



NEWSLETTER

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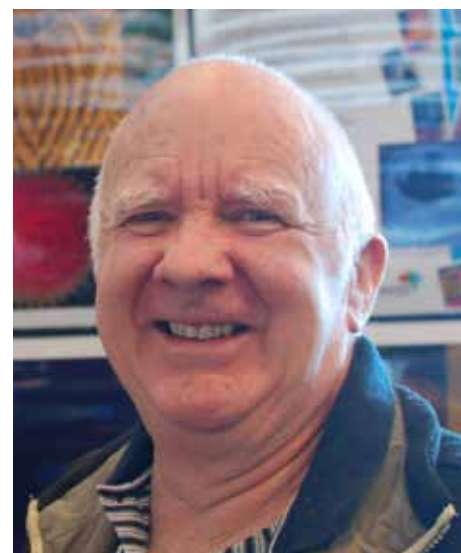
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Dear Members,

Firstly, and on behalf of the Executive and the Society, we wish you all a very pleasant and relaxing Festive season and eagerly anticipate an exciting year for 2017. I make mention of some of the many events and reports featured in the newsletter.

It was a grand event. **ICTMM 2016 exceeded all expectations** in content, standards of presentations and attendance. We congratulate the Australasian Society for Infectious Diseases (ASID) for a splendid partnership, to be extended with joint events in future. We were especially and constructively entertained by the range of talented ASP Invited Lecturers: Professors Russell Stothard, Peter Crompton and Maria Dolores Bargues together with IJP invited speakers, Dr Thomas Romig and Professors Leann Tilley and David Fidock. The ASP & ASID Early Career Researcher Breakfast event was heavily attended and once again, was an engaging, informative and productive networking event. Our congratulations go to all of the ASP student and ECR prize winners (featured in this epistle). Leading up to the conference and for its ultimate success, really special thanks for tireless and prolonged effort must go the Management Committee (Denise Doolan, Kathy Andrews, David Looke, James McCarthy and Paul Griffin). Naturally, the venue was enhanced by the proximity of our ASP-sponsored exhibition, the world-class Bayer- Berlin museum exhibition **"Parasites life undercover"** at the Queensland Museum, coupled with ASP's own **"Parasites, People, Art"** collaboration <http://parasite.org.au/outreach/gula-guri-mayin/>. Just for your holiday agenda, this runs until January 2017, and we are reliably informed that over 100,000 visitors have viewed it so far!

Special mention goes to our own very deserved, Bancroft-MacKerras medal



(BMM) winner, Professor Denise Doolan, for her outstanding contributions to the ASP as well as vaccination initiatives and correlates of immunity in malaria. If you missed her engaging BMM Oration in our special session at ICTMM, then I am afraid that it is not available on podcast, but you may get a pdf on request!

However, our man on the ground at ICTMM, fixing most of the operational hassles was **Malcolm Jones**, who must be congratulated for his sustained efforts and enthusiasm and for much of the success of ICTMM. **An amazing effort Malcolm-thanks so much from all of us.**

During ICTMM and under the watchful gaze of dinosaurs and "Parasites, life undercover", the ASP AGM turned out to be one of the most strongly attended and uproariously enjoyable that I have attended. Perhaps the pre-meeting nibbles and drinks placed all ASP attendees in a constructive and congenial demeanour to digest the ETM agenda! Secretary Colin Stack took full advantage and regaled the membership, with rejoinders for the crowd! A definite recipe for emulation at future meetings! However, the superlative efforts of our **Treasurer, Dr Peter Rolfe**,

From the President's desk continued

should be sounded applauded; he has single-handedly re-shaped the financial operations of the ASP, to bring functional innovation and ease of accountability, all of which are essential for the ongoing success of the wide-ranging activities and vitality of the Society. **Our sincere thanks Peter.** Peter would modestly admit that the appointment of an ASP Executive Officer, has been an excellent facilitatory step; Lisa Jones has easily slotted into this role, with wonderful admin support for the Executive. I would suggest that previous Executives had it much tougher!

It is my great pleasure to announce that **Professor Una Ryan was elected to be the next ASP President at the 2016 ASP AGM.** I also **thank most sincerely, and on behalf of Executive, Council and the ASP membership, Professor Robin Gasser, as outgoing Vice-President, for his enthusiasm and dedication to the ASP Executive over the past 4 years.** For half of that period, I have been thankful to learn and have his support in this role: his advice has been prompt, sage, incisive and much valued. Thank you Robin, sincerely.

From the AGM, we sincerely thank **outgoing councillors and representatives, Mark Pearson, Abdul Jabbar and Stephanie Godfrey** for their enthusiastic support during their term in office. With this change, we also welcome most warmly, our **newly elected members to ASP Council, Gillian Fisher (QLD), Danny Wilson (SA) Nathan Bott (VIC), Crystal Cooper (WA).** Other state representatives, Shookofeh Shamsi (NSW), Benedikt Ley (NT), Giel van Dooren (ACT) and Barbara Nowak (TAS) will continue for another year in their positions and these two positions were re-elected for another three year term: **Haylee Weaver (Archivist) Lisa Jones (Newsletter Editor/webmaster).**

And before we leave conferences, planning is well advanced for the **2017 ASP conference at Leura** in the Blue Mountains west of Sydney. Hot toddies, open fires and warm clothing for a

spectacular venue overlooking the Jamieson Valley and trotting distance to the Three Sisters and some notable coffee spots! And parasitic presentation to match! A special Industry Symposium (with career advice) will be featured at this meeting, so the ECR breakfast will be an event not to miss!

Our **"Concepts in parasitology" (CIP)** course is on at beautiful beach frontage at Kialoa in November with a full program. Our thanks once again, for the dedicated enthusiasm from Alex and the ASP management team to organise and conduct this wonderful event, and to our members who contribute to its ongoing success and notoriety! The ASP has renewed its financial commitment to CIP for another 3 years, but DOES need to discuss succession planning for the future of this flagship event! For the strategic planning!!

As indicated in the following pages, I commend your attention to the **outreach and network events.** Thanks to each of our **State reps and Lisa and Nick** for the sheer continued dynamism in the spectrum and public engagement exhibited by these activities. Also listed are **journal highlights** and list of articles published by ASP members in IJP, IJPDDR and IJPPAW. In addition, each of our journals has new social media accounts for signing up and following:

IJP – Instagram www.instagram.com/ijpara/

IJPDDR – FB www.facebook.com/IJPDDR/

IJPPAW – FB www.facebook.com/IJPPAW/

Other current and upcoming ASP initiatives:

ASP has approved funding of stage 2 of the update of the Para-site website which includes improved and additional, life cycles of important parasites.

On Feb 7-9, important ASP meeting will occur in Sydney. Invitees will be circulated shortly. These workshops and meetings are:

- Feb 7; Veterinary Parasitology teaching and resources workshop
- Feb 8; Workshop to revise the ASP strategic Plan. The Executive, Council will be informed from both the 2016 AGM and the results of our recent member survey, so as to solicit the most comprehensive and inclusive views for the Society and its members for the next 5 years- because this determines our priorities for funding support and initiatives. We have a broad base of members at this meeting, which unfortunately, must be a compromise between functionality and numbers. The revised ASP Strategic Plan will be provided for **endorsement at AGM 2017 (Leura).**
- Feb 9; MTM.

Please read on- this is only the preface....!

Best wishes to all for Christmas,

David Emery on behalf of the Executive

www.parasite.org.au
www.facebook.com/ASParasitology
www.twitter.com/AS_Para

ASP Annual Conference

XIX International Congress for Tropical Medicine and Malaria 2016

The 2016 ASP annual conference was part of the XIX International Congress for Tropical Medicine and Malaria 2016 (ICTMM2016) and jointly hosted by the Australasian Society for Infectious Diseases (ASID).

ICTMM2016 delivered workshops, satellite meetings and 83 concurrent sessions to 1500 delegates. With many thanks to supporters and sponsors of ICTMM2016; IJP and Elsevier, Georgina Sweet Travel Support from Melbourne University and the Boehringer Ingelheim Foundation. The ASP will adopt and make changes to the Gender Equity policy that was developed as part of the Georgina Sweet Travel

Support. Many thanks to The Bill & Melinda Gates Foundation who provided funding for Awards for Talented Tropical Medicine and Malaria Investigators from Resource-Poor Regions to Attend and Participate in ICTMM 2016.

Congratulations to Malcolm Jones and the Management Committee (Denise Doolan, Kathy Andrews, David Looke, James McCarthy and Paul Griffin) for a wonderful conference with an exciting program featuring ASP Invited Lecturers Professors Russell Stothard, Peter Crompton and Maria Dolores Barges together with IJP invited lecturer Professor Leann Tilley, IJP:PAW invited lecturer Professor Dr

Thomas Romig and IJP:DDR invited lecturer Professor David Fidock.

The conference started with some free parasitology fun on Sunday 18 September 2016 at the ICTMM Opening Ceremony in Brisbane with four of our most illustrious and entertaining scientists Peter O'Donoghue, Michael Good, Charlene Willis, and David Jenkins presenting about topical tropical medicine, the convoluted evolution of malaria vaccine strategies, and the many weird and wonderful parasites and the scientists who love them.



Invited Lecturers at ICTMM 2016: Top Row: David Fiddock, Leann Tilley and Maria Dolores Barges Bottom Row: Russell Stothard, Peter Crompton and Thomas Romig



2016 Bancroft-Mackerras Medal

Professor Denise Doolan, James Cook University, was awarded the 2016 Bancroft-Mackerras Medal for Excellence in recognition of her outstanding contributions to the ASP as well as vaccination initiatives and correlates of immunity in malaria.

Professor Denise Doolan

2016 Bancroft-Mackerras Medal for Excellence

It gives us enormous pleasure to announce Professor Denise Doolan of the Berghofer Queensland Institute of Medical Research for the Bancroft Mackerras Medal (BMM) for 2016.

Denise's contributions to Australian parasitology are well and truly encompassed within the spirit of the BMM. Denise's dedication to, and unwavering support of, the ASP is evident to all. She was recently president of the society, presiding over an industrious period of growth for the society, which included expansion of the IJP family of journals, conceptualization of the postgraduate course (Concepts in Parasitology), and many other new initiatives. While steering the ASP through one of its most exciting development periods, Denise also made outstanding advances in the fields of molecular immunology and vaccinology of malaria. Over her career Denise has published well over 100 papers in the peer-reviewed literature, 50 of these in the last 5 years. Moreover, many of these papers where Denise is first or senior author have appeared in the very best journals, including Science, Nature Med, Immunity, PNAS and Journal of Experimental Medicine.

Denise conducted her PhD at University of Queensland/Queensland Institute of Medical Research (QIMR), where she was supervised by Professor Michael Good, and became his first PhD graduate. Denise then moved to arguably the best malaria vaccine laboratory in the world, The Naval Medical Research Centre in MD, USA, working under the tutelage of Professor Stephen Hoffman. While at the naval malaria labs, Denise rapidly rose through the civilian ranks to become director of basic and pre-clinical research, where she led numerous malaria vaccine development projects and clinical trials and developed an international reputation that was second to none. It was therefore a great coup for QIMR in 2007 to lure Denise back to Australia as a group leader on a prestigious Pfizer Research fellowship. Since her return to Australia, Denise has established

the Molecular Vaccinology laboratory at QIMR- Berghofer and currently heads the Biology program at the institute. After completing her Pfizer fellowship, Denise entered the highly competitive NHMRC fellowship scheme as a Principal Research fellow in 2013.

Denise has attracted an astonishing amount of funding for her research on malaria vaccines. Many Australian researchers struggle to maintain their productivity after working in the vibrant and well-funded critical mass of researchers in the US. Denise, however, not only managed to obtain NHMRC program and project grant funding, but also enjoyed the benefits of being principal investigator on grants from the US National Institutes of Health. This is no mean feat for a non-US researcher working in Australia, and as a sole-investigator no less! Her research has led to a number of paradigm shifts in fields of vaccinology and immunology, and this is reflected in not only her publications but the 13 patents on which she is an inventor in the field of infectious disease vaccines. Among her awarded patents is one arising from her demonstration that an antigen expressed during the liver but not sporozoite stage of the Plasmodium life cycle is a target of sterilising protection! Previously, the liver-stage had been considered protected from host immune responses, and it is this sort of out-of-the-box thinking, with no "dogmatising" restraints, that typifies Denise's approach to her research and accounts for her reputation as a thought-leader and pioneer in this area. Indeed, when the editor-in-chief of Nature Genetics, a journal that needs no précis, recently visited her institute, he made a strong recommendation that Denise submits her most recent work to one of the leading Nature journals, emphasising that we have not yet seen the best of Denise Doolan! Having seen Denise present the work in question over the last few years, I have no doubt that her next series of publications will have an even bigger impact on the field of malaria vaccinology than her current work, and perhaps reinvigorate

this important area of endeavour that has suffered recently due to bad publicity around a sub-optimal vaccine that is in the final stages of human clinical trials.

In the area of vaccinology, Denise provided the first experimental verification of the concept of multi-valent vaccination for any pathogen with any vaccine delivery system, resulting in a paradigm shift in strategies for vaccination against tropical diseases. She played a key role in the evaluation of DNA vaccines as a promising molecular vaccine platform, demonstrating that DNA vaccines against malaria are immunogenic in mice and monkeys, and executing the clinical immunology in support of the seminal study demonstrating the safety and immunogenicity of DNA vaccines in healthy humans. This established the foundation for clinical testing of DNA vaccines against other pathogens. She also led the preclinical evaluation and development of malaria adenovirus vectored vaccines, showing that they could simultaneously induce both T cell and antibody responses and protect against parasite challenge, and could be designed to co-express multiple target antigens. Her team also conducted the seminal study demonstrating that adenovectors can induce functional antibodies capable of potent inhibition of blood-stage malaria parasite growth, with levels exceeding those induced by protein in adjuvant.

Denise's overall scientific accomplishments are numerous. In the past 5 years however, key advances that she has pioneered are in the area of systems immunology. Denise was the first to apply the growing technology of proteome microarrays to Plasmodium, and used this information to search for the best malaria vaccine antigens using a high-throughput approach. She has since exploited this technology to reveal an entirely new set of T and B cell antigens for inclusion in malaria vaccines that have until now gone completely unnoticed. Using a rational approach to high-throughput screening, and combining human and mouse studies, Denise has addressed the

Denise Doolan BMM continued

complex nature of protective immunity in malaria through meticulous dissection of the protective immune response at the molecular level.

Not satisfied with merely identifying the major antigens that are required for an efficacious vaccine antigen, Denise has made major discoveries in understanding the nature of the protective immune response to malaria. Through genuine scholarship and an unparalleled knowledge of malaria biology and vaccinology, she has demonstrated that humans recognize CD8+ cytotoxic T lymphocyte epitopes on the *Plasmodium falciparum* circumsporozoite protein, the core component of the most advanced malaria vaccine candidate RTS,S. Denise then went on to show that cytokines are the critical mediators of immunity against liver stage malaria, resulting in a paradigm shift for pre-erythrocytic malaria vaccine design. This marriage of antigen discovery and detailed immunologic mechanisms of protection resulted in development of a novel epitope-based T cell screening strategy to rapidly identify target antigens of T cell responses from genomic sequence data.

The outcomes and relevance of Denise's research outside of the malaria field are evident. She is responsible for the first experimental verification in any system of the concept of HLA class I supertypes, demonstrating that epitopes predicted by computer algorithms can be generated in vivo during the course of natural infection and recognised by host T cells. She subsequently extended this paradigm to class II T cell responses. These discoveries established the feasibility of developing a universally effective vaccine by focusing on a limited number of peptide specificities. This new concept of HLA supertypes has now been embraced by researchers in diverse fields including HIV, cancer, and autoimmunity, and has provided the foundation for a public access database and analysis resource for epitope data for infectious diseases, allergens and autoimmune diseases.

To summarise, Denise Doolan is an internationally recognised authority in malaria vaccine discovery and development. She is at the top of her game, and is on the cusp of making some of her greatest discoveries to date. She is a prolific author

of high quality publications, a mentor held in the highest regard by her students and postdocs, and a valued senior member of the QIMR Berghofer executive. In terms of this BMM nomination, Denise's contributions to the field of parasitology at large have been utterly selfless and ambassadorial, typified by her leadership of the ASP, her editorial and reviewer contributions to journals in the parasitology field, and the quality and quantity of her research output.

In 25 years of sustained research, Denise Doolan has proven herself to be a leading light in the malaria research community. The impact of her past, current, and undoubtedly future research efforts will lead to better treatments and control of malaria, and ultimately an efficacious vaccine.

Congratulations, Denise, winner of the Bancroft-Mackerras Medal, 2016.

ASID, our Conference Co-Hosts

The 2016 ASP Annual conference was held as part of ICTMM 2016 which was jointly hosted by The Australasian Society for Infectious Diseases (ASID) Inc.

ASID is an independent organisation, founded in Melbourne in 1976 by an eminent group of physicians, pathologists and scientists.

The aims of the society are to:

- Advance postgraduate education in infectious diseases in Australasia and internationally;
- Promote research in all aspects of infectious diseases; and
- Advocate for sound and evidence-

based public health policy in matters related to infectious diseases.

Membership encompasses Infectious Diseases Physicians, Clinical Microbiologists, Scientists, Infection Control Practitioners, Public Health Physicians, Sexual Health Physicians, Veterinarians and others eminent in the field of infectious diseases. ASID has constituted several Special Interest Groups which bring together members with interests in Paediatric infections, Hospital Infection Control, Mycology and Viral Hepatitis. It has also established a Clinical Research Network and a New Zealand



Committee.

Upcoming ASID events are on their website and ASID Annual Scientific Meeting will take place 29 March - 1 April, Blue Mountains, NSW.

www.asid.net.au

Conference prizes

Congratulations to the winners of prizes for the best poster and oral presentations at this year's Annual Conference in Brisbane.



Best Student Poster

Mohammed Al-Hasnawy, Monash University. "Lack of Giardia duodenalis-mediated apoptosis of intestinal epithelial cells."

Best Student Presentation

Deepani Fernando, QIMR Berghofer. "Cloning, expression and characterisation of scabies mite inactivated cysteine protease paralogues."

Best Early Career Researcher Presentation

Adele Lehane, ANU. "Characterisation of the ATP4 ion pump in Toxoplasma gondii."

Runner Up, Student Presentation

Erick Tjhin, ANU. "Plasmodium falciparum resistant to antiplasmodial pantothenate analogues harbours mutations in pantothenate kinase."

Runner Up, Student Poster

Dhanasekaran Sakhivel, Monash University. "Natural genetic variation in galecrin-11 and antiparasitic activity."

Best ECR Presentation

Samantha Emery, WEHI. "Quantitative proteomics of metronidazole drug resistance in Giardia duodenalis."

Winner, ICTMM Best Poster Presentation

Michelle Stanton

Parasites: Life Undercover

A number of ASP parasitologists, including Tom Cribb, Glen Coleman and Vicky Avery, gave free talks at the Queensland Museum in August to help celebrate National Science Week and promote the exhibition Parasites Life Undercover.

Queensland Museum CEO and Director, Professor Suzanne Miller said the exhibition will give visitors an opportunity to understand the impacts they have on both animals and humans.

"Parasites: Life Undercover highlights the significance parasites have on our daily lives, from the common pests such as fleas and lice such as treating heartworm in a pet to the more serious epidemics and threats such as malaria and those skin and gut parasites costing our livestock industries over a billion dollars each year," she said.

"Parasitism is a highly successful way of life. Parasites are a real and serious threat to all living things and this exhibition will showcase the fascinating evolution of parasites, their resilient life cycles and their ability to move from one host to another in order to not only survive, but in many cases, thrive."

"Having plagued us for centuries, parasites have certainly gained a bad reputation, but you will also see the positive role parasites can play in the medical industry and in developing our immune systems."

The Australian Society of Parasitology is supporting Parasites: Life Undercover and Society president Professor David Emery said they hoped it would promote the knowledge and fascination of parasitology to the general public.

"Parasites are our world at the Australian Society of Parasitology and we are truly excited to partner with Queensland Museum to bring this unique exhibition to Brisbane, which will coincide with our annual conference," Professor Emery said.

"We are always looking a ways to connect with the community and recently have had artists collaborate with us on a unique

project exploring the theme of parasites and health. One of the signature artworks of this project, Gula Guri mayin, which means heal the body by Cairns artist Bernard Lee Singleton will feature in the exhibition."

Parasites: Life Undercover was developed by the Museum of Natural History Berlin Germany with support of Bayer HealthCare Animal Health.

Parasites: Life Undercover is supported by the Australian Society of Parasitology and will run from 10 August 2016 – 27 January 2017 on Level 2, Queensland Museum. Entry is free.

Visit www.qm.qld.gov.au

2016 Impact 25 Awards

Brendan Crabb is a nominee for the 2016 Impact 25 Awards. Please vote for Brendan!

www.pbaimpact.com/2016awards

ASP Annual Report

The 2015 ASP annual report is available for download from the Society's website:

<http://parasite.org.au/publications/annual-reports/>



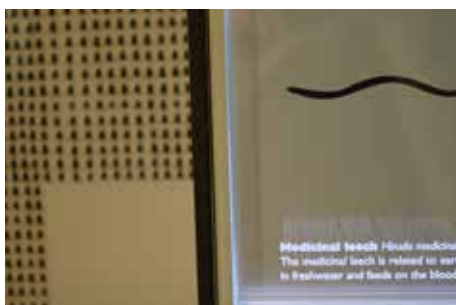
Women & Leadership Australia (WLA)

WLA are offering Women's Leadership Development Scholarships for women currently working in the sciences or scientific education to access part-scholarships to undertake a range of WLA leadership development programs commencing in 2017.

<http://www.wla.edu.au/>

Contact Alistair Young,
Women & Leadership Australia,
ayoung@wla.edu.au

Parasites: Life Undercover : Gallery



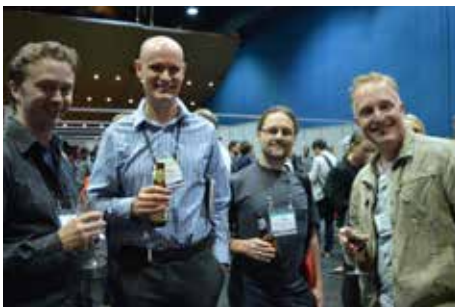
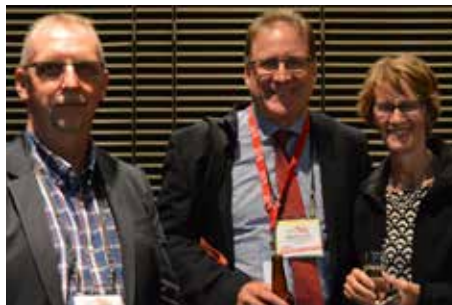
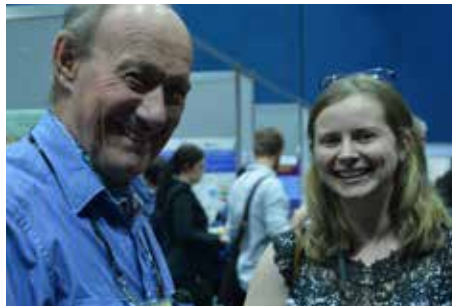
ECR Breakfast

ASID & ASP co-sponsored the Early Career Breakfast at ICTMM 2016 on Monday 19th September 2016. 168 ECRs enjoyed networking and meeting some of our invited speakers, Leann Tilley, Una Ryan, Malcolm Jones from the ASP and Cheryl Jones, ASID President. Nick Smith, ASP Network, hosted the event.



ICTMM/ASP 2016 Opening Ceremony

The conference started with some free parasitology fun on Sunday 18 September 2016 at the ICTMM Opening Ceremony in Brisbane with presentations by four of our most illustrious and entertaining scientists Peter O'Donoghue, Michael Good, Charlene Willis, and David Jenkins.



ASP AGM

The 2016 ASP Annual General Meeting was a lively meeting attracting 120 ASP members and held at the Queensland Museum on Tuesday September 20. The Museum supplied us with food and drinks and a chance to explore Parasites: A Life Undercover, an international exhibition of outstanding quality, which the ASP is sponsoring at the Queensland Museum until January 2017

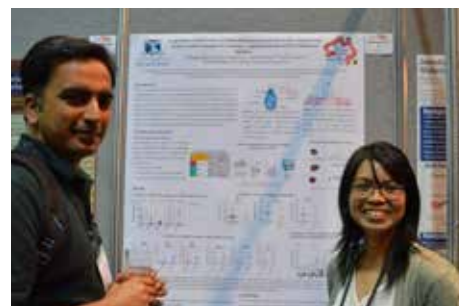
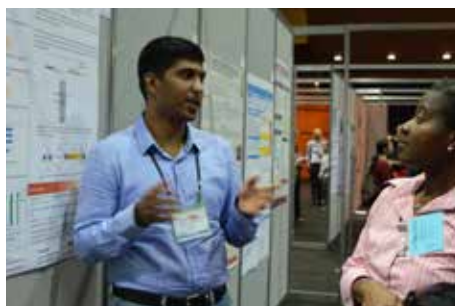
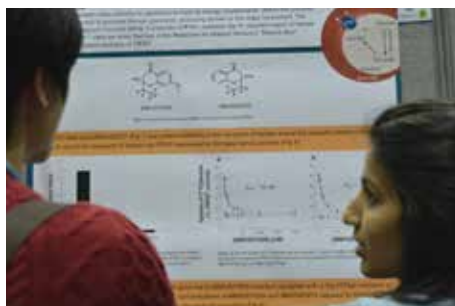
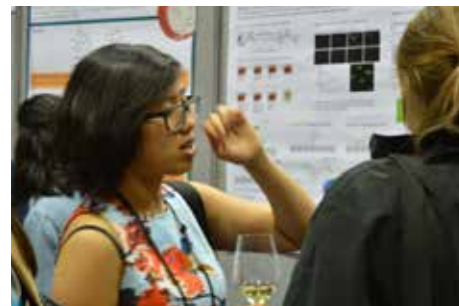
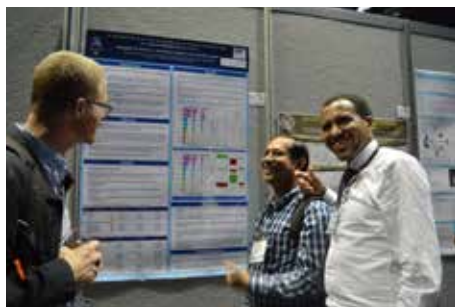


ICTMM/ASP 2016 Around the conference

Celebrating a rewarding 2016 ASP annual conference, part of the XIX International Congress for Tropical Medicine and Malaria 2016 (ICTMM2016) and jointly hosted by the Australasian Society for Infectious Diseases (ASID).



ICTMM/ASP 2016 Around the conference continued



Researcher News

Associate Professor Freya Fowkes of the Burnet Institute has won the prestigious 2016 Georgina Sweet Award for Women in Quantitative Biomedical Science

Head of Burnet Institute's Malaria and Infectious Disease Epidemiology Group, Associate Professor Freya Fowkes (pictured, below), has won the prestigious 2016 Georgina Sweet Award for Women in Quantitative Biomedical Science. The \$25,000 award is presented to outstanding mid-career female scientists across Australia who demonstrate excellence in the area of Quantitative Biomedical Science.

The Georgina Sweet Award for Women in Quantitative Biomedical Science was created by Professor Leann Tilley as part of her Australian Research Council Laureate Fellowship program, to promote and support female scientists who demonstrate excellence in the area of Quantitative Biomedical Science.

With the award Associate Professor Fowkes will aim to understand how elimination of

malaria can impact on rebound of clinical disease, and elucidate how infectious malaria reservoirs can spread drug resistant malaria.

She said it was a great honour to receive the Georgina Sweet Award, also won by Associate Professor Alicia Oshlack, Murdoch Childrens Research Institute and Associate Professor Kathryn Holt, University of Melbourne.

"To be recognised as a female leader in science in Australia is a great honour and I hope to emulate the success and achievements of other inspirational female scientists such as Professor Tilley" Associate Professor Fowkes said.

"During the award I hope to act as an ambassador for women in science, promoting and inspiring emerging female leaders in

science in Australia."

Associate Professor Fowkes received her award at a ceremony on Thursday 27th October at Melbourne University.

Story and picture courtesy of the Burnet Institute

https://www.burnet.edu.au/news/739_burnet_malaria_researcher_wins_georgina_sweet_award



News from the ASP Network for Parasitology

Welcome

Conference News

The ASP's Annual Conference, held in conjunction with the International Congress for Tropical Medicine and Malaria at the Brisbane Convention and Exhibition Centre was a memorable event. It kicked off with an Opening Ceremony that included a welcome from the Australian Society of Parasitology and Australasian Society for Infectious Diseases, together with a traditional Indigenous Welcome to Country, followed by four entertaining and informative – sometimes perhaps a little too informative – presentations from **Peter O'Donoghue, Michael Good, Charlene Willis, and David Jenkins**. This was followed by a week of fantastic science. Also a highlight, was our Annual General Meeting at the Queensland Museum, amidst the backdrop of *Parasites: A Life Undercover*, an international exhibition of outstanding quality, which the ASP is sponsoring at the Queensland Museum until January 2017.

Our congratulations go to the following members who won awards at the conference:

- **Dhanasekaran Sakhivel and Mohammed Al-Hasnawy**, runner-up and winner, respectively, of Best

Student Poster;

- **Erick Tjhin and Deepani Fernando**, runner-up and winner, respectively, of Best Student Presentation;
- **Sam Emery and Adele Lehane**, runner-up and winner, respectively, of Best Early Career Researcher Presentation;
- **Denise Doolan**, winner of the Bancroft Mackerras Medal;
- ASP Invited International Lecturers – Professors **Russell Stothard, Peter Crompton and Maria Dolores Barges**.

And a huge thankyou to all our volunteers who looked after the ASP Booth in the exhibition hall so ably, demonstrating a great commitment to their Society and unexpected abilities in salesmanship, selling hundreds of our *Gula Guri mayan* t-shirts. Our volunteers, coordinated by **Tina Skinner-Adams** were:

- **Thomas Williams**
- **Leanne Low**
- **Gillian Fisher**
- **Thomas Teoh**
- **Christopher Hart**
- **Cara Wilson**
- **Ellie Steller**
- **Jessie van Huis**
- **MJ Chua**
- **Naomi Clarke**
- **Bilal Zulficar**
- **David Teran**

- **Megan Arnold**
- **Jess Bridgford**
- **Amy Jones and**
- **Maria Meuleman**

2017 Conference

We now look forward to next year's conference at the Fairmont Resort in Leura, the Blue Mountains from June 26-29, 2017. We have a great line-up of national and international speakers already confirmed for various exciting themes covering, as always, the full spectrum of parasitological research, including:

Plenary Lectures – Parasitology: An Industry Perspective

- **Norbert Mencke** (Bayer Animal Health, Germany)
- **Vern Bowles** (Hatchtech, Australia)

ASP Invited International Lecturers

- **Carol Sibley** (University of Washington, USA)
- **L. David Sibley** (Washington University in St Louis, USA)

Toxoplasmosis

- **Giel van Dooren** (The Australian National University, Australia)

Malaria Control

- **Tom Burkot** (James Cook University, Australia)



Save the date

The 2017 ASP Annual Conference will be held in Leura in the beautiful Blue Mountains, West of Sydney in NSW from the evening of Monday 26th – Thursday 29th June 2017. This conference has an industry theme with our usual outstanding mix of quality international and Australian speakers. The Conference website will be open shortly.

<http://parasite.org.au/2017conference>

Diagnostics

- **Graham Robertson** (Concord Repatriation General Hospital, Australia)
- **Harsha Sheorey** (St Vincent's Hospital, Melbourne, Australia)
- **Andreas Latz** (Novatec Immunodiagnostics, Germany)

Companion Animals

- **Christian Epe** (Merial, USA)

Aquaculture

- **Barry Hosking** (Elanco Animal Health, Australia)

Wildlife

- **Andrew Thompson** (Murdoch University, Australia)

Drugs and Drug Resistance

- **Kevin Saliba** (The Australian National University, Australia)
- **Andrew Kotze** (CSIRO, Australia)

Network Researcher Exchange and Travel Awards

The September round of the Network Researcher Exchange and Travel Awards attracted 15 applications but, unfortunately, only 6 could be funded. We congratulate the following members for their outstanding applications:

- **Scott Cutmore** (The University of QLD) for a Researcher Exchange to explore marine trematode taxonomics with two experienced scientists in Japan, Assoc. Prof **James Reimer** Department of Biology, Chemistry and Marine Sciences, University of the Ryukyus, Nishihara, Okinawa and Assoc. Prof **Sho Shirakashi** Kindai University, Osaka.
- **Michael Hammond** (RMIT) for a Researcher Exchange to study the systematics and host-parasite interactions of bucephalid trematodes of fishes in the laboratory of **Tom Cribb**, The University of Queensland.
- **Hong You** (QIMR Berghofer) for a Researcher Exchange to establish

a CRISPR-Case9-mediated gene knock-down system in *Schistosoma japonicum* in collaboration with **Paul Brindley's** laboratory at the Department of Microbiology, Immunology and Tropical Medicine at the George Washington University USA.

- **Javier Sotillo** (JCU) for a Researcher Exchange to the laboratory of Dr. **Giovina Ruberti**, Group leader at the National Research Council, Institute of Cell Biology and Neurobiology, Italy to learn techniques to transfer adult schistosomes from one host into a recipient host.
- **Charlie Jennison** (WEHI) awarded a JD Smyth Postgraduate Travel Award for to visit the University of Georgia, USA to learn the Plasmodium micro-well hepatocyte culture methods under **Prof Kyle** 26th February; Shoklo Malaria Research Unit Thailand to learn sample collection and *P. vivax* transmission; the University of Georgia, USA to infect hepatocytes and perform the downstream processing and analysis of infected hepatocyte cultures; and to laboratory of **Takafumi Tsuboi** at the University of Ehime to produce a number of proteins required for the generation of malarial liver stage specific antibodies.
- **Jessica Johnson-Mackinnon** (The University of Tasmania) awarded a JD Smyth Postgraduate Travel Award to investigate the virulence, distribution and describe the relatedness of globally distinct outbreaks of amoebic gill disease in farmed salmon, in collaboration with the British Columbia Centre for Aquatic Health Services, Victoria, Nanaimo and Campbell River, Canada.

Applications for the next round close on March 31, 2017.

Don't miss the ASP JD Smyth Travel Award report from Alex Kennedy in this edition of the Newsletter.

ARC and NHMRC Grant Success

It was another relatively meagre year for parasitology research in both ARC and NHMRC grant announcements but, nevertheless, there is some cause for celebration with parasitologists securing over \$4 million worth of new grants and fellowships including:

- **Rowena Martin** (ANU) – an ARC Future Fellowship to continue her efforts to understand antimalarial drug action and resistance;
- **Alex Loukas** (JCU) – an NHMRC Senior Principal Research Fellowship to continue his work on helminth immunobiology and vaccine development;
- **Alan Cowman** (WEHI) – an NHMRC Senior Principal Research Fellowship to continue his research on the biology of the malaria parasite;
- **John Baell** (Monash University) – an NHMRC Principal Research Fellowship to develop new anti-parasitic drugs;
- **Robert Summers** (ANU) – an NHMRC Early Career Research Fellowship to carry out research to suppress antimalarial drug resistance;
- **Pasi Korbonen** (The University of Melbourne) – an NHMRC Early Career Research Fellowship to harness systems biology to tackle neglected tropical diseases;
- **Philip Andrews, Lukasz Kedzierski, Hongzhe Sun and Michael Mehring** (Monash University) – an ARC Discovery Project grant to develop new anti-leishmanials.

Finally, Nick writes:

"I would like to thank, very much, every member of the Society for their vote of confidence in me as Convenor of the ASP Research Network. As I've said many times, it's an absolute honour to serve the Society and I was truly humbled by the vote at the AGM. Thank you so much."

**Cheers,
Nick and Lisa**

Researcher Exchange Travel Report

Using his JD Smyth Postgraduate Travel Award, Alexander Kennedy travelled to Kanazawa in Japan and Hinxton and London in the UK between 2nd September and 3rd of October 2016.

I would first like to thank the Australian Society for Parasitology for their generous support. As outlined below this travel was exceptionally productive, providing new ideas and collaborations as well as laying the groundwork for successful *P. knowlesi* culturing in Melbourne.

26th International Complement Workshop; 03/09/2016-09/09/2016; Kanazawa, Japan

I attended the 26th International Complement Workshop held in Kanazawa, Japan. This workshop occurs every two years, bringing together experts in the field of complement, a central component of innate immunity.

The abstract that I submitted to this conference was accepted for a 15-minute oral presentation. My presentation was titled 'Hijacking host complement regulators: mechanisms of *Plasmodium falciparum* complement evasion' and covered both published and unpublished work from my PhD candidature. The

abstract for this talk has been published in the journal *Immunobiology*, Volume 221(10) pp. 1155. My talk was well received with numerous questions and comments from laboratory heads in the field of complement and complement regulation on a range of topics around *Plasmodium falciparum* interactions with the complement system.

This workshop also offered a teaching day for young investigators that I attended. It provided a comprehensive background of the complement system in the morning followed by themed sessions in the afternoon. I elected to attend the 'Therapeutic Intervention in the complement system' and 'Complement deficiencies and diseases' sessions. Both were led by experts in their field and provided a great deal of insight into how complex and interconnected the complement system is as well as ways we can intervene in this system. I look forward to applying this knowledge to how *Plasmodium falciparum* interacts with and dysregulates the complement system.

Furthermore, attendance at this meeting led to new collaboration opportunities, with a leading European complement laboratory making unique reagents available that will allow further investigation of host-pathogen interactions we have identified. Additional discussions also offered new avenues of deeper inquiry into our current projects.

Researcher Exchange: Wellcome Trust Sanger Institute, Rayner Group 11/09/16-23/09/16

Following the conference, I went to the laboratory of Julian Rayner at the Wellcome Trust Sanger Institute in Hinxton, United Kingdom. The purpose of this visit was to learn to culture the simian malaria parasite *P. knowlesi*, which has been adapted to invade human red blood cells. *P. knowlesi* causes zoonotic infections in South-Eastern Asia. Initially, I was taught to maintain a culture of *P. knowlesi* and how to identify the stages and morphology of the parasites during



their rapid 27 hour lifecycle. In addition, I learnt to purify the late stage *P. knowlesi* schizonts via density method using a nycodenz cushion and how to use these schizonts to produce a synchronous *P. knowlesi* culture. This method was particularly valuable as generating a synchronous culture is important for downstream assays. In addition, *P. knowlesi* is resistant to sorbitol lysis, a common method used for generating synchronous *P. falciparum* cultures. In addition, I was taught to successfully freeze and thaw *P. knowlesi* cultures, which will be important for establishing these cultures in Australia.

My *P. knowlesi* synchronous parasites were used to set up a growth inhibition. These assays produce key functional data about parasite viability in different conditions. In this case, we tested the IC₅₀ of several known *P. falciparum* inhibitors that were at hand, gaining interesting preliminary data worth further follow up in the future.

I was also guided through a transient transfection protocol that would express luciferase off and episomal plasmid in *P. knowlesi*. Our transfection was a success

with luciferase activity readily detected the following day. Being able to successfully transfect *P. knowlesi* will allow us to produce transgenic *P. knowlesi* lines here in Australia allowing us to further probe the parasite biology.

In conclusion, the two weeks at Sanger Institute were highly productive, covering the essentials needed to establish *P. knowlesi* culturing and experiments in Australia. This success is thanks to Julian Rayner and the welcoming and helpful attitude of his lab members. In particular, I would like to thank his postdoctoral fellow Dr Theo Sanderson who supervised and taught me all of the *P. knowlesi* techniques mentioned above.

Researcher Exchange: London School of Hygiene and Tropical Medicine, Moon Group 26/09/16 – 03/10/2016

I also visited Dr Robert Moon, who established the human adapted *P. knowlesi* cell line, at his laboratory at The London School of Hygiene and Tropical Medicine for one week. While at LSHTM, I presented a public seminar of my work on *P. falciparum* complement evasion strategies. In addition, I had extensive

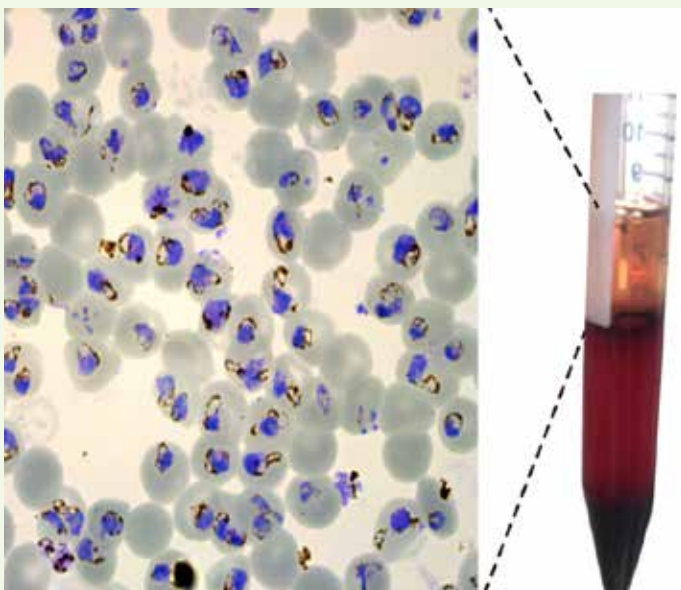
discussions on the *P. knowlesi* culturing methods refining the knowledge I had earlier learnt at the Sanger Institute, as well as receiving detailed protocols for assays such as immunofluorescence assays. Dr Moon has also been able to transfect *P. knowlesi* with exceptional efficiency and I was able to observe the methods used to prepare and perform these high efficiency transfections. This was a very productive week of research exchange, owed in great part to Dr Moon's generosity with his time and methods.

Previous page left: Kenrokuen Garden, Kanazawa, Credit: 26th International Complement Workshop.

Previous page right: The Wellcome Trust Sanger Institute in Hinxton, UK.

Below left: *Plasmodium knowlesi* schizonts growing in human red blood cells stained with Giemsa at 100 x magnification. Schizonts were enriched by floatation on a nycodenz cushion (right).

Below right: London, UK.



Researcher Exchange Travel Report

Kate Hutson describes her experience of the International Workshop on Symbiotic Copepoda, held at the Heron Island Research Station, a trip made possible by the support of the ASP Newtork's Travel Award scheme.

Researchers and students from around the world meet every three years to exchange ideas and learn research techniques on symbiotic copepods during the International Workshop on Symbiotic Copepoda (IWOSC). This year the conference was held at Heron Island Research Station, Australia and was generously supported by the Australian Society for Parasitology. The global shortage of technical expertise in copepod taxonomy is a threat to biodiversity studies and aquatic animal health industries. More than 11,000 valid copepod species are known, about half of which live in symbiotic associations with nearly every animal group, ranging from sponges to chordates. Only about 2% of aquatic invertebrate species and less than 20% of fishes have been surveyed for symbiotic copepods, which means there are many more waiting to be discovered and formally described.

The 1st and 2nd IWOSC were held at Cabrillo Marine Aquarium in San Pedro, California, U.S.A. and the University of Limpopo in South Africa, respectively. This 3rd IWOSC at Heron Island comprised a fully residential event including research presentations, laboratory based workshops and the opportunity for participants to collect workshop related specimens on

field trips in the scientific research zone of the Great Barrier Reef Marine Park. Four days were dedicated to symbiotic Copepoda, with the final day on symbiotic Isopoda. The workshop was organised by **Kate Hutson** (James Cook University, Australia), **Julianne Kalman Passarelli** (Cabrillo Marine Aquarium, USA) and **Danny Tang** (Orange County Sanitation District, USA) while guest tutors included **Geoff Boxshall** of the Natural History Museum, London, **Rony Huys** of The Natural History Museum, London, **Nico Smit** of North-West University, South Africa and **Niel Bruce** of the Queensland Museum, Australia.

The first day began with a welcome and introduction session and a plenary presentation by **Geoff Boxshall** with an introduction to parasitic crustaceans. Following we were given an introduction to copepods of invertebrates by **Rony Huys** and the history of the discovery of Australian marine parasitic copepods by **Kate Hutson**. In the afternoon we heard from **Jimmy Bernot**, **Diane Alps**, **Bruno Passarelli**, **Alejandro Trujillo-González**, **David Vaughan**, **Jonathan Barton**, **Nico Smit** and **Julian Uribe-Palomino** on their research involving a diversity of aquatic parasite fauna.

The second and third days were themed with a focus on symbiotic copepods of invertebrates and fish, respectively. Collections on the reef were made in the mornings followed by lectures by the organisers and tutors on preservation, identification and accession techniques before we moved into the laboratory to dissect host specimens and examine fresh preparations of symbiotic copepods. In the evening seine netting under the stars permitted collection of some nocturnal fishes for inspection the following day.

The weather closed in on the fourth day which suited our planned lectures on copepod life cycles, how to examine copepods specimens, illustration techniques and the use of dichotomous keys. After lunch we were challenged with a laboratory activity where participants were given preserved material and the resources to key out the specimens to family and genus. The final day involved a lecture by **Nico Smit** and a workshop by Nico and Niel working with keys and fresh and preserved parasitic isopod specimens.

Unfortunately the weather continued to deteriorate and the 3rd IWOSC participants found themselves stranded on Heron Island in gale force winds and rain! Fortunately our caterer Pat kept us well fed, Niel kept us entertained with highlights from Africa and the wind subsided enough for us to return to Gladstone the following day!



Left: Organisers and guest tutors (L-R): Nico Smit, Niel Bruce, Danny Tang, Rony Huys, Julianne Kalman Passarelli, Geoff Boxshall and Kate Hutson (Photo D Alps)

More photos from the event are shown on the following page.



Top left: Inspecting invertebrate host collections for copepods (L-R): Andrea Lawrence, Alejandro Trujillo Gonzalez, Danny Tang and Jimmy Bernot. Top right: Danny Tang gives a presentation on recovering copepods from fish Middle left: There were a number of useful presentations by the tutors, organisers and participants. Middle right: Each afternoon there were opportunities to examine fresh and preserved material in the laboratory Bottom left: *Stellicola* sp. in starfish *Nardoa* cf. *tuberculata* (photo J Bernot). Bottom right: Jade Morris on snorkel during collections in the scientific zone off Heron Island, Great Barrier Reef (Photo: K Morris)

Outreach: EKKA

Members of the Eskitis Institute for Drug Discovery, Griffith University held a stall over two days at the Royal Brisbane Show. Amy Jones reports.

The Royal Brisbane Show or EKKA as it is more commonly known is the largest agricultural show and exhibition in Brisbane attracting over half a million people across 10 days. This year the Eskitis Institute for Drug Discovery, Griffith University held a stall over two days to teach the wider public about parasites and some of the research undertaken at the institute. A visual wall containing microscopic images of *P. falciparum* gametocytes, *Trypanosoma cruzi*, *Trypanosoma brucei* and *Leishmania donovani* taken in the Discovery Biology laboratory was the focal point of the display. The images were accompanied

by simple facts and figures about the diseases and the parasites. The attractive, eye catching images lured many people to the stall and engaged them as they were interested to learn more about what the images represented. As a souvenir visitors choose their favourite image and took it home in the form of a key ring. To engage smaller children "Drug Discovery Show Bags" were handed out containing a 384 well micro-titre plate, plastic pipette, solution (non-hazardous water!) and a disease fact sheet containing information on either malaria, Chagas disease, human African trypanosomiasis or leishmania.

Accompanying the fact sheet was a brief, simplistic description of the drug discovery process and how the micro-titre plate was used to identify new drugs. The key rings and Drug Discovery Show Bags proved extremely popular with 200 given out over the two days. Through the event we managed to engage and inform a diverse range of people from all backgrounds, about the world of parasites and promote the work of the Australian Society of Parasitology. We are extremely grateful to the ASP for supporting the event and providing funds which enable the keyrings and drug discovery show bags to be purchased.



Outreach: GTAC

Now in its seventh year, the Parasites in Focus student program is a special program developed and run as a collaboration between the Gene Technology Access Centre (GTAC) and the ASP.

This program aims to raise awareness of the societal and economic consequences associated with parasitism through impacts on ecosystem dynamics, agricultural security, and human health. The program also exposes secondary school students to a diverse range of careers that are supported by training in parasitology.

The program is offered for Victorian students in Years 10 and 11 and their teachers and incorporated:

- An opening address by leading field parasitologist, Prof. Robin Gasser (Faculty of Veterinary and Agricultural Science, University of Melbourne)
- Three workshops in which students apply research technologies to solve scenario-based problems in parasitology
- The opportunity to work in small groups with practising research scientists

The program ran on Friday 5th August with a total of 90 students and 9 teachers attending. Students and teachers from

across Victoria were invited to participate in this event. A total of 28 schools registered interest in attending, including rural government schools, metropolitan disadvantaged government schools and independent schools and ten were selected by GTAC staff. These schools were invited to bring up to 10 students accompanied by one teacher. Students and teachers from nine of the invited schools ultimately attended the program.

In the Victorian school curriculum, the only explicit mention of parasitism is in Unit 1 of the VCE Biology study design under topics on relationships between organisms within an ecosystem. Technologies for studying parasites as pathogens address a number of key skills and techniques relevant to key content addressed in the broader VCE Biology study design. For these reasons, the Parasites in Focus student program is designed primarily for students of Years 10 and 11.

Opening address by Robin Gasser

For Parasites in Focus, Robin Gasser introduced students to the main groups of parasites, their complex life cycles,

and some of the afflictions they cause in their hosts. During his presentation, Robin circulated samples of the parasites among the audience. At the conclusion of the presentation, students asked probing questions ranging from mechanisms that adapt parasites to their way of life, to details of infection processes and their treatment.

Students and teachers were very positive:

"He was charismatic and engaging. Great visuals on the slides and it was brief enough to keep the students interested."

Hooked on Parasites

Parasitic diseases cost the Australian sheep industry almost \$900 million per annum. Working with scientist mentors in the GTAC laboratories, students applied techniques of the veterinary pathologist to diagnosing a parasitic infection of sheep. An assessment of clinical signs, faecal egg counts, and examination of larvae and adult worms led students to deduce the sheep were infected by the nematode, *Haemonchus contortus*. Students concluded by proposing strategies to manage the



Outreach: GTAC continued

health of the flock.

A Case of Cross-Border Detection

Malaria represents the world's biggest health issue caused by parasites. Working in the GTAC laboratories with scientist mentors, students used biotechnology to identify the specific malarial parasite infecting a tourist who had returned from overseas. Applying polymerase chain reaction and gel electrophoresis experiments, students determined the tourist was infected by the deadliest type, *Plasmodium falciparum*. The result is crucial for informing the patient's treatment.

Parasites Getting it Under Control

Australia is a world leader in the field of biological control, in which pathogens, predators, or parasites are harnessed to specifically control populations of the target pest with minimal disruption to other species. Working in the GTAC computer laboratory, students used the computer simulation software, NetLogo, to investigate the effects of various natural enemies on populations of the light brown apple moth, a pest of the grape industry. Evaluation of their mathematical models led students to conclude that the parasitoid wasp, *Trichogramma* was the most suitable biological control.

The students loved the hands-on experiments and workshops:

"This workshop was very interesting and fun, seeing how this kind of lab works was a great experience"

"It was good to see how some scientists work in controlling pest populations, and how modern technologies integrate into the (real) world"

This special event program could not have been delivered to the standard GTAC had envisaged without the generous support of a grant for \$2,000 from the Victorian branch of the ASP.

In addition to funds, the input and enthusiasm of Victorian representatives of the ASP was a boon for the program. GTAC extends its thanks to Prof. Robin Gasser (University of Melbourne) for accepting the invitation to deliver the opening address. GTAC also thanks Dr Abdul Jabbar (University of Melbourne) for collaborating on re-designing the Hooked on Parasites workshop for the 2016 program.

We are indebted also to Christine Andersen (University of Melbourne) who provided the specialist resources for the Hooked on Parasites workshop. Christine has

been involved with the program since its inception in 2010 and we wish her well for her imminent retirement at the end of the year.

The following GTAC staff and collaborators, as indicated, contributed to the coordination and design of the program: Dr Tony Chiovitti (Deputy Director) Jeni Grant (Administration Manager) Jenny Cuxson (Laboratory Manager) Alex Sipidias (acting Laboratory Manager) Dr Nicole Webster (Education Officer) Dr Fran Maher (Education Officer) Dr Abdul Jabbar (Lecturer, Faculty of Veterinary and Agricultural Sciences, University of Melbourne) Carla Daunton (Education Officer) Chris Szwed (Education Officer) Kian Jin Tan (Education Officer). Scientist mentors : Autumn Bricker (University of Melbourne), Simon Chau (University of Melbourne), Amol Ghodke (University of Melbourne), Denise Heckman (WEHI), Natasha Jansz (WEHI), Nijoy John (WEHI), Nicholas Kameniar-Sandery (Monash University), Toby Mansell (MCRI), Sam Mills (Florey Institute), Estella Newcombe (University of Melbourne), Valeria Rytova (Florey Institute), Katharina Stracke (WEHI), Michael Stutz (WEHI).

Report by Dr Tony Chiovitti, GTAC



Pictured above, from left to right: Dr Tony Chiovitti, Prof. Robin Gasser, Dr Nicole Webster, and Chris Szwed

IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

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parasitology](http://www.journals.elsevier.com/international-journal-for-parasitology)

Editor In Chief: Brian Cooke

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Twitter: @IJPara

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46:09 (August)

Original Research Article

Persistence and immunogenicity of chemically attenuated 1 blood stage *Plasmodium falciparum* in Aotus monkeys

Sai Lata De, Danielle I Stanisc, Karin van Breda, Bernadette Belle, Ivor Harris, Fiona McCallum, Michael D Edstein, Michael F Good

46:12 (November)

Invited Review

Haemonchus contortus: the then and now, and where to from here?

David L. Emery, Peter W. Hunt, Leo F. LeJambre

Original Research Articles

Water, sanitation and hygiene related risk factors for soil-transmitted helminth and *Giardia duodenalis* infections in rural communities in Timor-Leste

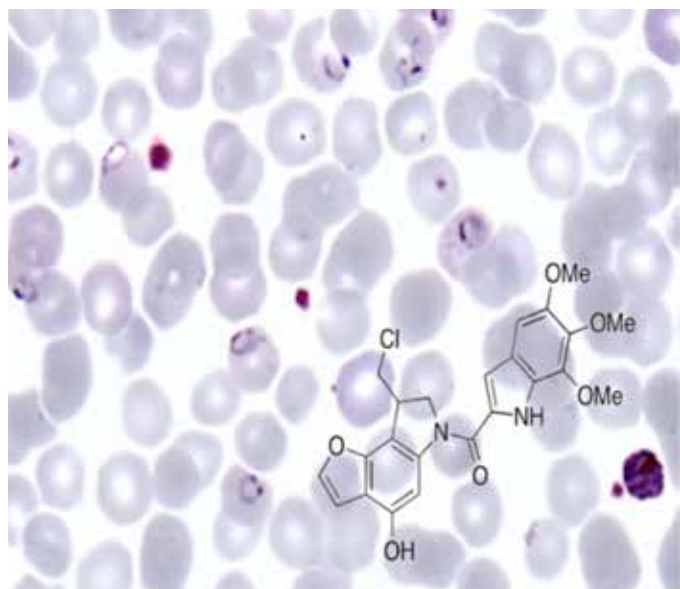
Suzy J Campbell, Susana V Nery, Catherine A D'Este, Darren J Gray, James S McCarthy, Rebecca J Traub, Ross M Andrews, Stacey Llewellyn, Andrew J Vallely, Gail M Williams, Salvador Amaral, Archie CA Clements

Multilocus sequence typing of *Dientamoeba fragilis* identified a major clone with widespread geographical distribution

Simone M. Cacciò, Anna Rosa Sannella, Antonella Bruno, Christen R. Stensvold, Erica Boarato David, Semiramis Guimarães, Elisabetta Manuali, Chiara Magistrali, Karim Mahdad, Miles Beaman, Roberta Maserati, Fabio Tosini, Edoardo Pozio

Images below courtesy Michael Good (Persistence and immunogenicity of chemically attenuated 1 blood stage *Plasmodium falciparum* in Aotus monkeys) and Suzy Campbell (Water, sanitation and hygiene related risk factors for soil-transmitted helminth and *Giardia duodenalis* infections in rural communities in Timor-Leste.

A feature article on Suzy Campbell's project in East Timor is planned for the next ASP newsletter.





www.journals.elsevier.com/international-journal-for-parasitology-drugs-and-drug-resistance/

Editors In Chief: Andrew Kotze & Kevin Saliba

Facebook: www.facebook.com/IJPDDR/

IJP-DDR has a Facebook page, please check it out and like us and some of our articles so we can promote the journal and all of the wonderful research published through *IJP-DDR*

Editors Choice

David Leitsch, Joachim Müller, Norbert Müller [Evaluation of Giardia lamblia thioredoxin reductase as drug activating enzyme and as drug target](#) International Journal for Parasitology: Drugs and Drug Resistance Volume 6, Issue 3, December 2016, Pages 148–153

Thioredoxin reductase (TrxR) is an important redox regulator in most organisms whose main role is to reduce thioredoxin, a redox protein that, in turn, reduces a large number of proteins and thereby mediates their functions. However, TrxR also reduces compounds other than thioredoxin, so called “subversive” substrates, including oxygen or nitro drugs like metronidazole

and furazolidone. These drugs are rendered toxic by reduction of their nitro group. Thus, TrxR has a double role as a potential drug target and as a drug activating enzyme. In this original research article both these roles of TrxR were assessed in the microaerophilic parasite *Giardia lamblia*.

New online access to IJP

Elsevier are currently providing ASP members with access to IJP through <http://www.sciencedirect.com/ijpara> as of November 10th please access the journal through this url: <http://www.sciencedirect.com/science/journal/00207519>

You can use the same username and password to access the content. You can log in using the “Sign in” functionality at the top right of the page. If you have not yet activated your access, please find below the instructions to activate your access. You can use the same activation code you have been sent before.

Instructions

To access IJP please use your activation code for one-time activation.

Go to: <https://www.sciencedirect.com/science/activate/ijpara>

Please do not bookmark this link. It is only for one-time activation

1. Enter your activation code; for ASP members this will be in the following format: type “asp” then immediately after type your first and last name initial (i.e. lj) and then enter the ASP membership number which you can locate through the ASP membership website <http://asp.wildapricot.org>

The activation code should be in the following format without the brackets asp{your name initials only}{ASP membership number}

If you have any issues please email APACSociety@elsevier.com and they can assist with online access.

After activation, your membership needs to be associated with a ScienceDirect user profile.

2. Click “register now” to create a new ScienceDirect username.

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After registration, whenever you want to use your ScienceDirect username to access the journal on ScienceDirect.com please use this url:

4. Access the journal directly at: <http://www.sciencedirect.com/science/journal/00207519>

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7. Use the “forgot password” link to reset the password.

8. Email APACSociety@elsevier.com to assist with their online access.



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- Clement Lagrue: The impacts of crustacean invasions on parasite dynamics in freshwater ecosystems
- Sarah Perkins: Parasite aggregation and invasion success
- Daniel Selechnik and Rick Shine: The things they carried: the pathogenic effects of old and new parasites following the intercontinental invasion of the Australian cane toad (*Rhinella marina*).
- Nico Smit, Wynand Malherbe and Kerry-Ann Hadfield: Review of alien invasive freshwater fish parasites from South Africa

of co-introduced ancyrocephalid monogeneans on alien invasive *Micropterus salmoides* (Lacepède, 1802) populations in South Africa.

- Rachel Welicky, Jurgen De Swart, Ruan Gerber, Edward Netherlands and Nico J Smit: Drought-associated absence of alien invasive anchorworm, *Lernaea cyprinacea*, is related to changes in fish health.

Please contact Andy Thompson if your research is on the topic of parasite invasions and you would like to submit a manuscript for consideration in this future special issue.

Research papers

- Sarah Perkins and Emma Gillingham: Determining the origin of invasive species using the parasite community.
- Marliese Truter, Iva Prikrylová, Olaf Weyl and Nico Smit: Successful survival

Below: Dale Seaton (Executive Publisher, Elsevier) taken whilst on the ferry from Stockholm to Turku for the EMOP conference in July 2016, photographer, Andrew Thompson.

Call for papers for our special issue on invasions

In 2017, the International Journal for Parasitology: Parasites and Wildlife will publish a special issue on Parasite Invasions.

A number of experts in the field have already agreed to contribute to the special issue:

Introduction

- Robert Poulin

Reviews

- Andrée Gendron and David Marcogliese: Enigmatic decline of a common fish parasite (*Diplostomum* spp.) in the St. Lawrence River: Evidence for a dilution effect induced by the invasive round goby.



Events

TropAg 2017



TropAg2017, the world's leading tropical agriculture and food science conference, will showcase Queensland agriculture innovations and technologies in Brisbane on 20-22 November 2017.

Announced by the Hon. Bill Byrne MP, Minister for Agriculture and Fisheries on 23 November, the highly successful AgFutures conference will be incorporated into TropAg to showcase the state's latest developments and applications in digital and data platforms, robotics, satellites and biotechnologies.

AgFutures 2016 was hosted by the Department of Agriculture and Fisheries in Queensland and attracted over 300 delegates.

Agriculture is big business in Queensland, and the state has a global reputation for producing clean, green and quality produce.

The AgFutures2017 stream at TropAg will feature new technologies, business systems and the industry-wide investment that is required for innovations critical to

the future of agriculture and discuss the opportunities associated with feeding a global population of 9 billion by 2050.

"AgFutures2017 will feature emerging trends, business opportunities and capital models from farm gate to agribusiness, agri-tech, processing and research to a global audience of agricultural researchers and investors," Professor Robert Henry, Chair of the TropAg International Advisory Committee, said.

"Industry representatives from the agriculture and food sectors, including producers, researchers, policy makers, and agribusiness representatives are encouraged to attend," Professor Henry said.

Call for Symposia Proposals

Proposals for other symposia for TropAg2017 across five themes are still open. Symposia proposals are to be submitted on the application form by 31 January 2017 via email to TropAg2017@expertevents.com.au.

Visit the TropAg website:
<http://tropagconference.org/>

Molecular Helminthology: An Integrated Approach 2017



Important Dates

16 November 2016

Extended abstract submission deadline

5 December 2016

Early bird registration deadline

Conference Chairs

Philip T. LoVerde, University of Texas, USA
Sara Lustigman, New York Blood Center, USA

Scientific Committee

Eileen Devaney, University of Glasgow, UK
Makedonka Mitreva, Washington University, USA
Ray Pierce, Université Lille Nord de France, France
Barton Slatko, New England Biolabs, Inc., USA

For more information, to register and to submit your abstract, visit: www.molecular-helminthology-conference.com

Events continued

One Health EcoHealth 2016 3–7 December 2016, Melbourne Convention and Exhibition Centre



The One Health EcoHealth 2016 Congress will be a 'meeting of the minds' for researchers, policy makers and practitioners who are working towards more integrated approaches and effective responses to complex global health challenges. The program brings together a formidable array of outstanding science, knowledge and expertise and will excite anyone committed to innovation and better ways of working in global health management. From the outset we have focused on gender equality – and will continue to do so as we hone the final program. Join this amazing, rich global forum for learning, networking and collaboration. You will interact with colleagues from diverse backgrounds and with a common interest in

protecting and promoting public, animal and ecosystem health.

More than 1,000 experts will gather to deliver 9 plenary presentations, 200 oral presentations and 780 poster presentations. The science, ideas and thinking draw on diverse expertise from more than 60 countries. Following the Welcoming Ceremony on Saturday 3 December, plenary sessions will be held each morning of the next four days focusing on specific themes:

- Creating a healthier world
- Food and nutrition systems – feeding our world safely and sustainably
- Responding to emerging diseases and invasive species
- Integrating science, policy and action.

Across these themes, the many presentations will consider pressing global issues associated with climate change, food and water security and antimicrobial resistance. They will address zoonoses, environmental sustainability, education, the benefits and impacts of One Health and EcoHealth approaches, and all forms

of health – population and environmental health, Indigenous health, ecosystem and ecological health, ocean health, domestic animal and wildlife health, the social, cultural and ecological determinants and dimensions of health – and much more.

There will also be symposium and discussion panels on hot topics such as:

- Ecological Health, biodiversity loss and the future of planet earth
- The Global Outbreak and Response Network (GOARN)
- Non-communicable diseases and the energy rich food system
- Education into Action: Building One Health Capacity in Asia
- Strengthening biosecurity systems
- One Health in Action: What's Working and Why?

See the website for more information and to register www.oheh2016.org

The First Australia-China Conference on Science, Technology and Innovation (ACCSTI) 3-5 February 3-5, 2017, The University of Western Australia, Perth



This event is part of a multi-forum series of the Australia-China Conference on Science, Technology and Innovation, organized by Western Australia Chinese Scientists Association (WACSA). This forum will bring together prominent researchers and thought leaders from

both nations to enable dynamic exchange across a wide range of topics, including collaboration in agricultural and food science research, joint educational opportunities, new agribusiness ideas, etc.

The forum will consist of a series of invited talks and oral presentations related to Agricultural and Food Science by eminent scholars from Australia and China. The topics will include but not limited to:

- Crop, Horticulture and Pasture Science
- Transgenic Plant Research
- Animal Science and Veterinary Parasitology
- Omics (genomics, proteomics or metabolomics)

- Biosecurity and Food Safety

Abstract submission due: Nov. 30, 2016

Registration fees: Early Bird Registration (by 31 December 2016) \$750. Full Registration (inclusive of industry visits) \$800. Standard Registration (excludes industry visits) \$600. Student Registration (excludes industry visits) \$400

Enquiries: Dr Meimei Zhang at R.Yang@murdoch.edu.au or visit the website www.wacsa.com/conference

State News

Queensland

Griffith University

Eskitis Institute for Drug Discovery

A/Prof **Kathy Andrews** participated in the "Catch A Rising Star: Women in Queensland STEM" program as part of National Science Week. Under this program Kathy was part of a group of women STEM researchers who travelled to Kowanyama, Cape York Peninsula to carry out hands on science experiments with ~200 children at Kowanyama School.

The Eskitis Institute for Drug Discovery hosted a pre-ICTMM2016 workshop on "Modern Concepts in Natural Product Drug Discovery". The event was organized by A/Prof **Rohan Davis** and included talks by ASP members **Vicky Avery** and **Tina Skinner-Adams**.

Jessica Engel from the Griffith University Tropical Parasitology Laboratory was awarded a Publication Assistance Scholarships for three months to finish writing papers related to her submitted PhD thesis.

Dr **Amy Jones** from the Discovery Biology Laboratory at the Eskitis Institute for Drug Discovery organised a stall at the EKKA in Brisbane over two days to teach the wider public about parasites and some of the research undertaken at the institute. Funds provided by ASP enabled keyrings and drug discovery show bags to be purchased which proved to be very popular.

Three Griffith University parasitology PhD students, **Bilal Zulfiqar**, **Megan Arnold** and **Chris Hart** were awarded travel grants to present at the Eskitis-SIMM meeting in Shanghai, China 1-2nd November 2016.

Jemima Wixted will be jointly conducting her PhD with Associate Professor Rohan Davies' Natural Products Chemistry group and Professor Vicky Avery's Discovery Biology group. Her research will focus on identifying compounds from fungi which show activity against *T. cruzi* – the parasitic cause of Chagas Disease.

Professor **Vicky Avery** was interviewed by ABC national radio on the topic of open source drug discovery for malaria. http://mpegmedia.abc.net.au/rn/podcast/2016/08/ras_20160824_1306.mp3. Professor Avery was also an invited keynote speaker at the VIIN Young Investigator Symposium, Melbourne 14th October 2016.

ABC News 24's Midday program hosted by Ros Child interviewed **Sandra Duffy** from the Discovery Biology laboratory to talk about her research in relation to an exciting new antimalarial compound that targets multiple parasite lifecycle stages. <http://snpy.tv/2cHoMoD>

Several members of Vicky Avery's lab took active roles at ICTMM 2016 (18 – 22 September, Brisbane). **Vicky Avery** was Invited chair, **Amy Jones**, **Melissa Sykes** and **Bilal Zulfiqar** delivered oral presentations; **Sandra Duffy** delivered a poster presentation.

Professor **Vicky Avery** and **Sandra Duffy** co-authored the following *Nature* paper:

Kato N, Comer E, Sakata-Kato T, Sharma A, Sharma M, Maetani M, Bastien J, Brancucci NM, Bittker JA, Corey V, Clarke D, Derbyshire ER, Dorman GL, Duffy S, Eckley S, Itoe MA, Koolen KM, Lewis TA, Lui PS, Lukens AK, Lund E, March S, Meibalan E, Meier BC, McPhail JA, Mitasev B, Moss EL, Sayes M, Van Gessel Y, Wawer MJ, Yoshinaga T, Zeeman AM, Avery VM, Bhatia SN, Burke JE, Catteruccia F, Clardy JC, Clemons PA, Decherer KJ, Duvall JR, Foley MA, Gusovsky F, Kocken CH, Marti M, Morningstar ML, Munoz B, Neafsey DE, Sharma A, Winzeler EA, Wirth DF, Scherer CA, Schreiber SL. [Diversity-oriented synthesis yields novel multistage antimalarial inhibitors](#). *Nature*. 2016 Sep 7;538(7625):344-349.

Northern Territory

Charles Darwin University



Rama Jayaraj and team

Rama Jayaraj has formed a very good

\$400 Undergraduate Prizes

The Australian Society for Parasitology is pleased to announce that it will be offering undergraduate student prizes of \$400 each to Australian Universities identified as offering a suitable course in parasitology, for presentation to the best undergraduate student in parasitology (highest passing mark/grade). The course(s) must be taught by a financial member of the ASP (of more than one year standing), and must comprise at least 30% parasitology. **Requests for 2016 prizes must be made by the eligible University to the ASP Treasurer or Secretary by the 30th September 2016. Please complete the online application form:**

www.parasite.org.au/awards/asp-undergraduate-prizes/

State News continued

Parasitology team at Charles Darwin University with two science students, a science teacher from Casuarina Senior College, one practising Vet/CDU Animal Officer and Rama himself, the Molecular Parasitologist. This group are investigating the incidence of gastrointestinal parasitism in Darwin canine population and have been collecting dog faecal samples in Darwin and want to compare the faecal flotation method and the zinc sulphate method.

New South Wales

Open Source Malaria Consortium

Congratulations to the members of the Open Source Malaria Consortium team who were involved in publishing their first paper, "Open Source Drug Discovery: Highly Potent Antimalarial Compounds Derived from the Tres Cantos Arylpyrroles."

<http://pubs.acs.org/doi/full/10.1021/acscentsci.6b00086>

Closing dates for ASP awards

ASP Fellowships
9 January 2017

ASP Researcher Exchange, Travel and Training Awards & JD Smyth
17 March 2017
29 September 2017

Bancroft-Mackerras Medal for Excellence
30 September 2017

More information
www.parasite.org.au

Victoria

The University of Melbourne

Congratulations to **Aaron Jex** who was promoted to Associate Professor. at the University of Melbourne this year. Aaron has also taken up a cross-appointment as a Lab Head at WEHI in the Population Health and Immunity Division.

ASP Outreach Funding

ASP members are encouraged to apply for ASP funding to support outreach in their state. Up to \$500 per event is available with a total per state or territory of \$2000 per calendar year. Initiatives should foster outreach by members and advance the field of parasitology. The funds can be used to support a wide range of activities - from seminars and symposia to "beer and nibbles" networking sessions of State members or any other parasitology-related event.

Submit your proposal to your ASP State/Territory Representative for consideration.

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