information generated from this technology. Scott Tanner spoke about software that has been developed to analyse this data: Unsupervised Neural Networks (UNN) and the clustering algorithms used to perform the analysis of samples acquired. Gary Nolan's presentation was using SPADE* and how its use in analysing the complex data also involving different types of clustering (Bendall SC, Simonds EF, Qiu P, Amir ED, Krutzik PO, Finck R, Bruggner RV, Melamed R, Trejo A, Ornatsky OI, Balderas RS, Plevritis SK, Sachs K, Pe'er D, Tanner SD, Nolan GP. Single-cell mass cytometry of differential immune and drug responses across a human hematopoietic continuum. Science. 2011 May 6; 332(6030):687-96).

International Cytometry Certification Examination

ISAC (International Society for Advancement of Cytometry) and ICCS (International Society for Clinical Cytometry) have worked together to develop a certification in cytometry, International Cytometry Certification. The motivation behind the establishment for certification in cytometry is to provide an internationally recognized minimal standard of competence. After years of preparation, the examination for certification is now available and a number of candidates have already sat and passed the exam when it first became available in June 2011. For more information on the certification go to http://www.cytometrycertification.org/ .

ISAC Scholars Program

The ISAC Scholars program is designed to enhance the scientific and leadership experiences of emerging leaders in the field of cytometry. The ISAC Scholars program is designed for younger members, those under the age of 40. The program provides opportunities for leadership training, presentation opportunities, financial support for membership of the Society, as well as other valuable mentoring activities. Australia has been successful with two scholarships being granted; the benefits have been tremendous in facilitating career goals and mentoring in cytometry. If you are interested in finding out more please go to http://www.isac-net.org

The Australasian Flow Cytometry Group (AFCG) has also been very active with a revamp of our website with updating of the clinical flow guidelines. The AFCG is an associated society of ISAC and together they are working on education material, up to date information on courses, meeting and teaching material to benefit to both AFCG and ISAC members. http://www.afcg.org.au/. The 2011 AFCG meeting was held in Hobart in August with a large number of presentations relating to immunology. The presentations again were world class from both international and local presenters. Abstracts from the meeting are available on the AFCG website. The new revamped website will also host educational material for our AFCG members so please go to the website and consider joining the AFCG to have access to resources.

Grace Chojnowski manages the flow and imaging core facility at QIMR in Brisbane. Grace has been working in the field of cytometry since 1987 when she was at Peter MacCallum Institute in Melbourne. Grace has been president of the Australasian Flow Cytometry Group (ISAC) and is presently an active member on the AFCG executive committee. Internationally Grace presently holds the position as councillor on the International Society for Advancement of Cytometry (ISAC) where she is active in the education, membership services and associated societies committees.

Contributions sought for the ASI online immunology quiz

As part of World Day of Immunology events, 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 Australian 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.

THE ASI VISITING SPEAKER PROGRAM 2011

During 2011 we were very fortunate to have visits by Shane Crotty, Emil Unanue, Warren Leonard and Astrid Westendorf which were possible due to the enthusiasm and work of their hosts Stuart Berzins/Steve Turner, José Villadangos, Annie Xin and Hubertus Jersmann. A big thank you for supporting the program.

At the same time, we would like to call upon the membership to propose their candidates of interest for 2012. We have already secured following visits:

March 2012
Professor JoAnne L. Flynn
Center for Vaccine Research
Microbiology & Molecular Genetics
University of Pittsburgh, Pennsylvania, USA

Hosted by Michael Good, Gold Coast (Griffith University)

"Tuberculosis kills ~2 million people per year, worldwide. We use various animal models to study T cell, macrophage, dendritic cell, cytokine and chemokine responses to Mycobacterium tuberculosis in the lungs. Our goal is to define immune mechanisms that enhance resistance to this infection, as well as those that exacerbate pathology. We have funded projects on CD4 T cells, CD8 T cells, granuloma formation, and TNF-a in tuberculosis. We study both the acute and latent phase of infection, since it is estimated that one third of the world's population is latently infected, and 10% of infected persons will develop active disease. These studies may lead to improved vaccine development or immunotherapeutic strategies, as well as a clear understanding of the host-pathogen interactions in tuberculosis."

Selected Publications Selected recent publications

Gideon HP, Flynn JL. Latent tuberculosis: what the host "sees"? Immunol Res. 2011 Jun 30.
Ford CB, Lin PL, Chase MR, Shah RR, Iartchouk O, Galagan J, Mohaideen N, Ioerger TR, Sacchettini JC, Lipsitch M, Flynn JL, Fortune SM. Use of whole genome sequencing to estimate the mutation rate of Mycobacterium tuberculosis during latent infection. Nat Genet. 2011 May;43(5):482-6.
Flynn JL, Chan J, Lin PL. Macrophages and control of granulomatous inflammation in tuberculosis. Mucosal Immunol. 2011 May;4(3):271-8.
Diedrich CR, Flynn JL. HIV-1/mycobacterium tuberculosis coinfection immunology: how does HIV-1 exacerbate tuberculosis? Infect Immun. 2011 Apr;79(4):1407-17.
Mattila JT, Diedrich CR, Lin PL, Phuah J, Flynn JL. Simian immunodeficiency virus-induced changes in T cell cytokine responses in cynomolgus macaques with latent Mycobacterium tuberculosis infection are associated with timing of reactivation. J Immunol. 2011 Mar 15;186(6):3527-37.
Kirschner DE, Young D, Flynn JL. Tuberculosis: global approaches to a global disease. Curr Opin Biotechnol. 2010. Aug;21(4):524-31.
Green AM, Mattila JT, Bigbee CL, Bongers KS, Lin PL, Flynn JL. CD4(+) regulatory T cells in a cynomolgus macaque model of Mycobacterium tuberculosis infection. J Infect Dis. 2010 Aug 15;202(4):533-41.
Marino S, Myers A, Flynn JL, Kirschner DE. TNF and IL-10 are major factors in modulation of the phagocytic cell environment in lung and lymph node in tuberculosis: a next-generation two-compartmental model. J Theor Biol. 2010. Aug 21;265(4):586-98.
Lin PL, Flynn JL. Understanding latent tuberculosis: a moving target. J Immunol. 2010 Jul 1;185(1):15-22.
Russell DG, Barry CE 3rd, Flynn JL. Tuberculosis: what we don't know can, and does, hurt us. Science. 2010 May14; 328(5980):852-6.

August 2012
Dr Pam Schwartzberg
National Human Genome Research Institute
NIH, Bethesda, MD, USA

Hosted by Stuart Tangye, Sydney (Garvan Institute)
More information will be provided in future newsletters

Travel Award Conference Reports

Mouse Genetics 2011

Colleen Elso
St Vincent's Institute, Victoria

In June 2011, hundreds of scientists working on and with mouse genetics descended on the Omni Shoreham Hotel in Washington DC for 'Mouse Genetics 2011'. This conference was jointly organised by the International Mammalian Genome Society, the Complex Trait Community and the Genetics Society of America and themes covered included Disease Models, Large Scale Resources, Preclinical Translation and Systems Genetics.

The conference began with an optional Bioinformatics Workshop focused on analysing next-generation sequence data. As a recipient of a conference scholarship, I was given the opportunity to attend this workshop and I now know much more about the process, the tools and terminology used and will be much more confident discussing my sams and bams and wiggles with collaborators in the future! (Thank goodness for bioinformaticians with lots of computing power …) The rest of the day was an opportunity for students and postdocs (including me) to present their data. It was a fantastic session ranging from infectious diseases to autoimmunity, to diet and cancer, using a wide range of mouse genetic techniques and resources.

The first day of the main program highlighted progress being made in some of the large-scale projects such as the availability of genome sequence data for 17 classical and wild-derived mouse strains; the Collaborative Cross (a multi-parental recombinant inbred cross to aid in mapping QTLs); large mouse phenotyping efforts; and how exome sequencing of mouse models is shedding light on human diseases. Francis Collins gave the keynote address, giving examples from his own laboratory to highlight how these large-scale resources can be applied to make rapid progress in the search for the underlying genetic mechanisms for both rare (progeria) and common (Type 2 diabetes and asthma) human diseases. The following days were packed with many stories of different mouse models, resources and analysis tools.

It was fascinating to see the advances since I last attended the IMGS meeting 10 years ago when results from the first large-scale ENU screens were just being reported and support for the Collaborative Cross was gaining momentum. Now the field has moved on to huge large-scale 'mouse clinics' to phenotype many of the mutants (including intensive immunological screens), and results from some of the Collaborative Cross strains are shedding light on phenotypes as varied as host response to infection and male infertility. A recurring theme was the utility of next-gen sequence for mapping mutations both in mouse models and human patients with rare mutations.

As well as the scientific value of the conference, it was a great opportunity to see a new part of the world: the conference dinner was followed by a Moonlight Tour of Washington DC, where we drove past the very historic and famous landmarks of the National Mall and surrounding areas, with time to visit the Lincoln Memorial. It was also great to meet some new colleagues and reconnect with some old ones resulting in what I hope will be a very fruitful collaboration. Thanks to ASI for their contribution to my trip. The information and resources I have gained from this meeting will help to move us forward as we continue to use mouse models to search for genes underlying autoimmune diseases.

Colleen and her children at the Washington Monument

Contributions sought for the ASI Newsletter

You could win $200 !!

Deadline for the next issue : 1st February 2012

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

17th Germinal Centre Conference

Ingela Vikstrom and Katja Lüthje

Walter & Eliza Hall Institute, Melbourne

Two individual post doc international travel awards from ASI allowed us to attend the 17th Germinal Centre Conference (GCC) in Birmingham, UK, 4–8 September, 2011. After the meeting, we parted ways and visited several labs.

The GCC has a long and well-established history, spanning over four decades. This year's meeting promised to bring us the latest research covering lymphoid development, chemokines, plasma cells, infection, transformation, ageing, T follicular helper cells and germinal centres. The conference was of intermediate size, with around 180 participants, many with a strong international standing. We found that a big advantage with this size of meeting was that everything was limited to one room, with no parallel sessions, in this way we did not miss anything of interest. The conference was held at The Belfry, a prestigious golf resort having hosted The Ryder Cup on four occasions. The surroundings were beautiful and we were tempted to go for strolls on the small walk paths, however, these were unfortunately assigned to golfers only and we were restricted to doing circles around the building.

The conference started on Sunday evening with an inspiring talk by Prof. Carola Vinuesa (The John Curtin School of Medical Research) focussing on regulation of T follicular helper cell formation and homeostasis. Drinks and an opportunity for everyone to catch up followed the presentation, the jet lag, however, forced us to a relatively early rest.

The first full day of the conference addressed the development of lymphoid tissues. Reina Mebius from the Netherlands opened this session with an excellent talk about lymphoid tissue inducer cells (Lti cells). This talk focussed on their dependence on lymphotoxins (LTαβ) and the chemokine receptors CXCR5 and CXCL13, as well as the important influence of retinoic acid on this process. Furthermore, she described the development of gut-associated lymphoid tissues, SILT and colonic patches. A couple of excellent presentations followed, dealing with the generation of lymphoid organs: innate lymphoid cells (ILC), lymphoid tissue organiser cells (LTO), T zone reticular cells (TRC) and isolated lymphoid follicles (ILF). All these amazing results were presented with accompanying images. A great overview of this important field of immunology and an excellent start to the conference. In addition, the first of the poster sessions commenced that evening and then continued throughout the conference; the interest in the posters was very high and there were many vivid discussions taking place until late into the evening.

Katja Luetje (left) & Ingela Vikstrom at the 17th Germinal Centre Conference

The second day of the conference covered topics such as plasma cells, ageing and cell transformation. The plasma cell session started off with Dr Facundo Batista (London Research Institute) showing us his impressive imaging of the dynamic changes that occur in B cells during their activation. Later in the same session, Dr Ulf Klein (Columbia University) gave an interesting talk on "New insights into the germinal centre exit" focussing on NFkB transcription factor subunits in GC B cell development. In the session on ageing, Dr Michael Cancro (University of Pennsylvania) gave a talk on how modulation of BLyS family member expression can govern plasma cell survival. Prof. Harald Stein (Charité University Medicine Berlin) and Prof. Ralph Küppers (University of Duisburg-Essen) both gave good overviews of the relationships of germinal centres and memory B cells to B cell malignancies.

The third day of the conference covered germinal centres and infection/vaccination. Dr Mark Schlomchik (Yale University), Dr Gabriel Victora (Massachusetts Institute of Technology) and Dr Kai-Michael Toellner (University of Birmingham) gave very interesting talks on GC selection. In addition, Prof. Michael Meyer-Hermann (Helmholtz Centre for Infection Research) gave an intriguing demonstration of an *in silico* model of the same process. The infection/vaccination session started with Dr Adam Cunningham (University of

Birmingham) explaining the regulation of the extrafollicular and germinal centre responses to Salmonella. Later on, Dr Michelle Wykes (Queensland Institute of Medical Research) talked about the role of dendritic cells during malaria infection. The day finished with a delicious gala dinner followed by entertainment consisting of a band performing ABBA songs to the delight of some but not as much others … by the end of it, most people were swinging their legs on the dance floor anyway!

The closing session on the last day of the conference discussed the important cells that regulate B cell responses, T follicular helper cells. In three independent talks, the new subset of CD4+ T cells, the "follicular regulatory T cell (TFR)", was introduced. These cells are like T follicular helper cells (TFH) dependent on the expression of BCL6; but they co express FOXP3 and act like regulatory T cells – in this particular circumstance by controlling the germinal centre response. Thus, while the density of TFH cells inside a germinal centre declines over time, the density of TFR cells increases. With this excellent finale, and following the great time we had at the conference, we split up to proceed with our independent lab visits.

Lab visit by Ingela:
After the conference finished, I travelled to Cambridge to catch up with a dear friend of mine and fellow immunologist, Jen Walker (formerly WEHI). I also took the opportunity to visit Dr Martin Turner's lab at the Lymphocyte Signalling and Development programme at the Babraham Institute, where I gave a presentation of my research. It was a great day, where I got to interact and exchange ideas with several brilliant researchers.

Lab visit by Katja:
My additional trip led me to Germany, starting in the north – Hamburg. There I visited the Bernhard-Nocht-Insitute for Tropical Medicine (BNI). Afterwards I proceeded south to Munich. Unfortunately, or luckily – depending on your point of view – the Oktoberfest had started and the whole city was celebrating beer. But I headed first to the Institute of Molecular Immunology of the HelmholtzZentrum and the following morning to the Institute for Immunology at the Ludwig-Maximilians University. I enjoyed each of my visits, which were jam-packed and led to a bunch of new impressions.

Taken together, we had a gorgeous trip full of experiences and we really appreciate the support from ASI. Thank you!

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!**

Upcoming Conferences

5th Congress of the Federation of Immunological Societies of Asia Oceania (FIMSA 2012) –Translational Immunology in Health & Science
March 14–17, 2012
New Delhi, India
fimsa@fimsa2012.com
www.fimsa2012.com

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

4th Australasian Vaccines & Immuno-therapeutics Development Meeting
May 2–4, 2012
Brisbane, Australia
www.avid2012.org

TLROZ 2012
May 2–4, 2012
Melbourne, Australia
www.TLROZ2012.com

Immunology 2012
May 4–8, 2012
Boston, USA
www.IMMUNOLOGY_2012™.com
infoaai@aai.org

15th International Congress of Immunology
August 22–27, 2013
Rome, Italy
ici2013@triumphgroup.it
www.ici2013.org

15th Biennial Meeting of the European Society for Immunodeficiencies
October 3–6, 2012
Florence, Italy
www.kenes.com/esid

3rd International Conference on Regulatory T Cells & Th Subsets and Clinical Application in Human Disease (China Tregs/Th Subsets 2012 conference)
October 13–16, 2012
Shanghai, China
http://www.chinatregs.com

The Walter and Eliza Hall Institute of Medical Research

WEHI Seminars on the Web: www.wehi.edu/seminars/

2011 European Multidisciplinary Congress Conference

Stockholm, Sweden, 23-27 September 2011

Alison West
Peter MacCallum Cancer Centre, Melbourne

For two weeks before the 2011 European Multidisciplinary Congress Conference in Stockholm, I checked the Swedish weather reports. It was not looking promising. Nonetheless on September 21 I packed up in an Australian Spring and headed to a Scandinavian Autumn. "I am doing it for the good of cancer immunology" I told myself. But over the next few days I realised there was nowhere else I would rather be, both for myself and for the good of cancer immunology!

The conference was of epic proportions. This is a world where the main hall seated about 3,000 people, there were 16 concurrent sessions covering 33 tracks, and each exhibitor's booth looked more like a cafe – complete with plasma TVs, couches and coffee machines operated by specially hired baristas – than a display table. Needless to say, I followed the other 15,931 delegates into the exhibitors' area each morning to begin the day with a free coffee.

Thankfully the science was just as epic as the conference. The 2011 European Multidisciplinary Congress Conference represented a conglomerate of clinicians, nurses, surgeons, basic scientists and even patients from all parts of the world (116 countries to be exact). This wonderfully diverse mix of people made for a broad meeting, which forced delegates to think outside their own square and apply their knowledge to the greater cause – finding a cure for cancer.

The meeting began with a 'bigger picture' keynote address, given by a wonderfully mixed bag panel, optimistically describing their combined perfect vision for the future: truly personalised cancer therapy. First we heard how clinicians are gaining better techniques to take tumour biopsies at diagnosis from both the primary site and from the blood. Then the scientists explained how high throughput technology is now allowing genetic, immunological and drug sensitivity testing to be carried out on these samples. The controversial idea of 'mouse hospitals' was also discussed, a system allowing constant cross referencing between the patient and the mouse, allowing better tailoring of drugs, doses and combinations. Finally the nurses and patients explained the all-important, albeit careful, use of media to educate the public on new therapies and technologies as they come to the fore. After this truly multidisciplinary seminar I felt ready to take on the rest of the conference and to fit my piece of tumour immunology data into the greater cancer research puzzle.

In between wandering around the many beautiful harbours and islands that make up Stockholm, I attended many interesting sessions. The first highlight was a session characterising the role of the microenvironment in lymphoma chaired by Paolo Ghia (Vita-Salute San Raffaele University, Italy) and Ralf Küppers (University of Duisburg-Essen, Germany). In this session cancer biologists, immunologists and clinicians came together to discuss the cellular interactions occurring in lymphoid organs during lymphomagenesis and how tumour cells can be dislodged from their comfortable niche and destroyed. Another highlight was an informative and passionate debate between Caroline Dive (Paterson Institute for Cancer Research), Stefan Sleijfer (Erasmus University Medical Centre) and Klaus Pantel (University of Hamburg) about the merits of circulating tumour cell biology and subsequent application for diagnosis and drug responsiveness. It is amazing how precise tumour cell detection in the blood can be (down to 1 tumour cell per 7.5mL), although it is a while until this technology reaches regular practice in the clinic. Finally, the opportunity to present my own data in the 'proffered papers: basic science/translation research' session was a highlight in hindsight, though at the time it was somewhat intimidating! The feedback I received after my talk was invaluable, as was the enforced 'outside the box' thinking required to present my work to such a translation-orientated audience.

I left Stockholm in awe of many things. Firstly of how many ways there are to eat herring, and secondly of how broad the field of cancer research is and what a special niche tumour immunology has in the middle of it all. I feel very privileged to have attended the 2011 European Multidisciplinary Congress Conference and am so appreciative of the ASI International Travel Award I received for this trip. I would encourage all ASI students to apply for this award and to find a conference which helps you to think outside your square and get creative. After all, great science is formed from great collaborations. And you might just get to eat a herring somewhere along the way …

Publications List

Congratulations to ASI members who have published their following work in the last three months (articles with an ePub date between July and September 2011)

Mitchell AJ, Pradel LC, Chasson L, Van Rooijen N, Grau GE, Hunt NH, Chimini G. **Technical advance: autofluorescence as a tool for myeloid cell analysis**. *J Leukoc Biol* 2010; **88**(3)**:** 597.

Mfonkeu JB, Gouado I, Kuate HF, Zambou O, Combes V, Grau GE, Zollo PH. **Biochemical markers of nutritional status and childhood malaria severity in Cameroon**. *Br J Nutr* 2010; **104**(6)**:** 886.

Carpintero R, Gruaz L, Brandt KJ, Scanu A, Faille D, Combes V, Grau GE *et al.* **HDL interfere with the binding of T cell microparticles to human monocytes to inhibit pro-inflammatory cytokine production**. *PLoS One* 2010; **5**(7)**:** e11869.

Jambou R, Combes V, Jambou MJ, Weksler BB, Couraud PO, Grau GE. **Plasmodium falciparum adhesion on human brain microvascular endothelial cells involves transmigration-like cup formation and induces opening of intercellular junctions**. *PLoS Pathog* 2010; **6**(7)**:** e1001021.

Hee L, Dinudom A, Mitchell AJ, Grau GE, Cook DI, Hunt NH, Ball HJ. **Reduced activity of the epithelial sodium channel in malaria-induced pulmonary oedema in mice**. *Int J Parasitol* 2011; **41**(1)**:** 81.

McQuillan JA, Mitchell AJ, Ho YF, Combes V, Ball HJ, Golenser J, Grau GE *et al.* **Coincident parasite and CD8 T cell sequestration is required for development of experimental cerebral malaria**. *Int J Parasitol* 2011; **41**(2)**:** 155.

Pankoui Mfonkeu JB, Gouado I, Fotso Kuate H, Zambou O, Amvam Zollo PH, Grau GE, Combes V. **Elevated cell-specific microparticles are a biological marker for cerebral dysfunctions in human severe malaria**. *PLoS One* 2010; **5**(10)**:** e13415.

Wassmer SC, Moxon CA, Taylor T, Grau GE, Molyneux ME, Craig AG. **Vascular endothelial cells cultured from patients with cerebral or uncomplicated malaria exhibit differential reactivity to TNF**. *Cell Microbiol* 2011; **13**(2)**:** 198.

van der Heyde HC, Gramaglia I, Combes V, George TC, Grau GE. **Flow cytometric analysis of microparticles**. *Methods Mol Biol* 2011; **699:** 337.

Hoyne GF, Chapman G, Sontani Y, Pursglove SE, Dunwoodie SL. **A cell autonomous role for the Notch ligand Delta-like 3 in alphabeta T-cell development**. *Immunol Cell Biol* 2011; **89**(6)**:** 696.

Lo L, McLennan SV, Williams PF, Bonner J, Chowdhury S, McCaughan GW, Gorrell MD *et al.* **Diabetes is a progression factor for hepatic fibrosis in a high fat fed mouse obesity model of non-alcoholic steatohepatitis**. *J Hepatol* 2011; **55**(2)**:** 435.

McGee HM, Malley RC, Muller HK, Woods GM. **Neonatal exposure to UVR alters skin immune system development, and suppresses immunity in adulthood**. *Immunol Cell Biol* 2011; **89**(7)**:** 767.

Hoyne GF, Flening E, Yabas M, Teh C, Altin JA, Randall K, Thien CB *et al.* **Visualizing the role of Cbl-b in control of islet-reactive CD4 T cells and susceptibility to type 1 diabetes**. *J Immunol* 2011; **186**(4)**:** 2024.

Begg DJ, de Silva K, Carter N, Plain KM, Purdie A, Whittington RJ. **Does a Th1 over Th2 dominancy really exist in the early stages of Mycobacterium avium subspecies paratuberculosis infections?** *Immunobiology* 2011; **216**(7)**:** 840.

Nantakomol D, Dondorp AM, Krudsood S, Udomsangpetch R, Pattanapanyasat K, Combes V, Grau GE *et al.* **Circulating red cell-derived microparticles in human malaria**. *J Infect Dis* 2011; **203**(5)**:** 700.

Tovar C, Obendorf D, Murchison EP, Papenfuss AT, Kreiss A, Woods GM. **Tumor-specific diagnostic marker for transmissible facial tumors of tasmanian devils: immunohistochemistry studies**. *Vet Pathol* 2011; **48**(6)**:** 1195.

El-Assaad F, Hempel C, Combes V, Mitchell AJ, Ball HJ, Kurtzhals JA, Hunt NH *et al.* **Differential microRNA expression in experimental cerebral and noncerebral malaria**. *Infect Immun* 2011; **79**(6)**:** 2379.

Jeffery P, McDonald V, Tippett E, McGuckin M. **Ghrelin in gastrointestinal disease**. *Mol Cell Endocrinol* 2011; **340**(1)**:** 35.

McNally A, Hill GR, Sparwasser T, Thomas R, Steptoe RJ. **CD4+CD25+ regulatory T cells control CD8+ T-cell effector differentiation by modulating IL-2 homeostasis**. *Proc Natl Acad Sci U S A* 2011; **108**(18)**:** 7529.

Hubert FX, Kinkel SA, Davey GM, Phipson B, Mueller SN, Liston A, Proietto AI *et al.* **Aire regulates the transfer of antigen from mTECs to dendritic cells for induction of thymic tolerance**. *Blood* 2011; **118**(9)**:** 2462.

Lee S, Fernandez S, French M, Price P. **Chemokine receptor expression on dendritic cells is normal in HIV-infected patients with a stable response to art, but chemokine levels remain elevated**. *J Med Virol* 2011; **83**(7)**:** 1128.

Lim A, Amini A, D'Orsogna LJ, Rajasuriar R, Kramski M, Lewin SR, Purcell DF *et al.* **Antibody and B-cell responses may control circulating lipopolysaccharide in patients with HIV infection**. *AIDS* 2011; **25**(11)**:** 1379.

Barbier M, Faille D, Loriod B, Textoris J, Camus C, Puthier D, Flori L *et al.* **Platelets alter gene expression profile in human brain endothelial cells in an in vitro model of cerebral malaria**. *PLoS One* 2011; **6**(5)**:** e19651.

Hoyne GF. **Mechanisms that regulate peripheral immune responses to control organ-specific autoimmunity**. *Clin Dev Immunol* 2011; **2011:** 294968.

Effects of perindopril-indapamide on left ventricular diastolic function and mass in patients with type 2 diabetes: the ADVANCE Echocardiography Substudy. *J Hypertens* 2011; **29**(7)**:** 1439.

Tan DB, Lim A, Yong YK, Ponnampalavanar S, Omar S, Kamarulzaman A, French MA *et al.* **TLR2-induced cytokine responses may characterize HIV-infected patients experiencing mycobacterial immune restoration disease**. *AIDS* 2011; **25**(12)**:** 1455.

Yao TW, Kim WS, Yu DM, Sharbeen G, McCaughan GW, Choi KY, Xia P *et al.* **A novel role of dipeptidyl peptidase 9 in epidermal growth factor signaling**. *Mol Cancer Res* 2011; **9**(7)**:** 948.

Moxon CA, Grau GE, Craig AG. **Malaria: modification of the red blood cell and consequences in the human host**. *Br J Haematol* 2011.

Hackett MJ, McQuillan JA, El-Assaad F, Aitken JB, Levina A, Cohen DD, Siegele R *et al.* **Chemical alterations to murine brain tissue induced by formalin fixation: implications for biospectroscopic imaging and mapping studies of disease pathogenesis**. *Analyst* 2011; **136**(14)**:** 2941.

Trieu A, Kayala MA, Burk C, Molina DM, Freilich DA, Richie TL, Baldi P *et al.* **Sterile protective immunity to malaria is associated with a panel of novel P. falciparum antigens**. *Mol Cell Proteomics* 2011; **10**(9)**:** M111 007948.

Sheng YH, Lourie R, Linden SK, Jeffery PL, Roche D, Tran TV, Png CW *et al.* **The MUC13 cell-surface mucin protects against intestinal inflammation by inhibiting epithelial cell apoptosis**. *Gut* 2011; **60**(12)**:** 1661.

Mollah ZU, Wali J, McKenzie MD, Krishnamurthy B, Graham KL, Fynch S, Szanyi J *et al.* **The pro-apoptotic BH3-only protein Bid is dispensable for development of insulitis and diabetes in the non-obese diabetic mouse**. *Apoptosis* 2011; **16**(8)**:** 822.

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