Australasian Society for Immunology Inc.

N E W S L E T T E R

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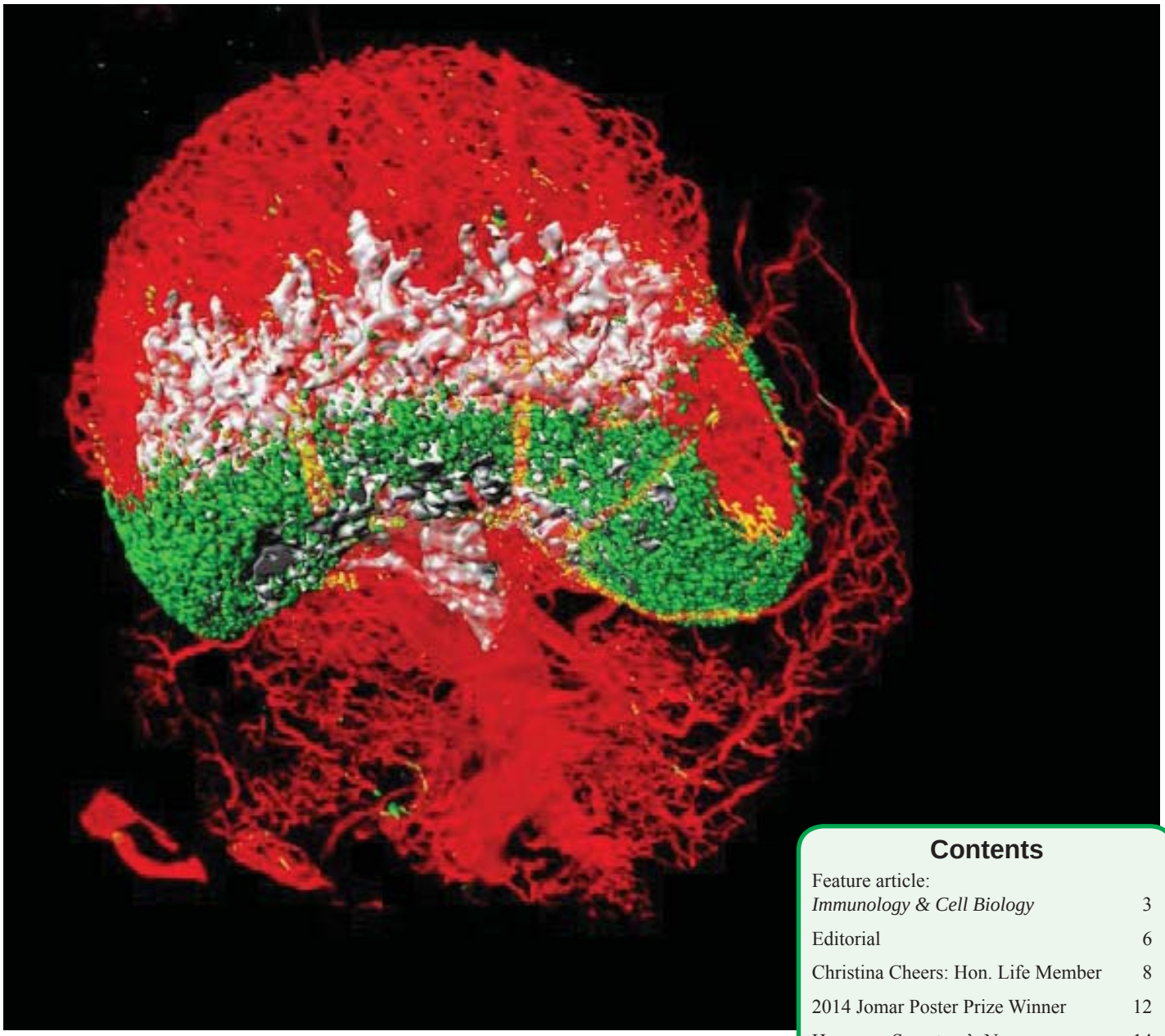

3D reconstruction of a murine lymph node.
red: blood vessels, green: dextran-labelled phagocytes, grey: lymphatic sinuses.
Inken Kelch and colleagues (see page 2)

Contents

ASI Inc. COUNCIL

Cover Image: 3D reconstruction of a murine lymph node

Inken Kelch[1,2] Gib Bogle[1,3] Greg Sands[3] Anthony Phillips[1,2,4] Dane Gerneke[3] Ian LeGrice[3,5] Rod Dunbar[1,2]

1. Maurice Wilkins Centre for Molecular Biodiscovery, Auckland, NZ
2. School of Biological Sciences, University of Auckland, Auckland, NZ
3. Auckland Bioengineering Institute, University of Auckland, Auckland, NZ
4. Department of Surgery, University of Auckland, Auckland, NZ
5. Department of Physiology, University of Auckland, Auckland, NZ

The image was taken during my (Inken's) PhD using a specialised confocal microscope, able to resolve fine subcellular structures across large tissue regions such as entire murine lymph nodes. The aim of the multidisciplinary project was to image critical structures for immune function in whole lymph nodes and make them available for detailed computer analysis in 3D. With the help of the specialised imaging platform (Ian LeGrice, Greg Sands, Dane Gerneke) and custom-written computer tools (Gib Bogle) we studied the topology of the blood vessel system and the distribution of lymphatic channels, the main routes for cell traffic and information distribution within lymph nodes. Our ongoing studies are concerned with the anatomical changes of these structures following an immune challenge, the antigen distribution within lymph nodes, and the positioning of supportive cell populations.

Immunology & Cell Biology: From Possum's Pages to leading Immunology Journal

Immunology & Cell Biology is the cornerstone journal of the Australasian Society for Immunology and is now joined by its sister journal *Clinical & Translational Immunology*.

Gabriele Belz, Editor-in-Chief, Immunology & Cell Biology
Division of Molecular Immunology, Walter and Eliza Hall Institute of Medical Research, 1G Royal Parade, Melbourne, Victoria, 3052. Australia

It's Your Journal!
In 2014, *Immunology & Cell Biology* celebrated its 90th year and has been host to a number of highly influential pioneering reports including those by McFarlane Burnett and Don Metcalf. Weathering the ups and downs of the last nine decades is testament to the quality and enduring nature of the journal. Continuing on the excellence in publishing established over this period, the journal aims to attract the highest quality research in the cellular immunology field. The journal publishes primary research articles but also stands out from other journals by collections of reviews as Special Features and Outstanding Observations.

Our most recent **Special Feature** collection focuses on **Epigenetics** (www.nature.com/icb/journal/v93/n3).

The journals are of critical importance to the ASI as they

- provide key platforms for financially supporting the ASI and the activities that are funded through the Society (e.g. ASI Visiting Speaker Program, regional activities, travel awards);
- are central places for the publication of high quality research;
- are critical for building our international presence for the Australasian immunology community.

Impact Factor: 4.205 (ISI Journal Citation Reports ®, Thomson Reuters, 2014)
Features:

- Rapid time to first decision
- Accepted articles available online within 72 hours of acceptance into production
- **Outstanding Observations** – rapid publication (14 days to first decision) of cutting edge findings

- **Special Feature Collections** – Focus issues, e.g. March 2015 Edition: *Epigenetics* (www.nature.com/icb/journal/v93/n3).
- Significant exposure through Nature Publishing Group

Location: www.nature.com/icb

I encourage all ASI members to consider ICB for publication of their next paper.

Meet the Team
Immunology & Cell Biology is overseen by a vibrant team which implements the review process of submitted articles and promotes the development of the journal on behalf of your society, ASI.

Simone Farrer: Simone is the Editorial Assistant for both ICB and CTI and is central for co-ordinating the engine house of the journal. Simone holds a MSc degree from University of Melbourne, where she studied the structure of hybrid zones in the common terrestrial toadlets of south-east Australia

Simone Farrer

(which are related to the alpine Corroboree frog) with Drs Murray Littlejohn and Graeme Watson. She brought to her position extensive experience both in editing and publishing through 18 years in editorial roles at CSIRO Publishing from 1991 to 2009 where she worked with several zoological and botanical journals as a Production Editor and Managing Editor. Simone took over the running of the ICB Editorial Office in 2010.

Gabrielle Belz

Gabrielle Belz, *Editor-in-Chief*, is currently an ARC Future Fellow and Elizabeth Blackburn NHMRC Fellowship recipient. She has a central interest in the formation of protective immune responses in response to acute and persistent pathogen infections. This has principally focused on elements of the adaptive immune system such as cytotoxic T cells and dendritic cells and the transcriptional regulation of the development of these cells. More recently, she has developed a major theme focusing on mucosal immunology and the role of recently discovered innate immune lymphocytes which form their own front line defense preceding initiation of the adaptive immune response. She has more than 144 peer-reviewed research articles and invited reviews and in 2008, she received the Gottschalk Medal from the Australian Academy of Sciences.

I encourage all ASI members to consider ICB for publication of their next paper

Stuart Tangye

Stuart Tangye, *Deputy Editor,* is currently an NHMRC funded Principal Research Fellow, Head of the Immunology Division and of the Immunology & Immunodeficiency lab at the Garvan Institute of Medical Research. Since 1995, he has published >115 peer-reviewed research articles and invited reviews and has been funded by research fellowships and grants awarded by the NHMRC, Cancer Council NSW, XLP Research Trust and Association for International Cancer Research. In 2011, he received the Gottschalk Medal from the Australian Academy of Sciences, which recognises outstanding research in the medical sciences by scientists no more than 40 years of age. His research interests focus on the biology of human lymphocytes in health and disease, and elucidating mechanisms whereby defects in signaling, activation and function underlie the development and clinical features of several immunodeficiencies. He is also a Section Editor for the *Journal of Immunology*, an Associate Editor for the *Journal of Clinical Immunology*, and an Advisory Editor for the *Journal of Experimental Medicine*. When he is not at work, he enjoys surfing, cycling, swimming and, most of all, being a dad to his three beautiful children!

Adrian Liston

Adrian Liston, *Deputy Editor.* Adrian is an immunologist, trained first at Adelaide University, and then obtained his PhD at the Australian National University. He then undertook a post-doc in Seattle (USA) with Alexander Rudensky. In 2009, he established his own laboratory, the Autoimmune Genetics Laboratory, at the VIB in Belgium. His main scientific interest is in understanding the genetic control over the immunogenic/tolerogenic balance of T cells, critical for preventing immune pathology.

Ian Parish

Ian Parish, *News and Commentary Editor*, currently drives a research group at the John Curtin School of Medical Research at the Australian National University having completed his PhD at the WEHI with Professor Bill Heath analyzing tolerance mechanisms in autoimmunity. He followed this by moving to Yale University under the mentorship of Associate Professor

Alert: If you've had a key paper recently accepted and in press, our News and Commentary staff would be interested hear about it as they may be able to commission a commentary on the article.

Susan Kaech to develop expertise in the transcriptional regulation of cytotoxic T cells, particularly in chronic viral infection. He now has major interests in the molecular regulation of T cell differentiation, mechanisms of peripheral tolerance and immune control of chronic viral infection. Ian's contributions to the journal follow on from his father, Professor Chris Parish, who so ably steered the journal to success for 19 years and maintains the Parish influence through multiple generations.

Elissa Deenick

Elissa Deenick, *News and Commentary Editor*. Elissa undertook her PhD with Professor Phil Hodgkin at the Centenary Institute/University of Sydney. Following her PhD she moved to Canada to take up a postdoctoral position in the lab of Dr Pam Ohashi at the University of Toronto looking at the signalling pathways controlling T cell activation and tolerance. In 2007, she returned to Sydney to work at the Garvan Institute, where she is currently a Group Leader in the Immunology Research Program. Her major interests are in lymphocyte activation and differentiation in both mice and humans and she investigates the signals that control these processes.

EDITOR-IN-CHIEF
Immunology & Cell Biology

The Australasian Society for Immunology Inc. seeks applicants for the position of Editor-in-Chief for its official publications, *Immunology & Cell Biology* (ICB) and *Clinical & Translational Immunology* (CTI)

The primary responsibility of the EIC is to maintain and build the Society journals as definitive sources of primary immunology research. He or she will ensure the highest standards of scientific excellence of the content and integrity of the peer-review process. This will involve the recommendation of an editorial board for appointment; recommendation and co-ordination with Deputy Editors; be responsible for the oversight of editorial conduct and peer-review process; attend to the concerns of authors; and make final decisions on publication of manuscripts. The EIC will be assisted by the Deputy Editors and Editorial Assistant in the running of the journals. The journal team adhere to the COPE (Committee on Publication Ethics) guidelines.

The EIC is responsible to the ASI Executive and is a non-voting member of the ASI Council.

The term of service for this position is from 1 December 2016 to 31 December 2020. The appointed EIC is expected to overlap with the incumbent EIC commencing 1 January, 2016, to ensure a smooth transition of responsibilities.

Interested individuals are invited to submit an application package that includes a *curriculum vitae*; a concise letter of interest and qualifications; a statement on the conceptual direction of the journals in the pursuit of excellence; and innovations that may be considered.

Applications will be accepted until 31 July, 2015. Please email them to: Gabrielle Belz, belz@wehi.edu.au

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

Editorial

If the science is so good, why do 39,000 Australian children miss out on vaccination due to conscientious objection by their parents? Vaccination is THE good news story of medicine! It looks like its enduring value will surpass antibiotics.

As Liz Forbes-Blom reminded us in a recent seminar, good old Mr Jenner was the start of something truly beautiful, with his great plan to infect a young lad with cow pox pus from the local milk maid, followed by a challenge with small pox which the young lad survived. The vaccination story is something that immunologists justifiably delight in.

Each year, the proportion of Australian kids exempted vaccination through conscientious objection has oozed further up the scale to current levels of around 1.6%. The science to justify these objections is completely missing in action, which makes the position taken by these families at best mis-informed and at worst dangerously risky.

The 'no jab no pay' policy put forward by the Abbot government of Australia recently to 'motivate' a re-think by these families will mean that from the beginning of next year, families will sacrifice government financial support should they object to vaccination of their children for 'conscientious reasons' (beyond medical and religious grounds). The big problem is that by far the majority of non-immunised children do not fit into this group. My guess is that many of the roughly 170,000 *other* 'non vaccinated' children in Australia (that are not part of the conscientious objectors group) are not immunized because of the challenges of a life lived with poverty.

In Highbury, down the road from where I live here in NZ, there are families that want their kids to be vaccinated but they have to find the cash to buy the petrol to put in the car to get the kids to the doctor's first. And that is after paying the court fine for the lapsed vehicle registration that they couldn't afford to renew last month as well as sorting out some cash to get that old dunger of a car re-registered. I think this is what they call structural poverty and there is a lot of it around. This is probably where the real struggle with vaccination should be focused.

I love the Day of Immunology (DoI) and all the hard yards that immunologists put into it. With such a beautiful piece of applied science to our name (i.e. vaccination), it is no wonder we're motivated to share the joy. What a brilliant way to reach out to people who are making, or will make, decisions about vaccination of their children. The DoI initiatives across Australasia have a broad scope (see articles later in this newsletter). But in part they act as a step towards up-skilling parents and future parents to gain knowledge about *good* science, find out what *good* science looks like and how it works, and become people making informed decisions about vaccinating their kids. Knowledge is power and getting this sort of knowledge out to the community makes a difference.

Joanna Roberts

Sustaining Membership

ASI Inc acknowledges the support of the following sustaining members:

- Abcam Australia Pty Ltd
- ARC Centre for Excellence in Advanced Molecular Imaging
- Australian Bioresources
- BD Biosciences
- Jomar Life Research
- Miltenyi Biotec Australia
- Ozgene Pty Ltd
- resolving IMAGES MABTECH
- Stemcell Technologies Inc
- Sysmex Australia Pty Ltd

45th Annual Scientific Meeting of the Australasian Society for Immunology

ASI2015

New Horizons Canberra
29 November - 3 December

Invited Speakers

Doreen Cantrell
College of Life Sciences, University of Dundee, Dundee, UK

Chris Goodnow
Garvan Institute of Medical Research, Sydney, Australia

Axel Kallies
Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia

Diane Mathis
Dept. of Microbiology & Immunobiology, Harvard Medical School, Boston, USA

Michel Nussenzweig
Sherman Fairchild Professor, Laboratory of Molecular Immunology, The Rockefeller University, New York, USA

Peter Openshaw
National Heart and Lung Institute, Imperial College London, London, UK

Jamie Rossjohn
Monash University, Melbourne, Australia

Alexander Rudensky
Memorial Sloan-Kettering Cancer Center, New York, USA

Ton Schumacher
The Netherlands Cancer Institute, Amsterdam, The Netherlands

Louis Staudt
Center for Cancer Research, National Cancer Institute, Bethesda, USA

Andreas Strasser
Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia

Carola G. Vinuesa
The John Curtin School of Medical Research, Australian National University, Canberra, Australia

Registration and Call for Abstracts now open!

www.asi2015.org

Christina Cheers: Honorary Life Member, ASI 2014

Joanna Roberts, ASI Quarterly Newsletter Editor
'flowjoanna', Longburn, Palmerston North, New Zealand. joanna.roberts@gmail.com

While it's likely that curiosity may in fact be killing quite a few cats it is nevertheless indispensible for a scientist. Christina Cheers, elected life member of the Australasian Society for Immunology in 2014 at Wollongong says, "You can't be a scientist without curiosity. Working in science is like being in a long term 'who-dunnit' trying constantly to solve things." She proffers a cogent observation: "There are tremendous pressures of reduced funding and the drive towards justifying work by its application. I think curiosity driven research is so important because you cannot predict the next big finding."

There weren't that many girls lucky enough to be given chemistry sets for their birthday presents in Australia in 1953 but when Christina turned eleven that year, her father bought her one for her birthday gift. She was delighted. One of Christina's greatest advantages is having had two parents who encouraged the smart and curious mind of their young daughter to pursue her interests, without ever turning that into unpleasant pressure. Neither of her parents had a tertiary education but they were both naturally interested in things of a scientific bent (metalurgy and engineering for her father, biology and medicine for her mother) and their interests were just a normal part of family conversations. This future immunologist always knew she wanted to be a scientist from the time of her earliest reflections on the subject.

An over-confident sceptic spouted off the view that 'B and T were the beginning and end of Bull Shit'

Isn't it great to be reminded that there was a time when it was considered dangerously radical to believe that T cells might actually DO something important to B cells by providing help for antibody production? In those exciting days of immunology in the 1970s, an over-confident sceptic spouted off the view that 'B and T were the beginning and end of Bull Shit'. Christina was quite content to let this quote remain anonymous and fair enough because a *mea culpa* would certainly be required for such casual rejection of something that was proved to be a core immunological truth. But this is how it was when Christina, having completed her PhD at the University of Melbourne in 1968 and after a period in London, headed to the lab of Jacques Miller in at the Walter and Eliza Hall Institute, Melbourne, to work on co-operation between B and T cells.

All scientists can name people in their lives who have been pivotal, influential, powerful or inspirational. Jacques Miller was one such person for Christina. "Jacques could see around more corners than anyone else could. He could see other ways of interpreting an experiment and what you must test as another possibility. The co-operation of T cells and B cells was a very new and very controversial area. Working with hapten carriers, we provided the first demonstrations of T helper cells recognizing the protein carrier while B cells formed antibody to the hapten. Other experiments showed that T cells influenced antibody class.

Christina Cheers at ASI 2014 Wollongong on receipt of her Honorary Life Membership to ASI

It was such a stimulating period of my work and I learnt so much."

Backtracking to the early 1960s: Christina is an undergraduate at the University of Melbourne studying in the Department of Microbiology where Nancy Millis, future chancellor of La Trobe University, was a lecturer. "She was a wonderful, vigorous, enthusiastic woman, and very inspiring. We realized by her example that women could DO things. And at that stage we hadn't had any women lecturers, and you almost had the feeling of being presumptuous to want to be a scientist." When I ask Christina if she can comment on one thing that has changed for the better over her career she replies without hesitation, "The role of women. When I started, very often I was the only woman invited speaker or the only woman chairing a session, and it used to really annoy me. And now it is just women taking their rightful place."

Integrity is an essential quality for Christina. "I think this may also be something that we learnt from Nancy Millis. Integrity covers the way you treat other people and the way you treat your results. And I don't just mean not faking your results, but making sure they really mean what you're saying, not taking short cuts, really being sure of your statements and the experiments that justify those."

"Integrity covers the way you treat other people and the way you treat your results."

Her career has spanned interests in immune responses to chronic infections, genetics of resistance to infection, and the role and identification of T cell subsets and cytokines. "I'm not sure if you're ever satisfied with anything (with respect to science) because there are always more questions, but the most satisfying thing of all is watching the development of students in your lab and that is a real

Honorary Life Membership to the Australasian Society for Immunology

Most recent recipient:
Christina Cheers, Wollongong 2014

Reason for conferral:
Christina's long standing career contributing to research and training in the field of Immunology in Australasia, combined with her service to the Society.

How does nomination for life membership work?
Any ASI Council member can suggest somebody for life membership. Usually the person suggesting the nomination is asked to provide a short (half page or so) justification. This is put to the vote of ASI Council. Sometimes Council asks for more information to make the final decision.

Where is the list of life members? On the ASI website at http://www.immunology.org.au/asi-honorary-life-members/

Following 'retirement', a trip to Easter Island

Photos courtesy of Christina Cheers and Su Heinzel

thrill to see them develop scientifically and grow into their own careers."

John Stambas, who studied under Christina, observes she has steely determination, a sense of collegiality, devotion to science and a strong work ethic. "She is dedicated to passing on knowledge to the next generation. This is evidenced not only through the young researchers she has mentored over the years, but also in her delivery of undergraduate immunology units at the University of Melbourne. It should also be noted that Christina was tough but fair in all her dealings with staff and students. There was never any ambiguity. Clear decisions and direction made working under her supervision rewarding and enjoyable."

Before the ASI was a sparkle in the eyes of its mothers and fathers, there were Australian immunologists meeting together to discuss shop. Christina was a part of the Society right from this point when it met informally for a couple of years before being formally constituted. She took a number of roles on the committee, including chairing the Education Committee, and was the Secretary/Treasurer from 1986-89 when she was able to guide its incorporation and the framing of a formal constitution. She formally retired from the lab in 2003. Returning to ASI 2014 at Wollongong she said, "The atmosphere at the meeting was very much as it had always been which was really lovely to see." When reflecting on the future of the field she said, "I do see that as we derive greater and greater understanding down to the molecular level, there will be many benefits in terms of therapeutic possibilities."

What would Christina say to an honours student considering a career in science? "GO FOR IT! So long as you love it, go for it. After your degree, spend some time overseas – it's so broadening to learn how other people approach their work. Just don't expect to make lots of money or for it to come easy, but it is a real privilege to be able to come in to work and do something different everyday. Someone once said, 'Scientists are one of the few groups of people to carry play into adult life'."

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

International Congress of Immunology 2016

Come and say G'day in Melbourne in 2016!

Experience the best that Melbourne has to offer – its beaches, entertainment, heritage, culinary traditions, food and wine, festivals, sporting events, friendly people and much more.

The city's wide range of accommodation options caters to all requirements – from luxury five-star to budget hotels. Its state-of-the-art venues are all within walking distance of the city centre, or you can travel aboard one of Melbourne's famous trams!

It is also the perfect opportunity to discover Australia's famous destinations: the Great Barrier Reef, Twelve Apostles, Ayers Rock, the Sydney Opera House, the iconic MCG Stadium and so much more!

Melbourne is recognised as an R&D centre of excellence in medical science, business and finance. With Australia's most culturally diverse population, and repeatedly voted the world's most liveable city, Melbourne has something to offer for everyone.

www.ici2016.org

Program highlights for ICI 2016

- Innate immunity
- Inflammation
- Acquired immunity
- Vaccines
- Tumour Immunology
- Transplantation
- Life and death decisions in the immune system
- Allergy
- Autoimmunity and the maintenance of tolerance
- Immunoregulatory gene networks
- Immune deficiencies
- Dendritic cells
- T cell differentiation
- B cell immunity
- Metabolic control of immunity
- Regulation of the immune system by commensal flora
- Immunotherapeutic drugs
- Therapeutic antibodies
- Mathematical modeling of immune responses

A message from the Chair of ICI2016

ICI 2016 promises to be an unforgettable event that will bring together delegates from all over the world. We anticipate over 4000 participants, including international leaders at the forefront of the discipline that will present the most recent advances in basic immunology and clinical treatments. The congress will provide a key networking and educational interface for colleagues from industry, university, health providers and independent research organisations to come together.

We look forward to meeting you in Melbourne!

Jose Villadangos
Chair of the International Congress of Immunology 2016

Congress Managed by arinex pty ltd
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P: +61 3 8888 9510 F: +61 3 9417 0899
E: ici2016@arinex.com.au

2014 Jomar Student Poster Prize Winner – Cameron Field

I said I wanted, A DIAGRAM, A DRAWING, A PHOTO, something graphic and beautiful to show off their work. Cameron Field, a winner of the Jomar Student Poster Prize at ASI Wollongong 2014 does a very stylish job with this brief in this piece. The students and young researchers who won at Wollongong will all have the chance to profile an idea they're working on or show off where their project has got to in a graphical form in the next two issues of the ASI quarterly Newsletter. Cameron, you've got us started brilliantly, thank you! – Joanna Roberts

I am a third-year PhD student at the Malaghan Institute of Medical Research under the supervision of Assoc. Prof. Ian Hermans. My research is currently focused on using immunotherapeutic approaches for the treatment of orthotopic murine glioma, a fatal brain cancer. This model requires surgical implantation of tumours within the brains of mice and post-operative monitoring as well as immune monitoring to delineate the mechanisms behind successful therapy.

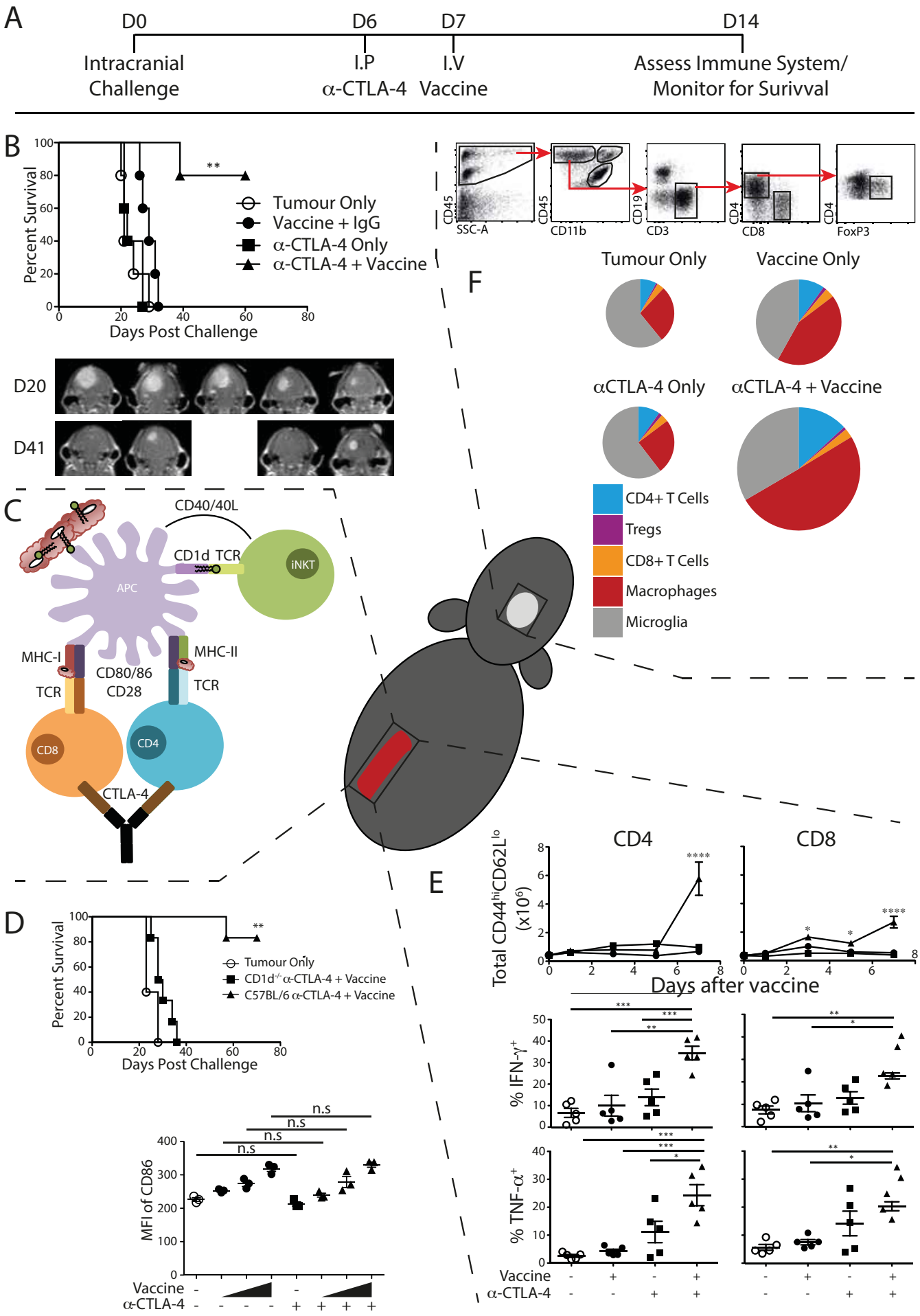
As part of the vaccine immunotherapy program, the overall goal of our research is to design more effective vaccines against diseases such as cancer. We are looking at the specific immune cell populations involved in eliciting effective immune responses to vaccination, including the dendritic cells responsible for stimulating T cells, and innatelike T cells such as Natural Killer T (NKT) cells that contribute to the induced response.

Working together with chemists, we are aiming to define compounds that can be incorporated into vaccines to ensure optimum, co-ordinated activity of all of the immune cells involved. These vaccines, combined with checkpoint inhibitors, are being tested in pre-clinical tumour models.

We work closely with leaders in the fields of immunology, medicinal chemistry and clinical oncology to test our vaccines in cancer patients, with a phase I melanoma vaccine trial currently underway.

Figure Legend – Tumor eradication in a murine model of glioma with immunotherapeutic vaccination and anti-CTLA-4: General Experimental Layout **(A)**. CTLA-4 blockade combined with therapeutic vaccination is a successful therapy for murine glioma. Tumour growth is radiologically evident, with tumour regression seen in treated mice. Mice from the α-CTLA-4 + Vaccine group depicted. **(B)**. Upon vaccine uptake, APCs will process tumour antigen onto MHC molecules to present to T cells, while α-GalCer is presented on the MHC like molecule CD1d to iNKT cells. iNKT cells license APCs via CD40/40L interactions, enhancing the costimulatory capacity of APCs. Antibody mediated blockade of CTLA-4 signalling prevents inhibition of T cell activation, resulting in enhanced proliferation and effector function. **(C)**. Therapeutic efficacy is dependent on the adjuvant activity of iNKT cells and α-CTLA-4 does not increase DC costimulatory ability *in vitro* **(D)**. Effector CD4+ and CD8+ T cells were quantified following therapy. Splenocytes were restimulated *in vitro* with tumour lysate on Day 7 to assess tumour specific effector cytokine production **(E)**. Flow gating strategy for brain infiltrating immune cells. Composition of T cell subsets, macrophages and microglia within the brains of intracranially challenged α-CTLA-4, vaccine or combination treated mice. Size of pie chart reflects the size of the immune infiltrate and is relative to tumour only control **(F)**.

MALAGHAN INSTITUTE OF MEDICAL RESEARCH


A
D0
D6
D7
D14
Intracranial Challenge
I.P α-CTLA-4
I.V Vaccine
Assess Immune System/ Monitor for Surivval
B
Percent Survival
Days Post Challenge
Tumour Only
Vaccine + IgG
α-CTLA-4 Only
α-CTLA-4 + Vaccine
D20
D41
C
CD40/40L
CD1d TCR
iNKT
APC
MHC-I
MHC-II
CD80/86
CD28
TCR
TCR
CD8
CD4
CTLA-4
D
Percent Survival
Days Post Challenge
Tumour Only
CD1d-/- α-CTLA-4 + Vaccine
C57BL/6 α-CTLA-4 + Vaccine
MFI of CD86
Vaccine
α-CTLA-4
n.s
F
CD45
SSC-A
CD45
CD11b
CD19
CD3
CD4
CD8
CD4
FoxP3
Tumour Only
Vaccine Only
αCTLA-4 Only
αCTLA-4 + Vaccine
CD4+ T Cells
Tregs
CD8+ T Cells
Macrophages
Microglia
E
Total CD44hiCD62Llo (x10⁶)
CD4
CD8
Days after vaccine
% IFN-γ+
% TNF-α+
Vaccine
α-CTLA-4

Honorary Secretary's News

Mid Year ASI Council Meeting
The mid year ASI Council meeting is being held in early July. The meeting involves Councillors from each branch and is an important opportunity to reflect on the administration of existing programs for ASI members and to discuss potential new initiatives. If you have ideas or issues you would like raised at the meeting, please contact your ASI Branch Councillor.

Women's Initiative
ASI is pleased to announce that a new Council position has been created for the running of the Women's Initiative. This program is aimed at providing mentoring and other assistance to women scientists and has been hugely popular amongst our members. Ros Kemp has been the administrator of the program as well as fulfilling her role as NZ Branch Councillor. She has overseen considerable improvements to the program, including to the WI section of the ASI website (http://www.immunology.org.au/womens-initiative/). ASI Project Manager Sarah Fardy has also played an important role in improving the website interface for the Women's Initiative but as the program has grown, a dedicated Councillor is now needed. The decision will be ratified at the mid year Council meeting and a new Councillor will be in place by the start of next year. Nominations will be called for ahead of the Annual Meeting in Canberra and an election will be held if more than one person nominates. Please contact Ros Kemp if you would like to discuss the possibility of nominating for the position of Women's Initiative Councillor or if you have suggestions to improve the program.

Travel Awards
Applications for the first round of ASI travel awards have closed and successful applicants will be notified in early June. The second (and final) round for this year will open in a few months so please keep an eye out for that announcement.

Scientific Meetings
ASI members are invited to visit the websites of the 2015 Annual Scientific Meeting to be held in Canberra (http://asi2015.org/) and the International Congress of Immunology (http://ici2016.org/). Both have outstanding programs in place and registrations are already open for the Canberra meeting. Please book early to get the early bird rates and remind colleagues that ASI members get a substantial discount and students are eligible for travel bursaries. Please also check your local branch page on the ASI website to see if there are additional meetings or events organized by your branch.

Stuart Berzins

The 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

Lupus Research at Monash University

By Jim Harris, Eric Morand, Alberta Hoi, Vera Golder, Sarah Jones & Katherine Greenberg

The Monash Lupus Team
Back Row (LtoR): Sarah Jones, James (Jim) Harris, Lucy Croyle, Vera Golder, Dale Carey (Lab Manager), Tali Lang, Huapeng Fan, Qian (Colin) Cheng.
Front row (LtoR): Juliana Vago, Alberta Hoi, Eric Morand, Jacinta Lee.

Monash Lupus

Systemic lupus erythematosus (SLE) is a chronic multisystem autoimmune disease resulting in significant morbidity and loss of life expectancy. SLE has a spectrum of manifestations, ranging from relatively mild cutaneous and musculoskeletal problems, to severe end organ disease. Ten-year mortality from SLE, estimated at up to 1 in 8 for patients with renal involvement, has not improved since the 1970s, and thus premature death remains a major risk. As lupus mainly affects young women, the impact on loss of life and quality of life is dramatic.

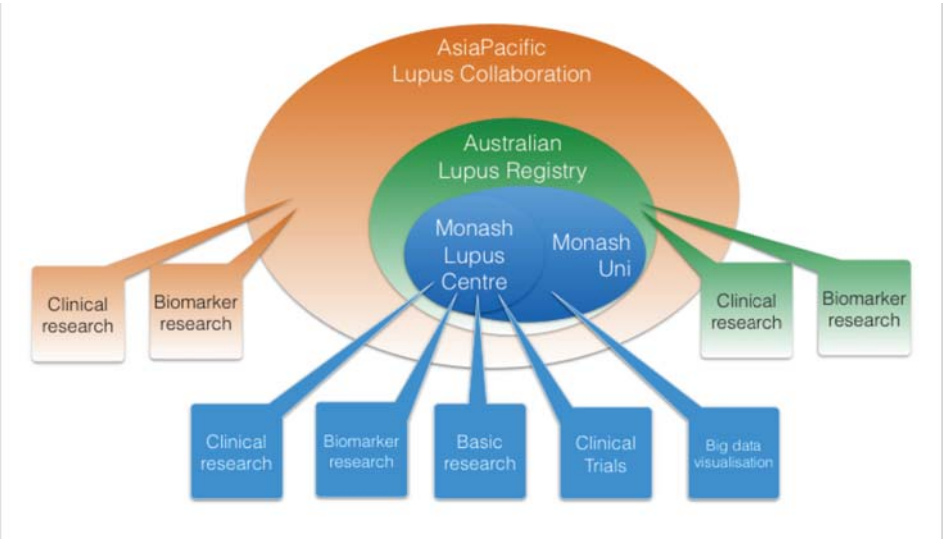
As lupus mainly affects young women, the impact on loss of life and quality of life is dramatic.

At Monash, close and deliberate collaboration between clinicians in the Rheumatology and Nephrology Units of Monash Health, and clinical and laboratory researchers in the Monash University Centre for Inflammatory Diseases, has resulted in a cluster of activity encompassing the range from discovery science through to day-to-day patient care under one roof. Since 2006, the Monash Lupus Clinic and Monash Lupus Database, as well as basic science research funded by grants from the NIH and NHMRC, have formed the basis of what is now a large and highly successful group. This collaboration has in turn given rise to substantial national, and international, collaborations with clinician-researchers from Monash Lupus leading the Australian Lupus Registry (ALR) and the AsiaPacific Lupus Collaboration (APLC).

The Monash Lupus Clinic

This is the only dedicated multidisciplinary lupus clinic in Australia, harnessing the expertise of specialists across disciplines to provide streamlined and comprehensive care for lupus patients. The clinic is concurrently staffed by rheumatologists and nephrologists who have long-standing clinical and research interests in SLE. Our busy teaching- and research-oriented clinic has a steady flow of specialist trainees, as well as research fellows and clinical nurse specialists who have spent many years with the unit providing care and support for our patients.

The clinic has cared for hundreds of SLE patients since its inception in 2006, and provides over 1500 episodes of care per year.



Monash Lupus encompasses the range from basic and clinical research through to clinical care, clinical trials, biobanking and 'big data' approaches. Monash lupus researchers also lead the Australian Lupus Registry and AsiaPacific Lupus Collaobration. The ALR is a national multicenter point-of-care clinical registry project, based on software developed by Monash University's School of Public Health with Monash Lupus' Dr Alberta Hoi. The APLC is the region's first multi-nation lupus research community – with high frequency and severity of lupus in the AsiaPacific this group can undertake very large clinical research projects.

Our clinicians are internationally regarded as leading physician-scientists in the area of SLE and other immune related conditions. The head of the clinic, Dr Alberta Hoi, has a basic science PhD in murine lupus as well as significant experience working with the full spectrum of SLE patients, including those with complex immunological issues and those acutely unwell who require inpatient care. Professor Richard Kitching and Dr Joanne Ghali are nephrologists with strong research interests in immune-mediated renal injury and bring experience managing the spectrum of patients with lupus nephritis.

As part of Monash Health, Victoria's largest health system, we provide care to a culturally diverse community in southeast Melbourne. Because of the multidisciplinary approach in the clinic, we are referred the most difficult SLE cases, providing us with valuable experience in treating these patients. We focus on providing the most effective treatments, based on clinical research and evidence-based therapy, and emphasise patient education and preventive care. The clinic also participates in many multicenter investigator-initiated as well as industry clinical trials.

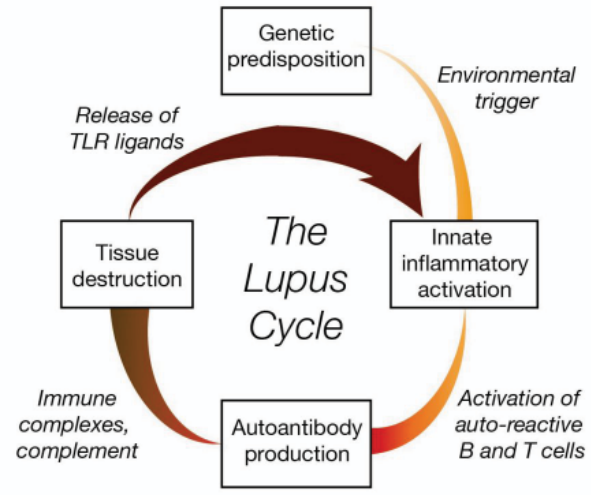
The Monash Lupus Database, Australian Lupus Registry & Biobank

The Monash Lupus Database, based at Monash Lupus, has been prospectively collecting clinical data and serum/DNA from patients in the Monash Lupus Clinic since 2007. This database has thousands of episodes of care tracked using validated measures of disease activity and outcome, matched to serum samples and DNA on hundreds of SLE patients over many years. Now, this approach is being launched at multiple centres across Australia, as the Australian Lupus Registry. The registry will provide a platform for lupus specialists and researchers to prospectively collect longitudinal clinical data and tissue from SLE patients across Australia over a prolonged period. Monash has developed an online point-of-care data entry system to expand its model of data collection to multiple sites across Australia, due to be implemented in the second half of 2015.

We currently have a large number of active projects involving stored serum or freshly obtained live cells.

Studies of biomarkers, obtained from blood, urine or other tissues, can be matched with patients' clinical information. This type of highly granular clinical information is lacking from most international collections of biosamples, and is highly prized for academic and industry research alike. We can rapidly validate new therapeutic targets measurable in human samples against a mass of clinical data. The registry will also allow identification of relevant SLE patients who may be eligible for participation in future research studies.

A very wide range of research projects have arisen from the Australian Lupus Registry and Biobank, including many studies that examine the association between biomarkers and clinical outcomes, as well as studies of ethnicity, drug use, bone disease, and clinical outcomes. Monash Lupus has had a long line of clinician-researchers, including physician-scientist PhD students and medical student BMedSciHons students, who take advantage of the large extant clinical data sets and biobank resources. Many of our projects involve collaboration with stakeholders, including labs across Australia and industry partners – we currently have a large number of active projects involving stored serum or freshly obtained live cells. We continue to build networks with other lupus researchers in Australia and internationally and are happy to discuss access to the Registry and Biobank with interested parties. Contact Dr Alberta Hoi (alberta.hoi@monash.edu) for more information.



Lupus: a complex, multi-faceted autoimmune disease. Lupus disease flares can be initiated by a combination of genetic and environmental factors that lead to activation of the innate immune system. This leads to autoantibody production and the formation of immune complexes, which, in turn, leads to further innate activation and tissue destruction.

Clinical research at Monash Lupus and in the region

Monash Health has a long history of conducting clinical trials in SLE. Patients are recruited from our large lupus patient cohort and referrals are also made to the Monash Rheumatology Clinical Trial Unit from external physicians. Most of our trials are at the later stage of drug development. To date, our studies have involved a range of B cell modulating biologics and have also participated in a number of lupus nephritis studies. Our physicians are familiar with the use of validated outcome measures such as SLEDAI and BILAG. In 2015 we will commence further trials of novel biologic therapies for patients with moderate to severe SLE; in one trial, Eric Morand has been appointed as global lead investigator.

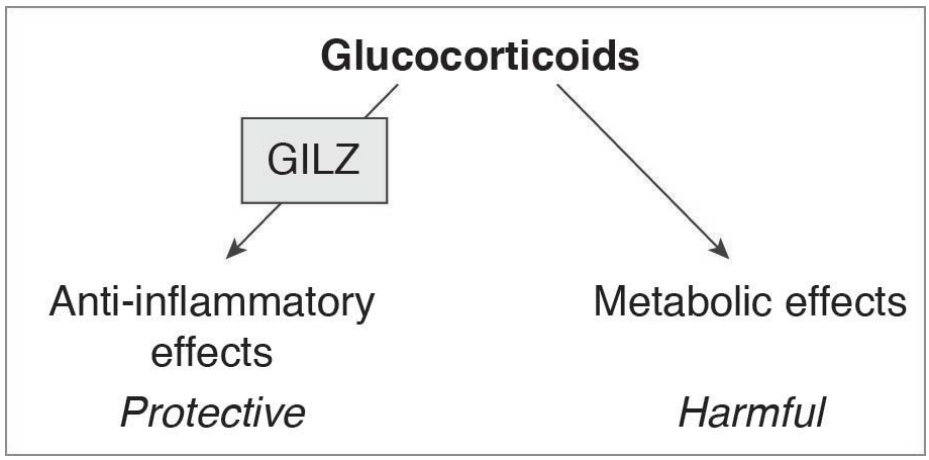
In other autoimmune diseases, particularly rheumatoid arthritis, achieving low disease activity has proven to be associated with better outcomes for patients. Complete remission from SLE occurs in only 2% of patients, whereas low disease activity for SLE may be a more achievable target for treat-to-target approaches. Thus, defining and validating a Lupus Low Disease Activity State (LLDAS) has been one of the main clinical projects of Monash Lupus over the past several years (Franklyn *et al* 2014). This project is now part of an international group effort of the Asia-Pacific Lupus Collaboration (APLC), which was founded by Monash clinicians and now includes researchers from 16 medical centers across 10 countries in the Asia-Pacific region. Thus far, the APLC has developed a definition of LLDAS, and this has been successfully retrospectively validated in the Monash Lupus cohort. Work is currently underway to prospectively validate LLDAS through collection of longitudinal clinical data from the APLC research centers (11 in total). This work is being led by Eric Morand (eric.morand@monash.edu) and is being undertaken by Kate Franklyn and Vera Golder (vera.golder@monash.edu), PhD candidates who are Advanced Trainees in Rheumatology, with the support of Dr Mandy Nikpour at the University of Melbourne.

One molecule that we are particularly interested in is glucocorticoid-induced leucine zipper (GILZ), which is one of the main players in the glucocorticoid-induced anti-inflammatory response but, when targeted directly, may not bring about the harmful side effects of glucocorticoids

The Monash Lupus Research Laboratory

Run by Eric Morand and Dr Jim Harris (jim.harris@monash.edu), the Lupus Research Lab focuses on the regulation of inflammation, with particular emphasis on lupus but also other immune-mediated diseases, including rheumatoid arthritis and psoriasis. The lab has enjoyed continuous NHMRC funding since 1997 and also benefits from close ties with industry partners and philanthropic funding from the Lions Club and the Ulysses Club as well as the Kim Jolly Lupus Research Fund. It is part of the Monash Centre for Inflammatory Diseases, which has collectively held two NHMRC Program Grants as well as project grants from NHMRC, NIH, Heart Foundation, and other bodies. The lab currently consists of four postdocs, one research assistant and a visiting international PhD student. In addition, the lab frequently runs Science and BMedSci Honours and PhD projects (and we are always to keen to hear from prospective undergraduate and postgraduate students).

A major aim of the lab is to develop alternatives to glucocorticoids in the treatment of autoimmune disease. Glucocorticoids, such as prednisone and prednisolone, are a mainstay for treating lupus but can have substantial dose-dependent side effects. One molecule that we are particularly interested in is glucocorticoid-induced leucine zipper (GILZ), which is one of the main players in the glucocorticoid-induced anti-inflammatory response but, when targeted directly, may not bring about the harmful side effects of glucocorticoids. We currently have an NHMRC development grant to look at GILZ as a potential therapeutic target in lupus. GILZ has multiple anti-inflammatory effects in different cells of the immune system; it dampens pro-inflammatory cytokine secretion in macrophages and DC, up-regulates Th2 activity and promotes the production of peripheral Treg cells (see Eades *et al* 2014; Beualieu & Morand 2011). Dr Sarah Jones (sarah.a.jones@monash.edu) is an early career researcher with wide experience in immunological techniques and assessment of disease indicators, gained from working in high-profile labs in WEHI, Harvard Medical School and Trinity College Dublin. She recently moved to Monash to exploit her expertise in the intersection of innate and adaptive immunity in translational research towards treatments for autoimmune diseases. Work led by Sarah has uncovered novel roles for GILZ in regulating Th17 cells and B cell activation. These studies are currently in submission.



GILZ: An alternative to glucocorticoids? Numerous studies have identified GILZ as a potent anti-inflammatory molecule, activated by glucocorticoids. We are working to determine whether the actions of GILZ are independent from the adverse metabolic effects of glucocorticoids.

Preliminary data from the lab suggests that while GILZ is a potent regulator of inflammatory responses, it may not induce the same side effects as treatment with glucocorticoids. Qiang (Colin) Cheng (colin.cheng@monash.edu), a postdoc in the lab, is currently investigating whether or not GILZ regulates metabolic effects, such as increased glucose production. If not, then, combined with the other studies in the lab, this would make GILZ a particularly exciting therapeutic target for the treatment of multiple autoimmune diseases.

Our newest lab member is Juliana Vago, a visiting PhD student from the Universidade Federal de Minas Gerais in Brazil. Juliana is interested in the role of GILZ in macrophage phenotype and behavior and has demonstrated that GILZ has an important role to play in inflammation resolution. Juliana is now looking at mechanisms through which GILZ regulates macrophage development and activation.

Another glucocorticoid-induced molecule that the lab has worked on over the past 20 years is macrophage migration inhibitory factor (MIF). Discovered in the 1960s, MIF was one of the first cytokines to be identified. Despite this, it remains one of the most enigmatic. It is produced by most cells of the immune system (and many other non-immune cells), is constitutively expressed, largely pro-inflammatory and protective against many gram-negative bacteria. However, it is also released by cells of the anterior pituitary, similar to a hormone. Importantly, hypersecretion of MIF is linked to some autoimmune diseases, including lupus and rheumatoid arthritis – these discoveries lead to NIH funding for Monash investigators, a rarity in the absence of US partners. Recent work in our lab, led by postdoc Tali Lang (tali.lang@monash.edu) has highlighted a novel mechanism by which MIF regulates other pro-inflammatory cytokines and we are now looking at this in terms of potential future therapies for specific inflammatory diseases. Watch this space …

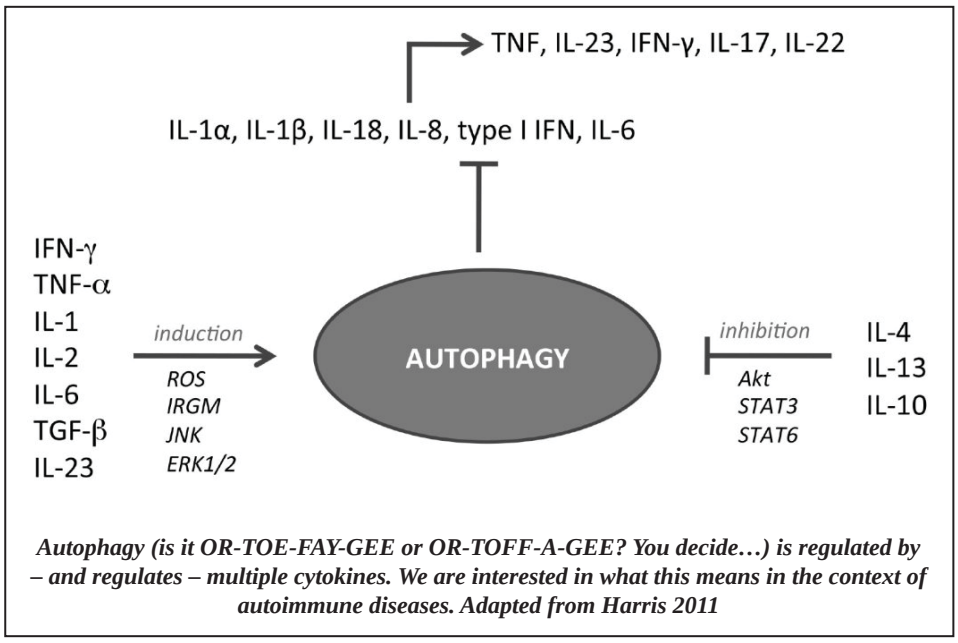
MIF secretion is regulated by glucocorticoids; at lower doses dexamethasone can induce MIF secretion by macrophages, while at higher doses, it can inhibit secretion. In turn, MIF can counter-regulate the effects of glucocorticoids, thus affecting the sensitivity of cells to steroid treatment. In particular, MIF has been shown to counter-regulate the glucocorticoid-induced expression of MAPK phosphatase-1 (MKP-

1), an inhibitor of MAPK through which glucocorticoids suppress pro-inflammatory cytokine secretion. We have recently demonstrated that this regulation of MKP-1 by MIF occurs through inhibition of GILZ, thus linking two arms of our current research (Fan *et al* 2014). This is, in turn, dependent on nuclear translocation of the transcription factor FOXO3a. This work is important in understanding the molecular basis of glucocorticoid sensitivity, a clinically important issue in diseases, like lupus, that are treated with steroid therapy.

A more recent addition to the lab research profile is the role of autophagy in the regulation of inflammatory responses by innate immune cells, particularly macrophages and dendritic cells. Autophagy is a general term for the pathways through which cytoplasmic constituents are delivered to lysosomes for degradation. One form, macroautophagy, has been shown to regulate inflammation through the removal of inflammatory stimuli, such as reactive oxygen species, mitochondrial DNA and, in some cases, bacteria-containing phagosomes. In addition, autophagy appears to target specific molecules important for inflammation, including pro-IL-1β, ASC and NLRP3 (see Harris 2013; Jones *et al* 2013).

We have reagents and expertise to study autophagy ... in detail and we are happy to share these

After spending time in the lab of Vojo Deretic in New Mexico, Jim Harris was bitten by the autophagy bug and demonstrated that this process can act to limit the secretion of multiple pro-inflammatory cytokines by macrophages and dendritic cells, including IL-1 family cytokines and IL-23. In turn, effects on IL-1 and IL-23 can influence the release of IL-17, IFN-γ and IL-22 by innate lymphoid cells and has knock-on effects on the secretion of TNF-α in vivo. Postdoc Huapeng Fan (huapeng.fan@monash.edu) and research assistant (and former Honours student) Jacinta Lee (jacinta.lee@monash.edu) are currently investigating the role of autophagy in the regulation of other pro-inflammatory cytokines. In particular, we have an NHMRC-funded Project Grant to look at the role of autophagy in myeloid cells in regulating inflammation in lupus. Thus, we are looking into the role of myeloid cell autophagy in mouse models of lupus, as well as arthritis, to see whether this regulatory effect on pro-inflammatory cytokines might be protective in these diseases. Further, Jim and Sarah are interested the potential knock-on effects of autophagy deficiency in myeloid cells, such as effects on antibody production, as well as the role of autophagy in other immune cells. Importantly, we have reagents and expertise to study the role of autophagy in immune responses in detail and we are happy to share these, so if you are interested, get in touch!



Autophagy (is it OR-TOE-FAY-GEE or OR-TOFF-A-GEE? You decide…) is regulated by – and regulates – multiple cytokines. We are interested in what this means in the context of autoimmune diseases. Adapted from Harris 2011


BRISBANE
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16th ANNUAL RETREAT
20-21 August 2015
Sea World Resort, Gold Coast
Confirmed speakers
Professor David Price
Cardiff University UK
Dr Axel Kallies
Walter and Eliza Hall Institute
Dr Jane Oliaro
Peter MacCallum Cancer Centre
Dr Thomas Gebhardt
University of Melbourne
Professor Phil Hansbro
University of Newcastle
Jonathan Sprent Orator
Professor Dale Godfrey
University of Melbourne
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 10 July 2015
Secretariat: Mandie Quince
Phone: (07) 3362 0430
Email: Mandie.Quince@qimrberghofer.edu.au
QIMR Berghofer
Medical Research Institute
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The ASI Visiting Speaker Program

Recent Visits by VSP Presenters

The Visiting Speaker Program has been busy so far this year, with visits from Dr Alex Shalek of MIT, USA; Professor Eric Vivier from Marseille-Luminy, France; and Professor David Masopust of the University of Minnesota, USA.

Dr Shalek's visit, jointly sponsored by Fluidigm and Millenium Science, included stops in Auckland, Wellington, Melbourne and Brisbane where he presented his work describing new single-cell transcriptional technologies. Dr Shalek spent time talking with PhD students, post-docs and PIs during his time at the Malaghan Institute in Wellington and presented his research to a fully packed lecture theatre.

Prof Vivier enlightened audiences in Brisbane, Melbourne, Wellington and Sydney about the regulation and clinical manipulation of natural killer and innate lymphoid cells. Unfortunately one of Prof Vivier's family members became very ill during his visit to QIMR Berghofer; however, very generously, he stayed on and gave an excellent seminar that was attended by more than 150 people. Prof Mark Smyth said, "His talk was incredibly well received". At the WEHI, over 180 people attended his talk and in Wellington, Prof Vivier's talk "provoked a lot of questions and discussions after the talk and during dinner" according to local host, Dr Lindsay Ancelet.

David Masopust presenting his research in Wellington (Photo courtesy Malaghan Institute)

During his visit to Sydney, Canberra, Melbourne and Wellington in late April and early May, Prof. Masopust presented his work describing the quantity, quality and location of memory CD8+ T cells. At the JCSMR, Prof Masopust also spent time meeting with students and PIs. Local host for Canberra, Dr Ian Parish, said that everyone "definitely enjoyed his visit".

The gender bias is very clear at the moment – in 2015 there is not a single female speaker in the Program

Eric Vivier visiting a lab in Melbourne with local hosts Nicholas Huntington and Sophie Ugolini (Photo courtesy Czesia Markiewicz, WEHI)

Visits to Come

The schedule is full for the remainder of 2015. The website is updated regularly so for details of the visits and contact information for local hosts, please visit http://www.immunology.org.au/events-calendar/the-asi-visiting-speaker-program-vsp/

Prof Hai Qi, Tsinghua University, China
29 May – Centenary Institute, Sydney
1 June – JCSMR, ANU, Canberra
3 June – PDI, Melbourne
4–5 June – Australian B Cell Dialogue, Melbourne

Prof Daniel Altmann, Imperial College, UK
Visits in July to Sydney, Brisbane and Townsville.

Prof Dirk Busch, Technische Universität, Germany
Visits in October to IgV, Melbourne and other sites to be confirmed

Prof Ralph Tripp, University of Georgia
Visits in December to ASI, Canberra and other sites to be confirmed

Changes afoot?

At the July ASI Council meeting I will be proposing a few changes to the Program. These include introducing a twice-yearly call for speaker nominations and a clear indication of support from potential host branches.

A twice-yearly call will allow nominations to be considered and prioritised by the Executive together, with the aim to inviting the best available speakers to as many branches as

Left: David Masopust's visit to Sydney - clockwise from front left: Mainthan Palendira, David Masopust, Wolfgang Weninger, Patrick Bertolino, Ben Roediger

possible, whilst avoiding a gender imbalance. Unfortunately the gender bias is very clear at the moment – in 2015 there is not a single female speaker in the Program! This proposal would also accommodate a small number of speakers to be nominated at other times so that excellent opportunities are not lost.

I also will propose that branches indicate their level of support of a speaker with more than a simple "yes" or "no", since it is not often that a branch says "no". Potential host branches would need to include a list of local interested research groups/institutes and a very brief indication of the value of the speaker to the branch. This would involve the local councillor engaging with their membership twice annually, following the call for nominations. This information would help Executive determine the level of interest in a speaker, and the information supplied by the branches could be shared with the invited speaker to help them decide which branches they will visit.

Your comments and suggestions to improve the Program are welcomed. Please contact me on jo.kirman@otago.ac.nz

Jo Kirman
VSP Co-ordinator

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We invite all ASI members to contribute copy that is

* interesting or historical
* useful or thought provoking
* what the student membership care about.

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email
immunologysecretariat@gmail.com or
joanna.roberts@gmail.com

Upcoming Conferences

55th Midwinter Conference of Immunologists
23–26 January 2016
Asilomar, California, USA
Registrar: kim.gurney@byu.net
www.midwconfimmunol.org
On-line registration by 13 November 2015

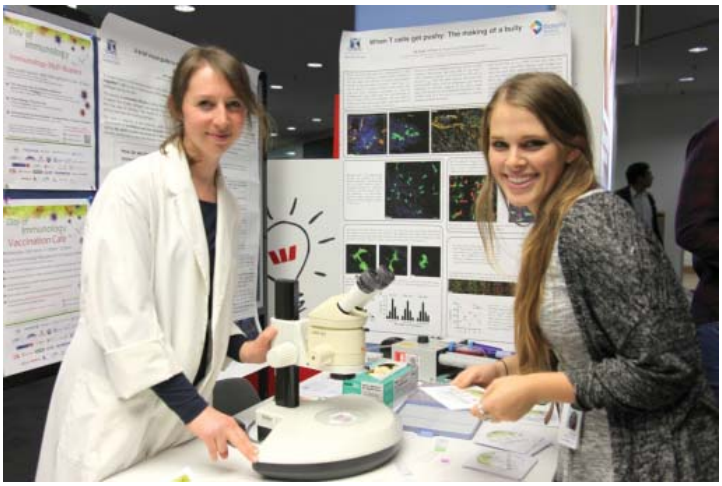
10th International Congress on Auto-immunity
6–10 April 2016
Leipzig, Germany
http://autoimmunity.kenes.com/
Abstract submission deadline:
27 October 2015
Early registration deadline:
11 January 2016

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

Day of Immunology 2015 – Victoria

Claerwen Jones
Day of Immunology Co-ordinator

Once again, ASI members from many branches ran Day of Immunology events to strengthen public awareness of the immune system to each person's health and wellbeing and the importance of immunology research. Public lectures and a "Day in the life of an Immunologist" full day workshop were held in Brisbane and Townsville [see next pages], a Science in the Pub gathering was held in Adelaide, a secondary school program was held in Auckland and a Quiz night in Dunedin. Please see the Councillor reports for further details of these fun and informative events.



Alison West chatting to a visitor to the Day of Immunology Information Booth at the Monash Medical Centre, Clayton. (Photo: Sue Panckridge)

In Melbourne, five events were held for the general public on 29th April. It was a beautiful, sunny Autumn day and, in the City Square in central Melbourne, 30 people took the opportunity to get the latest flu vaccination and chat with scientists over a cup of Brunetti's coffee.

Immunologists Thomas Gebhardt, Laura Mackay, Jay Rautela, Su Heinzel and Nick Collins waiting to chat to passers by at the Vaccination Café in Melbourne's City Square. (Photo: Claerwen Jones)

At the Monash Medical Centre in Clayton, staff, patients, and visitors to this busy hospital were able to chat with Monash University immunologists at an information booth set up in the foyer. The booth consisted of interesting posters, Day of Immunology flyers, and a microscope set up to highlight the role of inflammation in stomach cancer. Some highlights of the day included inspiring a patient to donate their blood for research, and clearing up several myths about vaccination!

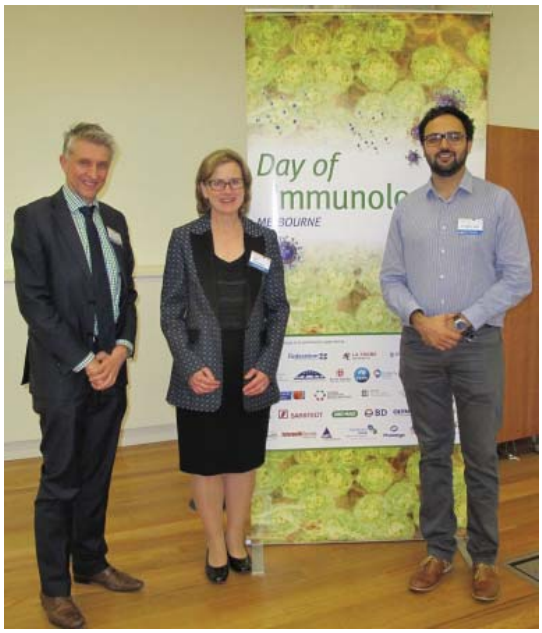
Discovery Tours were held at the Burnet Institute in Prahran and the Peter Doherty Institute for Medical Research in Parkville. At the Burnet, members of the public, including McKinnon Secondary College VCE students, listened to young scientists talk about their research into new vaccines and treatments against infectious diseases, and understanding the role played by the immune system. At the Doherty, a group of 25 participants including some primary school children listened to an introductory lecture by senior scientists Cameron Simmons and Ian Barr. At each institute, visitors then walked through laboratories and were able to chat with scientists at the bench. The Doherty Institute tour finished with a "glitter bug" practical, prepared by the classroom teaching staff, where participants were able to discover how good their hand washing technique was for getting rid of "bugs" (glitter).

In the evening, approximately 200 people attended the Doherty Institute auditorium to listen to four "Immunology Myth Buster!" talks. Dr Shalin Naik (WEHI) did a fabulous job of introducing the topic, getting audience participation in deciding between myths and facts and describing how reputable science is performed. A/Prof. Tim Stinear (Uni of Melbourne) gave a very interesting talk called "The rise and rise of antibiotic resistance" on how superbugs have developed resistance not only to antibiotics but to the pressure our immune systems put on them. Prof. Jo Douglass (The Royal Melbourne Hospital) followed with a great myth-busting talk on food allergy, called "Food Allergy: it's just nuts!", where she explained what food allergies were, the immune mechanisms behind food allergy, why food allergies have become more common, trials studying the prevention or treatment of food allergies, and finally, how to keep people with food allergy safe. The final speaker was Prof. Grant McArthur (Peter MacCallum Cancer Centre), whose very exciting talk "Activating the Immune System: The New Pillar of Cancer Treatment" busted the myth that the immune system could not be activated to fight cancer. The public had a chance to chat further with presenters over refreshments.

In addition to these five events for the general public in Melbourne, over 400 Victorian students studying VCE Unit 3 Biology together with their teachers had the opportunity to attend a full day

McKinnon Secondary College teacher Mark Drummond enjoyed the chance to tour the labs of the Burnet Institute with some of his VCE biology students. (Photo: Burnet Institute)

Immunology workshop run in conjunction with the Gene Technology Access Centre (GTAC). This program has expanded every year and in 2015, workshops were held at GTAC in Parkville, at Federation University in Ballarat, and – new to DoI 2015 – at Deakin University in Geelong. This expansion has been a wonderful way to allow more secondary students in regional Victorian schools to participate in this superb



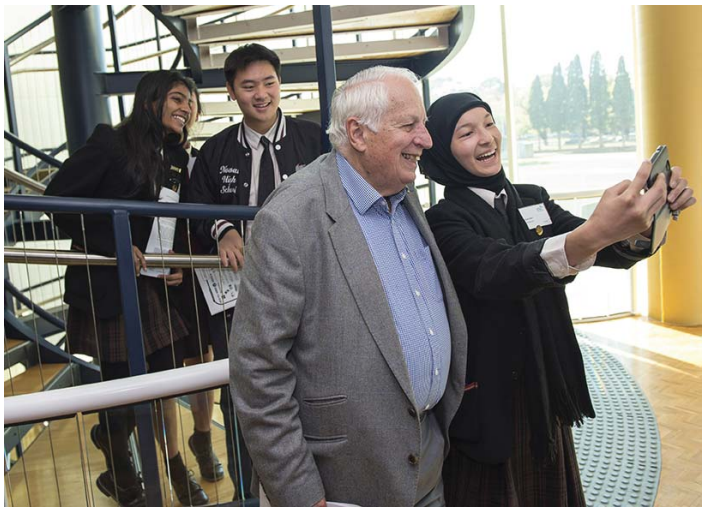
LtoR: Public lecture presenters Grant McArthur, Jo Douglass and Shalin Naik. Tim Stinear is invisible. (Photo: Claerwen Jones)

program that gives the students such a strong foundation in the Immunology component of their Biology course.

A LOT of work goes in to preparing and running Day of Immunology events and many thanks go to the fabulous organizing committees, speakers, tour guides, communication staff and helpers, and to our very generous sponsors for making all these Day of Immunology activities such a success.

Many of the organizers of these activities have commented to me on the very positive feedback from participants in these events. I think all of the research scientists also really enjoyed the interaction with the public and feel that it is a rewarding experience to increase public awareness of immunology and research in this way. Please contact me at cmj@unimelb.edu.au if you would like to be involved in Day of Immunology 2016.

Kim Pham and Jacques Miller chatting during the refreshments following the Day of Immunology public lecture. (Photo: Claerwen Jones)



Students from Nossal High School, Berwick taking a selfie with the school's namesake. (Photo: Ger Hynes/Monash University)

Lori Brown chatting with students in a "Lunch with Immunologists" session. (Photo: Ger Hynes/Monash University)

Celebrating World Day of Immunology in Queensland

Brisbane

This year, the Brisbane arm of ASI celebrated the Day of Immunology with its inaugural "Day in the Life of an Immunologist" workshop to inspire the next generation of scientists. Senior high school students attended workshops at the SPARQ-ed facility at the Translational Research Institute or the QIMR Berghofer Medical Research Institute where they were introduced to the wonders of lab-based immunology under the expert guidance of Mr Peter Darben and Ms Simone Cross respectively. Students at TRI heard from Professor Ian Frazer about their immune system and why they couldn't live without it while students at QIMR Berghofer heard Dr Christian Engwerda discuss parasites and fevers. The day ended with a lab tour and speed-dating-style career chat, where students spoke to research scientists, clinical immunologists, science writers and academics about careers in science. We would like to thank all involved for making this such a successful event, which we hope will be held again next year.

Above: Ian Frazer with high school students at TRI

A public lecture event, designed to educate and fascinate people about our amazing immune system, was also held on the evening of 29th April at the Translational Research Institute. There were four engaging sessions from local speakers on vaccination, rheumatoid arthritis and cancer immunotherapy. A recipient of immunotherapy shared his personal journey with the audience. We would like to thank Prof. Andreas Suhrbier, Prof. Ranjeny Thomas, Dr Andrea Schuessler and Mr Eddie Chen for presenting and discussing their research and experiences and generating a lot of interest and discussion amongst the attendees.

Danielle Stanisic
Brisbane DoI co-ordinator

Below: Public Seminar at TRI

Townsville

The Day of Immunology was celebrated on 28th April in Townsville, organised by two of the Queensland branch committee members, Dr Margaret Jordan and Dr Tammy Dougan. The event was well attended by approximately 100 members of the general public. Participants enjoyed a glass of wine, 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. There were CDs and booklets on "our incredible immune system" and "vaccinations" which went down a treat. This open session was followed by three informative talks covering different topics of how incredible our immune is. There was a short video introducing the immune system, provided by Prof. Natkunam Ketheesan, which opened the session, which was then followed by topics on immunity, addressing "Smouldering body, burning brain: How the immune system influences brain and behaviour" (A/Prof. Zoltan Sarnyai) and "The changing face of food allergy in Australia" (Dr Sandip Kamath). Dr Smriti Krishna wrapped up the session with a talk on "The role of inflammatory cells in AAA development". 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, A/Prof. Andreas Lopata.

Due to the enormous success of this event, we are endeavouring 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.Jordan@jcu.edu.au; Tammy.Dougan@jcu.edu.au).

Tammy Dougan
Townsville DoI co-ordinator

Above: Tammy Dougan & Margaret Jordan

Below: Zoltan Sarnyai

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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 13th-17th July, 2015

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
- Assoc Prof John Miles (QIMR)
- Prof Dale Godfrey (University of Melbourne)
- Prof Ranjeny Thomas (UQ Diamantina Institute)
- Assoc Prof Ray Steptoe (UQ Diamantina Institute)

> 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 OPEN NOW

www.di.uq.edu.au/advanced-immunology-course

Please submit your application and payment by Friday June 19, 2015
Bursary recipients will be notified shorty after applications close

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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.S.W. News

ASI NSW celebrated Immunology Day by hosting a seminar/workshop for school students at the Museum of Human Diseases at UNSW. A panel of five immunologists presented some fascinating insights into how the immune system works to a packed room of high school students. It was very well received by those present and we have no doubt we will continue to engage school students in the future. I have to take this opportunity to thank Dr Fabio Luciani for organizing this event. I would also like to thank the panel members – Dr John-Sebastian Eden, Dr Francesca Di Giallonardo, Dr Simon Jones and Dr Kirstie Bertram – for their time and effort in making this a success.

I would like to remind members about the upcoming NSW/ACT branch meeting. It will be held on 20 and 21 August at the Craigieburn Resort and Conference Centre in Bowral. More details will be emailed to you soon.

Finally, we will be hosting Professor Hai Qi as part of the ASI Visiting Speaker Program. His seminar will be held at the Centenary Institute on 29 May at 12 noon. If you would like to meet Professor Qi, please get in touch with me (m.palendira@centenary.org.au).

Mainthan Palendira
Councillor

S.A./N.T. News

On Friday 8th May the SA/NT branch of ASI will be teaming up with 'Science in the Pub' to celebrate the Day of Immunology. The theme of this year's event will be 'The power of the Immune System in Health and Disease'. Our aim is to introduce the audience to some of the less familiar functions of the Immune System such as interactions with cancer (Dr Lisa Ebert), the brain (Prof Mark Hutchinson) and sunlight (Assoc Prof Michele Grimbaldeston). A big thankyou to our invited speakers for agreeing to give up their Friday night to come along and share their passion for immunology, thank you also to Dr Pallave Dasari for agreeing to chair and moderate the panel discussions and the Science in the Pub team, led by Dr Andy Flies, for facilitating the organisation and promotion of the event. I would also like to thank the organising committee, who have helped in the lead up to the event: Tessa Gargett, Susan Christo, Iain Comerford, Natasha Kolesnikoff, Damon Tumes, Houng Taing, Dave Yip, Nicholas Hauschild, Kate Parham, Emma Thompson and Anita Kral.

Our next big ASI event for SA/NT will be the 11th Annual Adelaide Immunology Retreat (AIR-11). Planning for the Retreat is well underway and we are delighted that Prof Carola Vinuesa will be joining us as our invited Interstate Speaker. The retreat, which is aimed at giving Early Career Researchers (ECRs), PhD students, Honours students and Research Assistants the opportunity to present their work and interact in a relaxed environment, will be held from August 7-8. Last year we introduced a new session for Early Career Researchers (up to 3 years post-PhD), this was a success so we plan to offer this session for up to five presentations once again this year. If we receive more than three abstracts from ECRs we will offer a prize for Best Presentation.

A 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

Queensland News

The Queensland branch has been a hive of activity over the last couple of months. Alex Shalek gave well-received presentations at UQ IMB and TRI as part of the ASI Visiting Speaker Program in March, and Eric Vivier visited QIMR in April.

World Day of Immunology was a huge success in Queensland this year. Public events were held at TRI in Brisbane and at JCU in Townsville and TRI sponsored an immunology ECR poster session, jointly won by Kirsteen Tullett (Mater Research) and Peta Reeves (UQ-DI). For the first time we initiated two one-day immunology lab experience programs for high school students at TRI and QIMR. These events were all well attended and we have received fantastic feedback, particularly from the Queensland Chief Scientist Dr Geoff Garrett, who attended the TRI event, and the students at QIMR, more than 70% of whom said that, as a result of the course, they would be more likely to consider a career in immunology. None of this would have been possible without the huge amount of time and energy put in by Danielle Stanisic, who organised the Brisbane events, Tammy Dougan and Margaret Jordan, who organised the Townsville event, their many helpers and support from research institutes. More details on these events can be found elsewhere in the newsletter.

Dates for your diary:

BIG2015: The Brisbane (and Gold Coast and Far North Qld) Immunology Group Annual Retreat will be held at Seaworld Resort, Gold Coast on August 20-21. We have a fantastic line up of confirmed international and interstate speakers, including Professor David Price (Cardiff University UK), Dr Axel Kallies (WEHI), Dr Jane Oliario (Peter Mac), Dr Thomas Gebhardt (Uni Melbourne), Prof Phil Hansbro (Uni Newcastle), and the 2015 Jonathon Sprent Orator is Prof Dale Godfrey. All ASI members are eligible for a discount. Abstract and Registration opens on May 18 and closes July 10, 2015. For more details and to register, please see www.big.qimrberghoher.edu.au/page/Annual_Retreat or contact the secretariat Mandie Quince on (07) 3362 0430 or Mandie.Quince@qimrberghofer.edu.au

Advanced Immunology Course: This will be run by the University of Queensland Diamantina Institute, TRI and will be held over five days from 13-17 July, 2015. For more information and to register, visit www.di.uq.edu.au/advanced-immunology-course.

Kristen Radford
Councillor

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A.C.T. News

The main event for the ACT branch in the last few months was the visit by ASI Visiting Speaker Professor David Masopust. As usual for ASI visiting speakers, he gave a fantastic seminar and then met with interested group leaders for individual meetings as well as a group of PhD students. We are also looking forward to the next visiting speaker, Professor Hai Qi, who will visit Canberra on June 1st.

We have also been very busy organising the ASI annual meeting. The meeting will be held at the National Convention Centre in Canberra from November 29th to December 3rd, followed by a special joint workshop between ASI and the German Society for Immunology. The meeting is shaping up to be a very exciting highlight of the year with many excellent domestic and international invited speakers. For more information please have a look at the meeting website www.asi2015.org.

Anselm Enders
Councillor

Victorian News

The second quarter of 2015 has been a super-busy one for Victorian and Tasmanian ASI members. The IgV Masterclass was held on 5th May where over 80 delegates were treated to talks from Jenny Stow, Scott Mueller, James Whisstock, Jeremie Rossy, Justine Mintern, Kate Lawlor, Kelly Rogers and Georg Ramm on a wide range of exciting new techniques on the theme of *Visualising the Immune System*. This huge day was generously supported by the Centre for Advanced Molecular Imaging ARC Centre of Excellence, Life Technologies and the Walter and Eliza Hall Institute and the turnout from students was especially heartening.

We've also had some fantastic visiting speakers through recently. Alex Shalek from MIT was hosted by Shalin Naik and gave talks at Monash University and WEHI about the cutting edge of single cell transcriptomics that blew minds. This ASI Visiting Speaker was also generously supported by Millenium Science and Fluidigm. David Masopust was hosted by Thomas Gerbhardt at the Peter Doherty Institute and spoke about Tissue-resident memory CD8 T cells, an emerging and important theme in vaccine development and cancer therapy. In addition, Eric Vivier discussed his team's beautiful work on NK cells and other ILCs in a broad talk at WEHI. Eric is currently on sabbatical at WEHI with Dr Nick Huntington and will also be talking at the upcoming 1st Australian Innate Lymphocyte Symposium (#AILS2015) on 12th June. Check out the Vic/Tas branch page at the ASI website for further details on this conference and other upcoming meetings.

We also have some more stellar VSPs coming up, with Hai Qi (hosted by Vanessa Bryant) on 3rd June at the Peter Doherty Institute talking about his latest work on the mechanisms regulating humoral immunity. He will also be headlining the Australian B cell Dialogue (ABCD) on 4-5 June at WEHI, a great fixture on the immunology calendar that is not to be missed. We're also looking forward to a visit from Dirk Busch from the Technische Universitat Munchen, Germany, who will be hosted by Stephen Turner in another double act in October, co-ordinating with the IgV Annual Retreat.

In fact, you should pop the Annual IgV Retreat into your diaries right now, for 8-9 October at the Novotel Forest Resort Creswick. We're going all out this year since, with the International Congress of Immunology coming to town in 2016, there will not be a Retreat next year. Consequently, there is already an amazing line-up of speakers confirmed with Prof. Dirk Busch, Prof. Andreas Strasser from WEHI and Prof. Ranjeny Thomas from the UQ Diamantina Institute. This will be a fantastic event for lab heads, postdocs and students alike so be sure not to miss it. See, I told you it has been a super-busy quarter and the opportunities to catch the very best immunology in Victoria and Tasmania are only getting better as the year goes on!

Daniel Gray
Councillor

Travel Award Conference Reports

Keystone Symposia: Viral Immunity

11 – 16 January 2015, Breckenridge, Colorado, USA

Emma Grant

Department of Microbiology and Immunology, The University of Melbourne at the Peter Doherty Institute for Infection and Immunity, Victoria

After 30 hours of travel, delayed flights, missed connections and misplaced luggage, I finally arrived at Beaver Run Resort, the beautiful location chosen to host the 2015 Keystone: Viral Immunity conference. And so began an action packed week filled with snow, socialising and, obviously, spectacular science.

The conference ran over four days, and was filled with fantastic talks about viral immunity, with everything from basic innate signalling to complex adaptive processes and vaccine design. The program was divided into three main sections including plenary sessions, workshops and poster sessions. During the plenary sessions we heard the latest unpublished ground-breaking human and murine research from some of the world's leading experts in the field. I particularly enjoyed the sessions on localised anti-viral immunity and anti-viral lymphocyte receptor/peptide repertoires, however all sessions were incredibly engaging. Following a brilliant motivational talk from Prof. Jonathan Yewdell about how to succeed in science, the workshops began, and gave the students and early career postdocs with the most exciting abstracts the chance to present their breath-taking data.

Perhaps the thing I liked most about the conference however was the poster sessions. Each night about 70 students and early career researchers had posters in what can only be described as the most interactive poster sessions ever seen. Following dinner, the majority of delegates, including the plenary speakers, remained behind to visit the posters, engaging in light, albeit scientific conversations for the majority of the two-hour session.

One of the nicest things about the Keystone Conferences is their relatively small size, which means you actually have the opportunity to approach and talk to some of the "big wig" scientists whom you have no doubt cited may times. It is a nice intimate gathering, great for learning, catching up with old friends, and establishing new and fruitful collaborations.

Emma in the snow at Beaver Run Resort

After a week of great science, skiing (for some) and snowshoeing (for me!) it was over to the UK to visit some labs and investigate potential postdoctoral opportunities. I was lucky enough to visit labs within Cardiff University (Cardiff, Wales), Oxford University (Oxford, England) and the Imperial College of London (London, England, home to the fattest pigeons in the world!) where I had the pleasure of meeting wonderful scientists who were kind enough to take time out of their busy schedules to discuss their exciting research, show me around their labs and introduce me to their staff and students.

Now as I head back to Australia to finish writing my PhD thesis, I can look back and reflect on the wonderful time I had abroad. I have learnt many things and met lots of wonderful people, and I would like to extend my gratitude to ASI for my generous travel scholarship, which made this incredibly rewarding journey possible.

Big Ben, London

Keystone Symposia – Innate Immunity and Determinants of Microbial Pathogenesis

19–24 April 2015, Squaw Valley, USA

Alison Carey
Institute of Health & Biomedical Innovation, QUT, Brisbane

I had the privilege of attending the Innate Immunity and Determinants of Microbial Pathogenesis Keystone meeting at Squaw Creek, California, USA, the location where the first ever Keystone meeting was held 43 years ago. Firstly, I would like to thank ASI for awarding me a Postdoctoral International Travel Grant and providing financial support to attend this enthralling meeting. I was fortunate that this conference was also combined with the Mechanisms of Pro-inflammatory Diseases meeting, allowing registrants to attend sessions of both.

The meeting commenced with two keynote speakers. The first was the renowned Professor Richard Flavell, speaking on identification of disease causing microbes from IBD patients and the role of NLRP6 in intestinal inflammatory diseases. The second was Zhijian 'James' Chen, who spoke on his group's discovery of cyclic GMP-AMP (cGAMP) synthase (cGAS) as an innate immune sensor for cytosolic DNA.

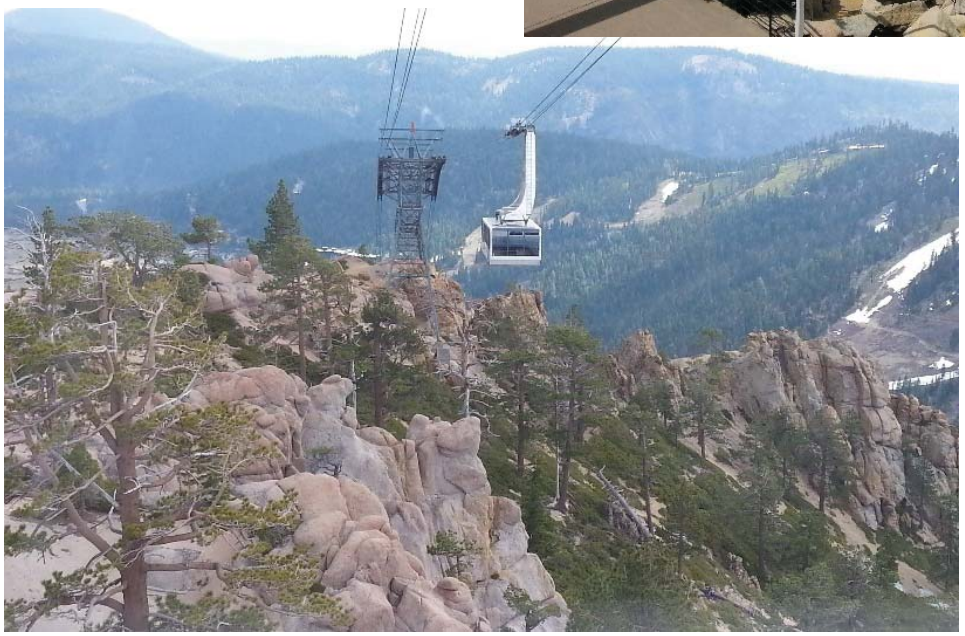
The benefit of these smaller meetings is that there are no concurrent sessions, meaning you can sit back and enjoy the talks without worrying about dashing back and forth between sessions. There were a number of talks on inflammosome pathway activation and IFN-γ signalling during infection, and an underlying theme of the role of cGAS in infection and pathway signalling.

There were three poster sessions, during which I presented my research on genital tract Group B Streptococcus colonisation. My poster gained interest from a number of attendees and generated discussions about future projects. I was also able to discuss my research in the context of establishing possible international collaborations, which was fantastic. I was able to find a bit of spare time to catch the tram up the mountain to a height of 8,000 feet and have a bit of a walk around in the snow. The views were spectacular (see pictures).

The meeting sessions concluded with a plenary talk on the important role of distinct PRRs in viral resistance verses disease pathogenesis and implicated possible interference with pathogenesis as a therapeutic modality for severe influenza infections. The conference dinner closed the meeting, where there were many drinks had, followed by some dancing. We were fortunate enough that Mother Nature gave us a night of snow on our last night which made the bus drive down the mountain very picturesque.

Again, I would like to thank ASI for their generous support, allowing me to attend this great meeting.

Above: The view of the snow-capped mountains from High Camp, site of the 1960 Winter Olympics'



Left: The view from the aerial tram to High Camp at Squaw Valley

Publications List

Published work by ASI members from January to March 2015 – congratulations – as well as selected highly accessed articles from ASI journals *Immunology & Cell Biology* and *Clinical & Translational Immunology*

Most accessed recent articles from 'Immunology and Cell Biology':

Denton, D., Xu, T. and Kumar, S. 2015. Autophagy as a pro-death pathway. Immunology and cell biology. 93, 1 (Jan. 2015), 35–42.

Moon, J.J. and Jenkins, M.K. 2015. The human T-cell repertoire grows up. Immunology and cell biology. (May 2015).

Most accessed recent articles from 'Clincial and Translational Immunology':

Balfour, H.H., Dunmire, S.K. and Hogquist, K.A. 2015. Infectious mononucleosis. Clinical & translational immunology. 4, 2 (Feb. 2015), e33.

Cross, R.S., Malaterre, J., Davenport, A.J., Carpinteri, S., Anderson, R.L., Darcy, P.K. and Ramsay, R.G. 2015. Therapeutic DNA vaccination against colorectal cancer by targeting the MYB oncoprotein. Clinical & translational immunology. 4, 1 (Jan. 2015), e30.

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Publications across all journals by ASI members:

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