Australasian Society for Immunology Inc.

N E W S L E T T E R

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Phenomics – Using Mice to Unlock Genomic Causes of Disease in Humans

Dr Stuart Read
The Australian National University, Canberra

The mouse has been essential to the advancement of medical and immunological research for the better part of the last century. The Jackson Laboratories started the ball rolling in 1929 and in 2004 the Australian Phenomics Facility (APF) in Canberra carried on that tradition of using mice for discovery and validation in an effort to better understand variations in the human genome.

The APF was established with a Commonwealth Government Major National Research Facilities Program awarded to Professor Chris Goodnow which allowed the construction of a new building on the ANU campus in partnership with Monash University, Garvan Institute and Institute Molecular Biology (UQ) which all provided cash and in-kind contributions to establish large libraries of mutagenized mice. Ongoing funding has been awarded to the APF through several Commonwealth Government initiatives including National Collaborative Research Infrastructure Strategy (2007), Education Investment Fund (2009) and Collaborative Research Infrastructure Strategy (20013). In 2005, the Australian Phenome Bank (see below) was established with funds awarded by NHMRC through the Enabling Grant scheme.

It has now been ten years in operation and APF has accumulated considerable expertise in the areas of developing, characterising and archiving mouse models of human disease.

During this time, the APF has built up a strong team to manage and execute researcher projects and train staff internally and in other institutional settings. All of the senior and middle managers come from a research background most with many years of laboratory experience. The APF prides itself of being run by researchers for researchers. This expertise helps large and small project users alike. The services provided are able to be managed at distance in with a level of responsiveness that ensures the outputs fro the APF are more efficient and cost effective.

The importance of the APF facility has been recognised by the number of international funded projects and industry activity it has attracted. It is one of the few facilities worldwide that has the capacity to address genome scale questions. Comprising three floors of offices, labs and mouse holding rooms, the facility is over 3,600 square metres, has the capacity to house 30,000 cages of mice, and has 80 staff and advanced quality control and robotics to ensure the researcher receives the very best quality research support.

The location of the APF in Canberra is not an impediment to researchers from all over

cont.p4

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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 Sarah Fardy at Fardy.s@wehi.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

Firstly, I must apologise to those of you suffering anxiety because of the belated arrival of the Newsletter. It is always difficult getting it all together in this hectic part of the year and this year seems to be more hectic than usual.

Thank you to Stuart Read from the Australian Phenomics Facility for agreeing to write the lead article. When I became aware of the wide scope of services offered by the Facility I thought it would be a good idea to try to spread the word amongst the ASI membership.

I stumbled across an interesting News Feature in *Nature* from a few years ago (472, 276-279(2011)) entitled "The PhD factory". This article discusses the ever increasing rise in the number of PhDs; the only Australian perspective I could easily come up with was in a 2013 Discussion Paper by the Group of Eight (The Changing PhD) which presented data showing that the trend in Australia is the same with the number of doctoral enrolments at Australian universities increasing by 68% between 2000-2010. I am not sure what the increase was for PhDs relevant only to medical research, but I imagine it would be consistent with this trend.

Taken simplistically, it is obvious that the NHMRC budget has to increase by the same order (in real terms) just to maintain the level of employment opportunities for Australian scientists. I think it's time we started discussing these issues; do you have an opinion? Please write a piece for the Newsletter giving your perspective – you could also (easily) win the coveted $200 prize for the best Newsletter article.

Simon Apte

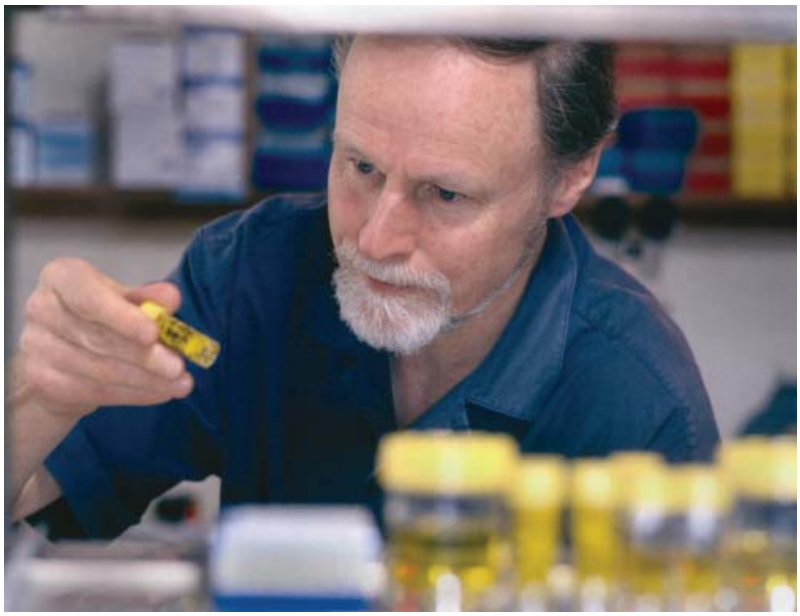
Sustaining Membership

ASI Inc acknowledges the support of the following sustaining member:

- Miltenyi Biotec Australia

ASI Legend Named ACT Citizen of the Year

(Article courtesy of ANU Media Team)



ANU Professor Chris Parish, Director of the John Curtin School of Medical Research, has been named the 2014 Canberra Citizen of the Year in recognition of his life's work in cancer and immunology research.

ACT Chief Minister Katy Gallagher presented the award and said Professor Parish had helped build Canberra's reputation as a centre of excellence for medical research, while also helping to improve the quality of life for cancer sufferers around the world.

"Professor Parish is recognised today for his inspiration and contribution over many years to the research community, and also to the broader health system in the ACT," the Chief Minister said.

An immunologist and cancer biologist with a research career of 40 years, Professor Parish is recognised as a world leader in research into the regulation of the immune system, and the role of complex carbohydrates in immune cell and cancer cell behaviour.

His research findings underpin six Australian biotechnology companies, including three Canberra-based companies: Biotron, Lipotek and Beta Therapeutics.

"I'm honoured and delighted to receive such a prestigious community award. It is definitely the highlight of the many years I have spent in Canberra," Professor Parish said.

"Also, I am pleased to see that the award has been given, for the first time, to a Canberra research scientist."

ANU Vice-Chancellor Professor Ian Young, AO, congratulated Professor Parish on his award.

"Professor Parish has been a valued member of the ANU community for the past 40 years. As a member of the academic staff at the John Curtin School of Medical Research, he has been the driving force behind significant advances in cancer and immunology research," Professor Young said. "We congratulate him on this well-deserved honour."

In 2005, Professor Parish was awarded the Clive and Vera Ramaciotti Medal for Excellence in Biomedical Research. In 2011 he was elected a Fellow of the Australian Academy of Technological Sciences and Industry and also became an Honorary Life Member of the Australasian Society for Immunology.

The Canberra Citizen of the Year is an honour awarded by the ACT Government, to recognise those who have made a significant contribution to the community.

To hear Professor Chris Parish discuss his work in immunology and cancer research, see http://www.anu.edu.au/vision/videos/3681/

Phenomics – Using Mice to Unlock Genomic Causes of Disease in Humans (cont)

The APF building in Canberra

Australia accessing the services. Researchers can manage the breeding of their strains remotely through the "Musterer" database or task a dedicated project manager and colony co-ordinator to undertake breeding, sampling management and co-ordinate analytical services. Clients can request services to be provided or work with our team of specialists in co-ordinating the production of gene variant mice, phenotyping, genomics services with data collection, management and analysis. The APF has built on years of experience to develop a comprehensive team capable of managing either small or national research projects through to international collaborations and commercial sector interests.

Since the facility opened, the pace at which research projects are now operating and the techniques we now employ have both changed radically. Through all that change what keeps the APF relevant is the depth of skill sets within the facility and the capacity to perform large-scale screening for new phenotypes upon which researchers can base ongoing investigative experiments.

A driving factor in this acceleration of research outputs has been the advances in next generation sequencing. The next ten years will see an increase in the use of mouse models of disease as experimental validation tools of gene variants identified through human sequencing studies. The APF has developed a very strong team and the infrastructure for identifying causative gene variations related to particular disease in both humans and mice. Here again the APF team specializes in helping researchers translate large, unwieldy sequencing datasets into manageable information in days, not months.

The APF is aware that across Australia there are numerous labs with freezers full of tissue samples and access to funding, looking to perform genome sequencing studies on a scale that only a few large genome centres could have contemplated five years ago. This is creating an ever-increasing demand for bioinformatic processing and data storage that is running well ahead of individual lab capacity. So the APF has the service spectrum, collections and variants, both live and frozen, to help.

Given the steady flow of fundamental discoveries of mammalian physiological function through the use of mouse models, the APF team looks forward to the next ten years and helping researchers translate their discoveries into new health treatments.

The variant mouse – your options and support services…

Creating new mouse strains – off the shelf and to order

Missense Mutation Library – One of the world's largest collections of point mutations

Utilising whole exome sequencing and our N-ethyl-N-nitrosourea (ENU) mouse mutagenesis pipeline, the APF is generating thousands of known missense and nonsense variants per year on the inbred C57BL/6 genetic background. Our fully searchable Missense Mutation Library database (http://databases.apf.edu.au/mutations) contains over 75,000 single nucleotide variants (SNVs) affecting 18,000 genes, representing 77% of all known genes. We are rapidly expanding the number of genes with mutations and in a large proportion of genes we have collected an allelic series. The database includes variants identified in libraries developed by Professor Bruce Beutler (2011 Nobel Laureate), University of Texas, SouthWestern Medical Center and the Walter and Eliza Hall Institute of Medical Research, Melbourne.

CRISPR/Cas9 – The most advanced and efficient genome editing tools

The APF team will provide the CRISPR/Cas9 system of genome editing by engineered nucleases in the second half of 2014. This system permits the relatively quick production of a strain carrying the desired mutation. The method involves the co-microinjection into 1-cell embryos of a nuclease and a short RNA molecule to guide it to the DNA target, followed by the transfer of the manipulated embryos into recipient females. Three weeks later, mice of the correct genotype are born. From initiation of the project, mutant mice could be available in as little as 12 weeks for under $10,000, including target RNA sequence design, injection and animal development.

Characterisating at the genotypic and phenotypic levels

DNA Sequencing – The APF utilises next-generation DNA sequencing to accurately detect protein-changing DNA variants in mice with heritable phenotypes and makes this known to researchers in real-time. This capability reduces the time between discovering a valuable mouse phenotype and identifying the causative DNA variant – from a previous 2–4 years to less than 6 months.

Also on offer are competitive exome and whole genome sequencing packages for both human and mouse. The APF has also developed specialised services for analysing tumour and matched normal pairs for cancer studies and family trios for rare disease variant discovery.

The team of genomics and bioinformatics specialists combine to provide services including project design, development of workflows, DNA extraction, library preparation, enrichment, sequencing, variant sequence detection through large-scale bioinformatics analysis with advanced annotation, large data set storage variant validation and ongoing genotyping.

Screening for specific genotypes and phenotypes – The APF can undertake tailored screens to suit a research program. Whether this be in N-ethyl-N-nitrosourea (ENU) mutant animals, knock-out or transgenics. Screening assays currently offered include: haematology analysis, antinuclear antibody test (ANA), enzyme-linked immunosorbant assays, red blood cell flow cytometry, white blood cell flow cytometry, biochemistry analysis, BMI and densitometry. The APF project team will work with you to develop new screens to identify the phenotype of interest.

Mouse Holding and Strain Management

Cost-effective housing for your mouse colonies – Animals maintained at the APF are housed using the latest technology of individually ventilated cages attached to air handling units with automatic watering systems. These are the cheapest externally available cages in Australia.

APF Animal Services provides a range of support services, from IP, IV, SC injections, blood and organ collection, timed matings, to compliment your research needs. The APF technical team enthusiastically embraces the opportunities to learn new procedures, freeing up researcher time for experimental work. An in-house developed database, known as Musterer, is used to track and organise all information pertaining to animals in the facility. All animal care at the APF is overseen by an onsite veterinary manager who can also deliver veterinary advice on ethics protocol applications, procedure developments/improvements, perform preliminary post mortem and provide sample collection services on request.

Archiving

The Australian Phenome Bank – The Australian Phenome Bank (APB) has been established to offer a centralised repository of genetically modified mouse strains both as a physical archive of cryopreserved material and a database of the strain information. The database includes gene and allele information, descriptions of phenotypes of both homozygous and heterozygous animals and links to publicly available information relating to each strain. The Curator reviews all strain submissions, ensures correct nomenclature is assigned and registers alleles and strains with MGI. Through this resource, researchers can save time and money by identifying strains of interest already existing in Australia rather than re-importing them from overseas or heading down the path of generating the strain. The APB database currently lists over 2000 publicly available strains and the data for an additional 1,500 strains that are currently restricted from view until publication. The inclusion of your strains will not only safeguard your strains at little cost but also greatly add to the value of the database and may lead to new collaborations.

Cryopreservation – Cryopreservation is an efficient method of insuring your variant strain from complete loss due to disaster (both man-made and natural) and a way to remove surplus strains from the laboratory without losing the genetic modification. Large sums of money, usually government grant funds, are used to generate these strains so it makes sense to not only preserve them now but to also make them available in the future to take advantage of technological and knowledge advancements. The APF currently focuses on sperm cryopreservation. Sperm is loaded into barcoded straws and stored in duplicate, in vapour phase liquid nitrogen vessels. The vessels are monitored 24/7 and are located in separate physical locations. Funding provided by the Federal Government enables this service to be provided at below cost.

Strain Re-animation from frozen stock – *In vitro* fertilisation (IVF) is used to re-animate strains from the frozen archive of the APB. The team is using the latest and most efficient IVF techniques and re-animation success is currently running at 98% of attempts with sperm thawed from the APB archive.

Until recently, IVF with sperm and oocytes on the C57BL/6 background was notoriously difficult. A new IVF technique developed by Professor Naomi Nakagata and colleagues in 2012 allowed the APB to change the IVF procedure to one resulting in higher two-cell fertilisation efficiency for strains on C57BL/6 background. While strain-to-strain variation is still evident, the APB consistently achieves two-cell fertilisation efficiencies of more than 80%. Staff at the APF successfully re-animated 67 strains from frozen stock in 2013 and by end of February 2014 had already successfully re-animated 39 strains.

Skills transfer and training – Over the 10 years of operation, the APF team has built a wealth of knowledge and expertise and we would like to share this with the research community. Thus, several training packages are in the process of being developed. Topics covered in these short courses include Assisted Reproductive Techniques (sperm cryopreservation, *in vitro* fertilisation, embryo transfer), Genomics (exome sequencing, linkage analysis and sanger sequencing, PCR and genotyping), Working with mice (husbandry and handling, mouse as a research tool) and Strategies for Research Management. The courses offer both practical and theory-based training. Please refer to our webpage for further details: http://apf.anu.edu.au/training-events.

For enquiries of any of the APF services, please visit our website: http://apf.anu.edu.au; contact us by email: contact@australianphenomics.org.au or telephone 02 6125 1324 or follow us on Twitter to keep in touch with the latest research discoveries, new resources, advances in technology, plus news regarding science policy, funding and communications @phenomics

Staff Profiles

Belinda Whittle is the Head of Scientific Services for the APF with two decades experience in the field of Molecular Biology and Genomics. Belinda graduated with a

BSc (Hons) from the ANU and has extensive experience in the management of advanced technologies, applications development, data analysis, and high-throughput processes relating to sample handling, genotyping, gene mapping, and targeted next generation sequencing. She has worked with leading scientists on a diverse range of projects during her career in the areas of vaccine development, evolutionary genomics, immunogenomics and mouse research models.

Dr Stuart Read is the Phenome Bank Curator at the APF. Stuart graduated with PhD from University of Adelaide and spent five years working as post-doc in Prof Sharad Kumar's laboratory. Stuart has extensive molecular biology, protein expression and tissue culture experience. His PhD and postdoctoral work involved studying mechanisms of transformed cell growth and their avoidance of apoptotic signals. Stuart has been the APB Curator for nine years, building the database and cryopreserved sperm archive from its inception.

Dr Suzanne Fowler is the Head of Animal Services for the APF and Attending Veterinarian for the ANU. Dr Fowler graduated with a Bachelor of Veterinary Medicine and Surgery (BVMS) from Murdoch University in 2004. She worked in mixed practice for two years before joining the APF. Dr Fowler has over seven years' experience in laboratory animal management and can provide advice on colony management, quality control, strain management, disease control, ethics as well as technical expertise in veterinary care for laboratory species and post mortem investigations.

Dr Michael Dobbie is the Chief Business Development Officer of the Australian Phenomics Facility (APF) and CEO of the Australian Phenomics Network. After gaining biomedical science degrees in Sydney, Michael completed his PhD and two postdoctoral projects in London and Oxford, UK, before returning to Australia seven years ago to capitalize on the power of the functional genomics and phenomics to serve medical researchers worldwide. Biomedical research fields Michael has directly contributed to include: genetics, vascular biology, cancer, neuroscience, developmental biology, malaria, metabolism and oxidative stress.

The Walter and Eliza Hall Institute of Medical Research

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

2013 ASI Meeting, Wellington
Tumour Immunology Workshop
The Dawn of a New Era in Cancer Immunotherapy

Chris Schmidt & J. Alejandro Lopez

Impeccably organised and chaired by Franca Ronchese from the Malaghan Institute, the program of the workshop took place in the enviable location of Victoria University at the top of the hill in Wellington. Following on from the theme of last year's Tumour Immunology Workshop (TIW), the program had the main theme of improving on the initial success of clinical immunotherapy and on discussing strategies capable of enhancing the potential of protocols recently deployed into the clinics.

The two international speakers presented separate approaches in this direction and most other speakers included variations on the same theme. Kees Melief from the Leiden University, Netherlands, discussed at length the addition of Pam_3Cys and other TLR ligands for the potentiation of long synthetic peptide vaccines. He showed data on the improvement of the immune response in animal models and included also clinical data from patients with tumour-inducing viral infections such as HPV. The approach of the team also includes the use of immunodulating antibodies. The second group of approaches enhancing immunotherapy include the use of genetically modified cells. In particular, Helen Heslop from Center for Cell and Gene Therapy at the Baylor College of Medicine in Houston, Texas, USA presented their clinical experience on treating patients with antigen specific CTL against virus-derived tumours (EVB, CMV, CPV) by genetically manipulating CTL. Various genes coding for immunomodulatory molecules (CD40, OX40, CD70, B7-1, ICAM-1, LFA-3 and several cytokines) have been included with very promising results.

This year's Gordon Ada Oration was delivered by Ian Hermans from the Malaghan Institute. He began with an argument that checkpoint blockade had, indeed, ushered in a new era in cancer therapy, and that combinations with novel vaccine approaches held enormous promise. In addition to presenting a summary of the research of his team, he contributed to the theme of the

Ruth Ganss, Chris Schmidt, Franca Ronchese

Kees Melief

Helen Heslop

J. Alejandro Lopez

meeting by discussing at length the various opportunities of combining immunotherapy with chemotherapy. He provided practical examples with his team's clinical trial for glioblastoma with appropriate timing of a combination of immunotherapy and chemotherapy. Ian also discussed his work on the recruitment of NK activity in order to further support CTL activity. This approach was discussed by several other presenters to the TIW.

Other themes presented in the workshop included the optimisation of the use of APC and the use of blocking antibodies as supporting tools for immunotherapy. It was a very open workshop within a very congenial environment that, once again, allowed for friendly and fruitful discussions in and out of the program.

Ian Hermans

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!

Tumour Immunology Workshop

(Photos by Lachlan Carlile)

Jai Rautela

Nicole Haynes

Ian Hermans

Chris Schmidt

Morad-Remy Muhsin

J. Alejandro Lopez

Contributions sought for the ASI Newsletter

You could win $200 !!

Deadline for the next issue: 1st May 2014

Please email your contributions to the Secretariat by the above date.

2013 ASI Mucosal Workshop

Alison Thorburn
Post doctoral researcher, Monash University

The 2013 ASI Mucosal Workshop ran on the Sunday afternoon prior to the main ASI conference, in Wellington, New Zealand. It was held at the Alan MacDiarmid Building, Kelburn Campus, Victoria University of Wellington, in "the safest building in Wellington" – which was ironically a phrase used to describe a lot of buildings in Wellington. Luckily, there were no earthquakes to test the accuracy of this description!

The workshop comprised a strong line-up of international speakers, Australian leaders in the field, as well as post docs and students presenting published, submitted and preliminary data. This provided an excellent forum for feedback and discussion.

I had the pleasure of chairing the first session on "Immune responses to microbiota and pathogens". Associate Professor Kathy McCoy spoke about how we can use germ-free mice to study the immune system. Connor O'Meara discussed how a chlamydial vaccine could delay genital tract infection and prevent oviduct disease. Catherine Plunkett discussed how IL-25 knockout mice

Alison Thorburn

are more susceptible to colitis. Dr Simon Phipps showed a plethora of data describing pathways involved in viral predisposition to asthma.

Dr Phipps then went on to chair the next section on "Inflammation and disease". We had the pleasure of hearing from the Mucosal Workshop president, Professor Kenneth Beagley who spoke about the role of IL-17 in chlamydial infection. Jason Lynch then explained how depleting pDCs in early life promoted pneumovirus-induced bronchiolitis. Dr Lieke van de Elsen explained her data that showed how omega 3 fatty acids induce Tregs and prevent cow's milk allergy. Hazel Poyntz talked about some preliminary results from analysis between mice strains from different facilities. Finally, Zhixuan Loh discussed the involvement of IRF3, IRF7 and IPS-1 in regulating neonatal human metapneumovirus infection.

In addition to the excellent science, the workshop generated great depth of discussion in a far from confronting atmosphere. Questions, particularly from Associate Professor Phil Sutton and Dr Steven Maltby, were particularly helpful and encouraging.

I strongly encourage students to submit their abstracts to this workshop next year. They also have prizes up for grabs – bonus!

Thanks go to Dr Elizabeth Forbes-Blom, Prof. Ken Beagley and the Mucosal Workshop committee for organizing a fantastic workshop. Thanks also go to Lachlan Carlile who volunteered his time as photographer for the Sunday workshops.

Catherine Plunkett

Connor O'Meara

Mucosal Workshop

(Photos by Lachlan Carlile)

Hazel Poyntz

Jason Lynch

Kenneth Beagley

Lieke can den Elsen

Simon Phipps

Zhixuan Loh

CSF Postgraduate Workshop

Cameron Field, Malaghan Institute

After a week of horrendous weather leading into ASI, Wellington finally got its act together just in time for the Hobbits to clear the runway, planes to land, scientists to unboard, and ASI to get underway!

The Sunday Postgraduate Workshop was opened by Britta Engelhardt with an informative insight as to how immune cells cross into what was thought to be an immune privileged central nervous system. Relating the brain as a castle surrounded by a two walled moat made understanding the blood-brain barrier much simpler and highlighted just how hard it is for immune cells to cross into the CNS.

Next up, Takashi Saito described the innate signal regulation of T cell activation and how DNA could act to provide costimulation, independent of currently known innate DNA and RNA TLR sensory pathways.

Scott Meuller reflected on tissue resident memory T cells in the periphery and how vaccination can influence the formation of these cell subsets. Though they may act spoilt by nestling down and not having to recirculate, as well as not surviving well when disociated from resident tissue, these cells do have cytotoxic potential and do attract circulating T cells to help clear infection.

Kristin Hogquist described lineage diversification in the thymus and how innate like T cells can influence the maturation of traditional T cells. Using transgenic mouse models to explore thymic selection, the role NKT cells play in the development of $CD8^+$ T cells.

Finally, Larry Steinmann, fresh off an international flight, gave a crash course on the many faces of amyloid proteins in neuroinflammation.

Following the individual seminars, all five speakers took part in an open panel discussion about life in science. Things started with brutal honesty when discussing the triumphs and disasters of pursuing an academic career. From here, we discussed following your dreams as a postdoc was important as long as you didn't deviate too far from a "safe" project. Things got comical when looking at when to call bullshit on a publication, whether it be totally against the grain, an author out of their usual subject depth, or just plain bad science. As we grow, we will inevitably be thinking about families and how this affects career decisions and journeys. This plays an important part in terms of what to think about when setting up a lab – where will it be, how many people do I want to employ and what hours can I realistically work? The somewhat topical issue of women in science and discrimination in the workplace was discussed as well as strategies to get around this.

If you have enough evidence which argues against the popular hypothesis, it can be hard to have your voice heard, and this can also have a negative impact on both collaborations, if you're seen as the new kid on the block trying to light a fire, and also on getting published when your results reflect something totally against the norm. At the end of the day, trust your data is true and don't be fearful of carving your own path as long as you also have parallel projects offering a safety net.

In today's competitive environment, when to publish is an important issue. Is it better to save up heaps for a *Nature* paper at the risk of getting scooped, or publish regularly in average journals? Quality over quantity seems to be the general consensus, though it is worth noting that you can't rest on your laurels so regular publishing is going to look equally good when it comes to writing grants. Getting negative results published is never easy. Negative results do need to be published – in the search for academic progression, there is no point in 100 labs making the same mistakes or coming to the same negative conclusions. Negative results are always worth publishing if you can sell a good story to go with them.

Finally, communication and presentation techniques were covered. Drama is always good and, as always, the stories we tell as scientists need to have excitement. Show just how badly your hypothesis was disproven, or how an obscure tangent became a very fruitful path to follow. The more we entice the reader, the more immersed they will become with the story and the better we communicate.

Once again, this was a very fruitful workshop with lots of frank, honest admissions about science as a career, aiming to leave the students motivated and inspired as to what the future holds for Immunology, while giving sound advice to further our careers.

Infection & Immunity Workshop

(Photos by Lachlan Carlile)

Alan Sher

Marcela Gatica-Andrades

Andrew Mitchell

Rick Maizels

Upcoming Conferences

ThymOz Masterclass: Stem Cells Meets Immunity
March 28, 2014
Monash University, Victoria
Email: thymoz.7@monash.edu.au

ThymOz International Conference
April 2–6, 2014
Heron Island, Queensland
http://globalthymus.net/thymoz/main.asp

3rd International Summer Symposium: Age & Immunity
12–13 June 2014
Nijmegen, The Netherlands
www.ageandimmunity.nl

The International Union of Microbiological Societies:
XIVth International Congress of Bacteriology & Applied Microbiology
XIVth International Congress of Mycology
XVIth International Congress of Virology
27 July – 1 August 2014
Montreal, Canada
www.montrealiums2014.org

16th Biennial Meeting of the European Society for Immunodeficiencies (ESID 2014)
October 29–November 1, 2014
Prague, Czech Republic
www.kenes.com/esid

Flow Cytometry Workshop

(Photos by Lachlan Carlile)

Kelly Lundsten

Bill Telford

Holden Maecker

ASI ANNUAL GENERAL MEETING MINUTES

Date: Tuesday, 3rd December 2013
Meeting opened: 12.55pm
Location: Michael Fowler Centre, Wellington, NZ

1. WELCOME AND APOLOGIES (Dale Godfrey)

Present as per sign in sheets: Rosemary Ffrench, James Harris, Sarah Jones, David Tarlinton, Lynn Corocoran, Sebastian Stifter, Sammy Bedoui, Emma Hamilton-Williams, Ron Sluyter, Jie Zhou, Scott Byrne, Merilyn Hibma, Andrew Lew, Anne Kelso, Susanne Heinzel, Carola Vinuesa, Anselm Enders, Chris Parish, J Alejandro Lopez, Wolfgang Weninger, Ken Beagley, Jose Villadangos, Yuekeng Xu, Christian Bryant, Phillip Fromm, Ranjeny Thomas, Ana Gussens, Plinio Hontedo, Stephen Daley, Roslyn Kemp, John Stambas, Jonathon Sprent, Shaun McColl, Kim Jacobsen, Dale Godfrey, Katrina Randall, Frank Sotzik, Judith Greer, Marcel Batten, Cindy Ma, Elissa Deenick, Stuart Tangye, John Fraser, Phil Hodgkin, Graham Le Gros, Joanna Kirman, Cara Fraser, Margaret Baird, Derek Hart, Andrew Currie, Nadia Osborne, Kirstie Bertram, Natalia Parlae, Ian Parish, Warwick Britton, Jane Allen, Bernadette Saunders, Anne La Flamme, Miles Davenport, Franca Ronchese

Apologies: Chris Goodnow, Stuart Berzins, Jenny Roll, Kristen Radford, Daniel Gray

2. CONFIRMATION OF MINUTES AGM 2012

The Minutes from the 2012 AGM were printed in the March edition of the Newsletter and circulated by email prior to the AGM.

Resolution: That the AGM approves as correct the Minutes of the 2012 Annual General Meeting held on Tues 4th December 2012. Proposed David Tarlinton, seconded Anne La Flamme, all in favour – CARRIED

3. RECEIPT AND APPROVAL OF REPORTS FROM COUNCIL

President's Report (Dale Godfrey)

DG gave an overview of the activity of the society during the year, including the appointment of a part time Project Officer, Dr Sarah Jones who had been involved in the member survey, development of the new ASI website (which has just gone live) and also general assistance to the Executive. He described the award of 10 international travel wards, one senior Jacques Miller travel ward to Prof Tony Purcell, and 18 special travel awards for members to attend the ICI 2013 in Milan. DG thanked the new travel awards subcommittee (Marcel Batten, Ashraful Haque, Anselm Enders, Su Heinzel) who ranked the awards. DG also described the success of the Visiting Speaker Program and thanked J Alejandro Lopez for his efforts in co-ordinating the program. He noted that Alan Baxter has been appointed IUIS Councillor at ICI Milan. He described the International Day Of Immunology activities throughout Australia, including a regional event in Ballarat. He announced that Australia had been awarded best International Day Of Immunology campaign by IUIS and was awarded an E2000 prize. He gave special thanks to the Day of Immunology co-ordinator, Dr Claerwen Jones, who did a great job advising and co-ordinating the national efforts. He described the move of the Newsletter to an online version for most members which had proceeded smoothly and thanks to Simon Apte and Judi Anderson for their efforts in compiling the newsletter. He described that 2013 had been a difficult year financially for the Society, with reduced income from meetings and sponsorship, decline in royalties from ICB and also increased spending on the website and Project Officer. He thanked John Stambas for his efforts in preparing the finance report and budget.

Secretary's Report (Rose Ffrench)

RF outlined the changes in composition of Council following the ballot in October. This included the election of a new Vice President, Prof Chris Goodnow from ANU, a new Honorary Secretary, A/Prof Stuart Berzins from the University of Ballarat, and new Council members representing Qld, Dr Kristen Radford; New Zealand, Dr Roslyn Kemp; and Vic/Tas, Dr Daniel Gray. All new Council members take office as of the AGM. RF thanked the outgoing members Stuart Berzins, Ash Haque, Anne La Flamme and David Tarlinton who were presented with a gift of a bottle of wine. DG also thanked RF for her contribution as outgoing Honorary Secretary and also ASI meeting co-convenor in 2012 and presented her with a gift of an engraved pen.

RF also presented the membership numbers for 2013 which were similar to 2012 at 1091 members, including 1027 financial members, 64 complimentary or honorary memberships, 390 from Vic/Tas as the largest region. There had been a slight increase in members from NZ.

Resolution: That the AGM approves the 2013 reports from Council. Moved Anne La Flamme, seconded John Fraser, all in favour – CARRIED.

4. RECEIPT AND APPROVAL OF FINANCIAL STATEMENTS

Treasurer's Report (John Stambas)

JS provided the audited treasurer's report of ASI finances. There was approximately $700,000 in equity, including $177,000 in branches. Overall during the year ASI had made a $73,000 loss. This was due to

Changes to Council and Councillors for 2014:

Position	*Outgoing*	*Incoming*
Vic/Tas Councillor	Stuart Berzins	Daniel Gray
Qld Councillor	Ashraful Haque	Kristen Radford
NZ Councillor	Anne La Flamme	Ros Kemp
Honorary Secretary	Rose Ffrench	Stuart Berzins
Vice President	David Tarlinton (now Past President)	Chris Goodnow

decline in income from ICB, including those due to changes in the exchange rate from British pounds to Australian dollars. There had also been a decline in subscriptions due to on line journals. This figure may be less if there is a further payment from ICB for this financial year. There are also additional one-off expenses for the creation of the website ($14,000), there were special travel awards given for the ASI symposium at the 100th AAI meeting in Hawaii ($10,000). Other increased costs were $7,000 for Day of Immunology events and the cost for the Project Officer. One-off expenses increased approximately $40,000 in 2013. Overall it was predicted there would be an $11,000 loss this year.

The proposed increase in membership by approx 14% across the board was discussed. The membership fees had not increased for nearly 10 years and were very low compared to other societies and considering the extensive benefits of membership. There were no objections to the increase, although Andrew Lew queried whether a membership increase was really necessary.

Resolution: i) That the AGM approves the Financial Statement of the 2013 financial year. Moved Dale Godfrey, seconded Anne La Flamme, all in favour – CARRIED.
ii) That ASI increases membership fees to $150 for Ordinary members; Ordinary overseas $136; Student $68; Student overseas $57; Retired $25; Retired overseas $23. Moved Dale Godfrey, seconded David Tarlinton, all in favour – CARRIED.

5. PROPOSED CHANGE TO CONSTITUTION (David Tarlinton)

David Tarlinton outlined the changes required to the constitution to conform to the new government regulations for incorporated societies. One major change is that the Public Officer position no longer exists and this role is taken up by the Honorary Secretary. The new rules also allow for proxy votes and electronic voting. Other minor changes regarded discipline and expulsion of members. DT had attended information session and redrafted the ASI constitution to conform to the new regulations. These were circulated to members by email three weeks in advance of the AGM. Stuart Tangye queried if the Public Officer/Secretary had to be resident of Victoria and DT replied they did not, although he wasn't sure about New Zealand.

Resolution: That the AGM accepts the proposed changes to the ASI constitution.(Details in Attachment 1.) Proposed David Tarlinton, seconded Miles Davenport, all in favour – CARRIED

6. RECEIPT AND APPROVAL OF REPORTS FROM ICB

ICB Report

As Gabrielle Belz was unable to attend the meeting, Dale Godfrey presented her written report on her behalf. ICB has a current impact factor of 3.95 and a rejection rate of 60%. It is aiming for >300 submissions per year. GB will be continuing as Editor, and Adrian Liston and Stuart Tangye as Deputy Editors. Ian Parish has joined Elissa Deenick as News and Commentary Editors. Stephen Daley has finished his term and DG thanked him for all his efforts. CTI was also running with six original articles, two reviews and one editorial published to date. Once it has 25 articles published, it will be included in PubMed. Rajiv Khanna was acting as Deputy Editor of CTI. There was a call for nominations of new candidate editors for the end of 2014 while GB and ST will end their terms in 2016.

Resolution: That the AGM approves the ICB report. Moved Dale Godfrey, seconded Miles Davenport, all in favour – CARRIED

7. OTHER REPORTS

IUIS/FIMSA Report; Meeting Reports

2013 NZ: Anne La Flamme reported over 400 attending current meeting in Wellington. Some issues with change in exchange rate but overall expected to break even or small profit. Lots of support from NZ institutions for support of guest speakers.

2014 NSW: Marcel Batten reported on progress with Wollongong meeting (1-5 December). All invited speakers have accepted, the website is now running, the meeting will be concurrent with transplantation workshop and HLDA10 meeting

2015 ACT: Anselm Enders reported LOC formed, selected PCO and venue, contract to be signed in the next week, Meeting dates will be Sunday 29 November – Thursday 3 December.

2016 ICI Melbourne: Jose Villadangos updated progress on ICI including major effort in marketing at the Milan meeting, including a booth and attendance by organising committee and three Arinex representatives, giving out Vegemite and Tim Tams. Have received $200,000 from state government. Website was up and running, budget projections provided. ICI logo designed.

Resolution: That the AGM approves the meeting reports. Moved Dale Godfrey, seconded Su Heinzel, all in favour – CARRIED

8. UPDATE ON NEW WEBSITE

Dale Godfrey/Sarah Jones gave an update on the new website which has just gone live. Website has new banner that rotates and can be used for advertising events or special deals with sponsors. Will include upcoming meetings in calendar, ASI history, travel awards, and women's initiative. DG thanked SJ for all her efforts in getting the website done and working. DG also acknowledged Gabriella Khoury who had put in a lot of effort to maintain the Facebook and Twitter sites for ASI and encouraged members to follow.

9. ANY OTHER BUSINESS

None.

Meeting closed at 2pm. Next AGM planned for Tuesday 2nd December 2014 at ASI Wollongong.

President's Column

I would like to begin by a brief mention of the terrific 2013 ASI Annual Scientific Meeting held in Wellington. As to be expected from our Annual Scientific Meetings, there were many outstanding science presentations ranging from plenary lectures through to the pacey 'Pecha kucha' session where speakers get 20 seconds before their slide advances and they have no control (very interesting to watch, and I am sure quite stressful to present). The Burnet Oration, as always, provided a great overview of the scientific career of one of ASI's outstanding scientists, John Fraser. Please stay tuned to the ASI website as we soon hope to upload a video of this event.

The postgraduate lecture, given by Alan Baxter, was equally informative to students, postdocs, lab-heads and Dr Who fans alike. The Lafferty debate was entertaining, and scientifically unsound, as usual, although the sight of Alan Baxter (or should I say 'Loretta') in a blue frock, with red hat and handbag, may have been too much for some. The ASI dinner, held in the Te Papa, the New Zealand National Museum, was great fun and the 'Bursa of Fabricius' prize for the best limerick was awarded to the second best entry as usual (mine is always the best, but the judges always fail to notice).

Congratulations to the many ASI members who received awards in the closing ceremony, especially to Margaret Baird who was awarded the Derrick Rowley medal for her long-standing service to our Society. On behalf of ASI Council and the membership, I wish to thank Anne La Flamme and the local organising committee who have been working hard at this event for the past 2-3 years – great job and well done to all of you. Thanks also to the many sponsors and exhibitors (see the ASI2013 website) who also make these important events possible. Marching on, I look forward to our next meeting in Wollongong, 2014.

I was thrilled to see the great reception and strong interest in the launch of the **ASI Women's Initiative**. We hope that this will open up many new opportunities including a mentorship program and discussion forum to reduce the problems associated with the isolation often felt by female immunologists – many thanks to Ros Kemp and Sarah Jones for driving this important initiative. This program will allow us to help pair female immunologists with appropriate mentors who express interest by signing up for this initiative. We will also maintain a publicly available and searchable **database of female immunologists** appropriate for consideration as invited speakers or chairs at conferences and courses. The immunologist database is a resource to enhance the representation of female immunologists as speakers at conferences, presenters of seminars, participants on review panels, and on editorial boards. Immunologists can be viewed based on discipline, experience and location. I am pleased to say we already have 75 registered mentors and 70 women in the speaker database and we are now ready to make a call for people who would like to be mentored. Finally, we recognise the need to celebrate success and encourage recognition – the Women's Initiative website will feature **news and events** that promote success by female immunologists. To register for the mentorship program or to be listed on the database of female immunologists, please contact Roslyn Kemp (roslyn.kemp@otago.ac.nz). Please also see our new website for more details on this program http://www.immunology.org.au/womens-initiative/

As you will have gathered from above, I am glad to announce that our new website is now live http://www.immunology.org.au – this was also very well-received when first presented at the AGM in Wellington. This is providing great new opportunities to enhance the ASI membership experience and increase communication between members. Many thanks to Sarah Jones for helping to drive this over the past year. Sadly, just as we are about to start seeing the full benefits of ASI's new website, Sarah will be leaving ASI as Project Manager in order to fully focus on her postdoctoral research. However, I am also very happy to say we have just appointed a new Project Manager, Sarah Fardy, an ASI member/final year PhD student with experience in website management, and ASI meeting organisation. Sarah will be able to continue to develop our website and other new initiatives to ensure we can maintain momentum with these important projects. Sarah's contact details for ASI related issues will be provided on the website and via email very soon.

New ASI Project Manager – Sarah Fardy

I also wish to formally welcome two new members of ASI Executive – our new Vice President, Chris Goodnow, and our new Honorary Secretary and Public Officer, Stuart Berzins. Also welcome to our new Branch Councillors for Victoria/Tasmania (Daniel Gray), New Zealand (Roslyn Kemp) and Queensland (Kristen Radford) and welcome back to Simon Apte who has been reappointed as Newsletter Editor. Thank you to each of you for offering your precious time to serve in these important roles in our Society.

Dale Godfrey

Honorary Secretary's News

New ASI Council Members
At the end of each year, there is a changing of the guard on ASI Council as some Councillors' terms expire and newly elected Councillors come on board. The changes for 2014 are as follows:

Chris Goodnow becomes ASI Vice President and will become President in 2015, when he replaces Dale Godfrey. The Presidency of ASI is a 2-year term, with an additional year spent before and after that term to ensure a smooth transition between Presidents.
Kristen Radford replaces Ashraful Haque as Qld councillor.
Daniel Gray replaces Stuart Berzins as Vic/Tas councillor.
Roslyn Kemp replaces Anne La Flamme as NZ councillor.
Stuart Berzins replaces Rose Ffrench as Honorary Secretary.

Congratulations to all the incoming Councillors and thank you to those they are replacing for all their hard work in helping to run ASI. I realise I am congratulating myself there … but after weeks of grant writing, self-effacing prose escapes me.

New Project Manager
Sarah Jones has stepped down as ASI Project Manager to focus on her postdoctoral research. Sarah made many important contributions to ASI over her time in the job, including working to get the new website up and running, organizing the membership survey and helping to establish the ASI Women's Initiative. Sarah has generously continued to work in an advisory capacity while a search was made for a replacement and we hope she will continue to help ASI with other ongoing initiatives.

ASI has been fortunate to appoint Sarah Fardy as the new Project Manager. Sarah's appointment has made it simple to remember to the name of the Project Manager but, more importantly, she has picked up where Sarah J left off and is already continuing the process of updating and improving our new website. If you haven't done so already, please look through the various sections of the website at http://www.immunology.org.au and let your local branch Councillor know if there are any problems or areas where there can be improvements or additions. Please let us know about new events, conferences, visiting speakers, ASI relevant photos, etc., that you would like to see promoted on the website.

ASI 2013 Conference in Wellington, 2–5 December
The ASI conference in Wellington was a great success, attracting over 400 participants to the "Coolest Little Capital in the World". Thanks go to Anne La Flamme and the local organising committee for gathering a great line up of local and international presenters and ensuring there was not a single earthquake to dampen the event. Thanks also to the many sponsors and exhibitors (see the ASI2013 website) who supported the meeting.

The 2014 Annual Meeting will be held in Wollongong from December 1–5, so please check out the official website (http://www.asi2014.org/) and keep an eye out for the opening of early-bird registrations. Organization for the event is already well advanced, with the following speakers already committed to attending the meeting: Nobel Laureate Bruce Beutler, Ron Germain (NIH, USA), Qizhi Tang (UCSF Diabetes Center), Erika Pearce (Washington University, USA), Yasmine Belkaid (NIAID, USA), Marco Colonna (Washington University, USA), Bart Lambrecht (VIB Belgium), Taka Okada (RIKEN, Japan), Gennaro De Libero (ASTAR, Singapore), Tracey Hussel (Imperial College London, UK), Andrea Cooper (Trudeau Institute, USA).

Awards
The deadline to submit applications for next round of travel awards has not been finalised, but will be mid to late April. ASI members will be advised about this and information will also be available on the ASI website.

Day of Immunology
The Day of Immunology 2014 is fast approaching and there are great initiatives happening in several States. Australia received the IUIS award for the best International DOI in 2013 and it continues to grow in popularity each year. The DOI is a great opportunity for the community to understand the importance of the immune system, so support it where you can and encourage friends, family and foes to engage with it.

Stuart Berzins

Barbara Heslop (1925-2013): A Tribute

Barbara Heslop was truly a renaissance figure. To her colleagues she was best known as a pioneering immunologist. To her students, a teacher of rare distinction whose remarkable knowledge was matched only by the clarity of her delivery. Her close friends, though, knew of other talents: she was a musician, a chef, a short story writer and a sometime inveterate entrant in "purple prose" contests. She had a formidable intellect and was capable of demolishing poor arguments with a few incisive comments. She was also an exceptionally generous person who contrived to combine marriage and motherhood with an outstanding career at a time when this was almost unthinkable.

Barbara was educated at Epsom Girls Grammar in Auckland where she won a coveted University Entrance Scholarship. She graduated in medicine from the University of Otago Medical School, collecting the Bachelor Memorial Medal and Prize in Obstetrics and Gynaecology en route. Her experiences as a woman medical student were extraordinary – who now, for example, would countenance excluding women from lectures when human reproduction was taught?

Following her undergraduate degree she embarked on an MD and worked in the Pathology Department where, among other matters, she learned valuable commercial skills – re-packaging histological stains into smaller quantities for sale to generate research funding. These early lessons were to serve her well later in her career. During this time she met and married John Heslop who was to become a general surgeon and a prominent figure in New Zealand cricket. They departed for London by ship in 1956 where Barbara spent five years at the Hospital for Sick Children, Great Ormond Street. Here the first of their two daughters, Helen, was born. With a babe in arms, they returned to Dunedin where Barbara expected to stay at home for a while. This was not to be. With John's encouragement, she returned to work in the evolving Transplantation Research Group within the Department of Surgery. John's mother readily took over the day-to-day childcare, looking after both Helen and Hilary, who was later born in Dunedin. This included ensuring that the girls each had their daily small glass of port on returning home from school.

The Transplantation Research Group at that time had seen a number notable arrivals and departures including a visit from Sir Peter Medawar. Barbara began the work on what were to become her major immunological foci: allogeneic lymphocyte cytotoxicity (NK cells), the development of immunosuppressive regimens for organ transplants and the mysteries of the H-Y antigen. During this period she held no less than nine inbred rat strains in her colony plus several homemade congenics. Five of these were albinos and to ensure their individual integrity without the benefit of today's molecular techniques, regular cycles of 'ring grafting' were carried out. This was a rigorous but lengthy approach: skin grafts were exchanged between a number of rats – rejection indicated deviation from syngeneity. All of this required constant funding, decent animal housing and trained staff. She recalled some very feisty sessions to secure the necessary money, encounters on which she thrived. Barbara led this group until her retirement in 1990, publishing over 130 papers. She maintained a group of, on average, 10 personnel, as well as a colony of some hundreds of rats. She was immensely fond of both of these.

Barbara also found time to lecture on, and eventually to become the Convener of, the Basic Sciences Course, an intensive revision course run out of Otago for those intending to undertake the FRCAS examinations. Over the years this course attracted (and still does) large numbers of Australian as well as New Zealand candidates. Fundamental immunology was a strong feature of the course which Barbara taught in her trademark "it-can-never-be–put-too-simply" manner. Indeed, occasionally surgical trainees volunteered that this was the first time they had really grasped any immunological concepts at all. When she joined the RACS Board of Examiners she relished the opportunity to create some very testing MCQs. Her outstanding contribution to the Royal Australasian College of Surgeons was marked the award of an FRACS for services to surgical sciences and the Louis Barnett Medal, the latter being awarded jointly to her and John. These were only two of the awards Barbara received. There were many others including Commander of The British Empire, Fellow of the Royal Society of New Zealand, Life Member of the Cancer Society and Life Member of the NZ Medical Women's Association.

Barbara developed a talent for managing finance. Immunological research is expensive so Barbara became characteristically entrepreneurial. In addition to the usual biomedical research funding sources (where she was extraordinarily successful) she drew upon her earlier experiences and found new income streams. For example, for a fee, rat and pig skin was harvested for application to the wounds of severely burned patients. These were much more effective than the traditional dressings. Thus the 'skin fund' was established. When she became the chair of the trust governing the Basic Sciences Course, the balance sheet steadily rose, so much so that in 2010 the trust was comfortably able

to donate $300,000 to the establishment of New Zealand's first academic neurosurgery unit in Dunedin.

Perhaps one of her most significant achievements for this Society occurred when she was the president of the New Zealand Society for Immunology. In 1985 she and Jim Watson, recognizing the strength of trans Tasman unity, initiated negotiations to amalgamate NZSI with ASI at the famous Queenstown meeting in 1985. This was cemented in 1986 with the first meeting of the *Australasian* Society for Immunology.

Barbara died peacefully just prior to Christmas 2013. Even in death her characteristic clarity of thought shone through, as she left very clear instructions. There was to be a private cremation and no funeral. And after a month or so, there was to be a gathering of old friends and colleagues with good food, good wine and short witty speeches (if there were, in fact, to be any).

It would please her to know we all *did* have a great time.

In honour of this remarkable woman, the Barbara Heslop Memorial Fund has been set up by the University of Otago to support a scholarship for research students. Donations to this fund may be made via the University of Otago Alumni website https://secure-www.otago.ac.nz/alumni/donations/#gifts20

Contributed by Margaret Baird in acknowledgement of Barbara as her PhD supervisor, mentor and friend

The ASI Visiting Speaker Program

The Year of the Horse augurs a very prosperous year for the program as several travelling distinguished immunologist are already lined up to visit our shores.

The success of the program depends on your participation and we look forward to hearing from you with your proposals. Please visit the new ASI website for details of the program.

February / March

Professor Peter Andersen
Vaccine Research and Development at *Statens Serum Institut*, Copenhagen, Denmark
Sydney, February 24
Dunedin, February 27
Palmerston North, March 4
Hosted by Joanna Kirman, University of Otago

May

Professor M. Juliana McElrath, MD, PhD
Fred Hutchinson Cancer Research Center. Seattle, USA
Sydney, May 5
Brisbane, May 6
Melbourne, May 7, 9
Hosted by Miles Davenport, University of New South Wales, Sydney

June

Jason Cyster, PhD
Howard Hughes Medical Institute, University of California, San Francisco, USA
Adelaide, June 5
Perth, June 16
Sydney, June 18, 19
Hosted by Claudine Bonder, Centre for Cancer Biology, Adelaide

Second half of the year

A/Prof. Ananda Goldrath
Section of Molecular Biology, University of California, San Diego,. USA
Detailed schedule to be confirmed
Hosted by Roslyn Kemp, University of Otago

ASI is now on Facebook and Twitter

For up-to-date information on all things ASI, including conferences, travel scholarships, prizes, visiting speakers and general immunology news.

Follow at:
https://twitter.com/ASImmunology
https://www.facebook.com/ASImmunology
And for even more immunology news,
https://twitter.com/DayofImmunology

Accounts managed by ASI member, Gabriela Khoury

ASI Councillors' News

N.Z. News

2014 represents a change of guard for the New Zealand branch. I have taken over from Anne LaFlamme, who has spent the last three years simultaneously representing New Zealand's interests on ASI Council and organizing the ASI 2013 meeting. Chairing the meeting committee was particularly challenging, since her three right hand women – myself, Jo Kirman and Sarah Hook – were all based 600 km away from Wellington in Dunedin. Anne has been a fantastic Councillor for NZ members and hopefully I can operate with at least half her energy.

ASI2013 was an extremely successful event, feedback from local and overseas participants has been overwhelmingly positive. It was especially good to be able to launch the ASI Women's Initiative from the NZ meeting, since so many of our local immunologists are female. Another very successful initiative was the Student Minder Programme, where immunology postgraduate students were matched up with our international invited speakers to welcome them to NZ and to help them to their hotels, to the conference and to act as the first point of contact whenever they had questions. This was beneficial to both speakers and the students.

In 2014, we will host a series of Day of Immunology events around the country, and have our main scientific meeting in Palmerston North in early July. The organizing committee is headed by Joanna Roberts, and so far they have confirmed Martin Vordermeier and Jane Oliaro as invited speakers, with one more to be determined. The theme is One Health, and will aim to bring together both clinical and veterinary immunology research. Finally, the Gut Health Network (guthealthnetwork.com) will be holding a special workshop at the NZ Society for Gastroenterology Meeting in Auckland in November, and is happy to confirm Charles MacKay as our invited speaker.

Once again, thanks to Anne for so much hard work over the last three years.

Roslyn Kemp
Councillor

Queensland News

I am settling into my new role as Queensland Councillor and am looking forward to some of the exciting events we are planning for Queensland this year, including World Day of Immunology, hosting visiting speakers and of course the BIG Annual Retreat. I'd like to take this opportunity to thank Ash Haque for the great job he did as Queensland Councillor and for his support in handing over the reins to me. He hasn't been let completely off the hook yet, below is his report of Ed Palmer's visit as part of the ASI Visiting Speaker Program:

Professor Ed Palmer visited Brisbane on the first leg of his VSP tour of Australia. After hopping off a flight from Europe, Ed was happy to embark on a jet-lag delaying, CityCat tour of the Brisbane River. A good night's sleep later, Ed visited the Translational Research Institute (TRI) and spoke with many of the immunologists based there. Later in the day he attended and contributed to the discussion at a seminar from ASI President, Dale Godfrey, who was visiting the QIMR Berghofer Institute. The following day Ed gave a wonderful seminar at QIMR Berghofer, rich in the history of T cell research, with many of the seminal discoveries his laboratory has made over recent decades. Ed was very gracious with his time, and his knowledge and experience was much appreciated by all in Brisbane.

Kristen Radford
Councillor

N.S.W. News

Happy New Year everyone! 2014 is looking exciting with some fantastic ASI Visiting Speakers in the planning and, of course, leading up to the NSW-hosted Annual Scientific Meeting of ASI which will be held next to the lovely beach of Wollongong from Monday 1st to Friday 5th December 2014. Amongst a star studded program, a notable inclusion is Nobel Prize Laureate Prof. Bruce Beutler. You can find more info and register your interest at **ASI2014.org**

2014 NSW/ACT Branch Meeting

The 2014 NSW/ACT Branch meeting will again be held in Bowral, Thursday 28th and Friday 29th August. Thank you to Anselm Enders and Yogesh Jeelall from ANU who are the meeting organisers for this year.

Visiting speakers

2014 speakers visiting NSW are slated to include:

24th February – Peter Andersen, hosted by Warrick Britton, Centenary Institute. Lecture to be given at 4pm at Centenary Institute followed by drinks and cheese (will be over by the time you read this).

Mid-June – Jason Cyster, hosted by Tri Phan, Garvan Institute. Details TBA.

5th May – Julie McElrath, hosted by Miles Davenport, UNSW. Details TBA.

I will be having a baby in May but still hope to be contactable if there is anything you need. If you do have matters you need urgent help with, you can also contact Judi at the ASI Secretariat or other members of the NSW committee who are listed on our page of the new website:
http://www.immunology.org.au/regional-branches/new-south-wales-branch/

Marcel Batten
NSW Councillor

ICB Online Manuscript Submission

Online manuscript submission for Immunology and Cell Biology now available via:

http://mts-icb.nature.com/

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

S.A./N.T. News

Our next local ASI event will be The World Day of Immunology which is coming up on 29th April. Last year we teamed up with the Royal Institute of Australia (RiAus) to run a 'Vaccination Café' where members of the public were invited to come along to experience immunology in action and get their flu vaccination and learn about immunology while they waited. The event was extremely well attended and with 100 people pre-booking their vaccination online, we quickly sold out. The event was such a success that we have started making plans with RiAus about how to make the event bigger and better this year. I will soon be calling for volunteers interested in participating in the event, so keep an eye out for my email as I am keen to hear any ideas.

The other big local ASI event for the year will be the 10th Annual Adelaide Immunology Retreat (AIR-10) which will take place in July or August. This event is growing every year; last year we had excellent participation across a broad range of research interests. I am keen to form an organising committee early in the year, and participating in this committee is a great chance to get involved in ASI and everyone has the opportunity to contribute ideas for the location, venue and invited speakers. I will send out an email soon calling for volunteers so please get involved and encourage your students to be involved!

Please don't hesitate to contact me at cara.fraser@health.sa.gov.au if you have any questions or suggestions about ASI events.

Cara Fraser
Councillor

Victorian News

As the incoming representative for Victorian and Tasmanian ASI members, I would like to start by thanking Dr Stuart Berzins for years of fantastic service. Local members have benefited greatly from his approachable manner and diligence. It's great news that Stuart will continue to serve the Society as Honorary Secretary.

Last year ended with a bang, with the ASI Annual Conference in Wellington, New Zealand. By all accounts, it was an excellent conference and I congratulate our colleagues across the pond for their hard work in putting it together. Keep 1st-5th December, 2014 free so you can come along to the 44th Annual Scientific Meeting in Wollongong, NSW; the list of Plenary speakers is already looking great, with some stellar scientists lined up. Members who have renewed before 1st April are eligible for the many prizes on offer and enjoy the special discounted rate, so remind your colleagues to renew their membership if they haven't already done so.

Late last year, we hosted Professor Ed Palmer for the Visiting Speaker Program. Poor Ed was worked relentlessly, giving talks at multiple centres and meeting with many students and scientists. His amazing talk on the biophysical parameters of TCR/co-receptor engagement with MHC/peptide and the implications for selection and immunological tolerance was inspiring. I urge any local members with ideas for speakers we could invite as part of this program to contact me. These visits require a lot of organisation (they usually visit three or more States and/or New Zealand), so please shout out now if you'd like to invite someone this year (contact me at dgray@wehi.edu.au).

For details on upcoming visiting speakers and, indeed, all things "ASI", I urge you to visit the revamped website (http://www.immunology.org.au). It looks fantastic and is jam-packed with useful, up-to-date information.

I'd also like to draw members' attention to an upcoming meeting at Monash University; "ThymOz Masterclass: Stem Cells Meets Immunity" on 28th March. It will be a showcase of outstanding national and international scientists and clinicians on immunological tolerance and stem cell biology, including Prof. Alan Trounson (President of CIRM), Prof. Martin Pera (University of Melbourne), Prof. Juan-Carlos Zuniga-Pflucker (University of Toronto), Prof. Charlie Surh (The Scripps Research Institute), Dr Axel Kallies (WEHI) and Silviu Itescu (CEO of Mesoblast Ltd.). It will be a great opportunity to hear how advances in immunology and stem cell research can be fused to explore new horizons in the lab and clinic. Please contact me on the email address above for information on this workshop, or with any other enquiries or ideas for Victorian and Tasmanian ASI activities.

Daniel Gray
Councillor

ThymOz Masterclass: Stem Cells Meets Immunity
March 28, 2014
Monash University, Victoria
Email: thymoz.7@monash.edu.au

ThymOz International Conference
April 2–6, 2014
Heron Island, Queensland
http://globalthymus.net/thymoz/main.asp

44th Australasian Society for Immunology Annual Scientific Meeting

Monday 1st - Friday 5th December 2014
Novotel Wollongong Northbeach, New South Wales

PLENARY SPEAKERS

Yasmine Belkaid, *National Institute of Health, NIAID, USA*
Gabrielle Belz, *Walter and Eliza Hall Institute of Medical Research, VIC*
NOBEL LAUREATE - Bruce Beutler, *UT Southwestern Medical Center , USA*
Robert Brink, *Garvan Institute of Medical Research, NSW*
Marco Colonna, *Washington University, USA*
Andrea Cooper, *Trudeau Institute, USA*
Gennaro De Libero, *Singapore Immunology Network (SIgN), Singapore*
Paul Foster, *The University of Newcastle, NSW*
Ronald Germain, *National Institute of Allergy and Infectious Diseases, USA*
Dale Godfrey, *University of Melbourne, VIC*
Tracy Hussell, *Manchester Collaborative Centre for Inflammation Research (MCCIR), UK*
Bart Lambrecht, *Ghent University, Belgium*
Takaharu Okada, *RIKEN Center for Integrative Medical Science Center (IMS-RCAI), Japan*
Virginia Pascual, *Baylor Institute for Immunology Research, USA*
Erika Pearce, *Washington University School of Medicine, USA*
Ray Steptoe, *University of Queensland, QLD*
Qizhi Tang, *UCSF Diabetes Center, USA*

www.asi2014.org

TRAVEL AWARD CONFERENCE REPORTS

International Congress of Immunology

22–28 August 2013, Milan, Italy

European Society of Respirology

4–11 September 2013, Barcelona, Spain

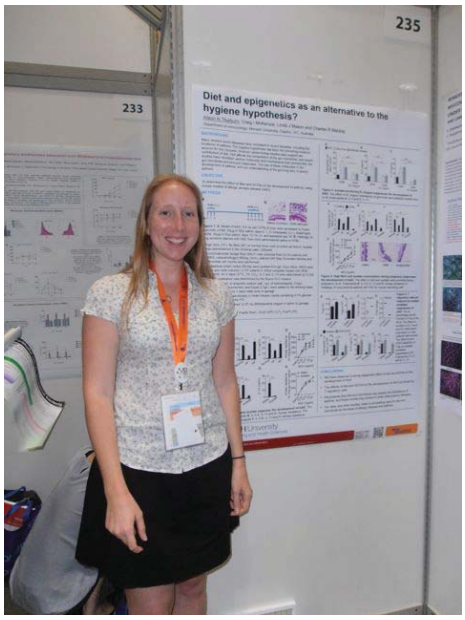
Alison Thorburn
Monash University, Victoria

Firstly I would like to thank ASI for awarding me an international travel award, which made this trip possible. I had a great trip and was able to attend two conferences, one immunology-based and one more clinically relevant.

The first conference I attended was the International Congress of Immunology (ICI) in Milan, Italy. As many of you are aware, this conference only occurs once every three years. There were more than 5300 participants, which meant that there were multiple sessions covering all aspects of immunology and a lot to see. The next ICI conference will actually be on home territory, in Melbourne 2016! Some of the highlights from the ICI conference included Prof. Luke O'Neill's presentation on how circadian rhythm affects the immune response, Prof. Shizuo Akira's presentation on microtubule acetylation in NLRP3 activation and Prof. Richard Flavell's presentation on the inflammasome and microbiota. There were some fantastic posters and the sessions generated a lot of discussion. My poster was well received and I made some collaborations.

The second conference I attended was the European Society of Respirology (ERS) in Barcelona, Spain. The conference was much larger, with more than 20,000 participants ranging from basic scientists to clinicians and pharmaceutical companies. Some of the highlights from the ERS conference included the symposium on "Severe asthma: moving from phenotyping to endotyping" and chatting to Prof. Stephen Holgate about my research, support for early career researchers and receiving general career based advice. It was also great to see a number of my Australian colleagues and friends as well as international collaborators. My poster session was a discussion session in which I was lucky enough to have my abstract highlighted in the program as an abstract of interest. I was the first presenter in my session and generated a crowd (at least 50 people), many who stayed and discussed my data with me for the whole of the 2-hour session. It was exhilarating and I made some more great collaborations.

Overall, the two conferences were very valuable and complementary. They allowed me to gain an understanding of what is going on at the forefront of scientific research in areas related to my research. Thank you again to ASI for this travel award, I am indeed, very grateful for the support.



Keystone Meeting on Biology of B Cell Responses

9–14 February 2014, Keystone, Colorado, USA

Alvin Pratama
John Curtin School of Medical Research, ANU, Canberra

In February, I attended the Keystone Meeting on B Cell Responses in the snowy yet scenic Keystone Resort. This visit was funded by the ASI Postgraduate International Travel Award, for which I am very grateful. The B cell symposium covered a range of topics, including B cell development and activation, B cell cancers, and the regulation of B cell immunity by T follicular helper (Tfh) cells. Tfh cells are a subset of effector CD4+ T cells that specialise in helping B cells to produce high-affinity antibodies. I am studying the differentiation of these T cells and their role in autoimmunity for my PhD thesis. Attending this conference really expanded my knowledge on B cell biology in general, but particularly on their development in the bone marrow and their differentiation after interacting with T cells.

Standing on top of one of the peaks along the Nordic trail

The conference was opened by a keynote address by Jason Cyster (UCSF), who talked about the importance of integrins in mediating interactions between B cells and follicular dendritic cells in germinal centers. He then went on to talk about the role of a phospholipid receptor S1PR2 in confining germinal center B cells within their niche and mutations in S1PR2 were found to result in B cell lymphomas.

The highlight of the second day for me was the talk by Tomohiro Kurosaki (Osaka University), which was on the identification of plasmablasts as the main subset of IL-10-producing B cells. He also showed that dendritic cells expressed the highest amount of IL-10 receptor, so he suggested that the repression of T cell differentiation by IL-10 (produced by plasmablasts) is most likely through indirect mechanisms by modulating dendritic cell function.

The third day of the conference was a special day for me, as it was a "Tfh cell and germinal center" day, on which I could recognise most of the speakers' names from the journal articles I read. I was really excited just by meeting my "immunology idols" and also fascinated by their talks, but the seminars by Gabriel Victora (Whitehead Institute) and Michel Nussenzweig (Rockefeller University) were the stand-outs. They studied the dynamic interactions between T and B cells in the germinal center and found that T cells were able to move between germinal centers while B cells were restricted in one. It was also interesting to see that more people (during Q&A sessions) were highlighting the importance of Tfh cells, on top of B cell-intrinsic factors, in regulating B cell differentiation. In the evening, I presented a poster on my PhD thesis, which is about the regulation of Tfh cells by microRNA-146a. I found accumulation of Tfh cells in miR-146a-deficient mice and this was due to the overexpression of many Tfh cell mRNAs, but most prominently *Icos*. During the poster session, I managed to discuss my project with other postdocs and students from around the world and received many constructive comments to improve my experiments.

The last day of the conference also featured an impressive line-up of speakers, but the highlight for me was the talk by Riccardo Dalla-Favera (Columbia University), who told us about the genetic lesions in two subsets of diffuse large B cell lymphoma. Overall, this Keystone meeting was very intellectually stimulating and rewarding for me as I had the opportunity to learn from some of the best B cell immunologists and also discuss my PhD project. Also, I had the chance to enjoy the scenery of the Rocky Mountains and participate in various recreational activities, like snowshoeing and snowtubing, during the lunch breaks.

After the Keystone meeting, I travelled to the northeast part of the US to find potential postdoctoral opportunities. My first stop was Dan Littman's laboratory at New York University and I was particularly interested in their work on the gut microbiota and how they can promote differentiation of certain T cell subsets. I had the most enjoyable and unforgettable visit, as the lab members were very enthusiastic and friendly and I also had stimulating discussions with several postdocs.

The following day, I went to the Rockefeller University (New York) to visit the laboratory of Michel Nussenzweig. His group is at the forefront in devising strategies to treat HIV infection using broadly neutralising antibodies yet, during our discussion on the topic, he pointed out that they are still faced with huge challenges in fighting HIV, which include identifying and eliminating the latent reservoir of HIV, and figuring out ways to "train" the immune cells to adapt to the ever-mutating virus.

The last laboratory that I visited was located in the New Research Building of Harvard Medical School (Boston) and is headed by Diane Mathis and Christophe Benoist. Here, we had a long discussion on how the gut microbiota can affect not only immune responses in the gut but also systemic immunity, and also on the novel roles of Treg cells (e.g. facilitating muscle repair and

controlling metabolic diseases). Discussions with the lab members also reassured me that the "horror stories" about Harvard labs – that more than one postdocs are working on the same project and postdocs are sabotaging each other's experiments – are certainly not true for this lab.

In all three laboratories, I gave a seminar on my PhD project, toured the laboratory, and discussed potential postdoctoral projects. I really benefited from these visits as not only did I receive useful feedback for my PhD project, but I also started building connections with the postdocs and students in those labs, which will be important for my career in science. All in all, I had a very educational trip and I would like to thank ASI again for generously supporting my efforts to be an independent scientist by providing funding for international travel.

The main gate of Rockefeller University

15th International Congress of Immunology

Jenni Williams
Victoria University of Wellington

I was very grateful for funding from ASI to help me attend the 15th International Congress of Immunology in Milan from August 22 – 27. This conference involved over 5300 participants from around the world and covered topics from basic research through to translation and clinical application. It was a brilliant opportunity to see and interact with internationally renowned researchers.

A highlight of the conference for myself was hearing from researchers who are successfully translating basic science research into human clinical trials. In particular, it was fascinating to hear how Dr Hua Yu and her colleagues have developed CpG-Stat3 siRNA, which prevents the growth of aggressive lymphomas and gliomas by blocking the critical protein, STAT3. Also, Dr Philip Murphy described the first use of a CXCR4 antagonist in humans to restore normal white blood cell counts in patients with WHIM syndrome. As a student at the beginning of my career, I found it inspiring to see how leading scientists have been able to move their lab-based discoveries into the desired human applications.

My PhD research is investigating the mechanism involved in a novel cardio-protective technique known as remote ischaemic preconditioning. Although this intervention has gained enormous interest, to the best of our knowledge we are the only investigators currently studying it in New Zealand. I presented a poster of my project titled '*The effect of remote ischaemic preconditioning on the immune response in healthy volunteers'* at the conference. I was able to discuss this research with numerous researchers, including experts in the fields of ischaemia biology and neutrophil function, and gained several key ideas for my next study.

Publications List

Congratulations to ASI members who have published their following work in the last three months

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