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NEWSLETTER

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Boldly Going Where No Group Has Gone Before: Medical Genomics in the Wilds of Deepest Darkest North Queensland

Alan G Baxter
James Cook University, Townsville, Qld.

In 2003, my research group relocated from the Centenary Institute, on the Royal Prince Alfred Hospital campus and adjacent to the University of Sydney, to the Townsville Campus of James Cook University (JCU). At that time, the University had not held NHMRC funding for over a decade. The last (and only previous) recipient had moved there on a training fellowship and moved away again within a year. The campus consisted of brutalist concrete bunkers adorned with concrete sheets protecting windows from cyclone damage, and wide expanses of the area's original flora – a dry, sparse woody scrub and native grassland populated by wandering mobs of wallabies, soaring cacophanies of cockatoos, and a vibrant collection of tropical butterflies.

Our lab was carved out of the ground floor of the largely derelict, but still occupied, Molecular Sciences Building. Various physical restrictions crimped the amount of office space, but the lab design was practical and safe, and far better than the rows of glass boxes architects seem to prefer. A new animal facility was built specifically to house the kind of work we do, which is the study of gene/environment interactions in autoimmunity. This required very fine levels of environmental control and the resulting facility – the first building on the campus to have an exterior colour scheme – remains one of the best small animal facilities in Australia.

In moving, most of our, and certainly all of my, attention was focussed on practical and physical requirements. To a large extent, I had assumed that the decade-long run of gifted staff and students I had enjoyed at the Centenary would continue in my new home. I had attributed these successes to my own abilities to judge people, and, knowing that JCU had a world class marine biology research endeavour, assumed that we would have little trouble in recruiting skilled and enthusiastic staff. In retrospect, this was a mistake. JCU had a strong "Tech College" mentality (it was formed by a merger between a teaching college and a school of the University of Queensland) and undeniably the tropics attracts, as Noel Coward used to note, some odd sorts. I failed to follow the wisest advice I have ever received, that of Jon Sedgwick when he said, "Only ever employ nice people." I learned my lesson, and after many attempts to change the lab culture, our original expeditionary force rebooted and repopulated the lab – this time carefully observing the Sedgwick rule.

JCU has some of the best administrative staff I have met anywhere: bright, enthusiastic and constructive. Of course, like anywhere, it also has some who are not so helpful, but unlike some larger institutions, none of these are malevolent. In addition, we received very strong support from the Faculty. I had been recruited to establish a viable medical research endeavour and to a considerable extent, I was given a free rein. The Research Office was refocused and prioritised to act as facilitators, rather than gate-keepers, of funding. Finance reporting was changed to provide year-by-year accounts, instead of whole-of-grant double entry book-keeping. A gradual acceptance grew that competitive research was hard and that teaching loads had to be seriously lightened for productive researchers.

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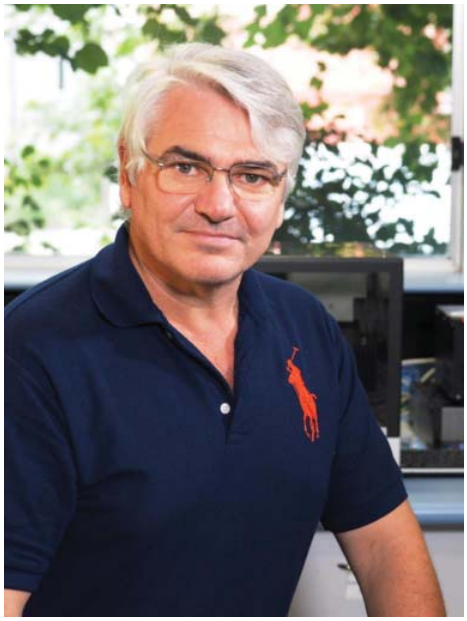

Alan Baxter

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The New ASI Website

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

- Links providing members with free access to Immunology & Cell Biology, Nature Immunology, Nature Reviews Immunology
- Special offers for ASI members
- Download and upload forms for ASI awards
- Positions vacant page
- Online membership renewal
- Upcoming conference listings
- Women's initiative
- Twitter feed

as well as many links to sites of immunological interest at home and abroad. If you would like to advertise a job or conference, or if you have an immunology news story, or a favourite immunology-related site that you would like to see linked to the ASI website, please email Sarah Fardy at fardy.s@wehi.edu.au

Editorial

Confusing Times for Medical Researchers

It was only three years ago we were fighting against proposed cuts to the NHMRC budget that would have more-than halved the available funding. Now, without even a fight, it seems we are in for the sort of support we wouldn't have dared dream of with the Government's proposed Medical Research Future Fund. This proposed fund is predicted to reach $20bn by 2023 and will act as an endowment – where revenue from the fund will act as a revenue stream to the NHMRC. That's great news for medical research but does come at a loss to other areas of scientific research. As my kids would say – too bad, so sad; but hang on, before you exercise your *Schadenfreude*, something doesn't seem to add up. The fund will be paid for by the $7 co-contribution for visiting the GP, with $5 of that going to the fund. Concessional patients and children under 16 will have to pay for the first 10 visits per year – now I know some people go to their GP more than once every 5.2 weeks, but many of those people will be concessional patients and won't contribute more than $50 p/a to the fund. Now my maths ain't so good, but, best-case scenario: if every woman, man and child goes to the GP 10 times/year – that gives us $50 x 22,680,000 = $1.3bn p/a into the fund, x 8 years (+ a kickstart of $1bn of uncommitted funds from the existing Health and Hospitals Fund) gives us a fund of $10.7bn. Revenue from the fund will apparently add to the NHMRC revenue stream from 2015-16 (so not compounding); that means that more than $9bn will have to be made up by other health reforms. This leaves me in a confused state and more than a little concerned for those areas of health that will be losing $9bn– anyway let's see what gets through the Senate – I'm sure it will all be clear then.

Thanks to Alan Baxter for his entertaining article, it's a great perspective on a very interesting career. It really is fantastic that contributors like Alan and his team find the time to put an article together for the Newsletter. I like his ideas about only employing nice people, unfortunately that'd probably rule me out of a job in his lab – I guess I wouldn't make it past the ice bucket anyway!

Thanks also to other contributors in this edition, including Claerwen Jones and Susan Christo. Their reports on the Day of Immunology in Victoria and the Tri-University Dinner in Adelaide are great examples of ASI reaching out and sharing the marvel of immunology.

Simon Apte

Boldly Going Where No Group Has Gone Before ... (cont.)

One of the biggest challenges we faced was trying to embed a culture of excellence within an institution that has a dominant role in remedial education. Everyone paces themselves against the people surrounding them, and students struggle to see the point in hard work if the same qualification is being achieved by others without it. Central to our strategy for addressing this was to establish a research centre, the Comparative Genomics Centre (CGC), with which we hoped to create a microculture to nurture the scientific endeavour. The evolutionary biologists Ross Crozier and David Miller played a major role in the early days of the Centre as both had already established molecular labs at JCU prior to our arrival. Given the relative scarcity of molecular biology laboratories at JCU, the Centre was formed by an aggregation of labs from a wide range of sub-disciplines. Our seminar series was, and remains, an extraordinary mix of talks on biochemistry, coral biology, crop plants, molecular technologies, human disease, fly models of chromosome disorders, mouse models, in vitro work … in fact, almost any molecular analysis of health and disease in almost any species.

The CGC currently has 92 members across ten research groups with an annual research budget exceeding $9M. It has become an administrative and support structure that prioritises research and is able to balance, to an extent, the sometimes competing needs of undergraduate teaching as represented by the Schools. It provided for the University a template by which some of the research needs of both research fellows and mixed duty academics could be met with reasonable efficiency and economy. In the last few years, JCU has taken this template and applied it across the whole university, so that we now have twelve research Centres covering everything from Language and Culture Research to Sustainable Fisheries and Aquaculture.

Over the last ten years, the campus has changed enormously. We are currently working on the plans of a new teaching and research building for the (mostly) biological sciences – the fifth I have been involved in planning since we arrived. The Medical School, and the affiliated adjunct health training programs that were launched around the time of our relocation, have greatly expanded the University's operations and footprint. The new buildings bring colour and activity to the campus. Some older buildings have been renovated, cafes and other services have been established within them, pavements laid to connect them, and the surrounding grounds more carefully tended.

Medical Genomics Group
LtoR Back Row: Adrian Gemiarto, Ben Crowley, Alan Baxter, Laura Kolter
Middle Row: Xuyen Dinh Thi, Tiange Liu, Tammy Dougan
Front Row: Margaret Jordan, Zizi Molaee, Letitia Smith

The latitude in approach allowed us by the University turned out to be necessary. The nature of human resources available for building a viable laboratory in the tropics differs greatly from that available in major population centres. I very quickly found that relatively few local students were interested in biomedical research and that some postdocs and research assistants who applied were not predominantly interested in the work. We had to develop a new style of interview; one that now includes the memorable line, "Having noted that you list PCR amongst your skills, we have prepared an ice bucket of reagents in the lab for you …" In the end, the solutions to many of these problems found us, rather than the other way round. Our web presence now attracts an excellent calibre of internationally funded students. We host a procession of backpackers and students on internships who leave reports of their experiences on notice boards, both virtual and real, and encourage others to follow in their footsteps. Similarly, word of mouth has recruited a team of undergraduate students who prefer laboratory work over bar work. Some we lose to the medical course; others we hope will stay for Honours. This part-time, casual workforce supplements our postgraduate research students and full-time staff, greatly contributing to a wonderful laboratory environment characterised by cheerful productivity.

Our laboratory studies the immunogenetics of autoimmunity, with a particular focus on gene/environment interactions and innate (or innate-like) immunity. We rely heavily on the ability to model the effects of genetic variation in mice.

For example, in collaboration with the laboratory of A/Prof. Helmut Butzkueven at the Royal Melbourne Hospital, we are examining gene expression of five peripheral blood leukocyte subsets from patients with Multiple Sclerosis (MS) and healthy controls. This data set is being correlated with the subjects' genotypes at previously identified susceptibility loci in order to identify expression quantitative trait loci associated with the disease. This data set of over 730 microarrays also provides an opportunity to identify differences in gene network usage and active genetic pathways between patients and healthy controls, both systemically and within individual leukocyte subsets. These

Histology Group:

LtoR: Karinne Law, Thea Buenviaje, Jenna Stewart

data provide key information about specific MS candidate genes: the associated protein's coding region, its direction of differential expression, and the cell type that expresses this difference. With this information, we can produce transgenic or targeted gene deficient mice to model the human disease-associated genotype in a mouse model of MS. These experiments will produce not only formal validation of these genetic candidates but also a platform for testing potential therapeutics.

In another project, we have taken the same approach of correlating genetic and expression data, to study the genetic control of the innate-like lymphocyte population, NKT cells. We conducted a genetic linkage study to identify two regions associated with differences in NKT cell numbers in mice. These data were then used to guide the production of congenic mouse lines for each locus, and then expression microarray studies identified, within each congenic interval, the relatively small numbers of differentially expressed genes. Again, this information was sufficient for us to construct mutant mice to formally test the role of each candidate. Studies of this nature are really quite unpredictable. While we originally assumed we would primarily find "immune" genes, our experience has been that we depend more and more on the biochemical and cell biological expertise of our collaborators to understand the molecular mechanisms by which these genes operate. For example, some of these NKT cell control genes affect lipid catabolism, and we are now dissecting how differences in the lipidome affect immunity.

A third example stems from our previous work on the effects of bacterial constituents on type 1 diabetes (T1D), lupus and MS. After having identified by chance bacterial products that could exacerbate and inhibit autoimmune disease (depending on the product and the disease), we attempted a more systematic study of the role of Toll-like receptors (TLR) in autoimmunity. This project is now focussed on the effects of TLR deletion on T1D. Some TLR-deficient mutants are protected; in some, disease is exacerbated. Remarkably, the strains that show worse disease mimic three intestinal phenotypes identified in children at the onset of T1D; changes in microbiome, changes in intestinal immunity and structural defects in the mucosal barrier. These three phenotypes were originally thought to be independent risk factors which, if they co-occurred, could generate the "perfect storm" leading to pancreatic beta cell destruction. Our new data show them to be, not independent but, parts of a causal chain. We are currently studying the nature and direction of these causal links.

Please let me introduce the members of the team:

Dr Margaret Jordan, Betty Cuthbert NHMRC/MSRA Early Career Research Fellow

I obtained my PhD in 2011 from JCU, Townsville under the supervision of Prof. Alan Baxter. I was born in Scotland, but spent my formative years in South Africa. It was here that I attained a BSc degree, at the University of the Witwatersrand. I subsequently worked as a Medical Scientist in Cytogenetics at the South African Institute for Medical Research for 11½ years, managing the laboratory and performing the culture, analysis and karyotyping of human blood, bone-marrow, amniotic fluid and chorionic villus samples. Over that period, I set up the Fluorescence in situ Hybridisation (FISH) node of the Cytogenetic Unit which permitted further research into chromosome breakage and translocations as well as interphase analyses of numerical anomalies. I cloned and prepared centromeric probes myself, while also using commercially obtained chromosome paints. While working as a Medical Scientist I studied Psychology and subsequently completed an Honours degree in Human Cytogenetics on Uniparental Disomy in Silver Russell Dwarfism.

In 1998 I moved to Australia on a work visa and worked in Cytogenetics for nine months before successfully applying for a position in the Autoimmunity Research Group at the Centenary Institute in Sydney. There I worked as a Research Assistant on genetic linkage projects in mouse models of autoimmune disease, to identify genes involved in SLE, Type 1 diabetes and Gastritis as well as the immunoregulatory cell subset, NKT cells. On obtaining Australian residency and citizenship, I applied for and was granted

a scholarship to undertake a PhD in the Medical Genomics Group when the group relocated to Townsville. My PhD project used mouse models of autoimmune diseases, congenic dissection of gene linkage regions, gene expression microarray analyses, qPCR and sequencing as tools to identify genes controlling NKT cells, as well as genes contributing to experimental autoimmune gastritis. The function of two of these genes was subsequently confirmed through my production of transgenic and knockout mice. My research on genes controlling NKT cell numbers has progressed from the initial localisation by genetic linkage analysis, to the identity of likely candidate genes by congenesis, to the confirmation of the candidate by transgenic complementation.

My most recent research dissects the molecular mechanisms of MS susceptibility. This project provides a vehicle for formally testing three candidate genes that are very strongly associated with MS in humans, and will fundamentally advance our understanding of the aetiology of MS by testing not only these gene/disease associations, but also allele/cellular function associations in both mice and humans.

Ms Tammy Dougan, Research Fellow

I originally came from Kings College, London, UK, where I completed an MSc in Immunology while I worked as a Research Assistant at Imperial College. The projects I contributed to were focused on the analysis of the affinity of autoantibodies in sera from patients with Goodpastures' disease and autoimmune Vasculitis. It was at Imperial College that my interest in autoimmunity developed. I carried out my PhD studies in the Vascular Biology Unit at JCU, where my research interests focussed on understanding the cellular mechanisms of inflammation within abdominal aortic aneurysms, by which innate immune responses are initiated and regulated. I am now working as a Postdoctoral Research Fellow in the laboratory of Prof. Alan Baxter at JCU Townsville focusing on NKT cell biology, and the associations between NKT cells and autoimmune diseases like T1D. My current project focuses on the metabolic control of NKT cells and the role of lipid metabolism in innate-like lymphocytes.

Dr Tharun Mysore, Postdoctoral Research Associate

Upon completion of my MAppSc (Microbiology & Biotechnology) at Royal Melbourne Institute of Technology (RMIT) in Melbourne, I researched for over two years in Molecular Genomics in Syngene International Pvt Ltd, which is a leading contract research biotechnology company in India. In this position, I was involved in developing high-throughput assays for screening combinatorial compounds for treating human diseases. During this time, I developed a keen interest in diabetes as this slow debilitating disease affected several members of my family. On joining the Immunology Research Centre (IRC), University of Melbourne, as an RA in 2001, I gained insights into Transplantation Immunology and applied these skills in my PhD there to develop transgenic mouse models for studying human diseases, including diabetic nephropathy and cardiomyopathy. It was in the IRC that I established mouse islet isolation and transplantation techniques, which provided required tools to investigate how immune cells destroy insulin-producing beta cells of pancreas.

I joined the Medical Genomics Lab in 2013, as I had skills in performing the specialised mouse islet procedures and analysis. I am currently working on TNF-related apoptosis-inducing ligand (TRAIL/TNFSF10), which is a typical member of the structurally related TNF superfamily and Fas-FasL mediated beta cell apoptosis in islet cells. I am attempting to identify the role TRAIL plays in the inhibition of cytokine secretion and amelioration of insulitis in the NOD mouse model of T1D. I will be dissecting the signalling pathways activated when TRAIL on the surface of islet beta cells is ligated, using Genomics and protein techniques. In the future, I'd like to identify circulating pre-T1D biomarkers suitable for a high throughput-screening platform.

Mr Benjamin Crowley, Executive and Research Assistant

I joined the Medical Genomics Group in 2010, initially to provide administrative assistance to Prof. Alan Baxter, while at the same time studying my BSc in Biochemistry, Molecular Biology and Botany at JCU. Since 2012, I've had a greater role within the lab, working at the bench. Currently, together with the post docs and research students, I am working on several projects, including investigating the effects of TLR on the intestinal microbiome, and how they influence intestinal permeability. In other work, I am helping Margaret Jordan and

Tammy Dougan dissect the mechanisms by which innate-like T cells are affected by lipid metabolism.

Ms Letitia Smith, Research Assistant

I completed my BSc (Hons) at the University of Melbourne in 2002, majoring in Genetics and Immunology. My honours year involved mutation detection in one of the major breast cancer-predisposing genes, BRCA1, in a study of Australian women with early onset breast cancer and a strong family history. For several years I worked at the University of Melbourne under the supervision of Prof. Melissa Southey, investigating the genetic causes of breast, colorectal and prostate cancers within various population- and clinic-based studies. My work primarily involved detection of genetic variants such as SNPs and large alterations (deletions/insertions).

After a few years away from science during which I travelled and lived overseas, I returned to Australia and joined the Molecular Genomics Group at JCU. Currently I work with Dr Margaret Jordan on a project investigating the gene expression of immune cells in Multiple Sclerosis, using the Affymetrix microarray platform. I also contribute data to other gene expression projects within the laboratory.

Xuyen Dinh Thi, Postgraduate Research Student

I come from Vietnam. In 2007, the cloning of Dolly the Sheep directed my interest into biotechnology. I studied a BBiochem at Vietnamese National University, Hanoi. After graduating with a Masters, I worked as a lecturer and researcher at Hai Duong

Xuyen Dinh Thi

Medical Technical University and taught into the BMedLabSci degree in the Department of Biomedical Science.

In 2011, I was awarded an Australian Development Scholarship from the Australian Government to study for a PhD. I joined the Medical Genomics Group and am interested in NKT cell development. I am using flow cytometry to investigate the factors affecting the numbers and differentiation of NKT cells using a mouse model transgenic for the NKT cell T cell receptor. During my study under the supervision of Prof. Alan Baxter, I have learned a lot about immunology and immunological techniques, which will be very useful for my future career.

Adrian Gemiarto, Postgraduate Research Student

I graduated with a BPharm in 2006 from the Widya Mandala Catholic University in Indonesia. Then I completed a Masters degree in Biotechnology at UCSI University in Kuala Lumpur, focused on the identification of an anti-pathogenic compounds derived from propolis (a mixture of flower resins and bee enzymes used to line the beehive, making it sterile) from manuka flowers. In 2013, I received a JCU Postgraduate Research Scholarship to pursue my PhD degree in the Medical Genomics group led by Prof. Alan Baxter.

My PhD is focused on MS susceptibility genes, which have been identified by combining genomic data from association studies and microarray analyses. I am investigating how changes in the expression of these genes affect the functions of immune cells, especially monocytes and NK cells, and lead to the development of MS. To answer this question, I am using gene-silencing and lentiviral transduction techniques to modulate the target genes' expression in human primary cells and also in-vivo using knock-out mice in Experimental Autoimmune Encephalomyelitis (EAE).

Mark Wilkes, Off-Campus Postgraduate Research Student studying at the Mayo Clinic, Rochester, Minnesota, USA

When I began my undergraduate studies I was intent on pursuing marine biology at JCU. It had been my desire since being eight years old. However, first through a classical genetics class, and then a section on basic biochemistry in a zoology class I discovered a passion for biochemistry and molecular biology. During my last 18 months as an

undergraduate I volunteered in the labs of Subhash Vasudevan and Jim Burnell with independent research projects. Before my final year I took six months away from JCU to visit family, where I worked as a Special Research Associate in the laboratory of Edward Leof at the Mayo Clinic. The time spent here galvanized my interest in biochemistry and I returned to JCU highly motivated.

Upon completing my bachelor degree I returned to Edward Leof's lab for what I intended to be a short stint before going on to graduate school. My research blossomed into a broad new direction and I found myself unable to leave it for graduate school. After 12 years, I was finally convinced to get my PhD and enrolled at JCU. Although my thesis project is in the field of TGF-beta signaling (as it was for the previous 12 years), we opted for a completely new direction for my thesis, a direction that has begun to yield fruit after substantial efforts.

As a student studying remotely, my direct contact with my lab colleagues is limited. My work focuses on the Transforming Growth Factor β and the mechanisms of how this non cell-permeable cytokine transmits the intracellular signal from the cell surface into nucleus where gross genetic modifications occur. Interestingly, the cellular responses to TGFβ vary considerably depending on the cell type, yet all cells signal through the same surface receptors and many of the signalling molecules are shared. While new signalling molecules continue to be identified, our understanding of how and where currently identified factors act, as well as how the cell regulates these processes, remains incomplete. To that end, we have focused on known TGFβ signalling proteins and pathways and examined how cells regulate entry of these messengers into the nucleus. A number of novel proteins and mechanisms have been identified, some of which appear to play roles in deregulation of TGFβ signalling during disease progression, while others further define how the cell propagates the TGFβ signal to regulate the genome during homeostasis of various cell types.

Tiange (Susan) Liu, Postgraduate Research Student

In 2012, I received my bachelor degree in animal science from Northwest Agriculture and Forestry University in Yangling, China, and was then awarded a JCU-CSC Joint Scholarship for my PhD studies in Prof. Baxter's laboratory at JCU.

Tiange Liu

My project is to build a better mouse model for MS. To examine the putative role of Epstein-Barr Virus (EBV) in MS, I'm generating the genetically modified mouse strains where the effects that EBV has on human B cells are mimicked by two transgenes. The transgenic mice will be monitored clinically and studied by histopathology and flow cytometry. In particular, I'm focusing on the pathogenic role of B cells in the initiation and development of MS. I'm also working on an additional project, which is to examine the relationship between NKT cell numbers and function and susceptibility to EAE. I induce active EAE on Vα14 transgenic and CD1d knockout mice that have different numbers of NKT cells. Recently, I have found varying severity of paralysis in these mouse strains, and a higher level of NKT cells appears to protect mice. I have gained experience in presenting my research nationally and most recently received a student poster prize in the Day of Immunology Event 2014 (Townsville). Medical genomics is a very dynamic group with many fantastic projects and superior scientific staff to work with.

Ms Karinne Law, Undergraduate Casual Research Technician

I was originally from a small regional town in South East Queensland, where I graduated high school in 2011. I was then accepted into the BSc (Advanced) program at JCU in Townsville, and I commenced my studies in February 2012. The nature of the JCU BSc Advanced program is unique in that students are assigned to a mentor (a senior academic whose research coincides with the interest or major of the student) in their first year. I was fortunate enough to be assigned to Professor Alan Baxter at JCU's CGC. Prof. Baxter presented me with a tremendous opportunity in my first year, whereby he offered me a casual position in the lab to learn important practical skills, and immerse myself in the research culture of the CGC. Now in my third year of full-time undergrad, I co-ordinate the histology components of a couple of ongoing projects in the lab, and am in the process of training a new student, Jenna Stewart.

Karinne Law

Ms Jenna Stewart, Undergraduate Casual Research Technician

I am from Rockhampton and decided to move to Townsville to study science at JCU. I am currently in third year studying in the BSc

Advanced program majoring in Genetics and Genomics. I have recently joined the Baxter lab and am working with Karinne Law to provide histology services, including quantitative analyses, for the laboratory.

Ms Athea Buenviaje, Undergraduate Casual Research Technician

I was originally from Edmonton, Alberta, Canada, where I graduated high school at Archbishop O'Leary High school in 2007. I then moved to Ontario in Guelph where I was accepted to the Biomedical Science program at the Ontario Veterinary College, University of Guelph. I graduated with Honors in 2011. I recently moved to Australia to enrol as a medical student at JCU in Townsville. Throughout my biomedical science career I have been involved in a series of volunteer and research assistantships and have had the opportunity to work in several research labs. I became interested in studying human diseases and conditions with an eye towards improving human health. I also enjoy the atmosphere of the laboratory and the co-operative spirit of researchers. My undergraduate research experiences ingrained in me the systematic approach that is required to effectively direct research and solve problems. In particular, I became interested in the area of Molecular Biology and Genetics and was recently fortunate to become part of the Medical Genomics Group under Prof. Alan Baxter at JCU's CGC. Though research presents many intellectual challenges, I wish to be involved both in traditional primary care and in investigative research that I hope will lead to more effective treatments of human diseases.

Ms Laura Kolter, Casual Research Technician/Visiting Scientist

I have only just arrived, so I am not quite sure what I will be working on! I studied Pharmacy at the Friedrich-Wilhelms-University in Bonn, Germany. During my studies I completed a course in Pharmaceutical Biology and an introduction to Molecular and Cellular Biology. After the second state examination I wanted to gain more experience in the lab and Alan Baxter has given me the opportunity to work for six months at the CGC.

Ms Zeynab Molaee, Visiting Scientist

I come from Iran and received my BSc with a major in genetics there. I then moved to lovely New Zealand and updated myself in graduate level of molecular genetics in Massey University. Recently, I moved to Townsville and connected with the Immunonogenetics research program at JCU. I'm very proud of being in Alan Baxter's team and working with great people. I am currently genotypying several different mice strains of mice in the lab and I enjoy doing it. With falling price of sequencing, this is a great time for me to learn about the genetics of complex diseases. In near future, I would like to learn about newly identified genetic associations which can provide deeper insights into the aetiology of medical conditions.

ICB & CTI Online Manuscript Submission

Online manuscript submission for *Immunology & Cell Biology* and *Clinical & Translational Immunology* now available via:

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

All manuscript submissions to ICB and CTI should in future be made online via these websites to speed up the reviewing and acceptance of manuscripts.

Gabrielle Belz, Editor-in-Chief
Immunology & Cell Biology
Clinical & Translational Immunology


BRISBANE
IMMUNOLOGY
GROUP
15th ANNUAL RETREAT
21-22 August 2014
Mantra Legends Hotel, Surfers Paradise
Confirmed speakers
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University of Melbourne
Dr Cindy Ma
Garvan Institute of Medical Research
Associate Professor Katherine Kedzierska
University of Melbourne
Associate Professor Ian Cockburn
Australian National University
Associate Professor John Silke
WEHI
Jonathan Sprent Orator
Professor Carola Vinuesa
John Curtin School of Medical Research, ANU
BIG Icon Lecturer
Professor Geoff Hill
QIMR Berghofer Medical Research Institute
We have a number of outstanding local and interstate speakers attending this year.
All Australasian Society of Immunology (ASI) members are eligible for a special discount.
Abstracts submitted by postgraduate students and postdocs will be eligible for various awards.
Registration and abstract submission close 11 July 2014
Secretariat: Mandie Quince
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QIMR Berghofer
Medical Research Institute
www.big.qimrberghofer.edu.au/page/Annual_Retreat

President's Column

Dear ASI members,

Firstly, I am pleased to say that as I am approaching the end of my term as President of ASI, the Society appears to be happy and healthy. Membership numbers continue to climb and are up from this time last year, our annual meeting last year was a great success both scientifically and it also returned some funds to the Society – again, many thanks to Anne La Flamme and the LOC in New Zealand for a terrific job with this meeting. We are tracking toward another great meeting this year in Wollongong (a joint meeting with the Human Leucocyte Differentiation Antigen (HLDA) workshop), with progress reports looking very encouraging. I am also looking forward to an exciting new development that we hope to introduce in the 2015 Annual Scientific meeting in Canberra (still a secret, but stay tuned …).

Our website http://www.immunology.org.au continues to develop and a slightly restyled version will be launched by the time you read this. I know there have been some teething problems with this website and as it has evolved, it was beginning to look a little cluttered. This has now been fixed and I think it is looking very sharp! We will be offering members the long-promised opportunity to enter into a website-based competition to be in the running for an iPad mini, very soon. Details will follow in an email. I encourage all of our members to visit our new website, look around, use it to promote stories of interest to the Immunology community, upcoming conferences, job advertisements, and access websites of our sustaining members (BD Biosciences, Elisakit.com, Jomar Bioscience, Miltenyi Biotec). Our sustaining members are very valuable to the Society, so please click through to their websites and look around at what they have to offer, by clicking on their logos on the ASI website. We also encourage you all to use the online renewal process to renew your membership from now on, although it is still possible to do this the old way if you prefer. Please contact our Project Manager, Sarah Fardy, fardy.s@wehi.edu.au, with any comments or queries regarding the website or online membership renewal.

Please remember that we have the new **ASI women's initiative** and we are ready to start linking up mentors with mentees, so check out this part of the website, and take advantage of this important opportunity to help progress the careers of females in our field. Please also see our website for more details on this program http://www.immunology.org/womens-iniative/ and 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).

We have seen another highly successful Day of Immunology this year and I want to thank Claerwen Jones, DOI co-ordinator, and the many people involved in organising these events in our various branches. By all accounts, they were well attended and a great success and I have observed first hand the enthusiasm of people in the Melbourne area as they planned and participated in the Melbourne-based event. Please see the Day of Immunology report in this issue for details. It is a credit to all people involved over the last few years that this has become such a popular and successful event that helps members get involved in public forum, while simultaneously promoting Immunology to the general community … well done!

ASI's journals (Immunology and Cell Biology and Clinical and Translational Immunology, http://www.immunology.org.au/about-asi/journals/) are both doing well. ICB has just received its 2012 impact factor of 3.95, maintaining this impressive position while many other Immunology journals are on the decline. Keep submitting your articles there and citing studies from there and we should see this journal climb above an impact factor of 4 next time around. CTI is gaining momentum with 16 published articles and submissions increasing strongly in 2014. Application for listing in PubMed is underway and article deposition in PubMed Central will be beginning soon, both of which should enhance its international profile considerably. Please visit the CTI website via the links from the ASI website and have a look at some of the great papers and reviews being published there. A reminder to all members interested in playing a more formal role with these journals – there are new editorial positions opening up very soon and I will be sending an email with details. If you are interested in this, please contact Gabrielle Belz, belz@wehi.edu.au.

In response to the survey we conducted last year, ASI has been getting more involved in public advocacy associated with immunology related issues. Twice this year, I have teamed up with representatives of other scientific societies including Associate Prof. Damian Purcell and Dr Peter Speck (President and Secretary, Australasian Virology Society), Prof. Paul Young (President, Australian Society for Microbiology), Associate Prof. David Looke (President, Australasian Society for Infectious Diseases), Clinical Associate Prof. Richard Loh (President, Australasian Society of Clinical Immunology and Allergy), as well as Emeritus Prof. Gustav Nossal, to write letters in support of scientifically driven decisions underpinning important public health issues. The first was a press release to encourage the Federal Government to stand by their promise made last year to remove the conscientious objection option used by up to 7% of families in some regions of Australia to bypass the vaccination requirements underlying the Family Tax Benefit Part A. The second was a letter to NHMRC applauding their decision to investigate the scientific evidence underlying the use of homeopathy for treating important health conditions, an investigation that found there to be no reliable evidence to support the effectiveness of homeopathy. We also proposed that these findings should call into question the value of further support for this particular form of therapy.

We feel that we have more influence as a collective, representing roughly 4000 members of Australasian scientific societies, and we will continue to represent the members of our respective societies on important public issues associated with immunology and related medical concerns.

Dale Godfrey

Honorary Secretary's News

The first round of ASI travel awards have been assessed, with congratulations going to the following winners in each category:

Post graduate (up to $3000):
Jason Lynch
Rachel Bartlett
Kylie James

Post doctoral (up to $3000):
Cyril Seillet
Alison West

Jacques Miller Award for Senior scientists (up to $6000):

David Tarlinton

The awards are always highly competitive, so we encourage ASI members to keep an eye out for the second round of travel awards later in the year. The exceptions are the annual Jacques Miller and Gordon Ada awards where members will need to wait until the start of 2015 before applying.

As of May, ASI has 885 financial members. This is slightly up from the same time last year and that's great news given there were some early issues with signing up the new website. Membership is the foundation of the Society and we ask you to please encourage fellow Immunologists to join ASI – especially the junior members of your laboratory or institute who are starting out in this field. Although new members won't be eligible for awards for 2014, they will still get heavily discounted registration to the ASI Annual Scientific Meeting and access to all the member-only resources on the redesigned ASI website.

We hope that most of you have now had a chance to visit the ASI website. The site is funded through your membership and provides a great resource for ASI members to get information about upcoming events and benefits such as mentoring programs, travel awards and a variety of scientific resources. If you want to contribute items to the website that are relevant to ASI members (e.g. news items, notices of upcoming events, etc.), please contact Sarah Fardy at fardy.s@wehi.edu.au. Sarah is the ASI Project Manager and is keen to help members post material that keeps the website interesting and relevant so feel free to contact her with suggestions. If you haven't seen the website lately, please have a fresh look at www.immunology.org.au. And … you will soon see a significant redesign to the website to further improve its appearance and functionality, so keep an eye out for when it goes live (expected to be the week of June 16) and let us know what you think of it.

Stuart Berzins

Contributions sought for the ASI Newsletter

You could win $200 !!

Deadline for the next issue: 1st August 2014

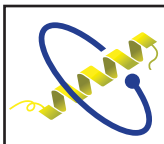
Please email your contributions to the Secretariat by the above date.
asi@21century.com.au

Upcoming Conferences

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

44th ASI Annual Meeting
December 1–5, 2014
Wollongong, NSW, Australia
www.asi2014.org

The Walter and Eliza Hall Institute of Medical Research
WEHI Seminars on the Web:
www.wehi.edu/seminars/



The key to understanding the immune system is to determine how its proteins, cells and other components interact, at a molecular level, in health and disease. This is what the ARC Centre for Advanced Molecular Imaging is all about – developing and using innovative imaging techniques to observe the details of how the immune system functions at the molecular level.

The Centre brings together biologists, physicists and chemists from 5 Australian universities – La Trobe, Melbourne, Monash, New South Wales and Queensland; the University of Warwick in the UK; the Australian Nuclear Science and Technology Organization; synchrotrons in Australia and Germany; and several high-tech companies.

For more information about the Centre participants, research and employment opportunities within the Centre, please visit our website and subscribe to our newsletter.

www.imagingcoe.org
www.imagingcoe.org/news/category/newsletters

The ASI Visiting Speaker Program

The very busy commitments of the high calibre speakers have affected the VSP program this year and we had a couple of unfortunate cancellations:

John O'Shea MD
National Institute of Arthritis and Musculoskeletal and Skin, Molecular Immunology and Inflammation Branch, NIH, Bethesda, MD. USA.
Hosted by Stuart Tangye, Garvan Institute of Medical Research, Sydney
Cancelled due to NIH restrictions

Jason Cyster, PhD
Howard Hughes Medical Institute, University of California, San Francisco, CA. USA
Hosted by Claudine Bonder, Centre for Cancer Biology, Adelaide
Postponed for family reasons

Planned visits
We expect to confirm details for two more visitors for 2014

September/October
Professor Frederic Geissmann
King's College, London, UK
Prof. Geissmann will visit Melbourne, Sydney, Canberra and Sydney.
Details to be finalised.
Hosted by Gabrielle Belz, WEHI

Professor Frederic Geissmann gained a medical degree in clinical haematology in 1996 and a PhD in Immunology in 1999, both from the University of Paris (France), and was a Post-doctoral Fellow of Dr Dan Littman in New York from 2000 to 2003. Work of his laboratory aims at understanding the development and physiological functions of monocyte/macrophages in vivo. His approach is to combine developmental studies, lineage tracing, genetics, and intra-vital microscopy to characterize the laws that govern the development and maintenance of phagocytes and interaction with specialized tissue cells, within living organisms in mice and – more recently – in Drosophila.

Frederic Geissmann has made several seminal contributions in this field. He identified and described the two main functional subsets of monocytes in mice (inflammatory and patrolling) and their human counterparts (Geissmann, Jung & Littman Immunity 2003, Auffray et al Science 2007, Cros et al Immunity 2010, Carlin, Stamatiades et al Cell 2013), identified a common clonogenic progenitor for monocyte/macrophages and classical dendritic cells (Fogg et al Science 2006), and more recently characterised an embryonic progenitor independent of Myb and hematopoietic stem cells for adult resident macrophages such as Kupffer cells, Langerhans cells, microglia, etc. (Schulz et al Science2012; Gomez Perdiguero et al. Cold Spring Harb Symp Quant Biol. 2013; Gomez Perdiguero et al, In preparation).

Frederic Geissmann was the recipient of a number of prestigious awards, including the European Young Investigator (Euryi) award, the European Research Council Investigator award and the Wellcome Trust Senior Investigator award. He is currently Professor, ARUK chair of Inflammation biology, and Director of the Centre for Cellular and Molecular Biology of Inflammation Biology, at King's College London, UK.

Selected key papers

1. Carlin LM, Stamatiades EG, Auffray C, Hanna RN, Glover L, Vizcay-Barrena G, Hedrick CC, Cook HT, Diebold S, **Geissmann F**. Nr4a1-dependent Ly6C(low) monocytes monitor endothelial cells and orchestrate their disposal. Cell. 2013 Apr 11:153(2)362-75.
2. Carlin LM, Stamatiades EG, Auffray C, Hanna RN, Glover L, Vizcay-Barrena G, Hedrick CC, Cook HT, Diebold S & **Geissmann F**. Nr4a1-dependent Ly6Clow monocytes monitor endothelial cells and orchestrate their disposal in presence of nucleic acids. (2013) ***Cell.*** 153: 362–375.
3. C Schulz, E Gomez Perdiguero, L Chorro, H Szabo-Rogers, N Cagnard, K Kierdoff, M Prinz, B Wu, SE W Jacobsen, JW Pollard, J Frampton, KJ Liu, **F Geissmann**. A lineage of myeloid cells independent of Myb and hematopoietic stem cells. *Science*, 2012. 10.1126.
4. Hambleton S, Salem S, Bustamante J, Bigley V, Boisson-Dupuis S, Azevedo J, Fortin A, Haniffa M, Ceron-Gutierrez L, Bacon CM, Menon G, Trouillet C, McDonald D, Carey P, Ginhoux F, Alsina L, Zumwalt TJ, Kong XF, Kumararatne D, Butler K, Hubeau M, Feinberg J, Al-Muhsen S, Cant A, Abel L, Chaussabel D, Doffinger R, Talesnik E, Grumach A, Duarte A, Abarca K, Moraes-Vasconcelos D, Burk D, Berghuis A, **Geissmann F***, Collin M, Casanova JL, Gros P. IRF8 mutations and human dendritic-cell immunodeficiency. (2011) ***N Engl J Med***. 365:127-38. (*co-senior author)
5. **F. Geissmann,** MG. Manz, S Jung, MH. Sieweke, M Merad, K Ley. Development of monocytes, macrophages and dendritic cells. Review. *Science*, 2010. 327:656-61.
6. Cros J, Cagnard N, Woollard K, Patey N, Zhang SY, Senechal B, Puel A, Biswas SK, Moshous D, Picard C, Jais JP, D'Cruz D, Casanova JL, Trouillet C, **Geissmann F**. Human CD14dim monocytes patrol and sense nucleic acids and viruses via TLR7 and TLR8 receptors. (2010) ***Immunity.*** 33:375-86.
7. Chorro L, Sarde A Li M, Chambon P, Malissen B, Kissenpfennig A, Barbaroux JB, Groves R, **Geissmann F**. Langerhans Cell proliferation mediates neonatal development, homeostasis, and inflammation-associated expansion of the epidermal LC network. *J. Exp. Med*. 2009. 206:3089-100.
8. Auffray C, Sieweke MH, & **Geissmann F**. Blood Monocytes: Development, Heterogeneity, and Relationship with Dendritic Cells. Annu Rev *Immunol.Review*. 2009. 27:669-92.
9. C Auffray, D Fogg, M Garfa, G Elain, O Join-Lambert, S Kayal, SSarnacki, A Cumano, G Lauvau, & **F Geissmann**. Monitoring of blood vessels and tissues by a population of monocytes with patrolling behavior. *Science* 2007. 317:666-670.
10. Fogg DK, Sibon C, Miled C, Jung S, Aucouturier P, Littman DR, Cumano A, **Geissmann F**. A clonogenic bone marrow progenitor specific for macrophages and dendritic cells. *Science*. 2006. 311:83-7.
11. **Geissmann**, S Jung, DR Littman. Blood monocytes consist of two principal subsets with distinct migratory properties. **F** (2003) ***Immunity*** 19, 71-82.

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

2015
We have two speakers confirmed for the first semester 2015:

April
Associate Professor David Masopust
University of Minnesota, Department of Microbiology, Minneapolis, Minnesota, USA

A/Prof. Masopust has confirmed he will visit NSW, NZ, Qld and Vic.
Hosted by Thomas Gebhardt, Department of Microbiology and Immunology, University of Melbourne

David Masopust helped to define a new paradigm in immunology with high impact for developing vaccines against important pathogens such as HIV-1 and TB: Tissue resident memory T cells, positioned in time and space, and sufficient in number, to prevent or control infections from their onset. Dr Masopust's initial discovery underpinning this concept was that memory T cells actively survey tissues and mucosal surfaces of the body where they are most likely to encounter pathogens. His technological expertise and innovativeness provided the supporting and convincing rigorous scientific evidence for this tissue resident host defense system and, in work of fundamental importance, he has explored interactions between the tissue microenvironment and resident T cells to help define a new field in immunology. In work with potentially great impact, he has discovered a way to vaccinate that elicits extraordinary numbers of these resident tissue T cells, located where they first encounter a pathogen, at a time when the small size of the infected population provides the most favorable odds to prevent transmission and systemic infection. In a proof-of-principle experiment in the SIV-monkey model of HIV-1 transmission to women, he has shown that this approach can prevent transmission or greatly attenuate systemic infection, a result without precedent in the HIV-1 vaccine field, and one that holds great promise for developing an effective vaccine.

Selected key publications:

1. **Masopust D**, Vezys V, Marzo AL, Lefrancois L. Preferential localization of effector memory cells in nonlymphoid tissue. 2001. *Science*. 291:2413-7.
>1350 citations. Recently designated a *"Pillar of Immunology"* by the American Association of Immunologists.
2. Wherry EJ, Teichgraber V, Becker TC, **Masopust D**, Kaech SM, Antia R, von Andrian UH, Ahmed R. Lineage relationship and protective immunity of memory CD8 T cell subsets. 2003. *Nat Immunol.* 4:225-34.
>1250 citations
3. **Masopust D,** Vezys,V, Usherwood EJ, Cauley LS, Olson S, Marzo AL, Ward RL, Woodland DL, and Lefrancois L. Activated primary and memory CD8 T cells migrate to nonlymphoid tissues regardless of site of activation or tissue of origin. 2004. *J Immunol.* 172:4875-82.
>200 citations
4. Barber DL, Wherry EJ, **Masopust D,** Zhu B, Allison JP, Sharpe AH, Freeman GJ, Ahmed R. Restoring function in exhausted CD8 T cells during chronic viral infection. 2006. *Nature.* 439:682-87.
>1500 citations
5. **Masopust D,** Vezys V, Wherry EJ, Barber DL, Ahmed R. Cutting edge: gut microenvironment promotes differentiation of a unique memory CD8 T cell population. 2006. *J Immunol.* 176:2079-83.
>125 citations
6. Vezys V, Yates A, Casey KA, Lanier G, Ahmed R, Antia R, **Masopust D.** Size of memory CD8 T cell compartment grows with immunological experience. 2009. *Nature.* 457:196-9.
>100 citations
7. **Masopust D,** Choo D, Vezys V, Wherry EJ, Duraiswamy J, Akondy RS, Wang J, Casey KA, Barber DL, Fraser KA, Kawamura KS, Webby RJ, Brinkmann V, Butcher EC, Newell KA, Ahmed R. Dynamic T cell migration program establishes resident memory within intestinal epithelium. 2010. *J Exp Med,* 207:553-64.
96 citations
8. Casey KA, Fraser KA, Schenkel JM, Moran A, Abt MC, Beura LK, Lucas PJ, Artis D, Wherry EJ, Hogquist K, Vezys V, **Masopust D.** Antigen independent differentiation and maintenance of effector-like resident memory T cells in tissues. 2012. *J Immunol.* 188:4866-75.
33 citations
9. Anderson KG, Sung H, Skon CN, Lefrancois L, Deisinger A, Vezys V, **Masopust D.** Cutting Edge: Intravascular staining redefines lung CD8 T cell responses. 2012. *J Immunol.* 189:2702-6.
10. Schenkel, JM, Fraser KA, Vezys V, **Masopust D.** Sensing and alarm function of resident memory CD8+ T cells. 2013. *Nature Immunology.* 14:509-13.
11. **Masopust D,** Schenkel JM. 2013. The integration of T cell migration, differentiation and function. *Nature Reviews Immunology.* 13:309-20.
12. Fraser KA, Schenkel JM, Jameson SC, Vezys V, **Masopust D.** Preexisting high frequencies of memory CD8+ T cells favor rapid memory differentiation and preservation of proliferative potential upon boosting. 2013. *Immunity.* 39:171-83.

Assoc. Professor David Masopust

April/May 2015
Professor Daniel Altmann
Imperial College, London, UK
Hosted by Nattkunam Ketheesan, James Cook University, Townsville
Prof. Altman has confirmed he will visit Sydney, Brisbane and Townsville.

Full details of Professor Altman's visit will be provided in the September newsletter.

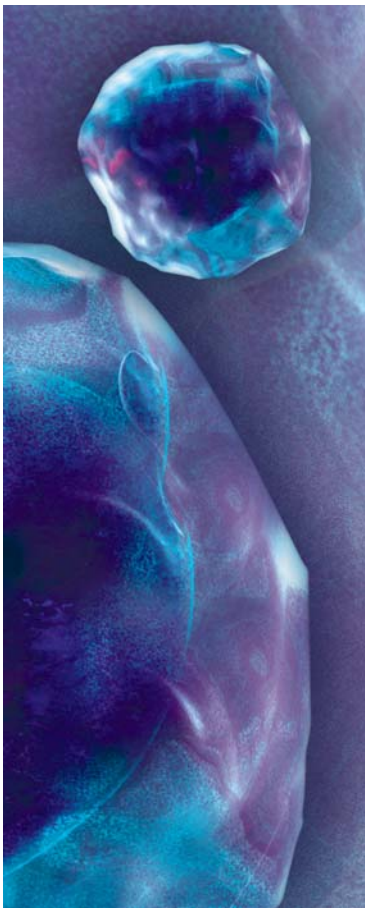
An invitation and a request to all ASI members

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!

Treg Cells



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Keeping the Immune System in Check

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- CD304 (Neuropilin-1) (h, m) New
- AHR (h, m) New
- c-Maf (h, m) New
- Helios (h, m) New
- ICOS (h, m, r) New
- Eos (m) New
- GARP (h, m) New

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ProcartaPlex™ Multiplex Immunoassays

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- IL-10 Simplex (h, m, r, nhp, c, p) New
- TGFβ1 Simplex (h, m, r, nhp, c, p) New
- Th9/Th17/Th22/Treg Cytokine Panels (h, m) New
- Th1/Th2/Th9/Th17/Th22/Treg Chemokine Panels (h, m) New

Recombinant Proteins

- TGFβ1 Recombinant Protein (m) New
- SAFE™ IL-2 Recombinant Protein (h) New

h=human, m=mouse, r=rat, nhp= non-human primate, c= canine, p=porcine

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T regulatory (Treg) cells are CD4+ T cells that are critical to the maintenance of immune cell homeostasis as evidenced by the catastrophic consequences of genetic or physical ablation of the Treg population. Specifically, Treg cells maintain order in the immune system by enforcing a dominant negative regulation over other immune cells. Treg cells are characterized by expression of the Foxp3 transcription factor that specifies differentiation of the lineage.

Three To One!

Susan Christo, University of South Australia

On 12th February, all three South Australian universities participated in the inaugural *Tri-University Distinguished Guest Speaker Evening*; a night that brought PhD students together for networking and career advice. The sold-out event attracted 160 delegates from The University of Adelaide, The University of South Australia and Flinders University.

Nobel Laureate Professor Peter Doherty, AC! Truly offering a fantastic, inspirational and entertaining presentation about his remarkable career, juxtaposing advice and the truths about working in scientific research

The idea

The premise was simple. As my lab friend Heather and I sat at a science Gala Dinner, she turns to me and says: "*I was thinking, we should have a career's night for the students, something like [this]. We could have a sit-down event with food, have some speakers*". Her vision was to bring together PhD students regardless of what university or field of health research they were in.

That was all good, but we had $0. So with a six-woman team, we began sourcing sponsorship, and the original idea began to develop.

On the night

The highlight of the evening was the keynote address given by Laureate Professor Peter Doherty, AC. His presentation was inspiring, entertaining, honest and passionate; yet his true dedication to the science was evident in his humble account of his exceedingly stellar career. The evening also consisted of a Panel Discussion which followed very closely to the ABC's *Q&A* program, allowing audience participation and a broad range of feedback from the panellists.

We were privileged with outstanding Panellists including Professor Doherty, Professor Graeme Young (Professor of Global GI Health, Flinders University), Professor Tanya Monro (Director, Institute for Photonics and Advanced Sensing), Professor Gary Wittert (Director, Freemasons Foundation Centre for Men's Health), Professor Lynne Cobiac (Director, Preventative Health Flagship, CSIRO) and A/Professor Janna Morrison (Head, Early Origins of Adult Health Research Group, UniSA).

The discussion was perfectly complemented with Dr Paul Willis (Director, RiAUS) as host, who was able to extract sentimental and thought-provoking comments from

Thank you once again to our The Tri-University Panel Speakers (LtoR) Prof. Lynne Cobiac, Prof. Graeme Young, A/Prof. Janna Morrison, Prof. Tanya Monro, Prof. Gary Wittert, Nobel Laureate Peter Doherty, AC, Dr Paul Willis

Panel Discussion generating plenty of discussion! LtoR: Prof. Gary Wittert, Prof. Lynne Cobiac, Prof. Tanya Monro, Dr Paul Willis, A/Prof. Janna Morrison, Prof. Graeme Young, Prof. Peter Doherty

answers and questions raised by the students themselves. The most incidental and, in fact, coalescing aspect of the evening was the overriding theme of collaboration and networking, which was consistently discussed as a key characteristic of a successful career. The evening was concluded by a fantastic presentation from Professor Wittert who elaborated on various aspects of being a successful researcher and offered perspective of various science career options beyond that of working in a lab.

Don't worry Peter, we'll take your advice!
To unexpected ears, a presentation by Prof. Doherty is far from orthodox. Prof. Doherty has a unique ability to juxtapose thought-provoking, deep, soulful accounts of immunology with humorous, honest and humble recollections of his life. Prof. Doherty played to his vast experience, describing the solid advice he gives his students wanting a career in research: "*Find yourself a nice accountant, or corporate lawyer, or banker. And marry them! They'll be able to support you. Not a single one of my graduate students have taken my advice. They've always married for love!*"

What I really enjoyed about Prof. Doherty's presentation, and in fact all of the panellists, were their genuine care for students. Their advice was real, open, and could be applied in all areas of science. The students particularly appreciated their honesty about careers in research, Prof. Monro admitting, "*It can be a bit overwhelming, at an early career stage, the things you need to get on your track record to be competitive*". However the need to collaborate and network was echoed by all panellists. This was further highlighted by Prof. Wittert when discussing post-doctoral opportunities: "*Networking, showing ethusasiam and making friends in the right places will get you a very long way*". Prof. Young also added to the conversation, detailing the valuable experiences gained in overseas trips: "*I got to know very quickly the people about my age, doing good stuff. Now we're writing papers together…you're investing for the future*".

But for students, the idea of talking to people you don't know and networking can be frightening. It was refreshing to hear that the panellists did, at times, feel 'shy' and 'introverted'. In fact, Prof. Monro outright stated: "*I'm a classic introvert, but you'd never guess it. You learn*". One comment that resonated well with the audience came from A/Prof. Morrison, who revealed that the idea of networking is a very pro-active motion: "*I am very shy. [But when at conferences] my options were to stand in the corner, or go talk to people. I decided, my 'hat' that's now on is "I'm talking to people" and that's what I have to do*". As students, we often neglect the fact the most successful scientists all started off at our level, and may, at times, have the same uncertainties and doubts.

But when attending conferences alone, how do I approach someone? Will I say the wrong thing? Prof. Doherty's advice: "*Don't be afraid to ask questions and don't be afraid to make a fool of yourself. I've been making a fool of myself for years! Don't be afraid to ask the simple naïve question because often, that naïve question is the very best question*". He makes it sound so easy! But certainly not impossible. The message was clear and simple.

Another popular issue of discussion was the notion of mentors. It was unanimously agreed that mentors are beneficial, however only when it's the right person. Prof. Cobiac pointed out that not all mentors are good scientists, and that students should approach "*mentors that have integrity*" in their work. In addition, Prof. Young suggested that "*a good mentor is someone who cares for you as a person*".

Naturally, the conversation was directed towards the importance of work/life balance, particularly focussed on maintaining high scientific standard and having a family. This issue is of personal interest to women considering children during their careers, to which Prof. Monro realistically said, "*There's no magic bullet. [During maternity leave] my PhD students would give me a chapter of their thesis in exchange for a little bit of babysitting. There are ways you can make it work*". A/Prof. Morrison also contributed, highlighting the advantage of research careers: "*I tailor the way I work. The flexibility is amazing*".

Another issue that is often overlooked is the need to communicate science to the public, not only to fellow scientists. I found this particularly interesting because we often forget that science is ultimately for the benefit of the greater community, regardless of how specific and deep into the field the work is.

The evening's ambience at the Adelaide Pavilion; Prof. Doherty presenting with our sponsors proudly displayed

However, the issue may be that the public aren't aware of the translational implications of research. "*We no longer need journalists. Everyone has the capacity to communicate science on a broad basis*," Prof. Wittert states. It certainly made the audience consider the social responsibility of a scientist, as Prof. Cobiac perfectly states: "*We need to have a convincing story of how we can demonstrate impact*". This was a particularly motivating comment for me because, like many students, I lose sight of how the work I do on a day-to-day basis will integrate into society. I hope the Tri-University Dinner was able to inspire the delegates to appreciate the impact their work will have.

The panellists are model examples of how hard work and exceptional science can be recognised in the greater community. We thank all the guests of the evening for their time, experiences, and for sharing their advice to inspire the future scientists of this generation.

Onwards and upwards

The union between the University of South Australia, University of Adelaide and Flinders University, has not been previously achieved in a manner such as the Tri-University Dinner. It lacked the formality and heavy scientific content of conferences, and brought with it an enjoyable night for students to learn about all aspects of 'being a researcher', not just 'doing research'.

Of course, a big thank you to the hard-working women on the committee who tirelessly helped organise the event. Thank you to Dannielle Post (co-representative from UniSA), Heather Armstrong and Emma Stewart (University of Adelaide), Karen Patterson and Nuy Chau (Flinders Unviersity). This event was organised and fully funded independent of any university society, highlighting the power of collaboration for translating a simple idea into an inspirational evening.

For more information and photos, please visit our website http://triuni2014.weebly.com/ or please feel free to contact me at susan.christo@mymail.unisa.edu.au.

Tri-University Committee members (LtoR) Karen Patterson (Flinders University), Nuy Chau (Flinders University), Susan Christo (University of South Australia), Heather Armstrong (University of Adelaide) and Emma Stewart (University of Adelaide). \
Absent: Dannielle Post (University of South Australia co-representative)

44th Australasian Society for Immunology Annual Scientific Meeting

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

INTERNATIONAL SPEAKERS

Yasmine Belkaid,
National Institute of Health, NIAID, USA
NOBEL LAUREATE - Bruce Beutler,
UT Southwestern Medical Center , USA
Arya Biragyn,
National Institutes of Health, USA
Marco Colonna,
Washington University, USA
Andrea Cooper,
Trudeau Institute, USA
Gennaro De Libero,
Singapore Immunology Network (SIgN), Singapore
Ronald Germain,
National Institute of Allergy and Infectious Diseases, USA
Bart Lambrecht,
Ghent University, Belgium
Takaharu Okada,
RIKEN Center for Integrative Medical Science Center, Japan
Virginia Pascual,
Baylor Institute for Immunology Research, USA
Erika Pearce,
Washington University School of Medicine, USA
Qizhi Tang,
UCSF Diabetes Center, USA

NATIONAL SPEAKERS

Gabrielle Belz, *WEHI, VIC*
Robert Brink, *Garvan Institute of Medical Research, NSW*
Anthony Cunningham, *Westmead Millennium Institute, NSW*
Andrew Currie, *Murdoch Univeristy, WA*
Stephen Daley, *Australian National University, ACT*
Barbara Fazekas, *Centenary Institute, NSW*
Paul Foster, *The University of Newcastle, NSW*
Katharina Gaus, *University of New South Wales, NSW*
Dale Godfrey, *University of Melbourne, VIC*
Michele Grimbaldeston, *SA Pathology, SA*
Margaret Hibbs, *Monash University, VIC*
Charles Mackay, *Monash University, VIC*
Ben Roediger, *Centenary Institute, NSW*
Sarah Russell, *Peter MacCallum Cancer Centre, VIC*
Ray Steptoe, *University of Queensland, QLD*
Jennifer Stow, *The University of Queensland, QLD*

EARLY BIRD REGISTRATION AND ABSTRACT SUBMISSION DEADLINE: FRIDAY 5TH SEPTEMBER

www.asi2014.org

Day of Immunology 2014 in Victoria

Claerwen Jones
Chair, Day of Immunology Melbourne Organising Committee

Over 600 members of the general public and secondary students participated in another excellent series of Day of Immunology (DoI) events in Victoria in 2014. Many thanks to the sponsors, the fabulous DoI committee, Communications staff at WEHI and Monash University, Medicare Local staff, GTAC staff, and speakers, tour guides and helpers for making DoI 2014 such a success.

Public Lecture: *Visions for a disease-free world: Vaccinations against infectious diseases*

An appreciative audience enjoyed an excellent series of lectures by four Melbourne scientists on how vaccination helps to protect us from infectious diseases.

Dr Irina Caminschi (Chairperson, Burnet Institute) gave a wonderful opening presentation on vaccination from the perspective of an immunologist and a mother, dispelling several commonly held misconceptions on vaccination safety.

Prof. Stephen Turner (University of Melbourne and Doherty Institute) spoke about the history of vaccination, how vaccination actually works to protect against disease (relating immune cell functions to Marvel Comics characters!), and how vaccines have developed over the years through to the modern age. Did you know that one of the Incredible Hulk's super powers is immunity to diseases and viruses?

Dr Krystal Evans (Walter and Eliza Hall Institute of Medical Research) gave a great talk on the very old problem of malaria, difficulties in developing a vaccine to this pathogen and three exciting new vaccine strategies developed at WEHI that are currently in clinical development.

Prof. Nigel Curtis (University of Melbourne and Royal Children's Hospital Melbourne) gave a very entertaining presentation about whether "to BCG or not to BCG", and how childhood BCG vaccination is showing potential to reduce allergies and boost the immune response to other infections.

Vaccination Café

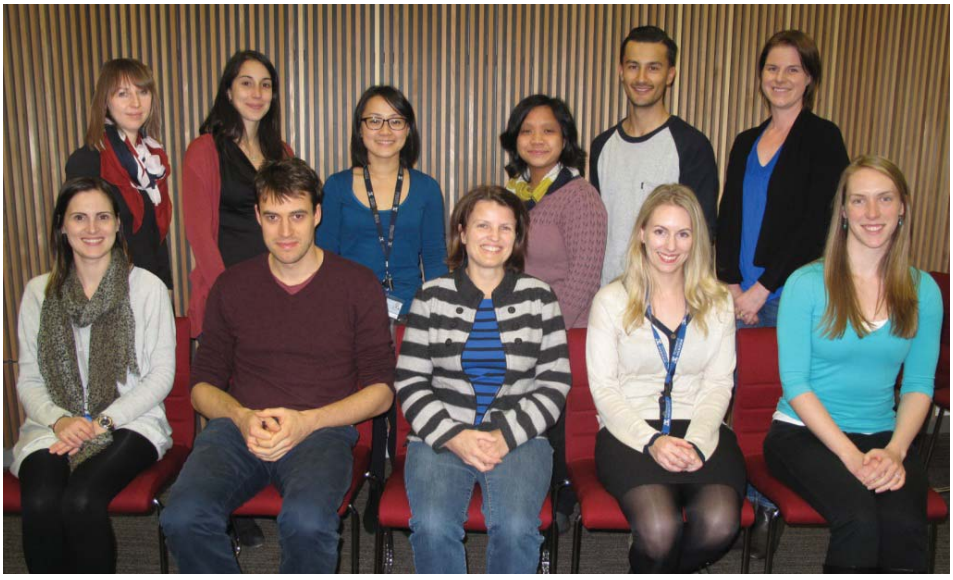
This was a new activity for DoI Victoria. Over 30 members of the general public came to get their influenza vaccination for only $10 and/or chat with research scientists over tea, coffee and biscuits about the science of vaccination and how the body fights illness and disease. Sonya Pemberton, 2012 Emmy Award-winning Australian documentary film maker gave a fabulous and passionate talk about her film *Jabbed: Love, Fear and Vaccines* that explores the benefits and risks of vaccination. We were very fortunate to work with Wendy Reid from Inner North West Melbourne Medicare Local, who performed the vaccinations and Anne McGlashan from University of Melbourne Health Service who organized the vaccines and equipment. Thanks also to Thomas Gebhardt and Sammy Bedoui (UniMelb) and Su Heinzel (WEHI) for expert advice and all the researchers who presented fabulous lay posters about their work (Nick Collins, Marie Greyer, Jyh Liang Hor, Alex Kato, Jane Li, Kylie Quinn, Ali Zaid). Congratulations to poster winner Dr Daniel Fernandez-Ruiz (UniMelb).

Discovery tours

Over 200 people (including members of the general public, nursing, uni or school students and teachers) attended a Discovery Tour held at either the Monash Health Translation Precinct, Ludwig Institute for Cancer Research, Burnet Institute, Peter MacCallum Cancer Centre or CSIRO's Australian Animal Health Laboratory. Tours included talks by PhD students and postdocs, poster viewings, tours of laboratories and facilities and the chance to talk with researchers over refreshments.

Participants and organizers alike had a really positive experience and there was heaps of great feedback, including *"Thank you so much for your time yesterday. I found the day very informative and fascinating; how far research has come over the last few years is amazing. What a delightful group of young researchers."*

Thanks to Jim Harris, Paul Hertzog, Eric Morand, Marcel Nold, Ashley Mansell, Alison Browning, Camden Lo, Ina Rudloff and Vivian Vasic, and other volunteers from MHTP; Katherine Woods and volunteers from Ludwig Institute; Kerry Ko, Rachel Lundie, Stephanie Luketic, Bruce Loveland, Ben Fancke, Xi Zen Yap, Tom Angelovich, Brendan Elsworth, Jun Gu, Elisha de Valle, Jess Li, Jess Anania and Andrew Guy from Burnet Institute; Connie Duong, Jessica Salmon, Nicole Milenkovski and Caroline Owen from Peter Mac; and Daniel Layton,



DoI 2014 Committee
LtoR Front row: Dimmy Zotos, Tim Johanson, Claerwen Jones, Laura Mackay, Aislin Meehan. Back row: Alison West, Nicole Messina, Wy Ching Ng, Connie Duong, Jay Rautela, Rachel Lundie.
(Photo: Gayle Davey, UniMelb)
Absent: Ann Cornish, Erika Duan, Jim Harris, Gabi Khoury, Kerry Ko, Julia Marchingo, Scott Mueller, Kim Pham, Azad Rahimpour, Lucie Rankin, Louise Rowntree, Linda Wakim, Clare Westhorpe, Wendy Winnall, Katherine Woods.

Public lecture presenters . LtoR: Steve Turner, Irene Caminschi, Krystal Evans & Nigel Curtis (Photo: Susanne Heinzel, WEHI)

Dimmy Zotos (WEHI) inviting passers by to get their flu shot at the Vaccination Café. (Photo: Jeremy Kennett, Inner North West Melbourne Medicare Local)

Sonya Pemberton speaking at the Vaccination Café (Photo: Jeremy Kennett, Inner North West Melbourne Medicare Local)

Adam Karpala and Lenny Izzard and volunteers from AAHL/CSIRO.

Immunology workshops

Nearly 300 VCE Biology students and their teachers from 30 Victorian secondary schools attended one of three full day workshops at either the Gene Technology Access Centre (GTAC) in Parkville or Federation University, Ballarat. The workshop began with talks by eminent immunologists, including Sir Gustav Nossal, Prof Phil Hodgkin (WEHI) and Prof Paul Hertzog (Monash University) and was followed by various activities (microscopy, ELISA and a GTAC-developed online immunology game) to give the students a strong foundation in the Immunology component of their Biology course. The program finished with inspiring careers talks by scientists, including A/Prof. Eugene Maraskovsky (CSL), Dr Julianne Bayliss (Victorian Infectious Diseases Reference Laboratory), Dr Jason Tye-Din (WEHI), Dr Misty Jenkins (Peter Mac) and Prof. George Kannourakis (Ballarat Oncology & Haematology). Feedback comments from students and teachers were, once again, extremely positive.

Many thanks also to Dr Tony Chiovitti, Nicole Webster and all the support staff at GTAC and A/Prof. Stuart Berzins and his support staff at Federation University.

The Committee would like to gratefully acknowledge the generous support from the following organizations: Australasian

Society for Immunology, Australian Academy of Science, Australian Biosearch, BD, Bioline, Bio-Rad, Burnet Institute, CSIRO, CSL, Federation University, Gene Technology Access Centre, Immunology Group of Victoria, Interpath Services, Ludwig Institute, Medicare Local Inner North West Melbourne, Miltenyi Biotec, Monash Health Translation Precinct, Monash University, Peter MacCallum Cancer Centre, Sigma-Aldrich, Stemcell Technologies, Taltarni Vineyards, The University of Melbourne, The University of Melbourne Faculty of Medicine, Dentistry and Health Sciences Infection & Immunity Research Domain, and the Walter and Eliza Hall Institute of Medical Research.

Professor Sir Gustav Nossal with students from Clonard College and their teacher, Sam Whitton (Photo: Monash University)

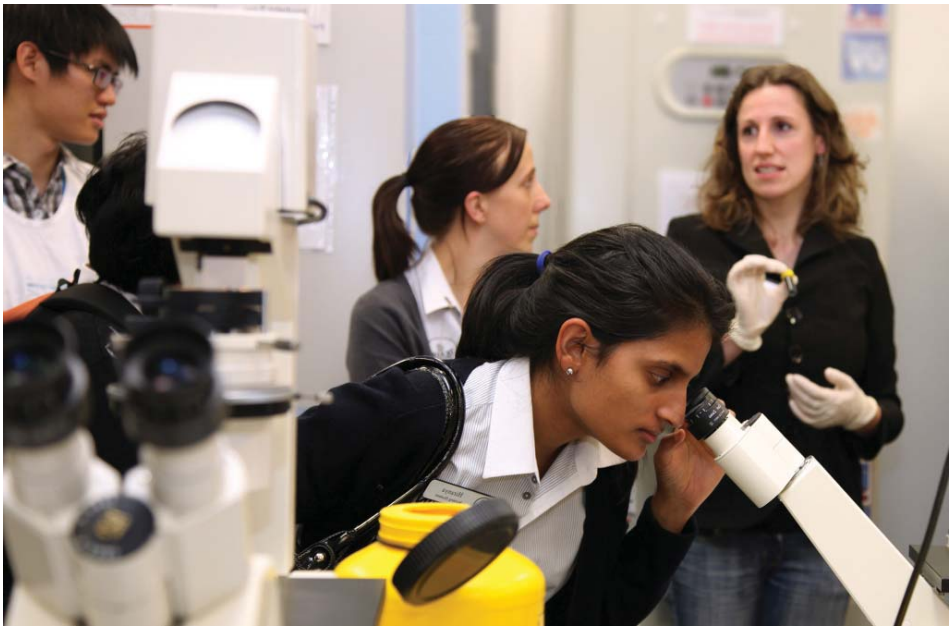
Prof. Phil Hodgkin (WEHI) speaking about the history of immunology research in Australia (Photo: Monash University)

Careers speakers Eugene Maraskovsky (CSL), Julianne Bayliss (Victorian Infectious Diseases Reference Laboratory) & Jason Tye-Din (WEHI) (Photo: Monash University)

PhD student Erika Duan (Monash University) demonstrating to secondary students in the microscopy workshop (Photo: Monash University)

Local VCE students from the Ballarat region attending the DoI Immunology workshop at Federation University
(Photo: Federation University)

PhD student Jason Lao, Dir Ina Rudloff and nursing students looking at cells at the Monash Health Translation Precinct Discovery Tour
(Photo: Monash University)



An aspiring young scientist counting live cells on a haemocytometer, during the Burnet Institute Discovery Tour
(Photo: Burnet Institute)

The University Of Queensland AUSTRALIA | DIAMANTINA INSTITUTE | TRI partnering for better health

"turning scientific discoveries into better treatments"

Advanced Immunology Course
at The University of Queensland Diamantina Institute

Win a $3,200 stipend towards your Honours degree

The University of Queensland Diamantina Institute is pleased to offer a Winter course in Advanced Immunology at the new Translational Research Institute in Brisbane.

Five day course from 14th - 18th of July, 2014

The Advanced Immunology Course will offer students:

> Advanced instruction in immunology

> Advanced practical training in immunological techniques

> Meet and hear from international leaders in the field of immunology, including Professor Robert Brink (Garvan Institute for Medical Research), Professor Christian Engwerda (QIMR), Associate Professor Kristen Radford (MRI-UQ) and Associate Professor Ray Steptoe (UQDI)

> All-day attendees are eligible to win $3200 Honours scholarship stipend, registration to BIG (Brisbane Immunology Group) and a year subscription to ASI

Costs

> All-day attendees (interactive lecture series + Practicals) is $210 + GST (numbers limited)

> Interactive lecture attendees (morning session only) is $60 + GST

Five bursaries will be offered based on academic record, and a 150 word essay on your interest in immunology.

Applications

Please submit an application form and pay for your course by Friday June 20, 2014. Applications can be found at - **www.di.uq.edu.au/advanced-immunology-course**

Australasian Society for Immunology Inc. | BD | millennium science

For further information, please contact Dr Bruce Wyse on **(07) 3443 7020** or email **b.wyse@uq.edu.au**

Conditions: A busary of $3,200 will be awarded to the winning student who successfully completes the Advanced Immunology Course. The winner will be determined by the course leader. The stipend must go towards an Honours degree at UQDI and cannot be used for any other purposes.

ASI Councillors' News

N.Z. News

This year, we have been fortunate to host Peter Andersen (as part of the Visiting Speaker Program) who gave talks in both Dunedin and Palmerston North, as well as meeting with staff and postgraduate students. Students in particular had time for stimulating discussions around their science and their future careers.

We also held two Day of Immunology events – a quiz night in Dunedin, open to the public, and a debate in Wellington.

Wellington (Anne LaFlamme): In Wellington, the World Day of Immunology was celebrated by rigorous debating of the moot: "The bugs have won!" The two debating teams were comprised of senior scientists, PhD students and secondary school students, who spent the month of April preparing to battle for the supremacy of bacteria or the immune system. While both teams fought valiantly, in the end, the audience, who ranged from primary school students to pensioners, decided that the bugs had NOT won and the immune system was doing its job (but it was very close!). The debate was held on 5 May 2014 at Rutherford House, Victoria University of Wellington. Our courageous debating team members were:

Affirmative Team: Dr Laura Green (captain), Varun Venkatesh, Nonny, Darian, and Tom
Negative Team: Dr Lieke van den Elsen, Amy Shepherd, and Gillian McNaughton

Dunedin (Jo Kirman): In Dunedin, we celebrated International Day of Immunology with a 'Plagues and Pestilence' public quiz night. We had 12 teams participate and they were presented with a multitude of facts about immunology and immunology research at Otago University before they were tested on loosely related general knowledge questions. A highlight was the explanation of the Y shape of antibodies followed by a question about the origin of Y-front undies, as well as the bonus round listing different types of tractors (it's New Zealand!). The joint winners of the best team names were: "Ring O' Roses" and "Pocket full of Posies".

Meanwhile, preparations continue for the NZASI meeting in July in Palmerston North (chair: Jo Roberts). We have three excellent invited speakers to support our unifying theme of 'One Health':

Leon Knippels, Utrecht University, Netherlands: *Immune Modulation by Dietary Compounds*
Jane Oliaro, Peter MacCallum Cancer Centre, Australia: *Lymphocyte Signaling, Immune Cell Differentiation*
Martin Vordermeier, Animal Health and Vet. Lab. Agency: *Veterinary Immunology and TB Research*.

Below are some photos from the Dunedin quiz night and Wellington debate for Day of Immunology.

Roslyn Kemp
Councillor

Dunedin Quiz Night
Top pic shows quizmasters Liam Brennan & Jo Kirman (partially hidden)

Wellington Debate
Left: The two teams with Anne LaFlamme

Below: The Affirmative Team

Victorian News

In Autumn, IgV presented the Annual Master Class in Immunology drawing on a fantastic line-up of local experts covering a range of immunological research topics and breakthrough new technologies. Professor Frederica Sallusto's presentation on human TCR diversity in effector T cell populations capped off a great day that was very well attended by students and postdoctoral fellows. A number of events were organised to celebrate the Day of Immunology in Melbourne, Ballarat and Geelong. The new Vaccination Café and public lectures were extremely successful and an article from Dr Claewen Jones in this newsletter provides more details of the Day. Congratulations to everyone involved in organising these events.

Another fixture on the IgV calendar looms on July 25 – the Annual IgV Winter Seminar. This year, Professor Antonio Lanzavecchia delivers the seminar at The Castle Hotel, with the support of long-term sponsors Miltenyi Biotec helping to ensure a great night. The salubrious setting is sure to make for a stimulating seminar. Please feel free to contact me about these events, or any other matters relating to Victorian and Tasmanian ASI activities.

Daniel Gray
Councillor

Queensland News

The Queensland ASI Branch has had a busy month. World Day of Immunology was celebrated in style and my thanks go to Danielle Stanisic and Jennifer Reiman for organising a fantastic series of public lectures in Brisbane, and to Margaret Jordan and Tammy Dougan who organised a highly successful event in Townsville. Thanks also to Ian Frazer and TRI who hosted Dr Juliane McElrath as part of the ASI Visiting Speaker Program. More details on these events can be found below.

The 15th Brisbane Immunology Group Retreat will be held at Mantra Legends Hotel, Surfers Paradise from 21–22 August. We have an exciting line-up of interstate speakers including Prof. Liz Hartland and A/Prof. Katherine Kedzierska from the University of Melbourne, Prof. Carola Vinuesa and A/Prof. Ian Cockburn from ANU, Dr Cindy Ma from Garvan and A/Prof. John Silke from WEHI. See the BIG website www.big.qimrberghofer.edu.au/page/Annual_Retreat to register and submit your abstract before July 11 2014.

The Queensland Branch is sponsoring an Advanced Immunology Course being organised by the University of Queensland Diamantina Institute at the Translational Research Institute from July 14–18, 2014. More details can be found at www.di.uq.edu.au/advanced-immunology-course

Kristen Radford
Councillor

Report on visit by Dr Juliane McElrath
Ian Frazer

Queensland ASI and the new Translational Research Institute on the Princess Alexandra Hospital campus were delighted to host Dr Julie McElrath from the Hutch in Seattle as our ASI visitor in May. Dr McElrath, during a 20 hour visit, had dinner with several local immunologists, and then spent a day at the Institute where she gave an informative and thought provoking lecture on the many reasons why we can't assess the efficacy of HIV vaccines except through clinical trials, and an update on the state of those trials worldwide. There was heated discussion amongst the immunologists and vaccine developers who were present amongst the ~100 audience about the implications for other vaccines under development. Dr McElrath also led discussion amongst interested PhD students from south east Queensland and met one-on-one with some local immunologists. She left us with a standing invitation to visit her in Seattle, while commenting that she was sure that none of us would be able to tear ourselves away from the pleasures of Brisbane in general and the new TRI building specifically.

Report on Brisbane Day of Immunology Event

Danielle Stanisic

On Sunday 4th May 2014, iQ held its second Day of Immunology event at the Queensland Museum. Entitled "Our Amazing Immune System", it was a public event designed to educate and fascinate people about different aspects of the immune system with six engaging sessions from local speakers on topics including: Diabetes, Rheumatoid Arthritis, Multiple Sclerosis, Cancer, Vaccination and cells of the Innate Immune System. We would like to thank Prof. John Aaskov, Prof. Mike McGuckin, Prof. Ranjeny Thomas, Dr Gary Allen, Dr Adam Wall and Dr Chris Schmidt for presenting and discussing their research and experiences and generating a lot of interest and discussion amongst the attendees and speakers.

Speaker Dr Gary Allen

Report on Townsville Day of Immunology Event

Margaret Jordan and Tammy Dougan

The Day of Immunology was celebrated on 1st May in Townsville, organised by two of the Queensland branch committee members, Dr Margaret Jordan and Ms Tammy Dougan. The event was well attended by

Brisbane DoI Speaker Dr Adam Wall

Two views of the Townsville DoI event

approximately 120 members of the general public. Participants enjoyed a glass of wine or bubbly or a beer or soft drink accompanied by nibbles of cheese, biscuits and fruit, while browsing the many posters showing aspects of the immune system and its functions. An interactive ITC was available for those wishing to "Learn immunology in 5 mins", and the CDs and booklets on "Our incredible immune system" and "Vaccinations" went down a treat.

This open session was followed by four informative talks covering different topics of how incredible our immune system is. Tammy Dougan opened the session by giving a short overview of immunology, which was then followed by topics on allergies and autoimmunity, addressing "Can Your Food Kill You?" (A/Prof. Andreas Lopata) and "Worms! A Cure For Inflammatory Diseases?" (Dr Paul Giacomin). A/Prof. Patrick Schaeffer wrapped up the session with a talk on how to "Help fight Melioidosis".

The floor was then opened to general questions that were fielded by our experts. The talks were most enjoyable and there was great cohesion due to the talent of our MC, Prof. Alan Baxter. In order to get our students involved, we had a poster prize for the best student poster of the evening. This was won by Tiange {Susan) Lui, a PhD student from the Medical Genomics Group at JCU.

Due to the enormous success of this event, we will endeavour to have a repeat performance next year. We welcome any interested parties who would like to participate in giving a presentation to contact us (Margaret.Jrdan@jcu.edu.au; Tammy.Dougan@jcu.edu.au).

A.C.T. News

To celebrate World Day of Immunology we organized public lectures by Professor Carola Vinuesa and Professor Mathew Cook about the application of new genomics technologies to diagnose and investigate immune mediated diseases. At the same time, a new Centre for Personalised Immunology (jcsmr.anu.edu.au/research/cpi) was launched by Assistant Health Minister Fiona Nash. The event was very well attended with more than 180 people coming to the lectures and also received a lot of media attention through an ABC story and a media release from the Department of Health.

Together with the NSW branch, we are looking to another 2-day retreat on Thursday 28th and Friday 29th August 2014. As in the previous four years, the retreat will be held at Peppers Craigieburn Conference Centre and Resort in Bowral. We are very excited to have Lynn Corcoran (WEHI), Wolfgang Weninger (Centenary Institute), Bernadette Saunders (Centenary Institute) and Thomas Gebhard (University of Melbourne) as invited keynote speakers.

Anselm Enders
Councillor

S.A./N.T. News

On Saturday, May 3rd, the SA/NT branch of ASI teamed up the South Australian Health and Medical Research Institute (SAHMRI) to celebrate the Day of Immunology. The state-of-the-art new SAHMRI building made a stunning venue for this year's event, "Immunology: Improving Modern Society". Members of the public were invited into the foyer for an interactive display which featured posters, a microscope station as well as immunology-based educational games and activities for all ages.

We were lucky enough to host three engaging speakers to deliver public lectures on their areas of interest, Prof. Eric Gowans (Vaccines), Assoc. Prof. Bob Heddle (Allergy) and Prof. Sarah Robertson (Reproductive Immunology). The audience was then given the opportunity to ask questions in panel discussion with the speakers. Following the panel discussion the interactive display was open for the public to wander around and ask questions. A well-received attraction of the display was an iPad station with the 'POX' game. The aim of this educational game is to stop the spread of a deadly infectious disease and it encourages players to learn the importance of group immunity and the need to vaccinate. The event was well attended by the public who

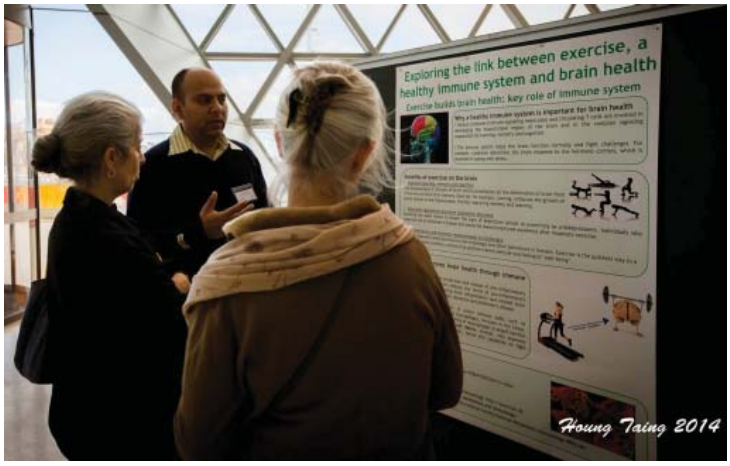
were interested to ask questions and learn more about the immune system.

A big thankyou to our invited speakers, Prof. Eric Gowans, Assoc. Prof. Bob Heddle and Prof. Sarah Robertson who gave up their Saturday to come along and share their passion for immunology and to our sponsors SA Pathology and UniSA. I would also like to thank the organising committee, who helped in the lead up to the event as well as on the day, I really appreciate all of your help in making the event a success: Susan Christo, Erin Lousberg, Natalie Stevens, Anita Kral, Natalie Aboustate, Iain Comerford, Pallave Dasari, Lisa Ebert, Tessa Gargett, Natasha Kolesnikoff, Shamika Moore, Gaurav Singhal, Peter Speck, Houng Taing.

Our next big ASI event for SA/NT will be the 10th Annual Adelaide Immunology Retreat (AIR-10). It has been great to watch the success of the event grow over the past 10 years and hopefully this year we can continue that trend! The retreat, which is aimed at giving PhD students, Honours students and Research Assistants the opportunity to present their work and interact in a relaxed environment, will be held in August this year. An advertisement of the exact date and call for abstracts will be sent out by email to all SA/NT ASI members in June. Please support this event if you are a supervisor by encouraging your students and staff to attend as it is a great opportunity for them to give an oral presentation to their peers in a relaxed environment. Another incentive is that there are prizes for the Best Presentations. For queries or more information, I can be contacted by email at Cara.Fraser@sahmri.com. We look forward to seeing you there!

Cara Fraser
Councillor

SA/NT Branch DoI event, "Immunology: Improving Modern Society", held at the new SAHMRI building



Poster Display

Pox game at the vaccination station in the interactive display

Prof. Eric Gowans delivering his public lecture on vaccination

Panel Discussion

TRAVEL AWARD CONFERENCE REPORTS

The Non-Coding Genome Symposium, EMBL

9-12 October, 2013, Heidelberg, Germany

Monika Srivastava
The John Curtin School of Medical Research, ANU, Canberra

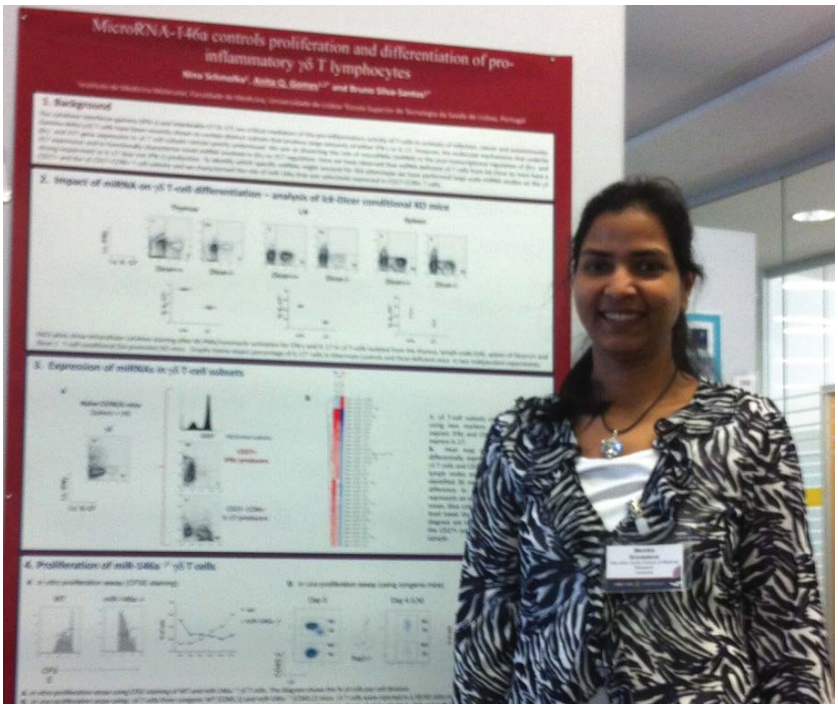
While working on microRNAs during my PhD project, I always wished that one day I would be able to meet some of the pioneers in this field. This wish came true when I received the Postgraduate International Travel Award from ASI to attend the non-coding genome symposium this year in Germany. Being my first international conference, I was very excited to travel abroad and equally thrilled to meet and talk to some of the eminent scientists in the field of microRNA. The conference was held in EMBL, Heidelberg which itself is a very popular destination among molecular biologists. The interior of the building was quite interesting with the staircase running in a double helix of DNA. The two sides of the stairs, or the two strands we should say, were interconnected just like a DNA strand that often created lot of confusion between the outsiders. In fact, I ended up twice on the wrong floor due to the complicated, rather interesting design of the stairs.

Prior to the start of the symposium, there was a short workshop hosted by Exiqon that told us about the recent advancement and latest techniques applied to study non coding RNAs such as long non coding RNAs (lncRNAs) and microRNAs (miRNAs). This was very helpful as the field of non-coding RNA is still in its naive state with a lot of potential for exciting discoveries. The major problems faced by researchers today in the field of microRNA is the availability of sufficient techniques and this workshop provided us with some of the options which was quite reassuring. After the workshop, the symposium started with the opening talk by Prof. Elisa Izaurralde. She told that the symposium had 477 registrants and 300 posters from all across the world, highlighting the success of the symposium. The next talk was from emeritus scientist Prof. Witold Flipowicz, and it was such a pleasure to hear him and know more about the Ccr4-Not protein that forms the core components of post-transcriptional regulation of mRNA. The four days of comprehensive coverage of non-coding genome was very informative and exciting. This meeting not only provided a chance to listen to some wonderful work but also gave me the opportunity to meet one-to-one with some of the eminent scientists in the field of microRNA such as David Bartel, V Narry Kim, Witold Flipowicz, and Elisa Izaurralde.

I have had the opportunity to make some great friends there and hope to remain in contact with them in some way, shape or form. The conference also provided an opportunity for some fruitful networking for scientific collaboration. I am very hopeful that these collaborations will not only benefit the ongoing projects but also for upcoming projects on miRNAs. The conference also showcased the use of advance technologies like RIP-Seq, deep sequencing, ribosomal profiling in studying expression, function and homeostasis of non-coding RNAs.

Although the weather was not very tourist friendly, still I took advantage of being in the city and looked around the beautiful town. It was a pity that due to family reasons, I could not take some extra days other than the conference to visit some more countries of Europe, but was extremely happy with my overall experience.

Once again I would like to thank the ASI for providing me this travel grant and giving me the opportunity to explore the outside scientific world, with may be some potential postdoc employers.



15th International Congress of Immunology

August 22-27, 2013, Milan, Italy

Susan Christo
Hanson Institute, Adelaide, SA

Fashion is to Milan as immunology was to ICI 2013. The Pradas, the Guccis and the Versaces of the immunology world were welcomed into Milan's congress centre, united by a common passion of science. It was overwhelming to be immersed in an environment so concentrated with the world's top researchers. The intellectual experience was invaluable; I had the opportunity to listen to presentations by Peter Doherty, Mark Davis, Rino Rappuoli, Alberto Mantovani, Vishva Dixit and many more.

What seemed to be a somewhat minuscule contribution to the conference (it was like walking through a real-life hall of fame!!), my poster presentation was one of the most rewarding experiences of my career to date. It was exciting to present my work to an international audience gathered around, and in particular, voice my struggles/ troubleshooting adventures with students who had the same experiences!

Susan visiting the ICI 2016 booth at ICI 2013, with an unexpected visit from Australian wildlife!

The European experience also accommodated a lab visit with Professor Ed Palmer in Basel, Switzerland, who generously donated his time and knowledge with me. I really enjoyed gaining more insight into how scientists from different cultures and environments think and shape their research. The sense of community was further strengthened by attending the IGSIC conference (Marseille, France) aimed for international immunology students. Amongst the world-wide representation at IGSIC, the most enjoyable aspect was the networking and connections established with the Australian students that were from Perth and Melbourne.

I want to express my gratitude to ASI for the ICI2013 award that supported my European endeavours.

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

9th International Congress on Autoimmunity

26-30 March 2014, Nice, France

Stephen Scally
Monash University, Victoria

The view of Nice from le château

Firstly, I would like to thank the ASI for awarding me an International Travel Grant, which allowed me to attend the 9th International Congress on Autoimmunity held in Nice, France from March 26 to 30. This was a great meeting with over 2500 participants, and an excellent chance to present my research to an international audience.

The meeting began with a brush up on my immunology, thanks to a great Basic Immunology Course run by Prof Abul Abbas. The conference held six parallel sessions running over four days ensuring that there was always something of interest for me to see. Some of the highlights included Professor Kazuhiko Yamamoto's talk investigating antigen-specific T cells in rheumatoid arthritis and Professor Guy Serre's talk, where he described a pathophysiological link between the presence of anti citrullinated antibodies and IgM rheumatoid factor in rheumatoid arthritis.

I was lucky enough to present my PhD work during the parallel session "Genetics in Autoimmunity" and received some great questions and feedback from the audience. In addition, Dr Nathalie Lambert invited me to give a talk for her and Prof Jean Roudier's group at INSERM U639, Parc Scientifique de Luminy in Marseille the following week. This was a great experience to present my work to leaders in the field, have in-depth discussions about the project and it will hopefully lead to a collaboration in the future.

Overall, this was a fantastic opportunity to present my research at an international conference and I gained some valuable feedback and experience. I'd like to thank ASI once again for their generous support.

FIMSA2015

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Publications List

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

Afshar-Sterle S, Zotos D, Bernard NJ, Scherger AK, Rodling L, Alsop AE, Walker J, Masson F, Belz GT, Corcoran LM *et al.* **Fas ligand-mediated immune surveillance by T cells is essential for the control of spontaneous B cell lymphomas**. *Nature medicine* 2014; **20**(3)**:** 283.

Alaidarous M, Ve T, Casey LW, Valkov E, Ericsson DJ, Ullah MO, Schembri MA, Mansell A, Sweet MJ, Kobe B. **Mechanism of bacterial interference with TLR4 signaling by Brucella Toll/interleukin-1 receptor domain-containing protein TcpB**. *The Journal of biological chemistry* 2014; **289**(2)**:** 654.

Altin JA, Daley SR, Howitt J, Rickards HJ, Batkin AK, Horikawa K, Prasad SJ, Nelms KA, Kumar S, Wu LC *et al.* **Ndfip1 mediates peripheral tolerance to self and exogenous antigen by inducing cell cycle exit in responding CD4+ T cells**. *Proceedings of the National Academy of Sciences of the United States of America* 2014; **111**(6)**:** 2067.

Baird FJ, Gasser RB, Jabbar A, Lopata AL. **Foodborne anisakiasis and allergy**. *Molecular and cellular probes* 2014; **28**(4)**:** 167.

Baschuk N, Wang N, Watt SV, Halse H, House C, Bird PI, Strugnell R, Trapani JA, Smyth MJ, Andrews DM. **NK cell intrinsic regulation of MIP-1alpha by granzyme M**. *Cell death & disease* 2014; **5:** e1115.

Beavis PA, Milenkovski N, Stagg J, Smyth MJ, Darcy PK. **A blockade enhances anti-metastatic immune responses**. *Oncoimmunology* 2013; **2**(12)**:** e26705.

Bedel R, Berry R, Mallevaey T, Matsuda JL, Zhang J, Godfrey DI, Rossjohn J, Kappler JW, Marrack P, Gapin L. **Effective functional maturation of invariant natural killer T cells is constrained by negative selection and T-cell antigen receptor affinity**. *Proceedings of the National Academy of Sciences of the United States of America* 2014; **111**(1)**:** E119.

Benham H, Rehaume LM, Hasnain SZ, Velasco J, Baillet AC, Ruutu M, Kikly K, Wang R, Tseng HW, Thomas GP *et al.* **IL-23-mediates the intestinal response to microbial beta-glucan and the development of spondyloarthritis pathology in SKG mice**. *Arthritis & rheumatology* 2014.

Berney-Meyer L, Hung N, Slatter T, Schollum JB, Kitching AR, Walker RJ. **Omeprazole-induced acute interstitial nephritis: A possible Th1-Th17-mediated injury?** *Nephrology* 2014; **19**(6)**:** 359.

Berry R, Headey SJ, Call MJ, McCluskey J, Tregaskes CA, Kaufman J, Koh R, Scanlon MJ, Call ME, Rossjohn J. **Structure of the chicken CD3epsilondelta/gamma heterodimer and its assembly with the alphabetaT cell receptor**. *The Journal of biological chemistry* 2014; **289**(12)**:** 8240.

Berry R, Rossjohn J, Brooks AG. **The Ly49 natural killer cell receptors: a versatile tool for viral self-discrimination**. *Immunology and cell biology* 2014; **92**(3)**:** 214.

Bhaskaracharya A, Dao-Ung P, Jalilian I, Spildrejorde M, Skarratt KK, Fuller SJ, Sluyter R, Stokes L. **Probenecid blocks human P2X7 receptor-induced dye uptake via a pannexin-1 independent mechanism**. *PloS one* 2014; **9**(3)**:** e93058.

Bhati M, Cole DK, McCluskey J, Sewell AK, Rossjohn J. **The versatility of the alphabeta T-cell antigen receptor**. *Protein science : a publication of the Protein Society* 2014; **23**(3)**:** 260.

Bird CH, Christensen ME, Mangan MS, Prakash MD, Sedelies KA, Smyth MJ, Harper I, Waterhouse NJ, Bird PI. **The granzyme B-Serpinb9 axis controls the fate of lymphocytes after lysosomal stress**. *Cell death and differentiation* 2014; **21**(6)**:** 876.

Birkinshaw RW, Kjer-Nielsen L, Eckle SB, McCluskey J, Rossjohn J. **MAITs, MR1 and vitamin B metabolites**. *Current opinion in immunology* 2014; **26:** 7.

Bisht K, Wegiel B, Tampe J, Neubauer O, Wagner KH, Otterbein LE, Bulmer AC. **Biliverdin modulates the expression of C5aR in response to endotoxin in part via mTOR signaling**. *Biochemical and biophysical research communications* 2014.

Bonder CS, Ebert LM. **Fos-icking for control of angiogenesis: increasing the longevity of peritoneal dialysis**. *Kidney international* 2013; **84**(6)**:** 1065.

Brennan RM, Burrows JM, Elliott T, Neller MA, Gras S, Rossjohn J, Miles JJ, Burrows SR. **Missense single nucleotide polymorphisms in the human T cell receptor loci control variable gene usage in the T cell repertoire**. *British journal of haematology* 2014.

Bunn PT, Stanley AC, de Labastida Rivera F, Mulherin A, Sheel M, Alexander CE, Faleiro RJ, Amante FH, Montes De Oca M, Best SE *et al.* **Tissue requirements for establishing long-term CD4+ T cell-mediated immunity following Leishmania donovani infection**. *Journal of immunology* 2014; **192**(8)**:** 3709.

Bunting MD, Comerford I, Kara EE, Korner H, McColl SR. **CCR6 supports migration and differentiation of a subset of DN1 early thymocyte progenitors but is not required for thymic nTreg development**. *Immunology and cell biology* 2014.

Byrne SN. **How much sunlight is enough?** *Photochemical & photobiological sciences : Official journal of the European Photochemistry Association and the European Society for Photobiology* 2014; **13**(6)**:** 840.

Byrne SN, Sarchio SN. **AMD3100 protects from UV-induced skin cancer**. *Oncoimmunology* 2014; **3**(1)**:** e27562.

Cakebread JA, Haitchi HM, Xu Y, Holgate ST, Roberts G, Davies DE. **Rhinovirus-16 induced release of IP-10 and IL-8 is augmented by Th2 cytokines in a pediatric bronchial epithelial cell model**. *PloS one* 2014; **9**(4)**:** e94010.

Carey AJ, Tan CK, Mirza S, Irving-Rodgers H, Webb RI, Lam A, Ulett GC. **Infection and cellular defense dynamics in a novel 17beta-estradiol murine model of chronic human group B streptococcus genital tract colonization reveal a role for hemolysin in persistence and neutrophil accumulation**. *Journal of immunology* 2014; **192**(4)**:** 1718.

Cha L, Berry CM, Nolan D, Castley A, Fernandez S, French MA. **Interferon-alpha, immune activation and immune dysfunction in treated HIV infection**. *Clin Trans Immunol* 2014; **3:** e10.

Chan AC, Neeson P, Leeansyah E, Tainton K, Quach H, Prince HM, Harrison SJ, Godfrey DI, Ritchie D, Berzins SP. **Natural killer T cell defects in multiple myeloma and the impact of lenalidomide therapy**. *Clinical and experimental immunology* 2014; **175**(1)**:** 49.

Chan AJ, Alikhan MA, Odobasic D, Gan PY, Khouri MB, Steinmetz OM, Mansell AS, Kitching AR, Holdsworth SR, Summers SA. **Innate IL-17A-producing leukocytes promote acute kidney injury via inflammasome and Toll-like receptor activation**. *The American journal of pathology* 2014; **184**(5)**:** 1411.

Chan CJ, Martinet L, Gilfillan S, Souza-Fonseca-Guimaraes F, Chow MT, Town L, Ritchie DS, Colonna M, Andrews DM, Smyth MJ. **The receptors CD96 and CD226 oppose each other in the regulation of natural killer cell functions**. *Nature immunology* 2014; **15**(5)**:** 431.

Chevrier S, Corcoran LM. **BTB-ZF transcription factors, a growing family of regulators of early and late B-cell development**. *Immunology and cell biology* 2014.

Chevrier S, Kratina T, Emslie D, Karnowski A, Corcoran LM. **Germinal center-independent, IgM-mediated autoimmunity in sanroque mice lacking Obf1**. *Immunology and cell biology* 2014; **92**(1)**:** 12.

Cho V, Mei Y, Sanny A, Chan S, Enders A, Bertram EM, Tan A, Goodnow CC, Andrews TD. **The RNA-binding protein hnRNPLL induces a T cell alternative splicing program delineated by differential intron retention in polyadenylated RNA**. *Genome biology* 2014; **15**(1)**:** R26.

Chow MT, Duret H, Andrews DM, Faveeuw C, Moller A, Smyth MJ, Paget C. **Type I NKT-cell-mediated TNF-alpha is a positive regulator of NLRP3 inflammasome priming**. *European journal of immunology* 2014.

Cloake NC, Beaino W, Trifilieff E, Greer JM. **Thiopalmitoylation of altered peptide ligands enhances their protective effects in an animal model of multiple sclerosis**. *Journal of immunology* 2014; **192**(5)**:** 2244.

Cooper PD, Barclay TG, Ginic-Markovic M, Petrovsky N. **Gamma ray sterilization of delta inulin adjuvant particles (Advax) makes minor, partly reversible structural changes without affecting adjuvant activity**. *Vaccine* 2014; **32**(5)**:** 552.

Corcoran L, Emslie D, Kratina T, Shi W, Hirsch S, Taubenheim N, Chevrier S. **Oct2 and Obf1 as Facilitators of B:T Cell Collaboration during a Humoral Immune Response**. *Frontiers in immunology* 2014; **5:** 108.

Cukalac T, Chadderton J, Zeng W, Cullen JG, Kan WT, Doherty PC, Jackson DC, Turner SJ, La Gruta NL. **The influenza virus-specific CTL immunodominance hierarchy in mice is determined by the relative frequency of high-avidity T cells**. *Journal of immunology* 2014; **192**(9)**:** 4061.

Dagley LF, Croft NP, Isserlin R, Olsen JB, Fong V, Emili A, Purcell AW. **Discovery of novel disease-specific and membrane-associated candidate markers in a mouse model of multiple sclerosis**. *Molecular & cellular proteomics : MCP* 2014; **13**(3)**:** 679.

Dagley LF, White CA, Liao Y, Shi W, Smyth GK, Orian JM, Emili A, Purcell AW. **Quantitative proteomic profiling reveals novel region-specific markers in the adult mouse brain**. *Proteomics* 2014; **14**(2-3)**:** 241.

de Andrade LF, Smyth MJ, Martinet L. **DNAM-1 control of natural killer cells functions through nectin and nectin-like proteins**. *Immunology and cell biology* 2014; **92**(3)**:** 237.

de Jong A, Cheng TY, Huang S, Gras S, Birkinshaw RW, Kasmar AG, Van Rhijn I, Pena-Cruz V, Ruan DT,

Altman JD *et al.* **CD1a-autoreactive T cells recognize natural skin oils that function as headless antigens**. *Nature immunology* 2014; **15**(2)**:** 177.

Devaud C, Westwood JA, John LB, Flynn JK, Paquet-Fifield S, Duong CP, Yong CS, Pegram HJ, Stacker SA, Achen MG *et al.* **Tissues in different anatomical sites can sculpt and vary the tumor microenvironment to affect responses to therapy**. *Molecular therapy : the journal of the American Society of Gene Therapy* 2014; **22**(1)**:** 18.

Ding Y, Wilkinson A, Idris A, Fancke B, O'Keeffe M, Khalil D, Ju X, Lahoud MH, Caminschi I, Shortman K *et al.* **FLT3-ligand treatment of humanized mice results in the generation of large numbers of CD141+ and CD1c+ dendritic cells in vivo**. *Journal of immunology* 2014; **192**(4)**:** 1982.

Dobson BM, Tscharke DC. **Truncation of gene F5L partially masks rescue of vaccinia virus strain MVA growth on mammalian cells by restricting plaque size**. *The Journal of general virology* 2014; **95**(Pt 2)**:** 466.

Dowling MR, Kan A, Heinzel S, Zhou JH, Marchingo JM, Wellard CJ, Markham JF, Hodgkin PD. **Stretched cell cycle model for proliferating lymphocytes**. *Proceedings of the National Academy of Sciences of the United States of America* 2014; **111**(17)**:** 6377.

Edwards ES, Smith C, Khanna R. **Phenotypic and transcriptional profile correlates with functional plasticity of antigen-specific CD4+ T cells**. *Immunology and cell biology* 2014; **92**(2)**:** 181.

El-Assaad F, Combes V, Grau GE, Jambou R. **Potential efficacy of citicoline as adjunct therapy in treatment of cerebral malaria**. *Antimicrobial agents and chemotherapy* 2014; **58**(1)**:** 602.

El-Assaad F, Wheway J, Hunt NH, Grau GE, Combes V. **Production, fate and pathogenicity of plasma microparticles in murine cerebral malaria**. *PLoS pathogens* 2014; **10**(3)**:** e1003839.

Enders A, Short A, Miosge LA, Bergmann H, Sontani Y, Bertram EM, Whittle B, Balakishnan B, Yoshida K, Sjollema G *et al.* **Zinc-finger protein ZFP318 is essential for expression of IgD, the alternatively spliced Igh product made by mature B lymphocytes**. *Proceedings of the National Academy of Sciences of the United States of America* 2014; **111**(12)**:** 4513.

Fan H, Kao W, Yang YH, Gu R, Harris J, Fingerle-Rowson G, Bucala R, Ngo D, Beaulieu E, Morand EF. **Macrophage Migration Inhibitory Factor inhibits the anti-inflammatory effects of glucocorticoids via glucocorticoid-induced leucine zipper**. *Arthritis & rheumatology* 2014.

Gagliardi L, Scott HS, Feng J, Torpy DJ. **A case of Aromatase deficiency due to a novel CYP19A1 mutation**. *BMC endocrine disorders* 2014; **14**(1)**:** 16.

Getts DR, Terry RL, Getts MT, Deffrasnes C, Muller M, van Vreden C, Ashhurst TM, Chami B, McCarthy D, Wu H *et al.* **Therapeutic inflammatory monocyte modulation using immune-modifying microparticles**. *Science translational medicine* 2014; **6**(219)**:** 219ra7.

Godfrey DI, Pellicci DG, Rossjohn J. **NKT cells: the smoking gun in fungal-induced asthma?** *Nature medicine* 2013; **19**(10)**:** 1210.

Gurung RB, Begg DJ, Purdie AC, de Silva K, Bannantine JP, Whittington RJ. **Lymphoproliferative and Gamma Interferon Responses to Stress-Regulated Mycobacterium avium subsp. paratuberculosis Recombinant Proteins**. *Clinical and vaccine immunology : CVI* 2014; **21**(6)**:** 831.

Hamson EJ, Keane FM, Tholen S, Schilling O, Gorrell MD. **Understanding fibroblast activation protein (FAP): Substrates, activities, expression and targeting for cancer therapy**. *Proteomics. Clinical applications* 2014.

Haque A, Best SE, Montes de Oca M, James KR, Ammerdorffer A, Edwards CL, de Labastida Rivera F, Amante FH, Bunn PT, Sheel M *et al.* **Type I IFN signaling in CD8- DCs impairs Th1-dependent malaria immunity**. *The Journal of clinical investigation* 2014.

Haque A, Engwerda C. **Hepatocytes break the silence during liver-stage malaria**. *Nature medicine* 2014; **20**(1)**:** 17.

Harland KL, Day EB, Apte SH, Russ BE, Doherty PC, Turner SJ, Kelso A. **Epigenetic plasticity of Cd8a locus during CD8(+) T-cell development and effector differentiation and reprogramming**. *Nature communications* 2014; **5:** 3547.

Hasan S, van der Veen DR, Winsky-Sommerer R, Hogben A, Laing EE, Koentgen F, Dijk DJ, Archer SN. **A human sleep homeostasis phenotype in mice expressing a primate-specific PER3 variable-number tandem-repeat coding-region polymorphism**. *FASEB journal : official publication of the Federation of American Societies for Experimental Biology* 2014.

Jacobsen RN, Forristal CE, Raggatt LJ, Nowlan B, Barbier V, Kaur S, van Rooijen N, Winkler IG, Pettit AR, Levesque JP. **Mobilization with granulocyte colony-stimulating factor blocks medullar erythropoiesis by depleting F4/80VCAM1CD169ER-HR3Ly6G erythroid island macrophages in the mouse**. *Experimental hematology* 2014.

Jenkins MR, Stinchcombe JC, Au-Yeung BB, Asano Y, Ritter AT, Weiss A, Griffiths GM. **Distinct structural and catalytic roles for Zap70 in formation of the immunological synapse in CTL**. *eLife* 2014; **3:** e01310.

Jones AL, Mowry BJ, McLean DE, Mantzioris BX, Pender MP, Greer JM. **Elevated levels of autoantibodies targeting the M1 muscarinic acetylcholine receptor and neurofilament medium in sera from subgroups of patients with schizophrenia**. *Journal of neuroimmunology* 2014; **269**(1-2)**:** 68.

Kamath SD, Abdel Rahman AM, Komoda T, Lopata AL. **Impact of heat processing on the detection of the major shellfish allergen tropomyosin in crustaceans and molluscs using specific monoclonal antibodies**. *Food chemistry* 2013; **141**(4)**:** 4031.

Kansara M, Leong HS, Lin DM, Popkiss S, Pang P, Garsed DW, Walkley CR, Cullinane C, Ellul J, Haynes NM *et al.* **Immune response to RB1-regulated senescence limits radiation-induced osteosarcoma formation**. *The Journal of clinical investigation* 2013; **123**(12)**:** 5351.

Kao W, Gu R, Jia Y, Wei X, Fan H, Harris J, Zhang Z, Quinn J, Morand EF, Yang YH. **A formyl peptide receptor agonist suppresses inflammation and bone damage in arthritis**. *British journal of pharmacology* 2014.

Kassahn KS, Scott HS, Caramins MC. **Integrating massively parallel sequencing into diagnostic workflows and managing the annotation and clinical interpretation challenge**. *Human mutation* 2014; **35**(4)**:** 413.

Kaufman KL, Mactier S, Armstrong NJ, Mallawaaratchy D, Byrne SN, Haydu LE, Jakrot V, Thompson JF, Mann GJ, Scolyer RA *et al.* **Surface antigen profiles of leukocytes and melanoma cells in lymph node metastases are associated with survival in AJCC stage III melanoma patients**. *Clinical & experimental metastasis* 2014.

Khoury DS, Cromer D, Best SE, James KR, Kim PS, Engwerda CR, Haque A, Davenport MP. **Effect of mature blood-stage Plasmodium parasite sequestration on pathogen biomass in mathematical and in vivo models of malaria**. *Infection and immunity* 2014; **82**(1)**:** 212.

Kooltheat N, Sranujit RP, Chumark P, Potup P, Laytragoon-Lewin N, Usuwanthim K. **An ethyl acetate fraction of Moringa oleifera Lam. Inhibits human macrophage cytokine production induced by cigarette smoke**. *Nutrients* 2014; **6**(2)**:** 697.

Koulis C, Chen YC, Hausding C, Ahrens I, Kyaw TS, Tay C, Allen T, Jandeleit-Dahm K, Sweet MJ, Akira S *et al.* **Protective role for Toll-like receptor-9 in the development of atherosclerosis in apolipoprotein E-deficient mice**. *Arteriosclerosis, thrombosis, and vascular biology* 2014; **34**(3)**:** 516.

Lepen Pleic I, Secombes CJ, Bird S, Mladineo I. **Characterization of three pro-inflammatory cytokines, TNFalpha1, TNFalpha2 and IL-1beta, in cage-reared Atlantic bluefin tuna Thunnus thynnus**. *Fish & shellfish immunology* 2014; **36**(1)**:** 98.

Lichtenfels M, Farrell J, Ogese MO, Bell CC, Eckle S, McCluskey J, Park BK, Alfirevic A, Naisbitt DJ, Pirmohamed M. **HLA restriction of carbamazepine-specific T-Cell clones from an HLA-A*31:01-positive hypersensitive patient**. *Chemical research in toxicology* 2014; **27**(2)**:** 175.

Liddicoat DR, Purton JF, Cole TJ, Godfrey DI. **Glucocorticoid-mediated repression of T-cell receptor signalling is impaired in glucocorticoid receptor exon 2-disrupted mice**. *Immunology and cell biology* 2014; **92**(2)**:** 148.

Liu J, Yan J, Greer JM, Read SJ, Henderson RD, Rose SE, Coulthard A, McCombe PA. **Correlation of adrenomedullin gene expression in peripheral blood leukocytes with severity of ischemic stroke**. *The International journal of neuroscience* 2014; **124**(4)**:** 271.

Loi S, Michiels S, Salgado R, Sirtaine N, Jose V, Fumagalli D, Kellokumpu-Lehtinen PL, Bono P, Kataja V, Desmedt C *et al.* **Tumor infiltrating lymphocytes are prognostic in triple negative breast cancer and predictive for trastuzumab benefit in early breast cancer: results from the FinHER trial**. *Annals of oncology : official journal of the European Society for Medical Oncology / ESMO* 2014.

Lucas CL, Kuehn HS, Zhao F, Niemela JE, Deenick EK, Palendira U, Avery DT, Moens L, Cannons JL, Biancalana M *et al.* **Dominant-activating germline mutations in the gene encoding the PI(3)K catalytic subunit p110delta result in T cell senescence and human immunodeficiency**. *Nature immunology* 2014; **15**(1)**:** 88.

Lutzky VP, Crooks P, Morrison L, Stevens N, Davis JE, Corban M, Hall D, Panizza B, Coman WB, Coman S *et al.* **Cytotoxic T cell adoptive immunotherapy as a treatment for nasopharyngeal carcinoma**. *Clinical and vaccine immunology : CVI* 2014; **21**(2)**:** 256.

Ma Y, Mattarollo SR, Adjemian S, Yang H, Aymeric L, Hannani D, Portela Catani JP, Duret H, Teng MW, Kepp O *et al.* **CCL2/CCR2-dependent recruitment of functional antigen-presenting cells into tumors upon chemotherapy**. *Cancer research* 2014; **74**(2)**:** 436.

McNally A, McNally M, Galea R, Thomas R, Steptoe RJ. **Immunogenic, but not steady-state, antigen presentation permits regulatory T-cells to control CD8+ T-cell effector differentiation by IL-2 modulation**. *PloS one* 2014; **9**(1)**:** e85455.

Menard L, Cantaert T, Chamberlain N, Tangye SG, Riminton S, Church JA, Klion A, Cunningham-Rundles C, Nichols KE, Meffre E. **Signaling lymphocytic activation molecule (SLAM)/SLAM-associated protein pathway regulates human B-cell tolerance**. *The Journal of allergy and clinical immunology* 2014; **133**(4)**:** 1149.

Mittal D, Gubin MM, Schreiber RD, Smyth MJ. **New insights into cancer immunoediting and its three component phases--elimination, equilibrium and escape**. *Current opinion in immunology* 2014; **27:** 16.

Moens L, Tangye SG. **Cytokine-Mediated Regulation of Plasma Cell Generation: IL-21 Takes Center Stage**. *Frontiers in immunology* 2014; **5:** 65.

Mohammad MG, Tsai VW, Ruitenberg MJ, Hassanpour M, Li H, Hart PH, Breit SN, Sawchenko PE, Brown DA. **Immune cell trafficking from the brain maintains CNS immune tolerance**. *The Journal of clinical investigation* 2014; **124**(3)**:** 1228.

Neeland MR, Elhay MJ, Nathanielsz J, Meeusen EN, de Veer MJ. **Incorporation of CpG into a liposomal vaccine formulation increases the maturation of antigen-loaded dendritic cells and monocytes to improve local and systemic immunity**. *Journal of immunology* 2014; **192**(8)**:** 3666.

Ng GZ, Chionh YT, Sutton P. **Vaccine-mediated protection against Helicobacter pylori is not associated with increased salivary cytokine or mucin expression**. *Helicobacter* 2014; **19**(1)**:** 48.

Nieuwenhuizen NE, Lopata AL. **Anisakis--a food-borne parasite that triggers allergic host defences**. *International journal for parasitology* 2013; **43**(12-13)**:** 1047.

Nozaki Y, Kitching AR, Akiba H, Yagita H, Kinoshita K, Funauchi M, Matsumura I. **Endogenous Tim-1 promotes severe systemic autoimmunity and renal disease MRL-Faslpr mice**. *American journal of physiology. Renal physiology* 2014; **306**(10)**:** F1210.

O'Connor GM, Vivian JP, Widjaja JM, Bridgeman JS, Gostick E, Lafont BA, Anderson SK, Price DA, Brooks AG, Rossjohn J *et al.* **Mutational and structural analysis of KIR3DL1 reveals a lineage-defining allotypic dimorphism that impacts both HLA and peptide sensitivity**. *Journal of immunology* 2014; **192**(6)**:** 2875.

O'Connor KS, Parnell G, Patrick E, Ahlenstiel G, Suppiah V, van der Poorten D, Read SA, Leung R, Douglas MW, Yang JY *et al.* **Hepatic metallothionein expression in chronic hepatitis C virus infection is IFNL3 genotype-dependent**. *Genes and immunity* 2014; **15**(2)**:** 88.

Park SM, Angel CE, McIntosh JD, Brooks AE, Middleditch M, Chen CJ, Ruggiero K, Cebon J, Dunbar PR. **Sphingosine-1-phosphate lyase is expressed by CD68 cells on the parenchymal side of marginal reticular cells in human lymph nodes**. *European journal of immunology* 2014.

Park SM, Angel CE, McIntosh JD, Mansell CM, Chen CJ, Cebon J, Dunbar PR. **Mapping the distinctive populations of lymphatic endothelial cells in different zones of human lymph nodes**. *PloS one* 2014; **9**(4)**:** e94781.

Parnell GP, Gatt PN, Krupa M, Nickles D, McKay FC, Schibeci SD, Batten M, Baranzini S, Henderson A, Barnett M *et al.* **The autoimmune disease-associated transcription factors EOMES and TBX21 are dysregulated in multiple sclerosis and define a molecular subtype of disease**. *Clinical immunology* 2014; **151**(1)**:** 16.

Plain KM, Marsh IB, Waldron AM, Galea F, Whittington AM, Saunders VF, Begg DJ, de Silva K, Purdie AC, Whittington RJ. **High-throughput direct fecal PCR assay for detection of Mycobacterium avium subsp. paratuberculosis in sheep and cattle**. *Journal of clinical microbiology* 2014; **52**(3)**:** 745.

Poon IK, Chiu YH, Armstrong AJ, Kinchen JM, Juncadella IJ, Bayliss DA, Ravichandran KS. **Unexpected link between an antibiotic, pannexin channels and apoptosis**. *Nature* 2014; **507**(7492)**:** 329.

Poon IK, Goodall KJ, Phipps S, Chow JD, Pagler EB, Andrews DM, Conlan CL, Ryan GF, White JA, Wong MK *et al.* **Mice deficient in heparanase exhibit impaired dendritic cell migration and reduced airway inflammation**. *European journal of immunology* 2014; **44**(4)**:** 1016.

Poon IK, Lucas CD, Rossi AG, Ravichandran KS. **Apoptotic cell clearance: basic biology and therapeutic potential**. *Nature reviews. Immunology* 2014; **14**(3)**:** 166.

Pratama A, Vinuesa CG. **Control of TFH cell numbers: why and how?** *Immunology and cell biology* 2014; **92**(1)**:** 40.

Quinones-Parra S, Grant E, Loh L, Nguyen TH, Campbell KA, Tong SY, Miller A, Doherty PC, Vijaykrishna D, Rossjohn J *et al.* **Preexisting CD8+ T-cell immunity to the H7N9 influenza A virus varies across ethnicities**. *Proceedings of the National Academy of Sciences of the United States of America* 2014; **111**(3)**:** 1049.

Radford KJ, Tullett KM, Lahoud MH. **Dendritic cells and cancer immunotherapy**. *Current opinion in immunology* 2014; **27:** 26.

Ramsbottom KM, Hawkins ED, Shimoni R, McGrath M, Chan CJ, Russell SM, Smyth MJ, Oliaro J. **Cutting edge: DNAX accessory molecule 1-deficient CD8+ T cells display immunological synapse defects that impair antitumor immunity**. *Journal of immunology* 2014; **192**(2)**:** 553.

Reantragoon R, Corbett AJ, Sakala IG, Gherardin NA, Furness JB, Chen Z, Eckle SB, Uldrich AP, Birkinshaw RW, Patel O *et al.* **Antigen-loaded MR1 tetramers define T cell receptor heterogeneity in mucosal-associated invariant T cells**. *The Journal of experimental medicine* 2013; **210**(11)**:** 2305.

Rinaldi C, Penhale WJ, Stumbles PA, Tay G, Berry CM. **Modulation of innate immune responses by influenza-specific ovine polyclonal antibodies used for prophylaxis**. *PloS one* 2014; **9**(2)**:** e89674.

Russell TA, Tscharke DC. **Strikingly poor CD8(+) T-cell immunogenicity of vaccinia virus strain MVA in BALB/c mice**. *Immunology and cell biology* 2014; **92**(5)**:** 466.

Sarchio SN, Scolyer RA, Beaugie C, McDonald D, Marsh-Wakefield F, Halliday GM, Byrne SN. **Pharmacologically antagonizing the CXCR4-CXCL12 chemokine pathway with AMD3100 inhibits sunlight-induced skin cancer**. *The Journal of investigative dermatology* 2014; **134**(4)**:** 1091.

Saulep-Easton D, Vincent FB, Le Page M, Wei A, Ting SB, Croce CM, Tam C, Mackay F. **Cytokine-driven loss of plasmacytoid dendritic cell function in chronic lymphocytic leukemia**. *Leukemia* 2014.

Sawant DV, Gravano DM, Vogel P, Giacomin P, Artis D, Vignali DA. **Regulatory T cells limit induction of protective immunity and promote immune pathology following intestinal helminth infection**. *Journal of immunology* 2014; **192**(6)**:** 2904.

Schittenhelm RB, Dudek NL, Croft NP, Ramarathinam SH, Purcell AW. **A comprehensive analysis of constitutive naturally processed and presented HLA-C*04:01 (Cw4)-specific peptides**. *Tissue antigens* 2014; **83**(3)**:** 174.

Schroder WA, Major LD, Le TT, Gardner J, Sweet MJ, Janciauskiene S, Suhrbier A. **Tumor cell-expressed SerpinB2 is present on microparticles and inhibits metastasis**. *Cancer medicine* 2014.

Seddiki N, Cook L, Hsu DC, Phetsouphanh C, Brown K, Xu Y, Kerr SJ, Cooper DA, Munier CM, Pett S *et al.* **Human antigen-specific CD4 CD25 CD134 CD39 T cells are enriched for regulatory T cells and comprise a substantial proportion of recall responses**. *European journal of immunology* 2014.

Seillet C, Huntington ND, Gangatirkar P, Axelsson E, Minnich M, Brady HJ, Busslinger M, Smyth MJ, Belz GT, Carotta S. **Differential requirement for Nfil3 during NK cell development**. *Journal of immunology* 2014; **192**(6)**:** 2667.

Shahijanian F, Parnell GP, McKay FC, Gatt PN, Shojoei M, O'Connor KS, Schibeci SD, Brilot F, Liddle C, Batten M *et al.* **The CYP27B1 variant associated with an increased risk of autoimmune disease is underexpressed in tolerizing dendritic cells**. *Human molecular genetics* 2014; **23**(6)**:** 1425.

Singhal G, Jaehne EJ, Corrigan F, Baune BT. **Cellular and molecular mechanisms of immunomodulation in the brain through environmental enrichment**. *Frontiers in cellular neuroscience* 2014; **8:** 97.

Smith C, Gras S, Brennan RM, Bird NL, Valkenburg SA, Twist KA, Burrows JM, Miles JJ, Chambers D, Bell S *et al.* **Molecular imprint of exposure to naturally occurring genetic variants of human cytomegalovirus on the T cell repertoire**. *Scientific reports* 2014; **4:** 3993.

Spildrejorde M, Curtis SJ, Curtis BL, Sluyter R. **Extracellular adenosine 5'-triphosphate and lipopolysaccharide induce interleukin-1beta release in canine blood**. *Veterinary immunology and immunopathology* 2014; **157**(1-2)**:** 105.

Stifter SA, Gould JA, Mangan NE, Reid HH, Rossjohn J, Hertzog PJ, de Weerd NA. **Purification and biological characterization of soluble, recombinant mouse IFNbeta expressed in insect cells**. *Protein expression and purification* 2014; **94:** 7.

Summers SA, Odobasic D, Khouri MB, Steinmetz OM, Yang Y, Holdsworth SR, Kitching AR. **Endogenous interleukin (IL)-17A promotes pristane-induced systemic autoimmunity and lupus nephritis induced by pristane**. *Clinical and experimental immunology* 2014; **176**(3)**:** 341.

Tan B, Anaka M, Deb S, Freyer C, Ebert LM, Chueh AC, Al-Obaidi S, Behren A, Jayachandran A, Cebon J *et al.* **FOXP3 over-expression inhibits melanoma tumorigenesis via effects on proliferation and apoptosis**. *Oncotarget* 2014; **5**(1)**:** 264.

Tanaskovic S, Fernandez S, Price P, French MA. **Interleukin-7 signalling defects in naive CD4+ T cells of HIV patients with CD4+ T-cell deficiency on antiretroviral therapy are associated with T-cell activation and senescence**. *Aids* 2014; **28**(6)**:** 821.

Teng MW, Smyth MJ. **Cancer. Can cancer trigger autoimmunity?** *Science* 2014; **343**(6167)**:** 147.

Thomas R. **Dendritic cells as targets or therapeutics in rheumatic autoimmune disease**. *Current opinion in rheumatology* 2014; **26**(2)**:** 211.

Tran LS, Bergot AS, Mattarollo SR, Mittal D, Frazer IH. **Human Papillomavirus E7 Oncoprotein Transgenic**

Skin Develops an Enhanced Inflammatory Response to 2,4-Dinitrochlorobenzene by an Arginase-1-Dependent Mechanism. *The Journal of investigative dermatology* 2014.

Uldrich AP, Le Nours J, Pellicci DG, Gherardin NA, McPherson KG, Lim RT, Patel O, Beddoe T, Gras S, Rossjohn J *et al.* **CD1d-lipid antigen recognition by the gammadelta TCR**. *Nature immunology* 2013; **14**(11)**:** 1137.

Van Rhijn I, Gherardin NA, Kasmar A, de Jager W, Pellicci DG, Kostenko L, Tan LL, Bhati M, Gras S, Godfrey DI *et al.* **TCR bias and affinity define two compartments of the CD1b-glycolipid-specific T Cell repertoire**. *Journal of immunology* 2014; **192**(9)**:** 4054.

Vella LJ, Pasam A, Dimopoulos N, Andrews M, Knights A, Puaux AL, Louahed J, Chen W, Woods K, Cebon JS. **MEK inhibition, alone or in combination with BRAF inhibition, affects multiple functions of isolated normal human lymphocytes and dendritic cells**. *Cancer immunology research* 2014; **2**(4)**:** 351.

Vincent FB, Morand EF, Schneider P, Mackay F. **The BAFF/APRIL system in SLE pathogenesis**. *Nature reviews. Rheumatology* 2014.

Vogelzang A, McGuire HM, Liu SM, Gloss B, Mercado K, Earls P, Dinger ME, Batten M, Sprent J, King C. **IL-21 contributes to fatal inflammatory disease in the absence of Foxp3+ T regulatory cells**. *Journal of immunology* 2014; **192**(4)**:** 1404.

von Scheidt B, Leung PS, Yong MC, Zhang Y, Towne JE, Smyth MJ, Teng MW. **Combined Anti-CD40 and Anti-IL-23 Monoclonal Antibody Therapy Effectively Suppresses Tumor Growth and Metastases**. *Cancer research* 2014; **74**(9)**:** 2412.

West AC, Mattarollo SR, Shortt J, Cluse LA, Christiansen AJ, Smyth MJ, Johnstone RW. **An intact immune system is required for the anticancer activities of histone deacetylase inhibitors**. *Cancer research* 2013; **73**(24)**:** 7265.

West AC, Smyth MJ, Johnstone RW. **The anticancer effects of HDAC inhibitors require the immune system**. *Oncoimmunology* 2014; **3**(1)**:** e27414.

Wolf P, Gruber-Wackernagel A, Bambach I, Schmidbauer U, Mayer G, Absenger M, Frohlich E, Byrne SN. **Photohardening of polymorphic light eruption patients decreases baseline epidermal Langerhans cell density while increasing mast cell numbers in the papillary dermis**. *Experimental dermatology* 2014.

Yang Z, Robinson MJ, Allen CD. **Regulatory constraints in the generation and differentiation of IgE-expressing B cells**. *Current opinion in immunology* 2014; **28C:** 64.

Zaki MH, Man SM, Vogel P, Lamkanfi M, Kanneganti TD. **Salmonella exploits NLRP12-dependent innate immune signaling to suppress host defenses during infection**. *Proceedings of the National Academy of Sciences of the United States of America* 2014; **111**(1)**:** 385.

Zhang J, Yan S, Sluyter R, Li W, Alici G, Nguyen NT. **Inertial particle separation by differential equilibrium positions in a symmetrical serpentine micro-channel**. *Scientific reports* 2014; **4:** 4527.