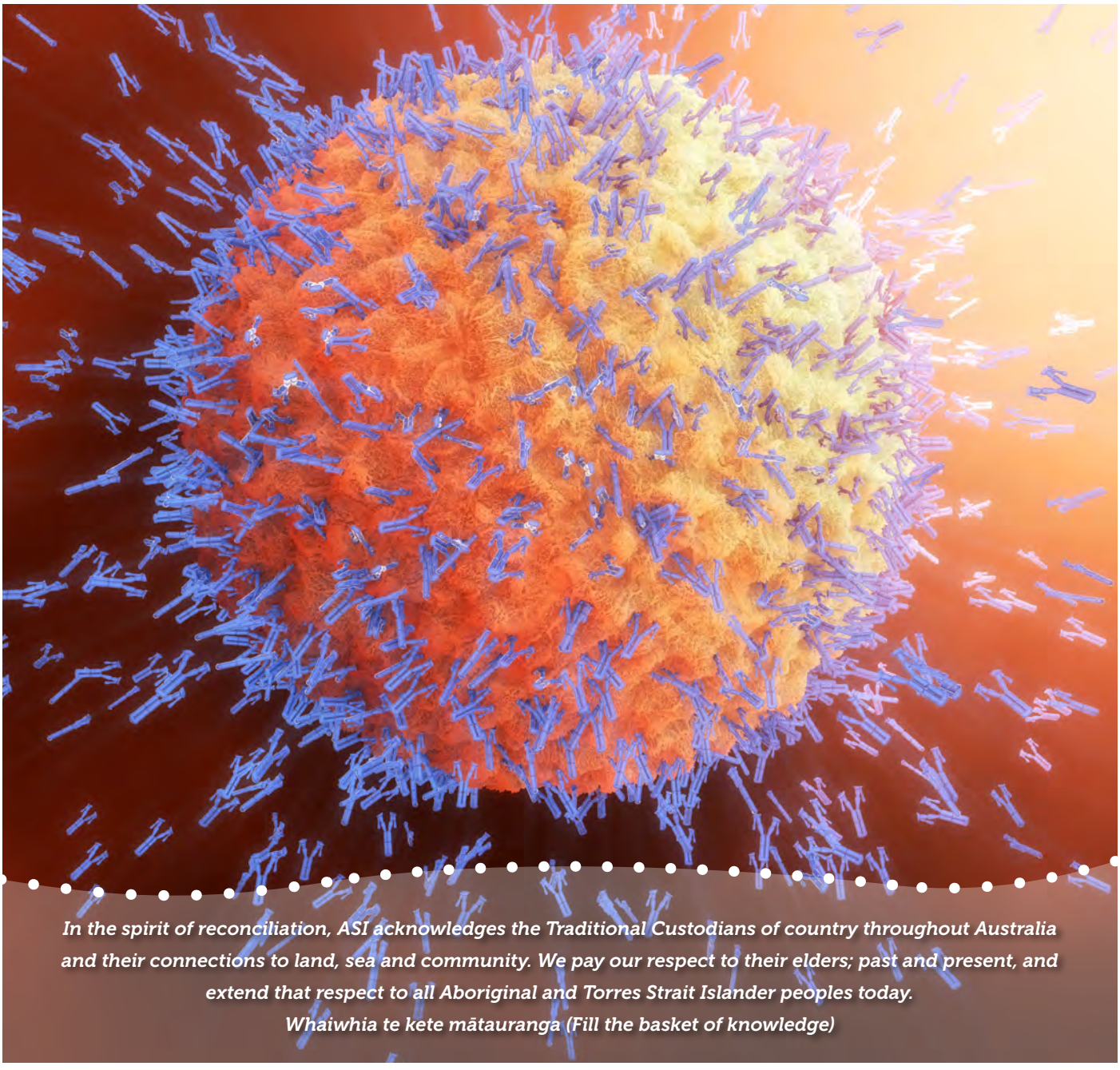
ASINEWS

DECEMBER 2022



In the spirit of reconciliation, ASI acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their elders; past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples today.
Whaiwhia te kete mātauranga (Fill the basket of knowledge)

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Australian and New Zealand SOCIETY FOR IMMUNOLOGY INC.

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President's Report

Stephen Turner | ASI President

The end of 2022 has coincided with the first face to face ASI annual meeting in 3 years.

This meeting was a huge success that many were looking forward to. The meeting had a number of confirmed international speakers that are making the trip to present plenary talks (Prof Doreen Cantrell, Prof Florent Ginhoux, Prof Ana-Maria Lennon, Dr Dan Littman, Prof Kim Newton, Prof Feng Shao and Dr John Wherry). On top this there are also 5 international symposia speakers that include A/Prof Stephanie Eisenbarth, Prof Daniel Kaplan, Dr Michelle Linterman and Dr Alex Marsen. This is complemented by local speakers that include Prof Dale Godfrey, Prof Sharon Lewin, Prof Mariapia Delgi-Esposti, Prof Nicole La Gruta, Prof Kate Schroder, Prof Jenny Stow and Prof David Tscharke. We also have the full complement of capstone events such as the Special Interest Group workshops held prior to the opening of the meeting; the Burnet Oration, ASI New investigator award sponsored by Pfizer, the Lafferty Debate and of course the Annual dinner.

We also hosted a special session to celebrate and recognize the 25th anniversary of Nobel Prize for Medicine and Physiology awarded to Prof Peter Doherty and Prof Rolf Zinkernagel. We were very grateful that both Peter and Rolf agreed to attend the meeting this year, and it was fantastic to hear from them and to help celebrate such a wonderful milestone with them as a society.

We thank A/Prof Mark Chong, his team on the LOC, as well the PCO (Arinex) and all those that have contributed to organization of the meeting. This includes Prof Antje Blumenthal, ASI Annual Meeting Coordinator, and all those that contributed to putting together the scientific program, the networking and social events, the organisation and running of the SIG workshops, those that helped with scoring of abstracts for talks and prizes, and of course importantly our sponsors. It really is a team effort that takes typically two years to plan. I'd very much like to thank and congratulate all those who have given up their time to help make this an exciting and highly anticipated meeting.

On sponsors and partnerships, it was wonderful to be able to announce a continuation of our partnership with Abbvie and running of the Abbvie New Horizons Research award. Last year it was awarded to Prof Di Yu, and we congratulate Prof Kate Schroder as our 2022 awardee. The purpose of the award is to support a mid-career research Immunologist (10-20 years PhD with potential to advance research that identifies new biological pathways, druggable targets and biomarkers, within the fields of Autoimmunity, Inflammation, and other Immune-mediated Diseases (excluding Infectious Diseases).

Our society journals, ICB and CTI, just continue to go from strength to strength under the stewardship of our editors, Prof Anne La Flamme and Prof Adrian Liston (ICB), and Prof Rajiv Khanna (CTI). The latest impact factors are a reflection of the continued upward trajectory and increased esteem our learned society journals are enjoying. I'd like to thank members of the executive, and senior members of our membership for their insight and guidance during this process.

We are still feeling the lingering impacts of the COVID19 pandemic, and in fact, one may even say it is still going. With vaccination rates lower than expected for those eligible for their booster (fully vaccinated), the emergence of a new wave of infections associated with easing of restrictions, it is more important than ever we are able to communicate to people the benefits of vaccination and help send the right messages. Many of our members have been at the forefront of providing advice to government and the public. Such advocacy by ASI and our membership is important for ensuring the right information is provided and helps the community make informed decisions.

Welcome to the new members of the ASI council and executive. I'd like to welcome Prof Scott Byrne as the new

ASI Deputy Treasurer. The establishment of this deputy role helps ensure a smooth onboarding and transition for new executive members. I'd also like to welcome Dr Louise Rowntree, (ASI VIC/TAS Branch Councillor), Dr Inken Kelch (ASI NZ Branch Councillor), A/Prof Severine Navarro (QLD Branch Councillor), Dr Caleb Dawson (Day of Immunology Coordinator), Dr M.Zeeshan Chaudrhry (Visiting Speaker Program Coordinator) and Dr Connie Jackaman (Honorary Secretary, 2nd term). I'd also like to thank those outgoing members of council (Prof Scott Mueller, VIC/TAS councillor; Dr Gabriela Khoury, DoI Coordinator and Dr Martin Davey, VSP Coordinator).

This is my last year as ASI president and the end of AGM signalled my transition to Past President, and ushers in Prof Gabrielle Belz as the new ASI President and it is clear the society is in very good hands. This year also represented some significant changes in how the society operates. We are in a very strong financial position. This is partly income from our journals, subscriptions (a small part) and important dividends from investments made with JB Were. This management and decisions on how to structure our investments is overseen by the ASI investments committee. This committee and its members play a critical role in ensuring oversight and governance. Importantly, we are able to put these dividends back into the society to help support and underwrite many of the activities we enjoy as members. I want to thank our Investment committee for their ongoing commitment and sage advice when it comes to looking after our finances.

The size, complexity and professional nature of the society has become evident in the number of initiatives, support programs and audits. The appointment of Dr Tyani Chan as our general manager several years back was recognition that ASI has gone beyond a local group and truly become a significant and internationally recognized learned society. With this, new initiatives include contracting of Association Professionals who provide much needed support for administrative and financial services.

Finally, I'd like to extend a heartfelt thank you to the other current executive members Dr Connie Jackaman, Dr Asolina Braun, Prof Gabrielle Belz and Dr Emma Taylor. Working with a group of people who show such dedication and engagement is truly inspiring. Their counsel, advice and humor are some of the reasons that has made being ASI President such a wonderful and rewarding experience. I also want to particularly highlight and thank Dr Tyani Chan for her ongoing support, tireless dedication and professionalism which she brings to the position of General Manager. Tyani is the glue that really brings and holds things together with not just her wonderful organization skills, but also her innovation and big picture thinking about how we can continue to improve and grow the Society for members.

As this is my last President's report, I would also like to thank all those I have engaged with over the last 2 years. In particular, I want to thank the membership without whom the society would not be the success it is today. It is truly heartening to hear and see the successes of our membership. It is nice to reflect that perhaps in some of those cases, ASI may have had a little to do with that success via support to attend meetings, via our prizes, or supporting new initiatives. IF you are considering nominating for one of the positions in the future, please consider it. We are a volunteer organization, and it is because of you, the membership, and the willingness to give some of your time and contribute to the organization that makes it the success it is. Rest assured, it really is worth getting involved and you will not regret it.

Stephen Turner
ASI president
(2020 - 2022)

Secretary's Report

Connie Jackaman | Honorary Secretary

Welcome again to the end of the year, however this time we finally got to the highly anticipated annual scientific meeting in Melbourne!

Many thanks again to the local organising committee, particularly in dealing with the challenges and delays due to the pandemic. The end of the year also meant that we had a changeover in councillors at the annual general meeting. Many thanks to outgoing councillors: Asolina Braun (Past Treasurer), Ries Langley (NZ Branch Councillor), Scott Mueller (VIC/TAS Branch Councillor), Gabriela Khoury (Day of Immunology Coordinator) and Martin Davey (VSP Coordinator). Particularly to highlight Gabriela Khoury, Ries Langley and Scott Mueller in their dedication in completing multiple terms. Also, a special thanks to Asolina Braun for her astute financial management during the pandemic. Not an easy feat to keep a track of everything and it is largely thanks to Asolina (and the investment committee) that ASI maintained a strong financial position, particularly in 2020 as the pandemic evolved.

Welcome to the incoming councillors and many thanks for putting your hand up to support ASI: Deputy Treasurer – Scott Byrne, QLD Branch Councillor – Severine Navarro (second term), NZ Branch Councillor – Inken Kelch, VIC/TAS Branch Councillor – Louise Rowntree, Day of Immunology Coordinator – Caleb Dawson and VSP Coordinator – M. Zeeshan Chaudhry. We did not receive any nominations for Secretary so I have renominated for now. If anyone is interested in the role in the future and keen to know more please feel free to contact me.

ASI continued to offer a number of different award schemes throughout the year, with this year including the first recipients of the new ASI Breakthrough Award. In 2023 we will aim to have a similar timeline schedule as per 2022 (www.immunology.org.au/awards-and-special-honours/awards/). The deadlines for these are below, although please note these may be subject to change and will be confirmed early 2023:-

- Career Advancement Awards Round One: March
- Margaret Baird Award: May
- Public Engagement Award: June
- Breakthrough Immunology Award: July
- Jared Purton Award: August
- Cheers-Buchan Education Award: September
- Career Advancement Awards Round Two: September
- Annual Scientific Meeting Awards and Travel Bursaries, including Carer's Grants/ Women's Initiative: August/ September
- AbbVie New Horizons Award (TBC): October
- Branch Meeting Carer's Grants: Open for applications throughout the year

ASI is also continuing to welcome applications for the Special Initiatives Fund, which are open all year and assessed every quarter. This year saw the Special Initiatives Fund the inaugural ASI Clinical Translation School, ASI-Mentor-Mentee Program, support for the Systems Immunology Hackathon and continued support for the ASI Advanced Immunology School. We would love to hear from you if you have a great idea on how to promote the discipline of immunology and as always, we welcome any feedback on any ASI awards or programs as we move into 2023.

Connie Jackaman
Honorary Secretary

EQUITY DIVERSITY & INCLUSION COMMITTEE UPDATE

Diana Hansen | EDI Coordinator

After over one full year in the making, last August, the inaugural ASI Mentor-Mentee Program was launched. The goal of this program is to support students from our membership by providing mentoring opportunities from more senior and experienced members of our community.

The program is helping to initiate connections between mentors and mentees that may not otherwise occur due to, for example, differences in research areas, geographical location, or the changed work environments due to the COVID-19 pandemic. This program was designed to connect like-minded individuals, provide opportunities to expand networks, and for mentors and mentees to learn from each other.

Our inaugural program had a fantastic reception, with 74 participants joining from across Australia and New Zealand. We had students from honours all the way to recently graduate PhD students signing up as mentees, and mentors from a variety of career stages, from Early Career Researchers to Laboratory Heads.

Through the use of Mentorloop, a dynamic online mentoring platform, participants were able to select a mentor/mentee suggested to them through an algorithm that determined their shared interests and goals to find the best possible fit. The next milestone of the ASI Mentor-Mentee Program was a series of mentoring workshops delivered by Serendis and Franklin Women. The workshops were designed to help registrants understand what can expect from the mentorship program and provide additional tools to both mentees and mentors to be able to take full advantage of this new unique relationship, thereby ensuring the success of the program. Now, as all participants are matched, we hope that there will be many stories of success and mentoring relationships that can extend beyond the duration of the program.

The ASI mentorship program has been organised in the context of a collaboration between the EDI committee and members of the IgV. I would like to thank Alexandra Dvorscek, Jennifer Rose Habel and Taylah Bennett from IgV, who generously donated many hours of their volunteer time to bring to life this exciting new program for our ASI community.

ASI-DGfl Joint Workshop 2022

The 4th Joint Workshop between the German Society for Immunology (DGfl) and the Australian and New Zealand Society for Immunology took place at the beautiful Klosterhotel Wöltingerode near Hannover in Germany from September 11-14, 2022.

The Kloster (monastery) provided a scenic backdrop for three days of excellent science, lively discussions, and plenty of time for networking. The spectrum of topics encompassed basic immune mechanisms and leukocyte cell biology, immune mediated pathologies and disease models to clinical applications. Ample opportunities to socialise with delegates and enjoy local delicacies included a hike through sunlight-dappled forests, a taste of local delicacies at the monastery and the nearby picture book town Goslar, as well as a guided tour through the monastery distillery.

"It was so good to meet in person, to see old friends/ collaborators and meet some new people. The format (small group, retreat style) works extremely well. Once again, a hugely successful and fun event, already leading to new collaborations."

Su Heinzel

"The ASI-DGfl workshop was a great opportunity to interact with some of Germany's premier immunologists. A highlight was the presentation by Wolfgang Kastenmuller, and hearing about his work relating to lymph node conditioning by innate-like T cells migrating from peripheral tissue sites. The healthy funding environment in Germany is allowing the application of high-end technology to address important immunological questions, resulting in significant advances in our understanding about immune processes."

Chris Engwerda

"The workshop provided a relaxed and stimulating setting for meeting colleagues from Oz and Germany, learning about a diverse range of research topics and discussing new findings in depth. Christian and Johanna were fantastic hosts and took us for a stroll into the forest, an old German heritage town and dared us to a rather sweet Schnapps tasting. I think we probably all felt a bit more German after that. I very much appreciate the connections I was able to make during the workshop and I am really grateful we could enjoy this small in-person meeting. I can only recommend joining these small workshops and I am looking forward to the next one!"

Inken Kelch

" About 15 members of both societies were invited and the presentations covered topics from immune tolerance over T cell biology to transcription factor networks and vaccine development, to mention just a few. In the afternoon of the second day, a hike through the picturesque forest behind the monastery provided some welcome physical activity after intense debate in the conference room. And the guided tour through the monastery distillery gave insights into a long history of alcohol production dating back to the 17th century. Of course, we also had the opportunity to taste a few of the delicious varieties of liquor on offer, including interesting flavours such as hazelnut and ginger. I sincerely thank the organisers from both the DGFI and the ASI for another fantastic Joint Workshop, and of course, I also thank the ASI for their support. I am looking forward to the next joint meeting, which will be held either in Australia or New Zealand."

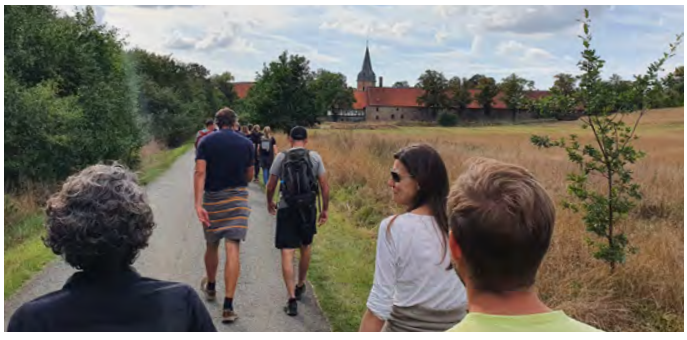
Andreas Kupz

"This was my first trip to Germany and the joint workshop format was an ideal format to really get to know researchers from both Australia and New Zealand and Germany and identify potential new collaborations. Discussing immune cell clusters in the Kloster followed by some schnapps and sharing of data, culture and contact details, what could be better!"

Laura Cook

"The workshop held in store a lot of the latest, exciting data from a broad range of projects and the one-on-one interactions in a collegial, relaxed atmosphere were invaluable to form new and revive existing connections post COVID restrictions ."

Asolina Braun



"After an excellent joint Immunology meeting from the German and Austrian Societies of Immunology in Hannover, it was great to join German and Australian colleagues in Goslar for the ASI/DGfI joint workshop. The workshop was as always well organised and allowed for lots of discussion and networking. I felt very privileged to do all of this in the beautiful environment of the old monastery hotel Woeltingerode in the medieval town of Goslar. Shame we could not stay for Goslar's famous Christmas market."

Michaela Lucas

"The workshop provided a collegial and relaxed atmosphere to share and discuss with both Australian and German colleagues our recent research outcomes."

Justine Mintern

NSW-ACT Branch Report

Angelica Lau
NSW Councillor

Julia Ellyard
ACT Councillor

After having to postpone our branch meeting for the past 2 years due to the pandemic, it was truly wonderful to finally reconvene with our NSW and ACT colleagues at our ASI NSW-ACT Joint Branch retreat. Held at Peppers Craigieburn, Bowral NSW, the meeting was a resounding success with a record number of close to 130 delegates from NSW and ACT represented from Anzac Research Institute, Australian National University, Centenary Institute, Charles Perkins Centre, Garvan Institute, University of Sydney, University of Technology Sydney, University of Wollongong and Westmead Institute of Medical Research

The two-day meeting was packed with a fantastic program of talks from student and post doc covering a diverse repertoire of research areas, including novel therapeutics for inflammatory diseases, autoimmunity, DC biology, SARS-COV2, immunodeficiency syndrome and therapeutics development. The quality of the talks were excellent and an indicator of the strength of future talent for the ASI. After two years of virtual meetings, it was also fantastic to see all the students, ECRs, group leaders and our sponsors engaging throughout the in-person meeting. What a great feeling to be back together to share and discuss science in person and reignite some of the great ideas that could only happen after a few beers! We look forward to seeing the outcome of future collaborations forged.

A special thank you to our invited speakers. On the first day Dr Iain Comerford (University of Adelaide) navigated us through a chemokine-journey in the context of CNS and multiple sclerosis and Dr Kylie James (Garvan Institute) presented on her phenomenal work exploring the balance of immune and microbial cells across the healthy human colon. Professor Jose Villadangos from University of Melbourne opened our scientific program on the second day and presented on his latest work on antigen capture and trogocytosis by dendritic cells in immune activation and provided some insightful advice to our students and ECRs. The meeting ended with A/Prof Fabienne Brilot-Turville from University of Sydney, who shared her incredible scientific discovery to translation journey on exploring MOG autoantibodies in brain demyelinating disease and translating this into the NATA-accredited diagnostics.

Congratulations to all our prizewinners for the best presentation in their career categories.

- *Best Post-doc Presentation:* Dr Felix Marsh-wakefield (University of Sydney) - Interrogating the tumour microenvironment in hepatocellularcarcinoma
- *Best PhD Presentation:* Karnnan Pathmanandavel (PhD Student) - Investigating the basis of IgE memory in Hyper-IgE Syndrome – Sponsored by Pathtech
- *Best PhD Presentation:* Rachael Ireland (PhD Student) - Local and systemic effects of narrowband UVB irradiation in mice - Sponsored by Pathtech
- *Best Honours Presentation:* Sarah Baird (Honours Student) - Adaptive Immune Correlates of Disease Severity in SARS-CoV-2 Infection

And of course this meeting would not be possible without the people behind it. Thank you to all our generous sponsors: Lonza, Merck/Abacus, BD, Australian Biosearch/Biolegend, ThermoFisher, Miltenyi Biotech, Bio-Rad, Pathtec, Millenium Science, United Bioresearch, Astra Zeneca, Australian BioResources. Thank you to our volunteer chairs and judges for their excellent effort in facilitating the meeting: Scott Byrne (USyd), Bernadette Saunders (UTS), Ian Cockburn (ANU) Nicole Fewings (WRI), Cindy Ma (Garvan), Nicholas Shields (Usyd), Joanne Reed (WRI), Debbie Watson (UOW), Deborah Burnett (Garvan), Daniel Enosi Tuipul (ANU), Pablo Silviera (ARI), Caroline Ashley (USyd), Anne Bruestle (ANU), Nicholas Geraghty (UOW), Kirstie Bertram (UTS), Si Ming Man (ANU), Elissa Deenick (Garvan). Also thank you to student volunteers: Natalie Smith (University of Sydney) who helped organise the entertainment "music bingo" over dinner; Nadia Roberts (ANU) and Sandali Seneviratne (ANU) for putting together the welcome packs. Lastly, a big thank you to the other members of the organising committee, Anselm Enders (ANU) and Helen McGuire (USyd), we couldn't have done it without you.

Organisation is already underway for the next branch meeting and we hope to everyone back again.

Angelica & Julia

ASI Margaret Baird Women in Immunology Award

ANTJE BLUMENTHAL

University of Queensland

I feel incredibly honoured to be a recipient of the ASI Margaret Baird Award 2021. Sharing this award with Joanna Groom, who I have long admired for her impactful advocacy for gender equity, is an immense motivation to continue our work on nurturing equity, diversity, and inclusion in our scientific community. One of my current goals is implementation of tailored support for individuals with carer responsibilities and extended career breaks. I envisage this as a key investment for long-lasting positive impact on career trajectories, workforce composition, and culture within our community. It is my firm belief that every achievement in fostering equitable, diverse and inclusive workplace environments will reach well beyond our sector, and create change in society through the stories we share, the lives we touch, and the individuals we inspire. The support offered through the ASI Margaret Baird Award has contributed to the establishment of spatial multi-omics workflows in my lab at the Frazer Institute at The University of Queensland. With these new technologies to our repertoire, we are interrogating molecular drivers of immune pathology in tuberculosis in our quest to identify new ways of tackling the global tuberculosis crisis.

Career Advancement Awards

AILIN LEPLETIER

Institute for Glycomics, Griffith University

I am Ailin, a Research Fellow at the Institute for Glycomics, Griffith University. Most of my career has been dedicated to understanding the basis of T cell development and function, and I have passionately identified and applied novel strategies to prevent and ameliorate dysfunctional T cells that accumulate during aging, cancer, and infectious diseases. As an early career researcher (7 years post-PhD including 1 year of career interruption at 1 FTE), I have been able to design and drive various research projects and supervise other team members. This has recently culminated in my first publication as leading author, in addition to 10 first-author and multiple high-impact co-author publications in Immunity, Cancer Discovery, Cell Reports and Clinical Cancer Research.

Sharing a bit about my research journey from my hometown in Brazil, I first arrived in Australia in 2013 when I was granted an international scholarship from the Brazilian Federal government (Science Without Borders). The funding support was to develop my PhD thesis as a collaborative research project between Monash University and FIOCRUZ-RJ, investigating strategies to increase immunosurveillance by T cells in aging. As a postdoctoral researcher, in 2015 I relocated to QIMR Berghofer to support the development of a novel strategy for cancer immunotherapy based on immune checkpoint inhibitors targeting T cells in the tumour microenvironment. During this role, I worked in close collaboration with clinicians from Canada, Italy and Australia conducting clinical trials in the field and the global biopharmaceutical company, Bristol-Myers Squibb.

In 2020, amidst the restrictions and lockdown due to COVID-19, I took on new challenges in both my professional and personal life. In March of that year, I joined Prof. Michael Good's group at Griffith University to translate immunological findings from human subjects and preclinical models of group A streptococcal infection and COVID-19 into results that have directly informed the development of novel epitope-based vaccine technologies and designing of clinical trials. In less than 6 months after starting in this position, I received the news that I was pregnant with my first child. In 2021 I took 6 months of maternity leave and returned to work part-time until April 2022. As one can expect, working full-time in academia while also being a primary carer of a one-year old child has been challenging, and I have used this generous Career Advancement Award from ASI to alleviate some of the burden with childcare costs and getting my career back on track. Thank you again to ASI for this award and the enhanced opportunities it has provided to researchers in the immunology field during challenging times.

Career Advancement Awards

ANDREA NGUYEN

Monash University

My name is Andrea Nguyen. I am grateful to be awarded an ASI Career Advancement Award. This award had allowed me to attend my first ever international conference and to meet with potential collaborators and mentors abroad.

I have recently submitted my thesis entitled "Molecular and Cellular characterisation of novel viral CD8+ T cell epitopes from Influenza and SARS-CoV-2" under the supervision of Prof. Stephanie Gras, Dr. Emma Grant and Dr. Christopher Szeto at Monash University. During my honours and PhD studies I have developed a passion for human immunology research and its application towards the development of improved therapeutics and vaccines against emerging viruses. During my PhD, I focussed on identifying epitopes derived from influenza and SARS-CoV-2, employing immunology focussed techniques to characterise the T cell response towards these novel epitopes. I also utilised biochemistry and structural biology techniques to structurally characterise how T cells bind to these epitopes when presented by human leukocyte antigen molecules.

I recently presented this work at the 33rd European Crystallographic Meeting (ECM33) held in Versailles, France, supported by the ASI Career Advancement Award. Whilst in France, I also had the opportunity to meet with Dr. Lisa Chakrabarti and her team at the Pasteur Institute with whom my lab collaborates with on viral infection and T cell immunology. I was also able to meet with Prof Robert Tampe in Frankfurt, Germany who is the world leading expert on the mechanistic understanding of antigen processing, viral immune evasion, and cellular quality control. His work is highly relevant to my work on T cell immunology as understanding the biochemical pathways to antigen processing is essential to classify potential epitopes for T cell recognition. Additionally, I was also able to include an in-person meeting with a mentor, Dr. Kelly Nguyen, a group leader in Cambridge, UK that included valuable career discussions. Overall, the opportunities offered by this award were invaluable, and greatly enriched my PhD experience and contributed extensively to the future of my career.

Career Advancement Awards

ANNE HUBER

Olivia Newton-John Cancer Research Institute and La Trobe School of Cancer Medicine

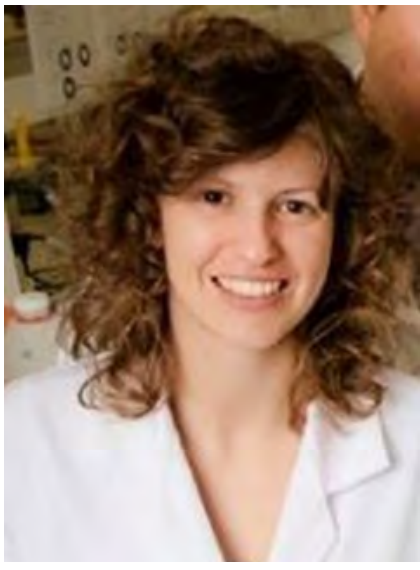
My name is Anne Huber, and I am a final year PhD student at the Olivia Newton-John Cancer Research Institute and La Trobe School of Cancer Medicine. I received my Bachelor of Science (Molecular Biosciences) in Germany from Ulm University in 2016. I then moved to the Netherlands for a Master by Research degree in Molecular Medicine which I obtained in 2018 from the Erasmus University of Rotterdam. In March 2019, I relocated to Australia to start my PhD focusing on gastric cancer and immunotherapy under the supervision of Prof Matthias Ernst and Dr Moritz Eissmann.

At the end of 2020, I had to return to Germany for personal reasons and due to the international border closure of Australia, continued my PhD in the laboratory of our collaborator Prof Markus Gerhard at the Technical University Munich. Unfortunately, despite our best efforts, we could not obtain ethical approval for the animal experiments still needed for my projects. When the border restrictions were lifted for international students, the career advancement award enabled me to relocate smoothly back to Australia in January 2022 and I could start diving back into my experimental animal work at the Olivia Newton-John Cancer Research Institute.

Furthermore, with the help of the career advancement award, I was not only able to attend the American Association of Cancer Research (AACR) Special Conference on Cancer Epigenomics, but also visit my collaborators Prof Stephen Baylin and A/Prof Hariharan Easwaran at the Johns Hopkins University in Baltimore. The conference provided me with an outstanding opportunity to present and discuss my research to fellow scientists in the field. It resulted in an invitation from Dr Chao Lu to visit his lab at the Columbia University in New York City to discuss possible collaboration efforts between his research and mine during my stay in New York City. The networking efforts during this conference also resulted in two invitations to post-doc position interviews.

In addition, the visit in our collaborators' lab in Baltimore was much anticipated because it had to be postponed twice due to the Covid-19 pandemic. I was thrilled to finally meet the lab members in person, especially Hari and Yuba, who virtually helped me to analyse the whole genome methylation sequencing data During my in- person visit, we could go deeper into the specifics of the analysis, and they taught me how to combine the results with RNA sequencing data. We also devised a strategy on how to proceed with the project and how to wrap the story up for a publication.

Taken together, the career advancement award was vital for a successful final year. Not only enabling me to return to Australia to conduct animal experiments and finalizing an



important analysis with the visit of my collaborators, it also provided me with unique networking opportunities for my future career.

Career Advancement Awards

DANIEL ENOSI TULPULOTU

John Curtin
School of Medical Research,
Australian National University

I am a postdoctoral research fellow at the John Curtin School of Medical Research, Australian National University. I completed my PhD in 2018 at the University of New South Wales under the supervision of Prof. Peter White, where I focused on the development of small compound antivirals for the treatment of Norovirus – the leading cause of acute gastroenteritis globally. In 2019, I changed fields and moved to the ANU to work under the supervision of Prof. Si Ming Man in the field of innate immunity and host-pathogen interactions. My current research program covers several themes, including: (1) understanding how host cells recognise and response to intracellular pathogens, (2) understanding the molecular mechanisms of inflammasome activation, (3) harnessing the antimicrobial properties of innate immune proteins and (4) using high-throughput screening technologies to identify novel activations of inhibitors of the innate immune system that could be used to treat infectious disease and cancer.

I am extremely grateful to have received a 2022 Career Advancement Award from the ASI. Awards such as these showcase the incredible commitment from ASI to support the development of early career researchers. This award provided me with the financial support to present my latest research at Cytokines 2022 in Hawaii in September earlier this year. The Cytokines 2022 conference was a fantastic opportunity to share my work performed in Australia with an international audience, establish new collaborations and learn cutting-edge techniques that I can now apply to my research. I presented my work recently published in Nature Communications. In this study, we discovered that a group of innate immune proteins, called guanylate binding proteins (GBPs), target and kill intracellular bacteria to release concealed ligands which can then be detected by the cytosolic immune sensor known as the inflammasome. Importantly, inflammasome activation promotes clearance of the pathogen from the host. Further, we identified the antimicrobial killing region of one of these proteins, GBP1. Importantly, when this region (40 amino acids) was synthesised as a peptide (GBP128-67), it displayed potent antimicrobial activity against the bacteria Francisella novicida and Neisseria meningitidis, clinically important pathogens. Our findings therefore provide evidence that innate immune proteins such as GBPs are a source of antimicrobial peptides that can be used to develop novel therapies to help combat the growing issue of antimicrobial resistance. I would like to sincerely thank the ASI for supporting my professional development as an early career investigator.

Career Advancement Awards

DEMETRA S.M. CHATZILEONTIADOU

La Trobe Institute for Molecular Science,
La Trobe University,

I am a postdoctoral researcher at La Trobe University in Prof Stephanie Gras's laboratory. I graduated with a Bachelor of Molecular Biology and Genetics, at the Department of Molecular Biology and Genetics, Democritus University of Thrace in Greece, and moved to the University of Thessaly in Greece to do my Master of Science on Molecular Biology and Genetics applications-diagnostic markers, in the Structural and Functional Biochemistry laboratory, at the Department of Biochemistry and Biotechnology. Following my master's degree, I completed my doctoral studies performing biochemical studies on human Angiogenin under the supervision of Prof. Demetrios Leonidas. In 2017 I was awarded an IKY Fellowship as a research fellow. At the end of 2017 I moved to Australia to work at Monash University, within Prof Jamie Rossjohn's laboratory. I joined Prof. Stephanie Gras's newly established group at BDI Monash University in 2019, and in January 2021, the team relocated to the La Trobe Institute for Molecular Science (LIMS) at La Trobe University.

I am currently working on the field of anti-viral immunity using multisdisciplinary approaches, including biochemistry, molecular biology, crystallography and cellular/functional assays, in order to understand the immune system actions when facing with viral infections. I have mainly studied two viruses: HIV and SARS-CoV-2. My work on the HIV virus, focuses on individuals that control HIV infection and delay disease progression, something that is associated with the expression of specific "protective" human leukocyte antigen (HLA) molecules and their associated potent T cell responses. I have elucidated significant differences between controller and non-controller individuals by investigating their T cell responses at the molecular level, including the strength and functionality of responses to the specific HIV-derived epitopes as well as the determination of the T-cell receptor (TCR) repertoire. I have also solved the crystal structures of the HLA molecules presenting the HIV peptides of interest as well as two complexes of an HLA-peptide bound to a TCR. The importance of the crystal structures lies in the 3D information of the way in which the T cell "sees" the peptide bound on the HLA molecule, revealing the molecular details of functional but also molecular features. The link between HIV control and T cell function, if clearly understood, can be harnessed to manipulate this protective immunity for future vaccines or therapeutics, to reproduce a HIV controller-like response.

Part of this work including the first crystal structure of a T cell receptor recognising the HIV-derived epitope, TW10, in complex with Human Leukocyte Antigen B*57:01 was presented in the ECM33 conference both as a poster and as an oral presentation in the European Young Crystallographers Satellite Meeting as well as in the Pasteur Institute in France as an invited talk. The receipt of the ASI career advancement award, which covered a significant part of this trip, made a significant contribution to my career progression. This generous award was used towards the promotion and dissemination of my research, capitalizing on my current momentum and upwards trajectory. More specifically, it gave me the opportunity to actively participate in this conference and get exposed to the latest research and cutting-edge techniques being used in the structural biology field,

information that I was able to take back to my laboratory at La Trobe University, in Australia. It helped me expand my world-wide collaborative network of esteemed professionals, interactions that are incredibly valuable for an early career researcher (ECR). Furthermore, the opportunity to disseminate my work as an invited speaker at the Pasteur institute in Paris, one of the world-leading institutes in HIV research, was tremendous. Additionally, my visit to the Pasteur Institute let to a great meeting and fruitful discussion with my collaborator, Dr Lisa Chakrabarti, on the publication of our research and the continuation of our collaboration in new research projects. The recognition provided by this award will greatly enrich my ECR post-doctoral experience and contribute extensively to my career development.

Career Advancement Awards

EMMA VICTORIA PETLEY

Epworth HealthCare

I was incredibly lucky to receive an ASI International Travel Award in 2020 whilst undertaking my PhD. Originally, I had planned to use the scholarship to help me attend a conference in Europe and then do some laboratory tours in the hunt for a post-doctoral position. However, COVID-19 had other ideas. Due to travel restrictions the Euro-tour dream never took off and instead I finished my PhD during the lockdown – having zero social distractions actually really helped with the writing of my thesis! After finishing my PhD, I decided I wanted to explore something new and exciting and became a clinical research coordinator at Epworth HealthCare. The research trials I were involved with all focused on haematological malignancies, which was a whole new area of research for me. I quickly became fascinated with the world of blood cancer and heard about the Blood 2022 Conference in Sydney.

Blood 2022 is the combined Annual Scientific Meeting for the Haematology Society of Australia and New Zealand, the Australian and New Zealand Society of Blood Transfusions and Thrombosis and Haemostasis Society of Australia and New Zealand. The conference hosted some of the world's leading national and international experts of haematology malignancies and diseases. During the conference I was very fortunate to be exposed to talks and seminars directly related to my current work surrounding haematological malignancies. The talks gave fascinating updates on where we are with treating myeloma, lymphoma, leukaemia and other blood malignancies. Furthermore, I was able to network and foster relationships with other academics, clinicians and scientists. I had an abstract accepted at the conference that showcased one of our research trials at Epworth HealthCare, which involves the successful establishment of a biobank of clinical specimens and patient information from a private hospital, which is now ready for collaboration with other academic institutes.

I am very thankful to ASI for the award as it allowed me to attend this conference and present my work. I would like to take this opportunity to thank ASI for being flexible with the travel grant in-light of the COVID-19 pandemic travel restrictions. It was honestly so incredible to finally attend a conference in person; everyone was clearly buzzing about it too.

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Miltenyi Biotec

Career Advancement Awards

HUI-FERN KOAY

Peter Doherty Institute for Infection and Immunity, The University of Melbourne

I am a postdoctoral fellow in Dale Godfrey's laboratory at the Department of Microbiology and Immunology, and the University of Melbourne. While the majority of our understanding on T cell immunity stems from peptide-reactive CD4+ and CD8+ T cells, my research focuses on unconventional T cells that do not recognise peptides, in particular Natural Killer T (NKT), Mucosal Associated Invariant T (MAIT), and gamma-delta T (gdT) cells. My work actively contributes to understanding how these cells develop and function, with a focus on the control factors that govern their thymic generation and differentiation.

It was an honor to have received the 2019 iteration of ASI Postdoctoral International Travel Award to fund my attendance to AAI2020 (American Association of Immunologists) in Honolulu, Hawaii, where I was scheduled to present in the AAI-Thermo Fisher Trainee Achievement Award session. Due to the sequence of events in 2020-2021 that is familiar to every single one of us, I am very grateful to ASI to have deferred the usage of the award to the end of 2022.

My first post-pandemic travel presented the perfect opportunity to utilise this fund and support my work at Lydia Lynch's laboratory in Brigham and Women's Hospital, Harvard Medical School (HMS). Lydia and I first got to know each other virtually when she was studying the role of NKT cells in obesity, and approached Dale and I for a collaborative experiment to characterise adipose tissue in NKT cells. As the years fast forward and we progressively uncover more insights into the functional diversity of unconventional T cell subsets, we maintained similar keen interest in the interplay and common factors that regulate these cells. I eagerly accepted Lydia's invitation in 2022 to explore a project and arranged a position as a Visiting Scholar. Working in Boston has felt very much akin to a pilgrimage to the hub of scientific research and biotech, and it has highly enriched my scientific development at this juncture of postdoctoral growth. Beyond stimulating discussions within the lab, some highlights include exposure to the HMS seminar series and joining the Lynch lab retreat in New Hampshire (photo attached).

During this period I also took the (shorter) journey to Gothenburg, Sweden, to present at our field's biennial conference, CD1-MR1 2022. It was an excellent, timely meeting to reunite leaders of the field and get up to date with research from these international groups. As mentioned by Dr Sidonia Eckle in last month's newsletter, along with Dr Nick Gherardin, we took the opportunity to co-chair the

next CD1-MR1 meeting, slated to be held in Australia in 2024. We look forward to hosting all who work in the field and also welcome any new interests from researchers exploring all things unconventional T cells and antigen recognition.

I would like to thank ASI for their ongoing endorsement for researchers at every level, and in this case supporting my early career development as I expand an international collaborative network. The flexibility and patience of the ASI governance team in extending or repurposing awards have helped to reinvigorate in-person scientific crosstalk that was sorely missing during the period of travel restrictions. As ASI actively creates and adapts their initiatives, they foster incredible support for the rich immunology community, and I continuously recommend them to the graduate students we supervise and mentor.

Career Advancement Awards

LAKSHANIE C WICKRAMASINGHE

Central Clinical School, Alfred Research Alliance, Monash University and Kennedy Institute of Rheumatology, The University of Oxford

I am deeply humbled to have received the ASI Career Advancement Award, which has given me the opportunity to travel to the United Kingdom and learn new scientific techniques relevant for my career advancement as a postdoctoral researcher in the field of ocular immunology, at the Kennedy Institute of Rheumatology, The University of Oxford.

In 2021, I completed my PhD at the Department of Immunology and Pathology at the Central Clinical School, Monash University, under the supervision of A/Prof Margaret Hibbs, Dr Evelyn Tsantikos and A/Prof Peter van Wijngaarden (Centre of Eye Research Australia). During my doctoral studies, I focused on exploring the immune mechanisms that underpinned the development of Bronchopulmonary Dysplasia (BPD), a debilitating neonatal lung disease, which affects at-risk preterm babies (born < 28 weeks of gestation, weigh < 1000 grams) receiving intensive respiratory support. Interestingly, a large proportion (~60 - 71%) of preterm babies that have BPD frequently develop Retinopathy of Prematurity (ROP), a severe ocular condition, which is characterised by damage to the developing blood vessels in the retina.

Both diseases can lead to long-term complications such as chronic obstructive pulmonary disease and blindness, in the lung and eye, respectively. The consistent co-presentation of BPD and ROP in preterm infants in the clinic, and the limited research exploring these two diseases in parallel, motivated me to investigate whether there were shared disease pathways occurring in the lung and eye. In my first-author manuscripts1, 2, we identified that inflammatory factors, in addition to angiogenic and oxidative processes, were essential to the development of both BPD and ROP. In addition my first-author review3 in the ASI journal, Clinical and Translational Immunology, critically examined the current state of knowledge of immunological dysregulation in BPD and ROP, and the major research gaps in each field. This initial research into the eye made me curious about the immune responses that were occurring in the healthy and diseased eye, which is commonly considered immune privileged site. Therefore, my PhD experience inspired me to pursue a research career in ocular immunology, to better understand how inflammatory diseases develop in the eye.

Here, at The University of Oxford, as a postdoctoral researcher, I am learning a range of advanced histology and imaging techniques such as RNAscope, Multiplex Cell Dive Imaging and LaVision Light Sheet Microscopy, to dissect the cellular biology of uveitis, an inflammatory ocular condition, which affects 2 million people of working age (20 – 50 years) worldwide and has poor treatment outcomes4. I hope that by implementing these new tools to better understand how uveitis develops will lead us to the identification of new disease targets for therapeutic interventions, which is essential for translating potential medicines from the laboratory to the clinic.

Bibliography:

1. Wickramasinghe, L.C. et al. Lung and Eye Disease Develop Concurrently in Supplemental Oxygen–Exposed Neonatal Mice. The American Journal of Pathology 190, 1801-1812 (2020).
2. Wickramasinghe, L.C., Van Wijngaarden, P., Johnson, C., Tsantikos, E. & Hibbs, M.L. An Experimental Model of Bronchopulmonary Dysplasia Features Long-Term Retinal and Pulmonary Defects but Not Sustained Lung Inflammation. Frontiers in pediatrics 9 (2021).
3. Wickramasinghe, L.C., van Wijngaarden, P., Tsantikos, E. & Hibbs, M.L. The immunological link between neonatal lung and eye disease. Clinical & Translational Immunology 10, e1322 (2021).
4. Guo, X., Chen, Z. & Xing, Y. Immune-Mediated Uveitis and Lifestyle Factors: A Review. Ophthalmic Res 64, 687-695 (2021).

Career Advancement Awards

LIEKE VAN DEN ELSEN

University of Western Australia

I am a Research Fellow in the Immunology and Breastfeeding team at The University of Western Australia and the Telethon Kids Institute. Currently I'm finalizing my research revealing the importance of the diet at birth for healthy growth and immune development and have a keen interest in the role of the gut microbiota in this project.

I was extremely grateful to receive an International Travel Award in September 2020. Receiving this award was a great boost for my motivation during the challenging times at the onset of the COVID-19 pandemic. I would like to thank ASI for their understanding and providing flexibility to accommodate the global uncertainty, as the conference and lab visits I had originally planned were unfortunately cancelled.

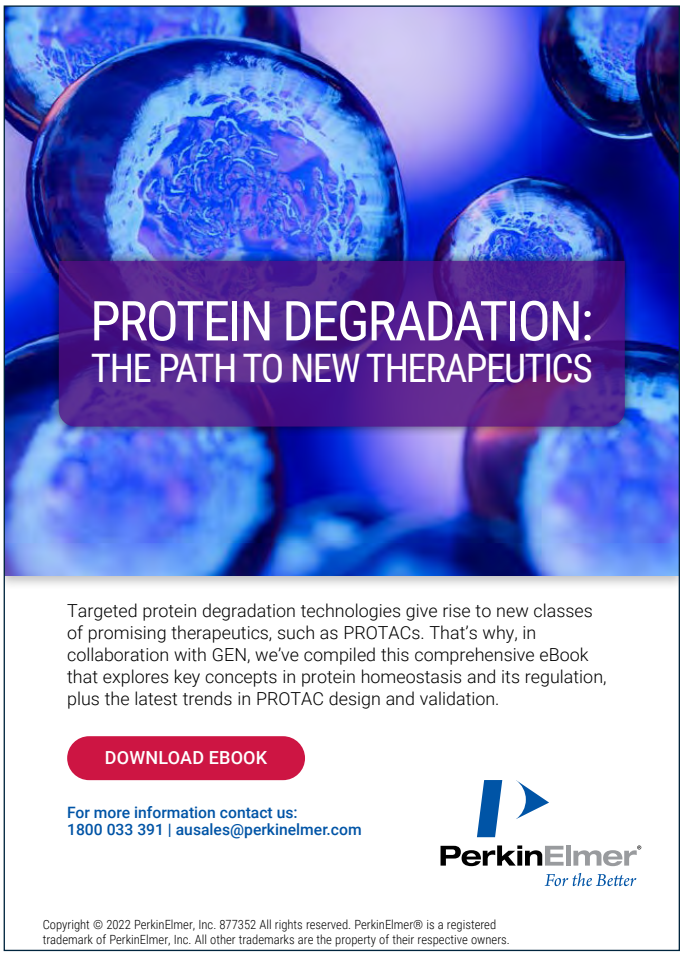
This year I was finally able to use the funds from the award to attend the Society for Mucosal Immunology's 20th International Congress of Mucosal Immunology (ICMI), held in Seattle, USA. It had been a long time since I attended an international in person conference, and I was very appreciative for this opportunity. This year's conference was excellent with a highly engaging scientific program. ICMI 2022 provided a great way to learn about cutting-edge research in the field of immunology at mucosal surfaces and provided several opportunities for face-to-face networking with peers, allowing for exchanging and developing ideas.

One of the highlights of the conference was the Society for Mucosal Immunology's Young Investigator Member Reception, which was hosted and sponsored by the Benaroya Research Institute where Professor Steven Ziegler runs his laboratory. This reception provided a brilliant way to foster relationships with peers. Although online meetings have been an important way to stay in touch with colleagues over recent years, I have truly missed these in person networking events.

The meeting also provided a valuable opportunity to engage with world leaders in immunology such as Yasmine Belkaid, Mathias Hornef and Kathy McCoy. The stimulating discussions with these leaders were extremely impactful and beneficial towards my current research project. Meeting these experts and hearing their insights would not have been possible without the financial support of ASI.

I would like to thank ASI again for their support and significant contribution towards advancing my research and my career. To find out more about my current work, check out www.telethonkids.org.au/contact-us/our-people/e/lieke-van-den-elsen/.

I hope to finalise my project in the coming months and will be on the lookout for new challenges for next year. Please get in touch with new opportunities!



Career Advancement Awards

LOUISE ROWNTREE

Department of Microbiology and Immunology, The University of Melbourne

I am very grateful to have been awarded the ASI Career Advancement Award. I am an Early Career Researcher in the Department of Microbiology and Immunology at the Peter Doherty Institute for Infection and Immunity, University of Melbourne, where my work focuses on dissecting anti-viral responses in high-risk groups.

I completed my PhD at Monash University on human cross-reactive CD8+ T cells in viral infections, before joining Professor Tony Purcell's Laboratory (Monash University) where I identified peptides recognised by cross-reactive T cells. I moved to Professor Katherine Kedzierska's Laboratory in 2019 and focused on identifying immunogenic influenza CD8+ T cell epitopes relevant to Indigenous Australians. When the COVID-19 pandemic began in 2020, I broadened my focus to include SARS-CoV-2 immune responses and other vulnerable populations. My work now centres on understanding anti-viral responses in high-risk groups, including Indigenous Australians, cancer patients, children and pregnant women, with a particular emphasis on T cell epitope identification and dissecting key features of T cell responses associated with severe disease outcomes. This year, we have compared SARS-CoV-2 epitope-specific memory T cell and Spike-specific B cell responses in children and adults directly ex vivo following infection (Rowntree et al Immunity, 2022), as well as investigated broad cellular and humoral immune responses to SARS-CoV-2 infection in unvaccinated pregnant and non-pregnant women (manuscript in revision).

I used the ASI Career Advancement Award to visit Professor Paul Thomas's Laboratory based at St Jude Children's Research Hospital in Memphis, Tennessee and attend Keystone Symposium on Viral Immunity: Basic Mechanisms and Therapeutic Applications in Colorado. Prof Paul Thomas is an international expert in viral immunology, specialising in T cell memory in viral infections and cancer, and the Thomas laboratory have analysed single-cell immune populations to the transcriptome level following influenza and SARS-CoV-2 infection/vaccination and cancer. Under the guidance of the Thomas Laboratory, we continued our investigations into COVID-19 during pregnancy, by performing cutting-edge single-cell RNA-seq experiments on a unique birth sample cohort of matched maternal blood and placenta from convalescent COVID-19 patients. With analysis of this unique dataset, we anticipate identifying novel genes that define optimal versus perturbed antiviral immunity during COVID-19 in pregnancy. We had a fabulous time in Tennessee, where in addition to performing some excellent science, we met Memphis royalty in the form of Priscilla Presley and tried some local food, including soul food, fried catfish, and ribs.

I also had the privilege of attending the Keystone Symposium on Viral Immunity: Basic Mechanisms and Therapeutic Applications, which was postponed three times during the pandemic. The Keystone Symposium offered a unique opportunity to present and discuss our findings, gather insights from the latest research, build on established relationships as well as initiate new collaborations. The conference took place in the picturesque surrounds of the Rocky Mountains during summer and was attended by scientists from around the world. While much of the program focused on SARS-CoV-2 research, other viruses such as influenza viruses, herpesviruses, HIV and flavivirus also featured. I was able to present our research comparing epitope-specific T and B cell responses in children and adults following SARS-CoV-2 infection.

I would like to immensely thank ASI for the Career Advancement Award which allowed me to attend this premiere international conference, as well as grow my technical skills by learning a cutting-edge technology. My time in the USA was of great benefit, allowing me to gain exposure to the latest ideas, results, and techniques.

Career Advancement Awards

RASA ISLAM

Cartherics Pty Ltd/ Australian Regenerative Medicine Institute (ARMI), Monash University

I am a final year Monash University PhD student enrolled through ARMI and undertaking my research in the Translational Research Program at Cartherics Pty Ltd. Cartherics is an immunotherapy based commercial clinical translation company in Melbourne, Australia with the mission of developing novel, allogeneic and genetically modified immune therapy products for the treatment of cancer based on immune killer cells such as Natural Killer (NK) cells and T lymphocytes. Cartherics is the recipient of a Collaborative Research Centre Project Grant (CRC-P) and I am enrolled under the auspices of the Education Program associated with the CRC-P Grant.

I completed my Bachelor of Philosophy (Hons) degree double majoring in Biomedical Science and Pharmacology at the National Centre for Asbestos Related Diseases at the University of Western Australia (NCARD, UWA) with first class honours. My project investigated the importance of CD4+ and CD8+ T lymphocytes in a curative response of anti-cancer drug Cyclophosphamide.

My additional research experience includes a Cancer Council WA funded vacation research project at NCARD, UWA, the Future Scientist International Summer Camp at the University of Science and Technology, China and 2nd and 3rd year research placements within the School of Medicine and Pharmacology, UWA.

Throughout my undergraduate training, I became increasingly fascinated by the growing field of adoptive cellular immunotherapy for treating cancers and the role of stem cells in generating these 'living drugs'. Simultaneously, I also became very passionate about bench-to-bedside medical research and a career in the biotechnology industry. To pursue my goals, I successfully applied for a Monash Graduate Research Scholarship to undertake a PhD at Cartherics which I commenced in 2019. At Cartherics I am investigating stem cell derived immunotherapy under the supervision of Prof. Alan Trounson, Dr. Richard Boyd, Dr. Vera Evtimov, Dr. Nicholas Boyd and Dr. Runzhe Shu. We are engineering select receptors into stem cells using CRISPR/Cas9 editing and differentiating them into functional NK cells that target TAG-72 antigen with the aim of treating aggressive ovarian cancers. Utilising the combined characteristics of unlimited self-renewal and lymphoid lineage commitment of stem cells, as well as the antigen specificity provided by the CRISPR/Cas9 editing, this product has the potential to be 'off-the-shelf', highly defined, cheap and transplant compatible with multiple cancer patients.

During my academic and leadership journey, I was fortunate to be sponsored by Monash SPARK to participate in the Biomedical Innovation and Entrepreneurship course hosted by SPARK Oceania in 2021. I have actively contributed to the delivery of the ASI annual meeting 2022 and have been selected for leadership positions within Hudson Institute Student Society (2021) and Monash Young Medtech Innovators (2020). As a science communication enthusiast, I received an award for my oral presentation at the 11th Annual Victorian ASMR student research symposium (2020) and was awarded the most outstanding oral presentation, Monash Young Medtech Innovator's Symposia (2019).

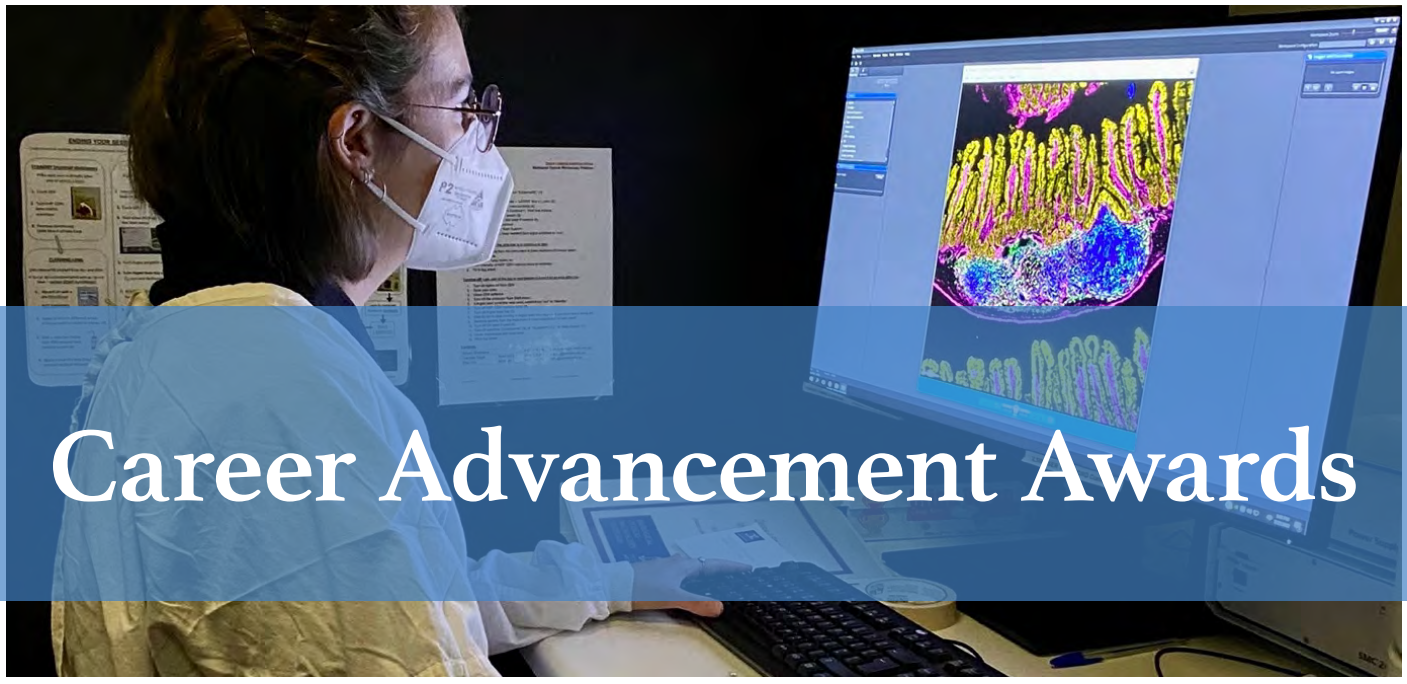
The ASI Career Advancement Award has been immensely helpful with overcoming disadvantages associated with COVID restrictions in Victoria. These restrictions disrupted data collection, and consequently conference presentations and networking in the previous years of my PhD studies.

I was fortunate enough to utilise the award funds to visit Seattle USA, an emerging biotech hub, where I was hosted by Associate Professor Jarrod Dudakov who leads the program in Immunology Clinical Research Division and is a member of the Integrated Immunotherapy Research Center at the prestigious Fred Hutchinson Cancer Research Center (FredHutch). The Dudakov lab specialises in the study of thymus and regenerative immunology and they are key players in the translation and commercialization of cancer

immunotherapy research. During my visit, I presented my work to the Dudakov lab group, attended the Dr. E. Donnall Thomas Symposium held at FredHutch with presentations from pioneers in the field of stem cell therapy and discussed career opportunities with multiple principal investigators at FredHutch.

My visit has enabled me to network with some of the leaders in my field of research and the discussions I had with them regarding my current and proposed research activities will be invaluable in facilitating the completion of my PhD candidature. This award will also support my membership of the International Society for Stem Cell Research, enabling me to develop and intercalate stem cell and immunotherapy research networks.

I am sincerely grateful to the ASI for the Career Advancement Award.



Career Advancement Awards

SARAH SANDFORD

The Peter Doherty Institute for Infection and Immunity, Murdoch Children's Research Institute

Sarah Sandford started her research career in New Zealand, where she completed a bachelor of biomedical sciences with Honours at the University of Otago with A/Prof Joanna Kirman. In her honours project she was examining memory T cells in mice after vaccination with prototype mycobacterial vaccines. This project really drove my interest in memory T cells and introduced me to the fascinating subset of tissue-resident memory T cells. Thus, I moved over to Australia to join Professor Scott Mueller's laboratory at the Peter Doherty Institute for Infection and Immunity.

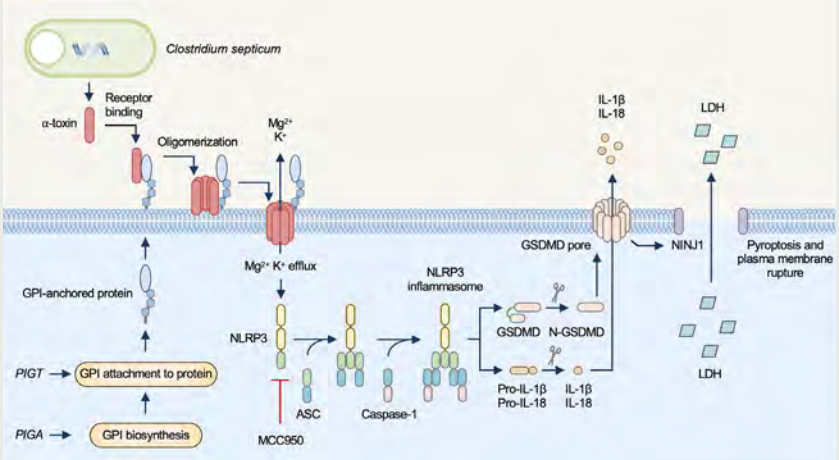
Research in the Mueller lab is focused on examining immune responses to both acute and chronic viral infections. A particular emphasis on T cell responses and interactions with antigen presenting cells and lymphoid tissue stromal cells is currently driving the group, as well as an interest in neuro-immune interactions.

In Sarah's PhD, she used flow cytometry and confocal microscopy to investigate the formation of tissue-resident memory T cells in the murine intestines after viral infection. Primarily the aim was to compare the small intestine, where TRM formation and maintenance is well-studied, to the large intestine, which differs significantly in structure to the small intestine and where less is known about T cell dynamics and memory formation after infection. Overall, she was able to highlight the reduced capacity of the large intestines to support the formation and maintenance of immune memory compared to the small intestine after infection. She found that memory T cells in the large intestine after acute LCMV infection differed phenotypically to those in the small intestine, with a unique subset resembling both resident and circulating T cells (expressing the cell surface protein Ly6C) resulting in part from limiting TGFβ signals in the large intestine. CD69intLy6C+ T cells in the intestines accumulated in the tissue following FTY720 treatment (interrupts T cell circulation), indicating that different levels of CD69 and Ly6C expression were associated with different circulatory ability of the cells.

Due to the pandemic, Sarah was unable to use her career advancement award to attend the International Congress of Mucosal Immunology conference as was originally planned. However, she was able to use the award to fund her final few months as a PhD

student to complete her thesis before starting a postdoc position in Melbourne. She is now working at the Murdoch Children's Research Institute as a member of the Infectious Diseases group under Prof. Nigel Curtis and Dr. Nicole Messina. This group has focused on the immunological basis of the off-target effects of the BCG vaccine in children, as well as having recently conducted a multi-national clinical trial investigating whether BCG vaccination in adults protects against COVID-19 infection (BCG vaccination to Reduce the impact of COVID-19 in healthcare workers; BRACE trial).

If you are interested in Sarah's PhD work, she will be presenting it at this year's ASI conference in Melbourne.



Mechanisms of *C. septicum* infection leading to α-toxin-induced activation of the NLRP3 inflammasome.

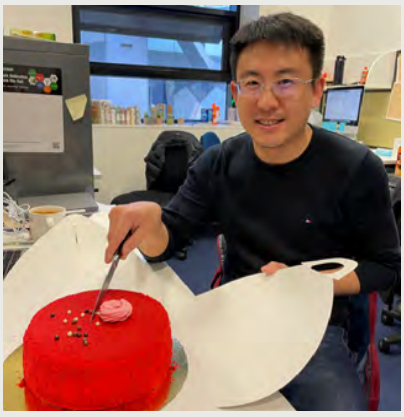
Carer Awards

WEIDONG JING

John Curtin School of Medical Research, Australian National University

I am an early career postdoctoral researcher interested in studying innate immunity, inflammation, and cell death signalling pathways. I received my PhD from the Australian National University (ANU) in 2020. In early 2022 I completed my postdoctoral training in professor Si Ming Man's lab at the John Curtin School of Medical Research ANU, where I studied the role of inflammasome and pyroptosis pathways in host defence against infectious diseases and cancer.

I received the ASI Carer's Award - COVID Support in December 2020, which was able to help cover some of my childcare expenses. There is no doubt that the COVID-19 pandemic has had a significant impact on my life. When the pandemic started, my daughter (Chloe Jing) had just turned two years old. Due to border policy restrictions, my parents and parents-in-law could not come to Australia to support caregiving. In addition, ANU experienced two lockdowns during the outbreak, and I had to work from home.



As you can imagine, for wet-lab-based research, this substantially impacted my project's progress and my productivity.

Fortunately, with support of family and friends, I finally overcame that difficult period. I attended the year-long postponed PhD graduation ceremony in 2021 (Photo 1-PhD Graduation). With the support of my postdoctoral supervisor and colleagues, I have also made a breakthrough in my research project on how infection of Clostridium septicum, an important human pathogen causing gas gangrene and sepsis, triggers inflammation and cell death. Using CRISPR/Cas9 technology, I successfully generated an isogenic mutant strain of C. septicum with the deletion of its major virulence factor, α-toxin (Photo 2-Celebration of C. sept. mutant). I demonstrated that α-toxin drove the host inflammatory response by triggering activation of the NLRP3 inflammasome complex. I further showed that blocking this inflammasome pathway could effectively prevent C. septicum infection from causing sepsis and death in mice (Figure 1-C. sept. α-toxin activates NLRP3). This work was published in Science Immunology in May 2022 (DOI: 10.1126/sciimmunol.abm1803).

I will be moving to the University of Cambridge to undertake a Research Associate position to further my academic career. There I will continue my research in inflammasome biology and learn cutting-edge imaging techniques such as cryo-electron tomography to explore the molecular mechanisms of how inflammasome sensors signal in cells. Finally, thanks again to the ASI for its generous Carer's Award that supported my walk through the pandemic. I hope more members will benefit from different ASI awards and support to advance their careers.

Carer Awards

NAOMI TRUONG

Centre for Virus Research, Westmead Institute for Medical Research

I am a Postdoc in Prof Tony Cunningham's HSV Immunology group in the Centre for Virus Research at the Westmead Institute for Medical Research, and an honorary Postdoctoral Fellow at the Faculty of Medicine and Health, the University of Sydney. In our lab, we're interested in unravelling pathways of HSV infection and the initial immune response in human skin and genital mucosa. I graduated from my PhD in 2017, which focussed on the responses of human NK cells to a novel lipopeptide vaccine candidate against HSV. My Postdoc has been focussed on understanding the mechanisms of the HSV antigen relay that we observed between HSV infected epidermal Langerhans cells (LCs) and subsets of dermal DCs that take up emigrating infected and dying LCs. I also co-supervise and mentor several students who contribute to various aspects of this work. In our investigations of HSV infection of LCs, we discovered that apart from LCs, a newly discovered subset of DC (that we termed Epidermal (Epi)-cDC2s) also resides in healthy human epidermis. Published just last year (2021) in PLOS Pathogens, we found that Epi-cDC2s were more susceptible to HSV-1 infection than LCs, that both cell types underwent apoptosis in response to infection, and that the virus entered the two cell types via differing entry pathways. It was this work that I presented at the NSW-ACT Joint Branch meeting in August.

I am also a mother to two young children; my daughter is age 3, and my son was 9 months old at the time of this year's Branch Meeting. Immediately prior to returning from maternity leave in both 2019 and this year, I attended the NSW-ACT Branch Meetings. These meetings assisted me in getting up to date on the latest research by my students, colleagues, collaborators, and others in the local immunology community. I also had the opportunity to present my own work this year that I had not had an opportunity to present at any conferences in the previous two years due to COVID. In both 2019 and 2022 I had a breastfeeding infant, and it was not ideal for me to be away from them overnight. The best way for me to attend the Branch meetings was for my husband and children to come with me. My husband cared for our children during the meeting, and I fed my baby in-between sessions. I am hugely thankful to ASI that I could be a recipient of the Carer's Grant both times, as it covered the additional meal package and room upgrade costs associated with my family staying at the accommodation with me.

Having been on maternity leave for substantial portions of 2019 and 2022, I have not yet established myself as an independent ECR, which is something that I hope to achieve in the near future. One aspect of career progression that is critical is strengthening current and establishing new collaborations, and I recognise that being an active member of ASI is an important means to do that. Thank you, ASI, for recognising and supporting scientists who also have family caring responsibilities.

Carer Awards

SUMAIRA HASNAIN

Mater Research Institute,
University of Queensland

I lead the Immunopathology Group at Mater Research Institute -The University of Queensland. I was the first to demonstrate that immunity can modulate protein production in secretory cells in infection and chronic diseases. My long-term vision has been to characterise these novel immune factors and manipulate them therapeutically using pre-clinical models of immune-driven pathologies. I hold a patent for targeted immunotherapy in metabolic disease which has led to the formation of a spin-off company, Jetra Therapeutics, and venture capitalist funding. I have been awarded more than $6 million in competitive funding and has won 19 awards to date, including the Gordon Ada Award from ASI in 2021.

Conferences can be lifelines at times in academia, allowing you to connect with your peers, gain critical advice on your work, allowing to develop new collaborations and learn about cutting-edge technology. Most of all though, in my opinion, it makes your work visible to the people in your field.

As anyone who attends conferences knows, being a primary carer of children adds a layer of complexity to traveling even if it is for one night. But as a parent living thousands of miles away from family in the UK and a husband that frequently travels for work (4-6 months/year), this is especially difficult for me. After having my first child in 2014, it took me a while to comprehend that those of us that are primary carers cannot always access the same opportunities as others. Being a mother and a scientist are both demanding jobs, and at times it was hard to find the balance between the two. I can of course take my kids with me; however, experience has taught me that this is a distraction that makes it harder to maximise on the opportunity that the conference provides.

With the support of the ASI Carer's Award, I was able to attend the 21st Brisbane Immunology Group (BIG) meeting at the Gold Coast, with 6 members of my group. With 1 oral presentation and 4 posters presented by the Immunopathology Group, we gained significant exposure and feedback at the conference, established new collaborations, and discussed data with old collaborators. Moreover, the provided the team (including myself) with an opportunity to increase engagement and motivation outside of work. Thank you, ASI for continuing to support parents in STEMM.

The IUIS Corner

Joanne Reed | IUIS Coordinator

Welcome to our final edition of IUIS Corner for 2022

The 18th IUIS General Assembly will take place virtually on 20 November 2022, where the election results will be announced and we will welcome a new 2022-2025 Executive Committee and Council. The election results will be made public on the IUIS website shortly after the General Assembly.

IUIS Webinar – Professor Kate Schroder

ASI member Kate Schroder recently featured on the IUIS Webinar series discussing "Inflammasome signalling: from fundamental biology to new therapeutics". Watch on demand here https://iuis.org/webinars-on-demand/kate-schroder-inflammasome-signalling/

The 18th IUIS International Congress of Immunology

The IUIS International Congress of Immunology will be held in Cape Town, South Africa on 27th November for 5 days. Abstract submission and early registration open in January 2023.

International Day of Immunology 2023

The 2023 Day of Immunology theme is 'Immunology Talks to Public Health' and will be dedicated to demonstrating how our understanding of human immunology can improve public health. Day of Immunology is held on the 29 April to increase global awareness of the importance of immunology. Join the global effort and start planning your event early.

IUIS Committee Updates

Education Committee

Not only are in-person conferences back but so are the immunology schools! The IUIS Education Committee has been busy organising training opportunities with the Benin Immunology Society, Immuno-Argentina and Immuno-Zambia.

Inborn Errors of Immunity Committee

The IUIS Inborn Errors of Immunity have published their latest updates on the monogenic causes of diseases of the immune system in the Journal of Clinical Immunology. Read more here: https://iuis.org/activities/iei-newsletter-contribution-september-2022/

Quality Assessment and Standardization Committee

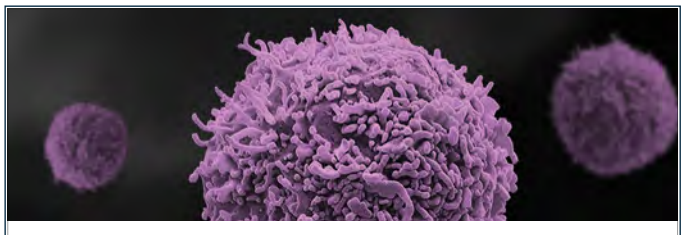
Many of us use anti-nuclear antibody (ANA) immunofluorescence assays as a readout of autoimmunity in patients or animal models. The IUIS Quality Assessment and Standardization Committee has provided a new consensus classification of Hep-2 immunofluorescence patterns with example images and information on the immunological and clinical significance of over 30 patterns. https://iuis.org/activities/qas-newsletter-contribution-september-2022/

Joanne Reed

DID YOU KNOW?

IUIS has compiled a list of funding opportunities from around the world in one place https://iuis.org/funding-opportunities/?

Here you can find more than 30 funding organisations that support international applications for projects and individuals.



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Sustaining Member Publications

BD

1. **BD CellView™**
   Image Technology Cell View BD Biosciences.com

   Schraivogel et al, (2022). High-speed fluorescence image–enabled cell sorting.

   Science DOI: 10.1126/science.abj3013

2. **BD Rhapsody Single-Cell Analysis System and BD FACSAria™ Fusion Flow Cytometry Instruments | BD Biosciences**

   McKenzie et al, (2022). RNA sequencing of single allergen-specific memory B cells after grass pollen immunotherapy: Two unique cell fates and CD29 as a biomarker for treatment effect.

   Allergy https://doi.org/10.1111/all.15529

3. **BD Rhapsody Single-Cell Analysis System Single-Cell Multiomics Systems | BD Biosciences**

   Johansen et al, (2022). Increased SARS-CoV-2 Infection, Protease, and Inflammatory Responses in Chronic Obstructive Pulmonary Disease Primary Bronchial Epithelial Cells Defined with Single-Cell RNA Sequencing.

   Am J Respir Crit Care Med DOI: 10.1164/rccm.202108-1901OC

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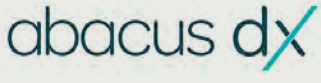
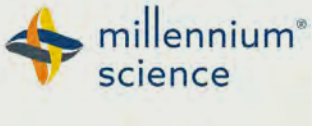
MACSima -

MACSima™ Imaging System | MACSima Imaging System | Ultra high content imaging | MACS Imaging and Microscopy | Products | Miltenyi Biotec | Australia

1. Pfeifer, R. *et al.*(2022) A multimodal imaging workflow for monitoring CAR T cell therapy against solid tumor from whole-body to single-cell level. Theranostics 12(11): 4834-4850DOI: 10.7150/thno.68966
2. Kinkhabwala, A. *et al.*(2022) MACSima imaging cyclic staining (MICS) technology reveals combinatorial target pairs for CAR T cell treatment of solid tumors. Sci Rep 12(1): 1911DOI: 10.1038/s41598-022-05841-4
3. Lewis, S. M. *et al.*(2021) Spatial omics and multiplexed imaging to explore cancer biology. Nat. Methods 18(9): 997-1012 DOI: 10.1038/s41592-021-01203-6

Thanks to our Sustaining Members





Australia and New Zealand Society for Immunology Inc.

The aim of the ASI is to encourage and support the discipline of immunology in the Australia and New Zealand region.

The Australian and New Zealand Society for Immunology Incorporated (ASI) was created by the amalgamation in 1991 of the Australian Society for Immunology, formed in 1970, and the New Zealand Society for Immunology, formed in 1975. The aim of the Society is to encourage and support the discipline of immunology in the Australasian region.

It is a broadly based Society, embracing clinical and experimental, cellular and molecular immunology in humans and animals. The ASI provides a network for the exchange of information and for collaboration within Australia, New Zealand and overseas. ASI members have been prominent in advancing biological and medical research worldwide. We seek to encourage the study of immunology in Australia and New Zealand and are active in introducing young scientists to the discipline.

The ASI membership directory, listing all current members of the Society is available at http://www.immunology.org.au/asi-membership-directory/

To renew your membership, click here. Please note that if you have not held a membership within the last 2 years, you will be prompted to provide 2 Nominators willing to support your application.

REMEMBER:
Renew your
ASI membership

ASI Member Benefits include:

- Career Advancement Awards
- Bursaries to attend ASI's Annual Meeting
- New Investigator and Student Awards at ASI Annual Meeting
- ASI Women's Initiative to support female scientists
- ASI Member's benefits publishing in ASI Journals ICB and CTI
- Special offers from ASI's Sustaining Members
- Full access to the journals Immunology and Cell Biology, Clinical and Translational Immunology

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