



NEWSLETTER

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IN THIS ISSUE From the President's Desk

- 3 From the President's Desk
- 4 ICOPA XIII report
- 5 2015 Conference
- 6 In Memoriam - Associate Professor Ian Whittington
- 8 ASP Fellow: Rob Adlard
- 10 ASP Fellow: Tom Cribb
- 12 ASP Fellow: Geoff McFadden
- 14 Network News
- 15 ASP-IA grant Outreach photos
- 16 ARC grant recipients
- 18 JD Smyth Travel Report: Giana Bastos Gomes
- 20 Photos from the 2014 50th Anniversary ASP Conference
- 27 Science Meets Parliament
- 28 OzEMaLaR News & Travel Award Reports from Kylie James; Steven Kho & Gaoqian Feng
- 32 OzeMaLaR Researcher News: Natalie Spillman; Brendan Crabb; Nick Anstey; Alan Cowman
- 34 IJP News
- 35 IJP:DDR & IJP:PAW
- 36 Researcher news: Marshall Lightowlers
- 37 Events; ICTMM2016
- 41 Jobs
- 44 State news

Dear Members,

Happy New Year and welcome to the January edition of the ASP Newsletter.

This Newsletter is packed full of photos from the 2014 ASP Anniversary Conference and celebrates our newly appointed Fellows. It features Ian Whittington's obituary and pays particular tribute to his outstanding and sustained contributions to ASP and discipline of Parasitology through research, teaching and outreach. It also includes an update on the joint conference with the New Zealand Society for Parasitology and a "Science Meets Parliament" report.

We are looking forward to the Conferences with the New Zealand Society for Parasitology (NZSP) in Auckland between 29th June and 2nd July 2015 and the International Congress of Tropical Medicine and Malaria (ICTMM) in Brisbane between Sunday 18th - Thursday 22nd September 2016. The organisation of our conferences are proceeding well we thank the Executive of NZSP and Nick Smith and Lisa Jones of the ASP Network as well as Malcolm Jones, Denise Doolan, Kath Andrews and others for all of their hard work.



The ASP course "Advanced Concepts in Parasitology" took place at the Australian National University (ANU), Kioloa Coastal Campus, between 23th November and 6th December 2014. The course was a great success and I would like to thank Alexander Maier and EVERYONE involved in the course for their massive contributions to make this such a great



event. We look very much forward to the 2015 course! We continue to seek support (in kind, cash, equipment, consumables, computers, etc.) from sponsors and promote the course through a new video on our newly designed ASP website (www.parasite.org.au). We thank Alexander Maier and his team for organising and putting together this promotional video.

Our new ASP website looks great, and, on behalf of ASP, I would like to thank Lisa and her Hub for their tremendous efforts in getting this done. This new-look web site will certainly profile ASP and hopefully will be a magnet to Parasitologist around Australia and the world. Important, the site also has an electronic copy of the 50th Anniversary booklet, which can be downloaded as pdf.

"Outreach Funds" available to support State/Territory events, including networking sessions or any other parasitology-related event; up to \$500/event with a total of \$2,000/calendar year per state/territory. Applications for support are coordinated via your state/territory representative.

The International Journal for Parasitology (IJP) spin-off journals, IJP-Drugs and Drug

From the President's desk continued

Resistance (IJP-DRR), IJP-Parasites and Wildlife (IJP-PAW) are going from strength to strength, and we wish the Editors and Assistant Editor Maria Meuleman all the very best of success in the busy year ahead. The new Editor-in-Chief of IJP will be appointed at the next Mid Term Meeting (MTM) ASP Council Meeting.

MTM will be held in Melbourne on 18 February 2015, so please contact your State/Territory representative if you want any issues to be brought to ASP Council. I invite for expressions of interest from members with an interest in science policy or related activities to assist Council in raising the profile of Parasitology in Australia. If you

or anyone you know have interest in this area, please do not hesitate to contact me. Members of Council have been asked to be proactive in identifying potential interests.

Wishing you every success throughout 2015.

Best wishes,

Robin Gasser

ICOPA XIII, Mexico



ICOPA under the auspices of the World Federation of Parasitologists (WFP) is held every four years. ICOPA XIII was held in Mexico City from 10th to 15th August 2014. Almost 1400 participants, from 81 countries came to this first ICOPA in Latin America. A high level scientific program and wonderful social gatherings were organised and there were plenty of Aussies in attendance and tequila was not in short supply. A full report of the congress can be found on the WFP-website and www.icopa2014.org. Daegu, South Korea was elected host city for the next ICOPA XIV in 2018. The WFP distinguished achievements awards were for the second time presented at ICOPA XIII in Mexico City. The awards are given to outstanding parasitologists, nominated by member societies of WFP and our own highflyer, Professor Ian Beveridge (pictured above receiving a gift from the ASP with Robin Gasser and David Piedrafita) was a recipient. Well done Ian!



2015 Conference 29 June - 2 July, Auckland



On behalf of the Organising Committee, we extend a warm invitation to attend the **2015 NZSP & ASP Annual Conference, which will be held at Crowne Plaza Auckland, New Zealand from 5pm Monday June 29 – Thursday July 2, 2015**, inclusive. It will be hosted jointly by the New Zealand Society for Parasitology and Australian Society for Parasitology, celebrating the best Australian and New Zealand parasitology research. The Conference program includes an outstanding mix of quality international, New Zealand and Australian scientists and with the following confirmed themes and invited speakers:

Elsevier Parasitology Lectures

- IJP Lecture – **Professor Robert Poulin** (University of Otago, N.Z.)
- IJP Drugs and Drug Resistance Lecture & 2014 ASP Invited Lecturer – **Professor Ray Kaplan** (The University of Georgia, U.S.A.)
- IJP Parasites and Wildlife Lecture & 2014 ASP Invited Lecturer – **Dr Eric Hoberg** (United States Department of Agriculture, U.S.A.)

Plenary and Symposia themes and confirmed speakers

- Immunity, Inflammation and Immunopathology – **Dr Paul Giacomin** (James Cook University, Australia)
- Diagnostics and Control – **Dr Jetsumon Prachumsri** (Mahidol University, Thailand)
- Population Genetics – **Professor Ivo Mueller** (Walter and Eliza Hall Institute, Australia)
- Veterinary Parasitology – **Dr David Heath** (AgResearch New Zealand)
- Protozoan Biology – **Dr Adele Lehane** (Australian National University)

- Helminth Biology – **A/Professor David Piedrafita** (Federation University, Australia)
- Veterinary Parasitology – **Dr David Leathwick** (AgResearch New Zealand)
- Marine Parasitology & Aquaculture: A Tribute to Associate Professor Ian Whittington – **Dr Andy Shinn** (Fish Vet Group Asia, Thailand)
- Ecology of Parasitism – **Dr Stephanie Godfrey** (Murdoch University, Australia)

The NZSP & ASP acknowledge the generous support of **Elsevier Parasitology, the International Journal for Parasitology (IJP), IJP: DDR, IJP: PAW, Virbac Animal Health, Bayer Animal Health and New England BioLabs Inc.**

For ASP student members to be eligible to apply for a 2015 ASP Student Conference travel grant they must join the ASP before Thursday April 2nd July 2015. www.parasite.org.au/awards/asp-student-travel-award/

Check the conference website for more details www.parasite.org.au/2015conference/ and registration will open shortly, early bird registration closes 10th April 2015. Please contact Lisa Jones by email (lisa.jones1@jcu.edu.au) or telephone +61 (0)7 4232 1311 with any queries. We look forward to seeing you in Auckland in June and July!



In Memoriam

Associate Professor Ian David Whittington (1960-2014)

Ian will long be remembered by his colleagues and friends as a passionate and enthusiastic scientist who held high, scrupulous standards and yet was modest and kind with an incredibly infectious sense of humour.

Born in the UK in 1960, Ian completed his PhD at the University of East Anglia in 1986 with Dr Graham Kearn, a leading authority on Monogenea. Ian then moved to Australia, in 1987 where he worked at the University of Queensland (UQ) in Brisbane as a Postdoctoral Fellow in the School of Biological Sciences. He won a prestigious Queen Elizabeth II Fellowship in 1990 and continued his work on Monogenea in the Department of Parasitology at UQ before accepting a Lectureship at the same institution (1993-1996). He maintained high research productivity during his Directorship of UQ's Heron Island Research Station (1996 to 1999) and was promoted to Senior Lecturer in 1997. During his 15 years at UQ, Ian built and led the Monogenean Research Laboratory – the only Australian research team dedicated to the study of this group of fish parasites. In July 2001, his group had the honour of hosting the 4th International Symposium on Monogenea, demonstrating significant international recognition for Ian's research during his early to mid-career.

In January 2002 Ian's status as an outstanding scientist was acknowledged when he was recruited by the then Director, Professor Tim Flannery, of the South Australian Museum (SAMA) to take on the role of Senior Research Scientist heading the Parasitology Section. This was a joint appointment with the University of Adelaide (UoA) where he delivered ever popular parasitology lectures. In 2006, he was promoted to Principal Research Scientist/Associate Professor.

Ian made numerous overseas study visits to further his investigations of monogeneans which included trips to Japan (1999-02), Borneo (2002), México



In Memoriam: Associate Professor Ian Whittington continued...

(2002, 2006), New Caledonia (2008) and Brazil (2011) and hosted international exchanges in his Australian laboratories. Ian promoted innovative studies of whole parasites to understand parasitism in relation to structure, ecology, life history, systematics and taxonomy and that of their host(s). His holistic studies focussed on live parasite biology, behaviour, life cycles, systematics and evolution. The specimens he donated to the Australian Helminthological Collection at SAMA constitute the major proportion of monogenean holdings in this collection.

Ian published more than 170 peer-reviewed papers over his career and led 40 major research projects to completion. Ian attracted

many students and colleagues with his expertise and knowledge of marine parasites, humorous nature and welcoming personality. He was a dedicated mentor, lecturer and supervisor and provided a supportive, professional environment conducive to productive science and the promotion of excellence and exceptional quality. He supervised more than 25 PhD/Honours students and mentored postdoctoral fellows. Many of his former students now work in senior roles in aquaculture, academia and government.

Ian belonged to numerous professional organisations and was familiar to many international colleagues, especially those who attended the International Symposium for Fish Parasitology and the International Symposia on Monogenea. Ian's research is well respected internationally and he made considerable contributions to the field through service. He received more than sixteen invitations to speak about his research at national and international conferences and contributed more than fourteen invited peer-reviewed publications. He acted as a grant assessor for numerous national and international funding bodies and served as Section Editor for the *International Journal for Parasitology* and was on the Editorial Board member for *Systematic Parasitology*, *Folia Parasitologica*, *Journal of Natural History* and *Acta Parasitologica*.

At SAMA Ian had significant input into the stunning Biodiversity Gallery and the construction of the award winning museum Website. Ian's formidable work ethic remained strong and although he was diagnosed with cancer in 2012 he took on the inconceivably demanding administrative roll as SAMA Head of Biological Sciences. He spent his final two 2 years juggling his hectic schedule with chemotherapy appointments. He remained actively engaged in research and these administrative duties until his death.



Ian Whittington will be remembered as an inspirational mentor and leader, who changed and shaped the lives of his students and had the admiration and respect of his colleagues. On behalf of his former students, friends and colleagues our thoughts go to his loving and attentive son, Matthew.

(This Memoriam provided by KS Hutson and LA Chisholm (Australia).



Images: Previous page photo taken by KS Hutson of Ian removing a monogenean (*Capsala martinieri*) from the external surface of an ocean sunfish (*Mola mola*) in 2008.

Top image Ian Whittington at ASP2011. Middle image Ian Whittington taken by Leslie Chisholm at the South Australian Museum. Bottom image Ian Whittington with H Weaver K Hutson A Gonzalez & A Brazenor at 2012 ASP Conference.

Fellow of the Australian Society for Parasitology

Dr Robert Adlard



Dr Rob Adlard, Head of Marine Environments & Senior Curator of Parasitology at the Queensland Museum

Robert Adlard received a BSc (Honours) from the University of Queensland in 1983 and a PhD from the same university with a thesis entitled, "*The effects of the parasitic isopod Anilocra pomacentri* Bruce (Cymothoidae) on the population dynamics of the reef fish *Chromis nitida* Whitley (Pomacentridae)". He then held positions as Postdoctoral Fellow in the Department of Parasitology, University of Queensland, and Assistant Curator of the Queensland Museum. Rob has also served as consultant to industry in marine sciences, specializing in the control of parasitic infections of commercial species. Rob has carved out a role as an international leader in the field of parasite biodiversity. Rob was the inaugural curator of the globally significant International Research Centre for Avian Haematozoa (IRCAH).

Rob is now Head of Marine Environments (while retaining the title of Senior Curator of Parasitology) at the Queensland Museum, and has responsibility for the significant collections of parasitological specimens at the Museum, estimated as around the fifth-largest collection of such material anywhere in the world and representing

a major resource for the members of the Australian Society for Parasitology.

Rob's career has focused almost exclusively on understanding the biology and diversity of parasites of marine organisms and wildlife. His work has had a strong whole organism and ecological focus, with a view to solving major economic problems of significance to Australian and international fisheries. Among his research achievements are: the first empirical demonstration undertaken in an open marine system (Great Barrier Reef), proving that parasites regulate host fish populations; demonstration that polychaetes are involved in the lifecycle of QX disease (*Marteilia sydneyi*), a significant pathogen of commercial oysters; determination of the oyster cycle of this parasite using molecular probes, epidemiology and causal webs for the disease agent and devising a scientific evidence-based management plan; demonstration that the wide host range and wide geographic distribution of marine White Spot Disease (*Cryptocaryon irritans*, a devastating pathogen of aquarium fish and fish in aquaculture), was the result of the presence of a species complex; determining the life cycle of a significant pathogen of Southern Bluefin Tuna – provided enabling information for management by industry; rationalised the systematics of myxozoan parasites and assessed biological correlates to provide a benchmark for study and diagnosis of these fish pathogens. Rob has discovered and described a total of 140 new species of parasites from fish and wildlife, providing substantial enhancement of knowledge of the diversity of parasites in Australia.

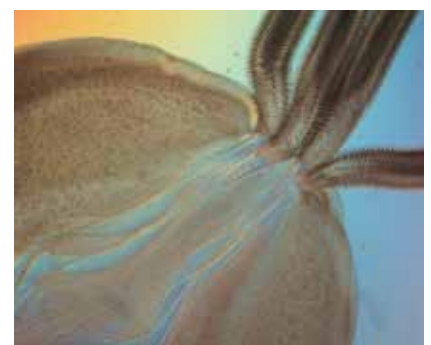
Rob has been an outstanding mentor in parasitology. He has supervised 14 PhD and 10 Honours students to successful completion of their studies. He has funded and mentored 4 post-doctoral fellows. Dr Adlard has been an excellent advocate for the discipline of Parasitology in television and radio interviews on issues in parasitology, in television shows for children, public lectures, Museum National Science Week activities, parasite exhibitions and Meet-the-Curator programs at the Queensland Museum. He has strong input into the ASP's *Parasites in Focus* exhibition. In keeping with his broad interests in biology, Rob has contributed chapters and images to local popular publications, including *Wildlife of Greater Brisbane*, *Wild Guide to Moreton Bay*, *Discovery Guide to the Great Barrier Reef*, and led the development of a *Field Guide to Queensland Fauna* smart phone app launched in May 2014.

An international advocate for Australian parasitology, Dr Adlard is currently a member of the Steering Committee for the *MalariaRCN*, a research co-ordination network funded by the National Science Foundation (USA) to promote research on *Malaria and Related Haemosporidian Parasites of Wildlife*. He has published 100 peer-reviewed scientific research papers and is recognised as a world expert in myxozoan parasites of fishes, presenting an invited Keynote Lecture on the subject at the *International Symposium of Fish Parasites* in 2011 in Chile. He has presented almost 100 conference papers on his work both nationally and internationally and won over \$3.4 million

ASP Fellow: Dr Rob Adlard cont...



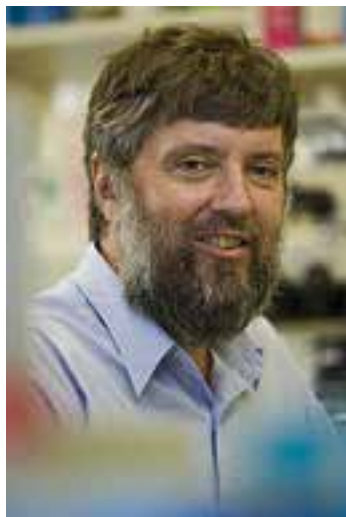
in competitive grant funding. He is currently a Regional Resource Expert for the *Network of Aquaculture Centres of the Asia-Pacific* (centred in Bangkok) and Chair of the National Reference Group for the *Neptune* project, the Australian aquatic animal health web-platform. Rob has been one of the most loyal and hardworking servants of the Australian Society for Parasitology. He has been executive secretary of the ASP Council on two occasions, and Queensland State representative for three years. He has served on the organizing committee of 1999 Conference in Yeppoon and the 2006 conference on the Gold Coast. He is now a member of the curriculum committee for the *ASP Kioloa Intensive Parasitology Course* to be run for the first time in late 2014. Dr Adlard was a participant and steering committee member of the ARC/ NHMRC Research Network for Parasitology bid in 2004, and a member of the Managerial and Advisory committee for the Network from 2007 to 2009. He has served on the Specialist Editorial Board of the *International Journal for Parasitology* for two terms. Through his endeavours, Rob has promoted the advance of parasitology and has rendered conspicuous service to the cause of Parasitology and the Society. Dr Robert Adlard is a very worthy recipient of the Fellowship of the Australian Society for Parasitology.



Images: Robin Gasser presenting ASP Fellow Award to Rob Adlard (top and middle right); Rob Adlard (previous page and this page middle left) bottom row of images courtesy of Rob Adlard, QLD Museum, from left *Anilocra pomacentri* manca stage (ectoparasitic isopod) initial feeding scar on juvenile *Chromis nitida* – Heron Is; Marine leech from the leopard shark – Flinders Reef Moreton Bay; Anterior of trypanorhynch metacystode from a serranid fish.

Fellow of the Australian Society for Parasitology

Professor Thomas H. Cribb



Thomas H. Cribb is elected to Fellow of the Australian Society for Parasitology.

Tom received his PhD in Parasitology from the University of Queensland in 1986 for work focusing on elucidating the taxonomy and life-cycles of trematodes of Australian freshwater fishes. He then took up a CSIRO postdoctoral Fellowship in London and Canberra to work on trematodes of Australian terrestrial mammals. A QEII Fellowship followed, during which he commenced work on trematodes of marine fishes, principally of the tropical Indo-Pacific. The theme of his research for more than 30 years has been the biodiversity of trematodes – their taxonomy, evolution, host-specificity, geographical distribution and life cycles. Using a combination of morphological and molecular approaches, Tom has gone on to become one of the most significant contributors to the understanding of trematodes, and has made major contributions to knowledge of the evolution and ecology of helminths in both aquatic and terrestrial systems. Evidence of the significance of these contributions is provided in his receipt of the Bancroft-Makerras Medal for research excellence in 2007. Since receiving his PhD, Tom has published 259 manuscripts in high-quality, peer-reviewed scientific

journals describing more than 300 new species and 65 genera of helminths, as well as expanding knowledge of the distribution and biology of countless other species. A feature of his work has been the elucidation of many complex novel trematode life-cycles. Tom's research shows his clear passion for fundamental research in zoology, ecology, parasitology and the world's natural history. He has also made significant applied contributions to his field, including characterizing the life-cycles of *Brachylaima cribbi*, a parasite that infects humans, and, with colleagues, that of *Cardicola forsteri*, a significant pathogen of ranched southern bluefin tuna.

Beyond his direct scientific contributions, Tom Cribb has made substantial contributions to the discipline of Parasitology. He has supervised to completion 77 post-graduate students, including 22 PhD candidates and 54 Honours students and continues to provide strong mentorship and guidance for many of his former students as they have gone on to develop their careers in Parasitology as post-doctoral research scientists and senior researchers within industry, the departments of primary industries, CSIRO, or as faculty members of universities within Australia and around the world. Tom has been a strong supporter, mentor and teacher in undergraduate education at all levels, and has run numerous specialist field courses on Marine Parasitology on Heron Island, North Stradbroke Island and, through the Australian Society for Parasitology outreach program, Kenya. Currently, he serves on the editorial boards of *Acta Parasitologica*, *Folia Parasitologica*, *Parasite*, *Parasitology International* and *Systematic Parasitology*.

Tom also has a strong history of substantial contributions to the Australian Society for Parasitology, including as a former member of the editorial board of the *International Journal for Parasitology*,



ASP Fellow: Professor Thomas H. Cribb cont...



Images: Robin Gasser presenting ASP Fellow Award to Tom Cribb (previous page); Tom Cribb (previous page and this page)

and through service as a member of the Society's council, as Councilor from 1995-1997 and as President-Elect, President and Vice-President from 2001-2003. Tom has also been a stalwart supporter of the Society through his research group, with students under his supervision having presented their research at every meeting of the Australian Society for Parasitology since he commenced his Lectureship position at the University of Queensland in 1992. Many of these students have since gone on to make their own contributions to the Society through service to the Council and through their own research groups.

For his major contributions to Parasitology through his scientific research and tireless mentorship of his current and former students and for his significant contributions to the Society, Thomas H. Cribb is elected Fellow of the Australian Society for Parasitology.



For all the members who were unable to attend the 2014 ASP 50th Anniversary Conference and for those members who would like an electronic version of the **ASP 50th Anniversary Commemorative book** please download from the ASP website or email Lisa.Jones1@jcu.edu.au if you want the very large high resolution version of the book.

www.parasite.org.au/publications/asp-50th-anniversary-commemorative-book/

Fellow of the Australian Society for Parasitology

Professor Geoffrey I. McFadden



Geoff McFadden, a 1984 PhD graduate in Botany from The University of Melbourne, identified the relict chloroplast in apicomplexan parasites – a discovery that has revolutionised our understanding of one of the world’s major pathogens and opened up new strategies to battle the deadly disease, malaria. Geoff has focused his research on the biology and evolution of protists, the kingdom of life that includes algae as well as many other unicellular organisms. His research has shown, quite unexpectedly, that *Plasmodium*, the parasite responsible for malaria, is related to algae and contains a plastid – the chloroplast organelle that is responsible for photosynthesis in algae and higher plants. In apicomplexans, this organelle, now known as the “apicoplast”, no longer contains chlorophyll but has a circular DNA genome similar to all other plastids. This fundamental scientific discovery opened up novel approaches for studying and combating malaria. Geoff’s team has identified many new drug targets in the plastid of malaria parasites, vastly increasing the number of strategies for the development of much needed new anti-malarial drugs.

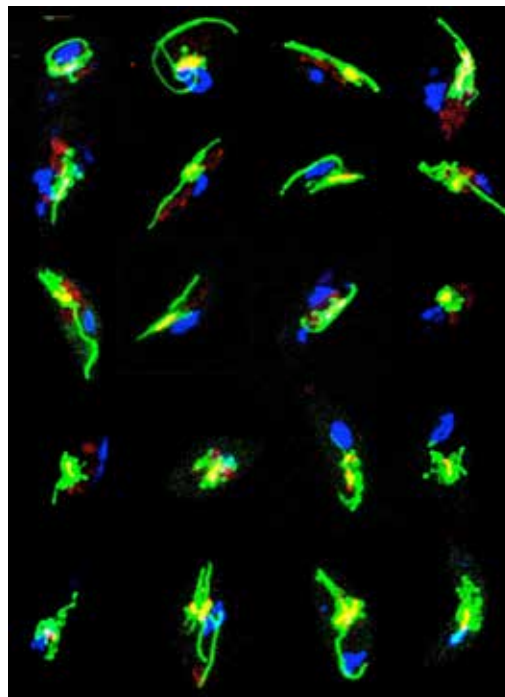
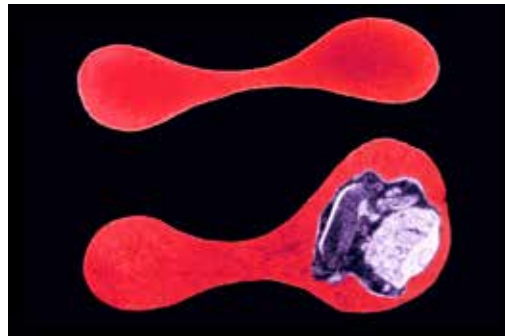
In recognition of the importance of his work, Geoff has been elected as a Fellow of the Australian Academy of Science and as an overseas associate to the Canadian Institute of Advanced Research. He has received two Howard Hughes Medical Institute International Scholar Awards, the Australian Academy of Science’s Frederick White Prize, The David Syme Prize, the Friedrich-Mieschner Prize for endosymbiosis research, the Julian Wells Medal for genome research, the Royal Society of Victoria Research Medal and the Ramaciotti Research Medal. Geoff has been the recipient of three consecutive major National Health and Medical Research Council (NHMRC) 5 year Program Grants in collaboration with some of Australia’s finest parasitologists,

ASP Fellow: Professor Geoff McFadden cont...

and has been an Australian Research Council (ARC) Professorial Fellow, and a Federation Fellow.

Geoff has published over 200 papers, many in high impact journals such as *Nature*, *Science*, *PNAS*, *The EMBO Journal*, *Current Biology* and *The Journal of Cell Biology*. His publications have attracted 14,000 citations, and he has an h-factor of 60. Thirty-eight of his papers have been cited more than 100 times, including six with more than 200 citations, three more with over 300 citations, three with more than 400 cites, one with more than 600 citations and one cited more than 3,000 times. Journal covers have featured images from his laboratory 20 times.

Geoff's contributions to unraveling the evolutionary relationships of microscopic plankton and the origin of chloroplasts by endosymbiosis, placed him in the perfect situation for identifying a relict chloroplast in human parasites. He is the only botanist working on malaria and the only botanist to be a Principal Investigator in National Health and Medical Research Council (NHMRC) Program Grants. Similarly, he is the only botanist to secure grants from the Howard Hughes Medical Institute for Medical Research. He has crossed discipline boundaries, requiring a determination and flexibility to adapt to a difficult and demanding research subject. His success in obtaining funding support, and his wide-ranging collaborations with parasitologists, evolutionary biologists and botanists in universities, medical research institutions, hospitals, the military and non-government organisations, attest to the significance of his research success.



But over and above this, Geoff has been an outstanding mentor to young scientists and a loyal servant to the Australian Society for Parasitology. His graduate students and postdoctoral fellows have made outstanding contributions to parasitology, received competitive research fellowships and many have gone on to become strong, independent researchers now leading their own teams at prestigious national research institutions including The Walter and Eliza Hall Institute of Medical Research, the Burnet Institute, the Royal Botanic Gardens of Melbourne, the Bio21 Institute, The University of Melbourne, the Australian National University, plus renowned international institutions such as Nanyang University, the University of British Columbia, Université de Limoges, the University of Otago, the Pasteur Institute, the Sanger Institute, the University of Cambridge and Merck Pty Ltd. Geoff was one of the driving forces behind the establishment and the success of the ARC/NHMRC Research Network for Parasitology, and served on its the management committee from 2004-2010, then becoming the inaugural director of the Australian/European Malaria Research Network. He has helped to revitalise the discipline of parasitology in Australia over the last decade. Geoff has also been the President of the International Society of Evolutionary Protistology. He is a more than worthy recipient of the title, Fellow of the Australian Society for Parasitology.

Images: Geoff McFadden (previous page and this page bottom image); top image a healthy red blood cell & a malaria-infected red blood cell (image courtesy McFadden); middle image *Plasmodium falciparum* gametocytes (image courtesy Okamoto)

News from the ASP Network for Parasitology

Welcome

Happy New Year! In this newsletter we feature photos from our ASP-Inspiring Australia "Parasites in Power" and National Science Week 2014 events and photos from the 2014 ASP 50th Anniversary Conference held in Canberra.

Through our Inspiring Australia grant we will be collaborating with Indigenous artist and performer **Bernard Lee Singleton** and artist **Tai Inoue** (Nature Sounds - Filming and Photography) on a unique Art-Science Parasite project.

Bernard is an artist born in Cairns and raised in the small Aboriginal community of Coen, Cape York. Bernard's Mother is a Djabuguy woman born in Mona Mona mission and his Father is an Umpila (east coast Cape York)/Yirrkandji man from Yarrabah mission.

Annual Conference

The **2015 Annual Conference will be a joint meeting held with the NZSP at the Crowne Plaza, Auckland, New Zealand from 5pm June 29th - July 2nd**. We hope to see you all in June for, what promises to be, another wonderful

Closing dates for ASP awards and ASP Fellowships

**ASP Network Researcher Exchange,
Travel and Training Award
and JD Smyth Award**

Friday 13 March 2015
Friday 26 September 2015

ASP Fellowships
9 January 2015

More information
www.parasite.org.au

event. See conference information on page 5 of this newsletter.

www.parasite.org.au/2015conference/

ASP Network Researcher Exchange, Travel and Training Award and JD Smyth Award

Congratulations to recent JD Smyth Travel Award and ASP Network Travel Award winners.

JD Smyth Travel Award winners

- **Rebecca Stewart**, PhD candidate, The Walter and Eliza Hall Institute, Researcher Exchange to the Hunter lab, University of Pennsylvania in Philadelphia for hands on training of 2-Photon Microscopy to analyse *Toxoplasma* in the brain *in vivo* and to attend Parasitology Conference, Philadelphia and Woods Hole, Massachusetts, USA
- **Brendan Ansell**, PhD Candidate, The University of Melbourne, for a Researcher Exchange to visit Prof. Staffan Svard at Uppsala University, Sweden for expertise in the laboratory manipulation of *Giardia*.

ASP Network Travel Award winners

- **Catarina dos Santos**, PhD Candidate, The University of Tasmania, for a Researcher Exchange with a leading fish immunologist in New Zealand, Dr. Steve Bird, The University of Waikato to learn molecular techniques to significantly increase the understanding of amoebic gill disease – Atlantic Salmon interaction.
- **Stephanie Hing**, PhD Student, Murdoch University, for Researcher Exchange to Charles Sturt University.

Network Mentorship Scheme

Early career researchers are encouraged to apply to the Network Convenor (nicholas.smith@jcu.edu.au), in strict confidence, for funding to participate in the Network Mentorship Scheme. The scheme allows young investigators to be paired with experienced, successful researchers to discuss, plan, prioritise and set targets for their career. Typically, the early career researcher will fly to the institute of a senior parasitologist and spend a day there. Arrangements for professional development and progress to be reviewed by the pair annually can also be arranged. Importantly, mentors need not be from an individual's home institution but can be drawn from across the Network. The scheme has proved very valuable for several young researchers and their mentors already.

To apply, simply write to Nick Smith (nicholas.smith@jcu.edu.au) with a brief outline of your research interests and aspirations. You can also indicate a preferred mentor or ask Nick for advice on whom amongst the Network participants may be most suitable.

Nick Smith
Convenor, ASP Network for
Parasitology

Lisa Jones
Communications Coordinator

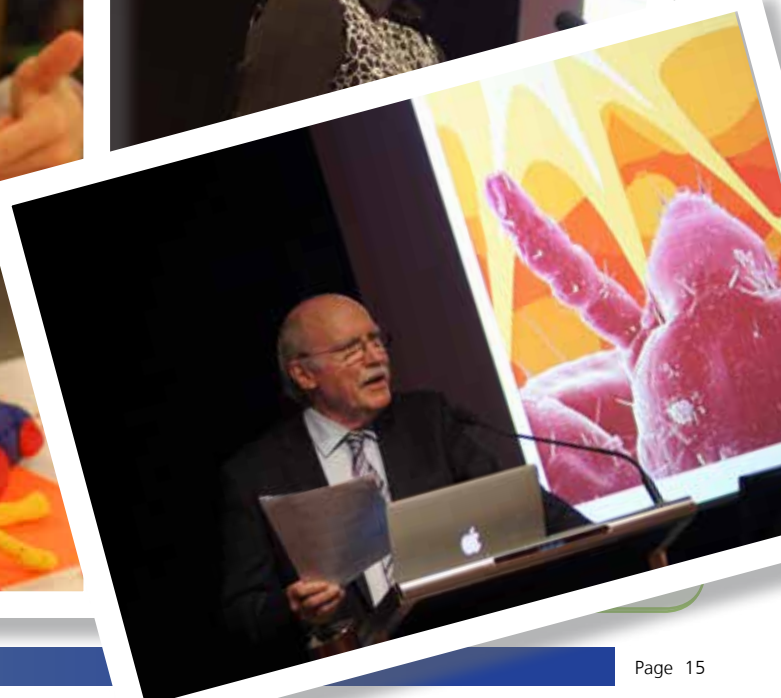
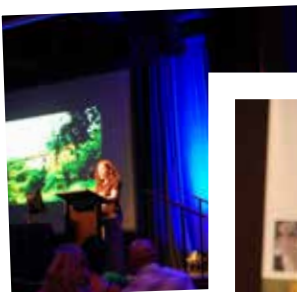


An Australian Government Initiative



Inspiring
AUSTRALIA

Photos from 2014 ASP-Inspiring Australia "Parasites in Power" and National Science Week events



Congratulations to ARC grant recipients

The following outstanding parasitologist have secured prestigious ARC grants, worth collectively over \$5 million:

ARC DISCOVERY GRANT

Prof Kiaran Kirk; Dr Giel G van Dooren; Prof Stefan Broer; A/Prof Ian A Cockburn

A novel family of amino acid transporters in Apicomplexan parasites, \$560K, 2015-18

The Australian National University

Apicomplexan parasites are single celled organisms that are the causative agents of major diseases in livestock and humans. However, the basic biochemistry of these intracellular parasites is poorly understood, and there are limited treatments available for the diseases these parasites cause. The project hypothesis is that a novel family of proteins that are unique to apicomplexan parasites play a key role in the uptake of essential nutrients (amino acids) into these organisms. This project aims to use a combination of genetic, biochemical and physiological methods to understand the function of these proteins, the role(s) that they play in apicomplexan biology, and their importance for parasite survival.

ARC LIEF GRANTS

Prof Katharina Gaus; Prof John J Gooding; Dr Till Boecking; Dr Lawrence Lee; Prof James C Whisstock; Prof Jamie Rossjohn; Prof Paul J Hertzog; Prof William R Heath; Prof Dale I Godfrey; Dr Daniel M Hatters; A/Prof Harry M Quiney; Dr Brian Abbey; A/Prof Filip C Braet; Prof Nicholas J King; **Prof Georges E Grau**; Prof Antoine M van Oijen; Prof Ewa M Goldys; Prof Johnson Mak; Prof Frederic A Meunier; Prof Alpha S Yap; Dr Nicholas S Eyre; Prof Sarah M Russell, The University of New South Wales, The University of Adelaide, Swinburne University of Technology, Monash University, The University of Melbourne,

La Trobe University, **The University of Sydney**, University of Wollongong, Macquarie University, Deakin University, The University of Queensland; *Single molecule imaging laboratory: The goal of the project is to establish a single molecule imaging laboratory to close the gap between structural imaging and cellular imaging. Utilising the expertise of the ARC Centre of Excellence in Advanced Molecular Imaging, the aim of the project is to design, build and apply three microscopes that go beyond the current commercial solutions for single molecule localisation microscopy such as Photo-Activation Localisation Microscopy (PALM) and Stochastic Optical Reconstruction Microscopy (STORM) and perform single molecule imaging: deep inside cells and tissue. The facility will have a fast acquisition rate to monitor highly dynamic molecular events, and improved precision to image molecules and complexes in intact cells with less than or equal to one nanometre resolution. There is currently no comparable imaging facility in the world.*

Prof Trevor J Lithgow; Dr Georg Ramm; Prof Richard A Strugnell; Prof Elizabeth L Hartland; **Dr Eric Hanssen**; Prof David A Jans; Prof John Carroll; Prof Paul J Hertzog; Prof Paul A Gleeson, Monash University, **The University of Melbourne**; *A video-rate nanoscopy facility for super-resolution imaging: Super-Resolution Microscopy (SRM) is a major frontier technology and is revolutionising our understanding of the structure and dynamics of cellular organisation. A video-rate SRM imaging facility will be established and is expected to bridge the gap between the functional dynamics and structure of living systems at the level of the single molecule. In leading international centres, breakthroughs are being made in understanding molecular mechanisms in cancer, infectious diseases and neuropathologies. Beyond purely biomedical considerations, SRM*

is redefining our knowledge of cellular architecture and will impact on our understanding of the fundamental biology of all plants, animals and micro organisms.

Dr Eric Hanssen; Prof Tony Bacic; **Prof Geoffrey I McFadden**; **Prof Malcolm J McConville**; Prof John B Furness; Prof Dougal G McCulloch; A/Prof Vipul Bansal; Prof Kathryn N North, **The University of Melbourne**, RMIT University, Murdoch Childrens Research Institute, The Florey Institute of Neuroscience and Mental Health; *An automated 3D electron microscopy facility: The aim of this project is to establish the next generation of electron microscopy facility, with a fully automated tool enabling 3D imaging. The automated serial section system incorporated in a scanning electron microscope circumvents the limitation of transmission electron microscopy, which provides unique insights into molecular structures and cell components at high resolution, however, the area and volume are limited in size to a few microns. This new type of microscope can image whole organisms and be used by non-electron microscopists. It will be housed in an open access facility and will meet a growing demand for 3D electron microscopy.*

Prof Staffan Persson; **Prof Leann Tilley**; Dr Paul J McMillan; Prof Tony Bacic; Prof John L Bowman; A/Prof Rachel A Burton; Prof Marilyn A Anderson; Dr Bernhard Dichtl; Prof Geoffrey B Fincher; Prof James M Whelan; **Prof Geoffrey I McFadden**; A/Prof Roslyn M Gleadow, **The University of Melbourne**, Monash University, La Trobe University, Deakin University, The University of Adelaide *Spinning disk confocal microscope with dual stages: This custom-built spinning disk confocal microscope with rotational stages will constitute an internationally unique platform. The system has the capability of rapidly monitoring cells in growing biological specimens under changing environments. It offers an*

Congratulations to ARC grant recipients cont...

integrated platform for multiple imaging strategies, including confocal and Total Internal Reflection Fluorescence (TIRF) microscopy. The system will reside in core facilities with open access to a broad research community. The system may be used to monitor a wide variety of cells and molecules, and will offer capabilities that are of importance to understand cell trafficking, disease and signalling, plant biomass production, and climate change.

A/Prof Timothy P Stinear; Dr Torsten Seemann; A/Prof Alex Andrianopoulos; Dr Kathryn E Holt; **Prof Christian D Doerig**; Prof Julian I Rood; Prof Stephen J Turner; **Prof Robin B Gasser**; A/Prof Sureshkumar Balasubramanian; Dr Paul J Sunnucks, The University of Melbourne, Monash University

A single molecule real-time DNA sequencing facility: A PacBio SMRT sequencing facility will be established and used to accelerate ten specific research programs across a breadth of biological disciplines at two institutions. A specialised high throughput DNA sequencing technology called Single Molecule Real-Time (SMRT) sequencing developed by Pacific Biosciences (PacBio) is revolutionising biological research. SMRT sequencing allows researchers to discover important information in DNA and RNA molecules that are missed by other modern DNA sequencing approaches. It is expected that this facility will also be a key infrastructure resource for the wider scientific community, helping to address fundamental questions in biology.

Prof Andrew H Millar; A/Prof Peta L Clode; A/Prof Gavin R Flematti; Prof Peter J Leedman; Prof Dongke Zhang; Prof Kliti Grice; Prof Michael Bunce; Prof Richard P Oliver; Dr Kar-Chun

Tan; A/Prof Robert D Trengove; Dr Garth L Maker; **Prof Richard C Thompson**; Prof Stephen D Wilton; Prof Ralph N Martins; Dr Chris R Abbiss; Dr Mary C Boyce
The University of Western Australia, Curtin University of Technology, Murdoch University, Edith Cowan University
High resolution mass spectrometry for metabolomics and proteomics research: Ultra-high resolution mass spectrometry and capillary electrophoresis are expected to greatly enhance separation and mass analysis for multi-disciplinary research. Biological processes, and the metabolites and proteins that control them, will be analysed at rates, sensitivities and resolutions which are expected to significantly advance molecular and cell biology research. Multiple levels and types of fragmentation will allow complex experiments to be conducted and provide new mechanisms to aid plant and crop science, sports science, energy and resource science, and chemical toxicology. Comparative and systems biology, where analysis of rare or complex samples is a key requirement, will be strongly supported by these new facilities.

Prof David D Sampson; Prof Shaun P Collin; Prof Martin T Hill; Prof Yinong Liu; Prof Martin Saunders; Prof Steven M Reddy; Dr Gretchen Benedix; Prof Craig E Buckley; Dr Katy A Evans; Prof Birger Rasmussen; A/Prof Lai Chang Zhang; A/Prof Zongwen Liu; Dr Ravinder Anand; Dr Stephen J Barnes; **Prof Richard C Thompson**; A/Prof Gamini Senanayake

The University of Western Australia, Curtin University of Technology, The University of Sydney, Murdoch University, Edith Cowan University, Commonwealth Scientific and Industrial Research Organisation
Ultra-high resolution focussed ion beam facility: An ultra-high resolution dual beam facility (incorporating ion and electron beams) will provide 3D imaging, site-specific analysis and nano-machining to a wide range of internationally recognised Australian researchers across a broad spectrum of disciplines in the geosciences,

engineering, biological and physical sciences. Providing critically needed access to this world-class infrastructure is expected to advance international competitiveness, leading to high-impact outcomes in smart materials, nanotechnology, bioscience, and geoscience, including support for the Australian resources sector.

Prof David D Sampson; Prof Shaun P Collin; Prof Andrew S Whiteley; Prof David A Mackey; A/Prof Matthew D Linden; Prof Michael C Berndt; Prof Philip Newsholme; A/Prof Giuseppe Verdile; Dr Janina E Tirnitz-Parker; Dr Delia J Nelson; Prof Simon A Mallal; **Prof Una M Ryan**; Dr Philip A Stumbles; Dr Garth L Maker; Prof Ralph N Martins; A/Prof Mel Ziman; Dr Elin S Gray; Dr Deborah H Strickland; Dr Jason Waithman; Dr Meegan Howlett; Dr Bree A Foley
The University of Western Australia, Curtin University of Technology, **Murdoch University**, Edith Cowan University, Telethon Kids Institute
Mass cytometry - a breakthrough in multidimensional systems biology: Mass Cytometry by Time of Flight marries the resolution, specificity and sensitivity of atomic stable isotope mass spectrometry to the high-throughput, single-cell analytical advantages of flow cytometry. Using molecular probes conjugated with stable isotope tags, a large increase is possible in the number of simultaneous quantitative measurements in complex samples. These parameters, denoting cell type, function and signalling status, will make possible future advances in the understanding of the diversity of cell phenotype and function with a systems biology approach.

ASP Network Researcher Exchange, Training and Travel Award: Giana Bastos Gomes

Report by Giana Bastos Gomes, James Cook University

I am very grateful to the Australian Society for Parasitology (ASP) for the financial support awarded to me for my research exchange experience to visit the Microbial Diversity Laboratory (Centre for Genetics, Genomics and Evolution) led by Professor Laura A. Katz at Smith College, Northampton, MA, US. The objective of this visit (from 15th September to 3rd October 2014) was to learn how to culture parasitic ciliate protozoans, and apply different molecular techniques to identify cryptic species. Professor Katz's group has been growing "*in vitro*" *Chilodonella uncinata* (a free-living species extensively used as a genetic model) over the last six years.

This research exchange was crucial for my PhD project on parasitic *Chilodonella* species that cause diseases and economic loss in freshwater barramundi farms in north QLD and Murray cod fish farms from southern Australia. The freshwater finfish aquaculture industry requires more knowledge about this ciliate protozoan in order to integrate the most appropriate control strategies. Identification of parasitic species can be challenging, as some *Chilodonella* spp. can alternate between parasitic and free-living stages. Furthermore, there are limited distinguishing morphological characters within closely related species' groups.

My research project involves investigating the ecology and transmission dynamics of *Chilodonella* spp. infections in Australian fishes. I have been collecting water samples from freshwater aquaculture ponds from north QLD with a history of *Chilodonella* spp. infections, as well as samples from infected fish (gills and skin) collected during epizootic events. I have successfully detected *Chilodonella* spp. using novel environmental DNA (eDNA) diagnostic



Success! I have grown *Chilodonella* spp. from farmed barramundi *in vitro* at James Cook University following my researcher exchange in the US.

techniques developed during my project. Although I have sequenced more than 100 samples, identifying the species assemblage present in the region is challenging, as there is a lack of knowledge of morphological and genetic differentiation among Australian *Chilodonella* species.

Chilodonella species responsible for epizootics in freshwater farmed fish in Australia are poorly known. Based on my preliminary results there is evidence of multiple *Chilodonella* species present in single farms. Successful *in vitro* culture of ciliates is crucial for morphological and genetic analyses. Artificial culture of parasitic *Chilodonella* spp. is considerably challenging and is the single largest problem for identification of multiple and/or potential new species. *Chilodonella* spp. have been traditionally classified as morphospecies (species described and identified by morphological characters), but more recent genetic studies based on mtSSU-rDNA gene revealed multiple genetic variance among single *Chilodonella* cells. *Chilodonella* spp. has been classified recently as a cryptic complex of species (similar morphology but genetic

variance). Additionally, some studies show considerable dynamics in the distribution of cryptic species of *Chilodonella uncinata*.

While working with Professor Laura Katz we discussed the use of traditional molecular techniques such as denaturing gradient gel electrophoresis (DGGE) which may provide a cheap and quick insight into the spatial (i.e. between different ponds) and temporal (i.e. different months of the year) community changes of the parasitic *Chilodonella* species affecting barramundi in tropical QLD. DGGE could help us to understand the different genetic types of parasitic *Chilodonella* species present in farmed barramundi. Understanding the genetic relationship among *Chilodonella* species affecting fish in tropical QLD can help to determine which species are more likely to cause outbreaks and potential treatment methods.

Professor Katz's work focuses on principles of eukaryotic evolution through phylogenetic reconstruction, community sampling and analyses of genome evolution. In the last 18 years she has published over 90 research articles with

Giana Bastos Gomes continued

focus on molecular biology and ciliates. She has used different species of ciliates for her molecular research but the species *Chilodonella uncinata* has become an important model organism as part of her projects. During my visit to Professor Laura A. Katz's lab I learnt how to culture *in vitro* *Chilodonella* spp. observing how the technique has been applied to growing *Chilodonella uncinata*. I learnt how to identify single *Chilodonella* cells by a simple fluorescent *in situ* hybridization (FISH) protocol. This technique is another interesting tool with great potential to be used in my project to identify parasitic *Chilodonella* from farmed fish in Australia.

The skills learned from Professor Katz and her group will be useful not only for my PhD but for all my future work as a researcher. More importantly, this research exchange opened up opportunities for future collaborative research with Professor Katz's team. This opportunity provided unique and critical educational experiences to my research development and greatly improved my scientific skills and my knowledge on *Chilodonella* spp. Since my return to Australia I have been able to practise the skills learned for *in vitro* *Chilodonella* sp. culture collected from a barramundi farm from North Queensland. The culture has been growing very well and I have been enjoying every minute of this important step for my project.

Activities/skills learned were:

- In vitro growth of free-living *Chilodonella uncinata*;
- Manipulation and collection of single cells of *Chilodonella uncinata*;
- Direct PCR using a single cell of *Chilodonella uncinata* (without DNA extraction);
- Preparation and observation of fluorescent *in situ* hybridization (FISH) slides for identification of *Chilodonella* species;
- Denaturant gradient gel electrophoresis (DGGE) to assess community diversity of ciliates present in environmental samples (water, soil, etc);
- Cloning of other ciliates and *Chilodonella uncinata* (for different genes).

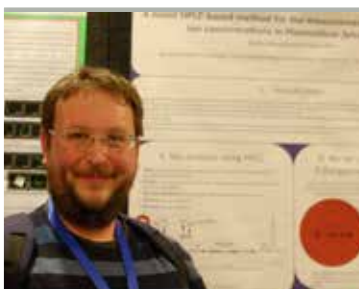
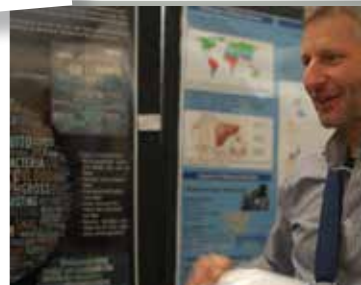
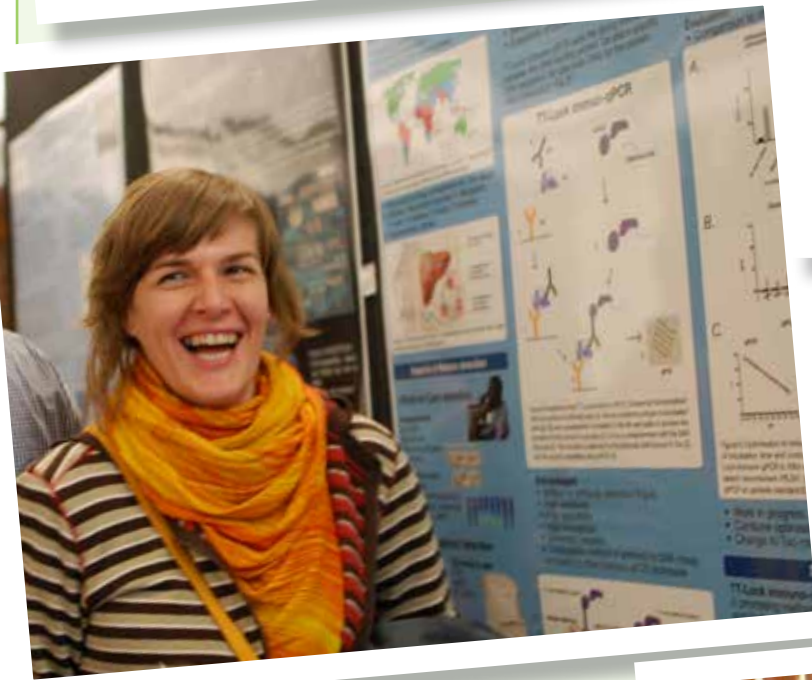


Professor Laura A. Katz and Giana during the travel exchange

Photos from the 2014 ASP 50th Anniversary Conference, June 30th
– July 3rd, ANU Commons, Canberra



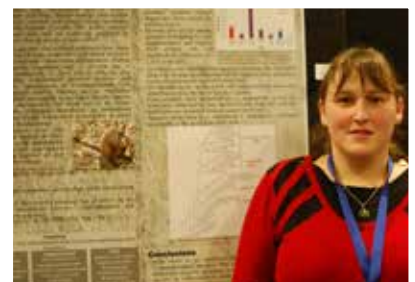
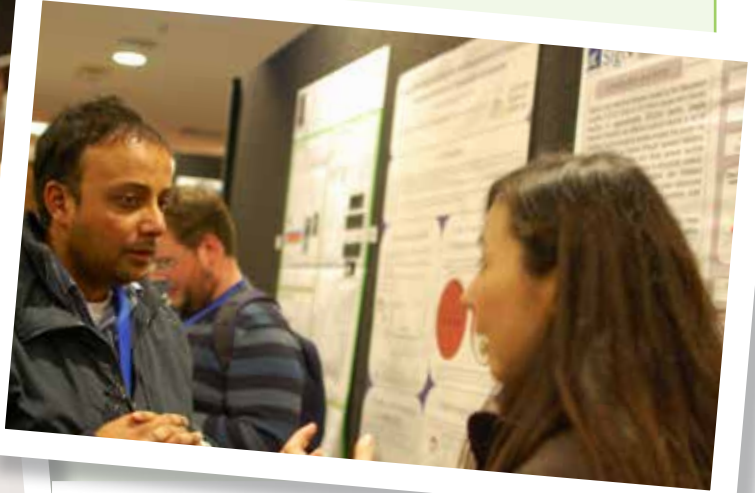
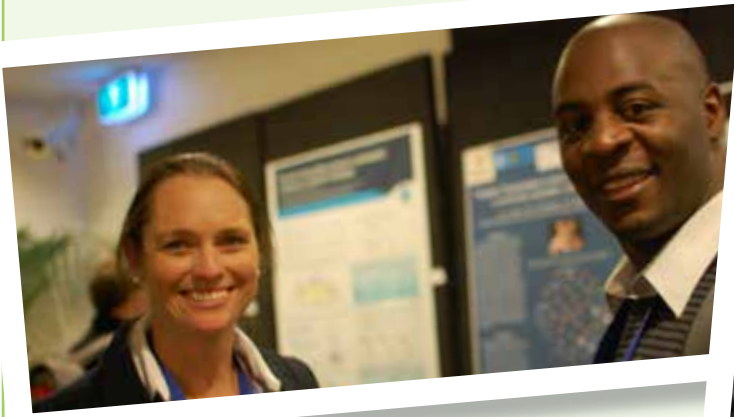
Photos from the 2014 ASP 50th Anniversary Conference, June 30th – July 3rd, ANU Commons, Canberra



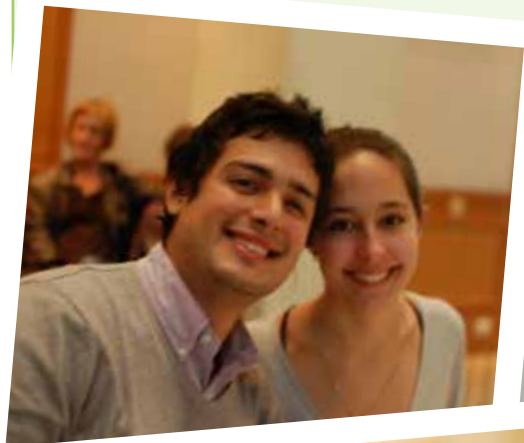
Photos from the 2014 ASP 50th Anniversary Conference, June 30th – July 3rd, ANU Commons, Canberra



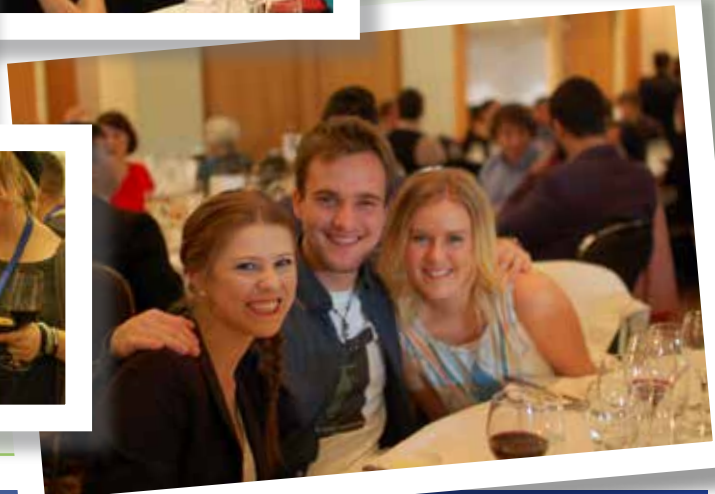
Photos from the 2014 ASP 50th Anniversary Conference, June 30th – July 3rd, ANU Commons, Canberra



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– July 3rd, ANU Commons, Canberra



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Photos from the 2014 ASP 50th Anniversary Conference, June 30th
– July 3rd, ANU Commons, Canberra



Science meets Parliament 2014

Reports by ASP members David Jenkins and Markus Winterberg

Science Meets Parliament took place in Canberra 17th – 18th March 2014

The annual Science Meets Parliament forum, organised by Science and Technology Australia (STA), gives scientists a chance to get an inside into politics and bring science closer to the decision makers. The event is set over two days. Day one is an information session for the participating scientist on how to successfully communicate their science. Day two takes place in parliament where meetings and discussions with politicians take place.

Theme of the first day was 'How to communicate your science'. The day started at the National Gallery of Australia with a welcome by the STA President Dr Ross Smith and CEO Catriona Jackson followed by a series of talks and keynote discussions on how to successfully mediate science to the public and politicians.

Questacon's Program Manager Simon France pointed out the importance to communicate in an understandable way and Dr Inger Mewburn showed how Twitter could be a useful tool to do so.

A discussion session chaired by Kylie Walker, Director, Communications and Outreach, Australian Academy of Science, James Massola, Political Correspondent, Fairfax Media and Lyndal Curtis, Political Editor, ABC News 24 who gave an entertaining inside into the way journalists work and how scientist can get attention for their research.

A highlight of the morning session was the address by the Honourable Bill Shorten, Leader of the Opposition. Mr Shorten elaborated the National Disability Support Scheme and emphasised the opposition's commitment to science and that science and research will be a priority when returning to Government.

The dinner was delightfully moderated by Robyn Williams (ABC radio) and filled with speeches of delegates and politicians. It was a great chance to get in contact with colleagues from other disciplines of science. A pity was that not many politicians attended the dinner.

The second day was set in Parliament House. Meetings with politicians were spread over the day together with presentations and a lunch at the National Press Club. A highlight was the address by Senator the Honourable Kim Carr. He outlined the roll of science and research at the cutting edge of social change. Senator Carr showed a great interest in the concerns of the participants and stayed on over the tea break to continue one-in-one discussions with the delegates.

Individual meetings in small groups between scientists and politicians were scheduled for the day. The meetings I've attended were always kept very brief and the politician's interest in the science presented was mixed. The day ended with a cocktail finale sponsored by the Greens.

Overall it was an interesting experience and a chance to get an inside into the world of politics. A little downside in my opinion is the lack of interest in science some of the politicians showed very openly. It seems to be a party specific phenomenon.

Report by Markus Winterberg

The following has been adapted from the report by David Jenkins:

Day 1 afternoon sessions from Dr Subio Banerjee, Deputy Secretary (Science Research and Skills), Department of Industry, gave us a bureaucrat's perspective on understanding science policy. Followed by Dr Inger Mewburn who explained in entertaining detail how to "Tweet Like a Pro" her hashtag being @thesiswhisperer. Not being a tweeter, or knowing much about how to do it I was looking forward to being educated, well it rapidly became clear to me I urgently need to take a course in "Tweet-speak" because much of what she said was completely over my head! However, the take-home message was clear, handled well, tweeting can be a very useful way of promoting your work.

The afternoon started with a very entertaining take on how to run a meeting with politicians that works. Chaired by Martin Laverty, CEO of Catholic Health Australia, Gary Dawson, Chief Executive, Australian Food and Grocery Council,

Simon Banks, Managing Director, Hawker Britton Public Affairs Solutions and Paul Chamberlin, Partner, Endeavour consulting. They gave a short skit on a political meeting with each panel member taking a role. It was the perfect light hearted, fun presentation to follow lunch when delegates may have had a tendency to doze off. There followed excellent presentations from Dr Rod Lambert Deputy Director and Dr Will Grant, Lecturer, Center for the Public Awareness of Science (CPAS), ANU explaining how to get science out of the lab and into the community in a way people enjoy and maintains interest in what they are hearing and/or seeing.

Delegates were then asked to present their work to the rest of their table in 60 seconds with the best talk judged by Rod Lambert and Will Grant from (CPAS). This activity was an excellent demonstration of how to present your work clearly and succinctly, a manner media, politicians and the public appreciate. The talks ended with "How to talk like a policy maker" by Professor Hugh White, Professor of Strategic Studies, ANU and "Raising the Standards of the climate debate: what debate" by Prof Will Steffen, climate change researcher.

Day 2: Meetings with politicians. Prior to SmP politicians had outlined topics they wished to discuss with a scientist, STA, matched scientists with politicians based on the area of expertise of the scientist and the request of the politician. Scientists with similar broad areas of interest were grouped in 2s or 3s for the meetings. My group was a group of 3 with broad biological interest but the politician we were matched with was expecting to be talking to a nuclear scientist not biologists and the meeting was brief.

My recommendation for ASP involvement in future SmP events is to register early and get guidance from the ASP Executive as to what issues the ASP wanted raised. I feel the ASP needs to become much more politically aware and strategic to take full advantage of the unique opportunity we have meeting politicians face to face to get our points across.

News about Australia/Europe Malaria Research Cooperation

Happy New Year and we hope to see many new applications from Australian malaria researchers for OzEMalaR Researcher Exchanges to eligible laboratories in 2015.

Don't forget to 'like' our facebook page, www.facebook.com/ozemalar and follow us on twitter

twitter.com/OzEMalaR

If you are running events, programs, public outreach please email details to Lisa.Jones1@jcu.edu.au for additional promotion through the ASP membership.

The 5th Molecular Approaches to Malaria Conference, February 21-25, 2016 in Lorne, Australia aims to highlight the latest molecular advances in our understanding of:

- host cell invasion
- virulence mechanisms
- immunity and pathogenesis
- drug resistance
- drug and vaccine discovery
- population biology
- transmission
- epidemiology
- host-parasite interactions (including vector)
- all human malaria parasite species

Visit the MAM2016 website www.mamconferences.org for more details and to register your interest and don't forget to 'like' our facebook page www.facebook.com/MAMconference and follow us on twitter twitter.com/MAMLorne

OzEMalaR funding runs until the end of 2015 and we want to make the most of such a fantastic opportunity. All OzEMalaR Travel Award funds granted to successful applicants must be invoiced for by the end of 2015.

The deadlines for 2015 OzEMalaR Travel Awards are:

Friday 6 March 2015

Friday 8 May 2015

Friday 10 July 2015

Friday 11 September 2015

Friday 30 October 2015

Visit our website www.ozemalar.org to find out how you can apply for OzEMalaR Travel Awards to support early career malaria researchers (PhD and postdocs) from Australia to work and be trained in top European laboratories within EviMalaR (=BioMalPar) for malaria research. To check which laboratories are eligible as hosts visit www.evimalar.org.uk Download funding guidelines from the OzEMalaR website and start planning your researcher exchanges to utilise this great opportunity. If you are not currently but would like to be part of the OzEMalaR Network please contact Lisa with your details. And please email Lisa with any news, jobs or events you have for the website or with your comments and suggestions.

Geoff McFadden
Convenor, OzEMalaR
OzEMalaR Travel Award Scheme

Congratulations to our latest OzEMalaR Travel Award winners:

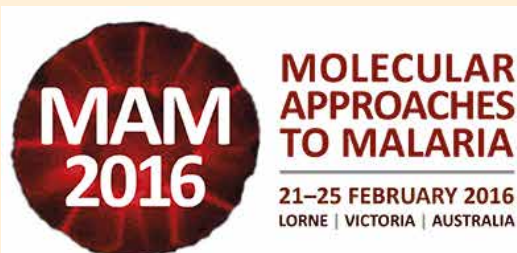
- **Danushka Marapana** PhD student, WEHI, Cowman laboratory for a Researcher Exchange to University of Heidelberg/ Friedrich Frischknecht
- **Sofonias Tessema**, PhD student, WEHI, Barry laboratory for a Researcher Exchange to the Lavstsen laboratory at the University of Copenhagen.

OzEMalaR Reports

Kylie James, Malaria Immunology Laboratory, QIMR Berghofer Medical Research Institute won \$5000 for an OzEMalaE Researcher Exchange to Wellcome Trust Sanger Institute and European Bioinformatics Institute, Hinxton, Cambridgeshire and tells us about her exchange here.

Last year I was both delighted and honored to received a travel award from OzEMalaR to go on exchange for 10 weeks in the laboratories of Dr Oliver Billker at the Wellcome Trust Sanger Institute (WTSI) and Dr Sarah Teichmann at the European Bioinformatics Institute (EBI), Hinxton, Cambridgeshire.

My interest and PhD project lies in how the antigen-specific CD4⁺ T cell proliferation and differentiation into effector cells can be controlled by innate immune factors during blood-stage malaria. Considering the significant



OzEMalaR Reports

global impact of malaria (caused by infection with the protozoan parasite *Plasmodium*), I believe a better understanding of the protective CD4+ T cells response is critical in advancing the feasibility of improving the host adaptive immune response to malaria, either via vaccination or during recrudescence infection in the field. I have already uncovered a role for interferon regulatory factors in boosting the appropriate CD4+ T cell response, and that this is likely facilitated by an innate immune cell. My next goal was to determine when and in which cell these factors are exerting their effects. This is where our new collaborators come into the picture.

Using the extensive expertise in parasite biology and infection of Dr Oliver Billker's group, combined with the single-cell RNAseq knowledge and experience of Dr Sarah Teichmann's group, we set out to investigate the differential gene expression of CD4+ T cells and antigen presenting cells over the course of the same blood-stage malaria infection. We used the C1 Fluidigm system to automate this process and achieve single-cell resolution in order to discern heterogeneity within populations previously assumed to be homogeneous.

I really enjoyed working between these laboratories because it afforded me the opportunity to work alongside inspiring and passionate scientists from diverse backgrounds and benefit from their extensive knowledge and expertise. On a day-to-day level, I worked closely with Tapio Lonnberg (Post-doc in the Teichmann team) and Ruddy Montandon (Post-doc in the Billker team). We successfully sorted and captured CD8a+ and CD8a- dendritic cells early during experimental *Plasmodium* infection, and antigen-specific CD4+ T cells throughout the infection. We obtained high quality cDNA from the cells, all of which are currently being sequenced. With further help from the Teichmann team, I look forward to learning the bioinformatics necessary to unravel the complexity of the CD4+ T cell response and its interaction with innate cells that is hidden in the sequencing results we are generating. We anticipate publishing exciting findings from this collaboration

that will not only shed some light on the immune response to malaria, but also have significant implication on our understanding of the differentiation of CD4+ T cells during any infection. During my stay I was also invited to speak about my PhD project and the work that I was undertaking at the WTGC at the WTSI Malaria Program meeting and also at the Teichmann laboratory meeting. At each presentation, I gratefully acknowledged the funding



OzEMalaR Travel Reports

support I have received from OzEMalaR. When I wasn't in the laboratory, I made the most of the Cambridge experience. I went punting on the Cam, rode my bicycle to Grantchester to eat scones in the Orchard, and attended Trinity Christmas dinner. My trip coincided with Halloween, Guy Fawkes day and the commemoration of the centenary of World War I, all of which were unique experiences. I also fit in trips to London to meet mentors and friends from around the world. Some of the highlights included a visit to the Wellcome Trust head quarters at Euston Square and watching a play in Shakespeare's Globe Theatre. The people I met and had the pleasure of getting to know during my stay at the WTGC and Cambridge made my trip all the more rewarding.

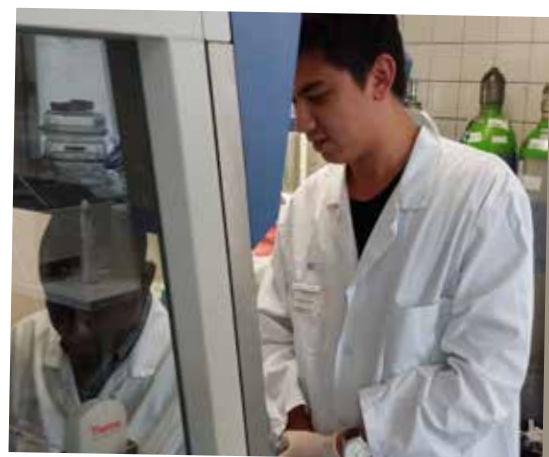
I would like to thank OzEMalaR and ASP for providing me with a travel award, as well as my supervisor Dr Ashraf Haque and everyone who helped make this trip successful. The knowledge, experience and connections that I have gained will greatly benefit my PhD and future career.

Steven Kho is a Research Assistant in the Malaria, Global and Tropical Health Laboratory at Menzies School of Health Research in Darwin, Northern Territory. Steven

won an OzEMalaR Researcher Exchange to visit Professor Hernando del Portillo, Barcelona Centre for International Health Research (CRESIB), Hospital Clinic - Universitat de Barcelona, Barcelona, Spain & Dr Pierre Buffet, Parasitology and Mycology Unit, and French National Center for Metropolitan Malaria, de l'Hôpital Pitié-Salpêtrière, Paris, France. Steven writes here about his Researcher Exchange.

My role at Menzies School of Health Research is based around activities in Indonesia, where extensive clinical malaria studies have been conducted. As part of ongoing immunology studies led by Dr Tonia Woodberry and Dr Gabriela Minigo, my current research focuses on studying the role of dendritic cells and regulatory T cells in patients with uncomplicated and severe malaria, and in individuals that have developed asymptomatic immunity to malaria. My experience as a research assistant has affirmed my interest to pursue a career in research and has prepared me with the skills to carry out my PhD

project at Menzies in 2015. My project will include studying the role of the spleen in the pathology of *falciparum* and *vivax* malaria, where recent evidence of malaria parasites accumulating in the spleen has been proposed to be a possible mechanism for severe disease. My project will be carried out in Indonesia at a site uniquely placed to carry out fundamental studies on splenic pathology and function due to high malaria transmission and high rates of splenectomy. I am extremely grateful to OzEMalaR for granting me a researcher exchange award that has allowed me to visit Professor Hernando del Portillo's laboratory in Barcelona, Spain, and Dr Pierre Buffet's laboratory in Paris, France. This exchange has allowed me to prepare for my PhD project by meeting with experts in spleen biology, learning various techniques to handle and process spleen tissue, and establishing collaborations with specialised European research groups, including sharing of expertise for quality control, and transfer of specialised malaria antibodies and an ex vivo system designed to replicate splenic clearance.



Previous page: Kylie James at Wellcome Trust Sanger Institute, UK.

This page: Steven Kho, Menzies School of Health Research visiting labs in Barcelona Centre for International Health Research.

OzEMalaR Travel Reports

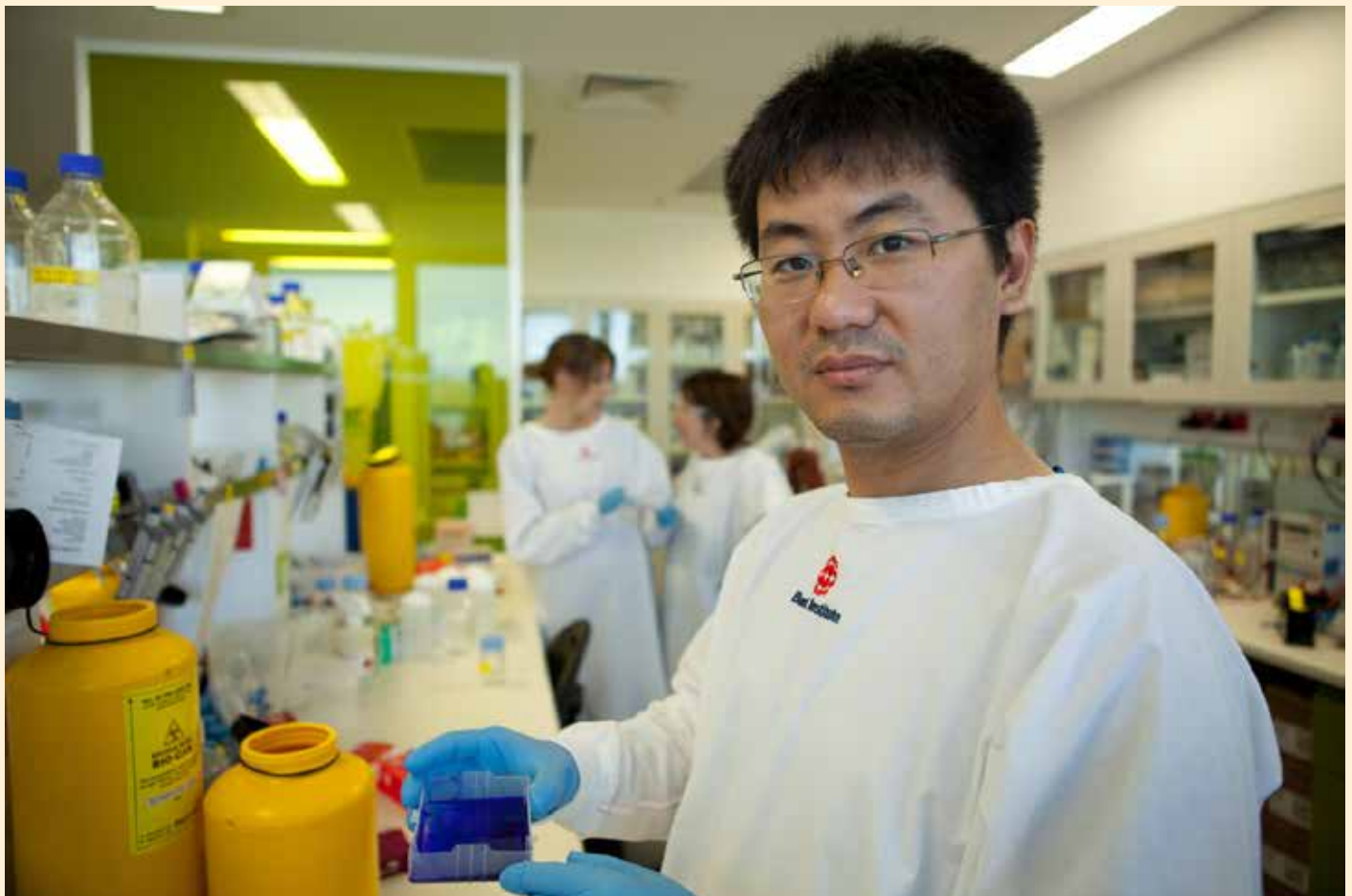
Dr Gaoqian Feng, Burnet Institute travelled to KEMRI-Wellcome trust in Kilifi, Kenya from 20th September– 20th October 2014 on an OzEMalaR Travel Award.

He was able to work with one of the world leading malaria group and conduct research using a recently developed method to study the function of antibodies among malaria exposed children. This trip also enabled Gaoqian to have further discussion with Dr Francis Ndungu to exchanged ideas and set up new collaborations.

Gaoqian conducted the proposed research to explore the function of antibodies from malaria exposed children and was able to demonstrate these antibodies were functional in promoting opsonic phagocytosis and activating complement cascade.

As he worked in KEMRI-Wellcome Trust, healso helped them establish the assays to quantify the function of antibodies promoting opsonic phagocytosis and activating complement cascade, giving him experience in transferring technology to a new laboratory and teaching, which is a big advantage for future career development.

Gaoqian also had discussed research interest and potential collaboration opportunities with Dr Ndungu and learned extensively of conducting ADRB assay to quantify the function of antibodies in activating neutrophil respiratory burst. He will bring this technique back to the Burnet Institute and apply to Burnet's research.



Gaoqian Feng, **Burnet Institute**

News about Australia/Europe Malaria Research Cooperation

OzEMalaR Researcher News



ANU researchers have released details of a raft of new chemicals with potent anti-malarial properties which could open the way to new drugs to fight the disease in a new paper published in PNAS.

"The series of papers shows that the malaria

parasite has a real Achilles heel, and describe a range of new ways to attack it," said Professor Kieran Kirk, Dean of the College of Medicine, Biology and Environment and one of the scientists involved in the project.

Dr Natalie Spillman (pictured left), from the Research School of Biology at ANU studied the mechanism by which the parasites are killed.

"The new molecules block a molecular salt pump at the surface of the parasite, causing it to fill up with salt," Dr Spillman said

"This has the effect of drawing water into the parasite, causing it to swell uncontrollably and burst."

Although the process of developing the new compounds into clinical drugs is complex and lengthy, Professor Kirk is optimistic the

findings will lead to new treatments.

"It's very early days, but these pump-blocking compounds have some of the most promising anti-malarial potential we've seen," he says.

Aspects of the work were carried out with groups at Griffith University, Monash University and the Menzies School of Health Research in Darwin.

"This is a good example of a long-term, international drug development program in which Australian groups have played a key role," he said.

Adapted from source: <http://www.anu.edu.au/news/all-news/new-molecules-to-burst-malarias-bubble>



Congratulations to Director and CEO of Burnet Institute, Professor Brendan Crabb who has been awarded a Companion of the Order of Australia (AC) in the Australia Day Honours for his contributions to medical research and global health.

Professor Crabb (pictured above) is widely recognised for his significant contributions as a malaria research scientist; for his leadership of Burnet Institute, one of

Australia's leading medical research and public health institutions; and for his work in promoting medical research through the Association of Australian Medical Research Institutes (AAMRI) of which he is immediate past president.

Professor Crabb's dedication and passion for improving the health of poor and vulnerable populations was influenced by growing up in Papua New Guinea, a poor country that has many health challenges not faced in the developed world. He established himself as a major international contributor to the field of malaria, especially in the development of vaccines and new treatments for the disease. Professor Crabb described the award as an unexpected delight and tremendous honour.

"I accept it recognising that any achievement I have made has relied extensively on others; particularly on colleagues and family," Professor Crabb said.

"I also acknowledge that the award is as much about the issues I care about and the people I work for as it is about me. My focus is on the poorest, most marginalised and vulnerable people in our community and around the globe. Any award to me recognises them.

Professor Crabb said it was important to acknowledge that far fewer children are dying today than at any stage in history, and we are living longer and better than ever.

"Despite this enormous progress, our community, and especially the developing world, still face major health challenges,"
Adapted from source: Tracy Parish (Burnet) http://www.burnet.edu.au/news/477_ac_honour_for_burnet_s_professor_brendan_crabb

OzEMalaR Researcher News



Congratulations to Professor Alan Cowman who has won the Sornchai Looareesuwan Medal 2014 for his significant contributions to understanding how the malaria parasite causes disease and for his search for potential malaria vaccines.

Professor Cowman, head of the Infection and Immunity division at the Walter and Eliza Hall Institute, and his team have spent decades probing the inner workings of the most deadly malaria parasite, *Plasmodium falciparum*. His work has led to the creation of two potential malaria vaccines, one in clinical trials and another in preclinical development.

He has also made important discoveries about the biology of the malaria parasite, including how it evades the immune system, infiltrates and remodels red blood cells to replicate and spread, and how it communicates with other parasites to trigger the next stage of infection.

Professor Cowman said the work had the potential to aid the quest to eradicate malaria.

"We can use our understanding of how the parasite survives within a human host to identify weaknesses to target with new drugs," he said. "In addition, our work on malaria transmission and resistance informs eradication and control programs, providing knowledge to devise the best strategies for minimising malaria spread."

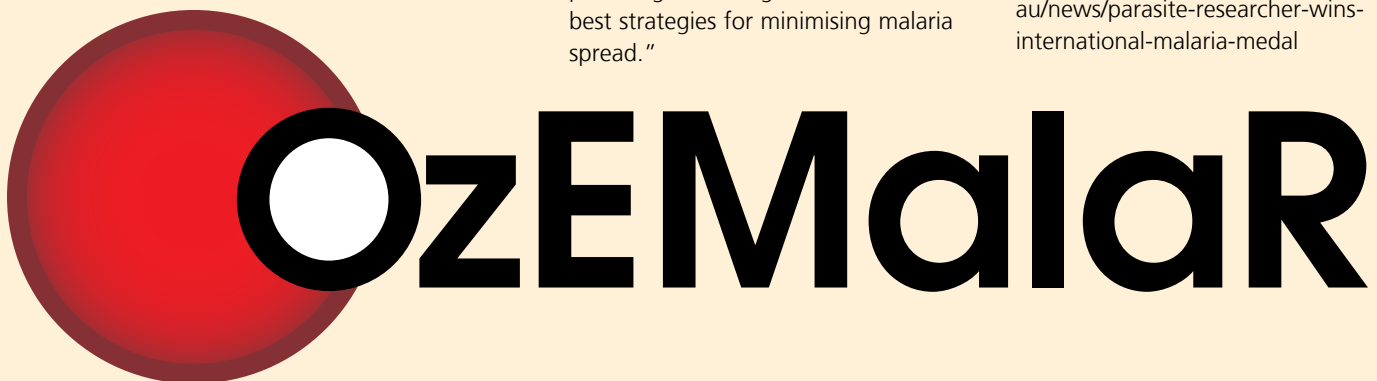
Professor Cowman said medical research had reduced the toll of malaria globally. "Sustained efforts to eradicate malaria has seen the disease disappear from many countries around the world," he said. "These gains are very encouraging, however malaria can quickly become resistant to existing therapies, and there is much more that needs to be done."

More than 200 million people worldwide are infected by the *Plasmodium* parasite that causes malaria, with up to 700,000 people dying every year from the disease.

Professor Cowman said he was deeply honoured to receive the Sornchai Looareesuwan Medal. "Professor Sornchai Looareesuwan was an outstanding scientist who made a significant contribution to malaria research and I am humbled to receive the medal named in his honour," he said. "Our team has worked hard for many years to find new ways to tackle this disease and this award also recognises their outstanding efforts."

The Sornchai Looareesuwan Medal is awarded by the Faculty of Tropical Medicine at Mahidol University, Thailand, and recognises a researcher who has focused their efforts on malaria and made a significant contribution to the field. Source: <http://www.wehi.edu.au/news/parasite-researcher-wins-international-malaria-medal>

Professor Anstey has undertaken clinical research in malaria and tuberculosis with partners in the Asia-Pacific. He has identified new ways that parasites cause severe malaria, translating these findings to clinical trials of agents to improve blood supply to vital organs. He has also undertaken clinical trials of drugs to treat all three major species causing malaria in the Asia-Pacific region. He uses these results to contribute to policy change nationally, regionally and globally.



IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

October 2014

Succinctus

Proteomics elucidates key molecules involved in exsheathment in vitro in *Oesophagostomum dentatum*
Martina Ondrovics, Katja Silbermayr, Makedonka Mitreva, Neil D. Young, Robin B. Gasser, Anja Joachim

Original Research Articles

Bioinformatic exploration of RIO protein kinases of parasitic and free-living nematodes
Bert Breugelmans, Aaron R. Jex, Pasi K. Korhonen, Stefano Mangiola, Neil D. Young, Paul W. Sternberg, Peter R. Boag, Andreas Hofmann, Robin B. Gasser

October 2014
ASP 50th Anniversary Special Issue

Current Opinion

Insights and controversies into the role of the key Apicomplexan invasion ligand, Apical Membrane Antigen 1
Katherine L. Harvey, Alan Yap, Paul R. Gilson, Alan F. Cowman, Brendan S. Crabb

Invited Reviews

Diversity in parasitic helminths of Australasian marsupials and monotremes: a molecular perspective
Ian Beveridge, Robin B. Gasser

Echinococcus as a model system: biology and epidemiology
R.C.A. Thompson, D.J. Jenkins

Control of the sheep blowfly in Australia and New Zealand – are we there yet?
R.M. Sandeman, G.W. Levot, A.C.G. Heath, P.J. James, J.C. Greeff, M.J. Scott, P. Batterham, V.M. Bowles

Optimal assay design for determining the *in vitro* sensitivity of ring stage *Plasmodium falciparum* to artemisinins
Stanley C. Xie, Con Dogovski, Shannon Kenny, Leann Tilley, Nectarios Klonis

Genome-based vaccine design: the promise for malaria and other infectious diseases

Denise L. Doolan, Simon H. Apte, Carla Proietti

Liver fluke vaccines in ruminants: strategies, progress and future opportunities

Hayley Toet, David M. Piedrafita, Terry W. Spithill

Trematodes of the Great Barrier Reef, Australia: emerging patterns of diversity and richness in coral reef fishes
Thomas H. Cribb, Nathan J. Bott, Rodney A. Bray, Marissa K. A. McNamara, Terrence L. Miller, Mathew J. Nolan, Scott C. Cutmore

A list of the 70 species of Australian ticks; diagnostic guides to and species accounts of *Ixodes holocyclus* (paralysis tick), *Ixodes cornuatus* (southern paralysis tick) and *Rhipicephalus australis* (Australian cattle tick); and consideration of the place of Australia in the evolution of ticks with comments on four controversial ideas

Stephen C. Barker, Alan R. Walker, Dayana Campelo

Parasitic mites of medical and veterinary importance – is there a common research agenda?

Katja Fischer, Shelley Walton

November 2014

Original Research Article

Geographical distribution of human *Schistosoma japonicum* infection in The Philippines: tools to support disease control and further elimination
Ricardo J Soares Magalhães, Maria Sonia Salamat, Lydia Leonardo, Darren J Gray, Hélène Carabin, Kate Halton, Donald P McManus, Gail M Williams, Pilarita Rivera, Ofelia Saniel, Leda Hernandez, Laith Yakob, Stephen McGarvey, Archie Clements

December 2014

Original Research Articles

Trends in schistosomiasis-related mortality in Brazil, 2000–2011

Francisco Rogerlândio Martins-Melo, Marta Cristhiany Cunha Pinheiro, Alberto Novaes Ramos Jr, Carlos Henrique Alencar, Fernando Schemelzer de Moraes Bezerra, Jorg Heukelbach

IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

Mitochondrial genomes of *Trichinella* species and genotypes - a basis for diagnosis, and systematic and epidemiological explorations

Namitha Mohandas, Edoardo Pozio, Giuseppe La Rosa, Pasi K. Korhonen, Neil D. Young, Anson V. Koehler, Ross S. Hall, Paul W. Sternberg, Peter R. Boag, Aaron R. Jex, Bill Chang, Robin B. Gasser

Comparison of next-generation droplet digital PCR (ddPCR) 1 with quantitative PCR (qPCR) for enumeration of *Cryptosporidium* oocysts in faecal samples

Rongchang Yang, Andrea Paparini, Paul Monis, Una Ryan

<http://ees.elsevier.com/ijp/>



<http://www.journals.elsevier.com/international-journal-for-parasitology-parasites-and-wildlife/>

Original Research Article

Ovine IgA-reactive proteins from *Teladorsagia circumcincta* infective larvae. **Samantha Ellis, Jacqueline B. Matthews, Darren J. Shaw, Steve Paterson, Hamish E.G. McWilliam, Neil F. Inglis, Alasdair J. Nisbet**

December 2014

Parasitology and One Health. **R.C. Andrew Thompson, Lydden Polley.**

Giardia duodenalis and *Cryptosporidium* occurrence in Australian sea lions (*Neophoca cinerea*) exposed to varied levels of human interaction **Tiffany C. Delport, Amy J. Asher, Linda J. Beaumont, Koa N. Webster, Robert G. Harcourt, Michelle L. Power**



The final issue of IJP:DDR for 2014 included two Special Sections containing papers from two conferences held early in 2014. The 'Anthelmintics: From Discovery to Resistance' meeting was held in San Francisco in February 2014. Several of the papers covered current drug discovery efforts underway worldwide, with some specific examples focusing on ion channels, protein kinases and cysteine proteases. These efforts included the repurposing of known drugs as well as the discovery of novel actives. Two papers described recently-developed whole-organism screening techniques. Other papers looked at mechanisms and management of drug resistance in human and veterinary parasites.

The second conference was the Zing Drug Discovery Conference on "Global Challenges for New Drug Discovery Against Tropical Parasitic Diseases" held in Nerja, Spain, in February 2014. Papers in this special section included primary research papers describing different strategies in the search for novel antimalarials and a number of reviews on trypanosomatids drug targets and compound library screening approaches.

<http://www.journals.elsevier.com/international-journal-for-parasitology-drugs-and-drug-resistance/>

Recent papers from Australian authors:

Drug repurposing and human parasitic protozoan diseases,

Katherine T. Andrews, Gillian Fisher, Tina S. Skinner-Adams

Recent advances in candidate-gene and whole-genome approaches to the discovery of anthelmintic resistance markers and the description of drug/receptor interactions.

Andrew C. Kotze, Peter W. Hunt, Philip Skuce, Georg von Samson-Himmelstjerna, Richard J. Martin, Heinz Sager, Jürgen Krücken, Jane Hodgkinson, Anne Lespine, Aaron R. Jex, John S. Gilleard, Robin N. Beech, Adrian J. Wolstenholme, Janina Demeler, Alan P. Robertson, Claude L. Charvet, Cedric Neveu, Ronald Kaminsky, Lucien Rufener, Melanie Alberich, Cecile Menez, Roger K. Prichard.

Researcher news: Marshall promotes cysticercosis and cystic echinococcosis vaccines

Marshall Lightowlers attended the Fourth International Meeting on the Control of Neglected Zoonotic Diseases, at the World Health Organization's headquarters in Geneva, held on the 19 to 20 November 2014. The meeting was organized by Dr Bernadette Abela-Ridder at the WHO. One of the University of Melbourne's undergraduate veterinary students, Aashima Auplish is currently undertaking an internship at the WHO and Aashima was assisting with the conduct of the meeting (see photo). The meeting involved more than 100 representatives of governments, including some Ministers from various countries, WHO, FAO, OIE and other organizations as well as disease experts. In his opening comments, Dr Dirk Engels, Director of Neglected Tropical Diseases section of the WHO declared rabies, cysticercosis and cystic echinococcosis as the priority diseases among those we were to be discussing. Marshall interprets this as a welcome and much deserved elevation of cysticercosis and cystic echinococcosis and will certainly help us gain the in-country collaborations we are seeking to have both our TSOL18 and EG95 vaccines evaluated for their ability to deliver practical, affordable and sustainable disease control measures.

During November Marshall Lightowlers participated in activities being undertaken as part of a field trial of the EG95 vaccine against cystic echinococcosis, being conducted in Rio Negro province of Argentina by the Argentine Ministry of Health. The trial is led by Dr Edmundo Larrieu and being undertaken in ruminant Mapuchi Indian communities in the foothills of the Andes. In these communities there have been efforts to reduce the incidence of human cystic echinococcosis for several decades, but with little success. It is hoped that through application of the EG95 vaccine in sheep, transmission through dogs will be reduced and new infections in the human population curtailed as a consequence. The principal objective of the field work on this occasion was to undertake post mortems on animals from the first intake of lambs in 2009. Marshall says it is too early to make meaningful conclusions but the results so far are encouraging, with typical hydatid cysts found in the liver and lungs of non-vaccinates but no infected animal detected among the vaccinated groups. Marshall will return to the region in December as the program continues into its sixth year, with lambs to receive two EG95 immunizations, the first in December and a booster in January/February next year. Further evaluations for infection in the older animals involved in the program will be undertaken in March next year.



International Congress for Tropical Medicine and Malaria

18–22 September
Brisbane Australia

2016



On behalf of the Congress Management Committee, the Australian Society for Parasitology (ASP) and the Australasian Society for Infectious Diseases (ASID), it is our immense pleasure to invite you to join us for the XIX International Congress for Tropical Medicine and Malaria (ICTMM 2016). The Congress will be held at the Brisbane Convention & Exhibition Centre from Sunday 18th - Thursday 22nd September 2016.

ICTMM is the premier tropical medicine congress held internationally, with meetings held regularly since 1913. The Congress is an exciting opportunity for delegates to network and share knowledge in the areas of tropical medicine, malaria, parasitology, infectious diseases, zoonoses, veterinary health, travel medicine and more. In 2016 the program will include international plenary speakers, oral presentations, posters, exhibition and social events

For more information regarding the program, key dates, and other important information see the website.

<http://tropicalmedicine2016.com/>

Dr Malcolm Jones and Dr David Looke, ICTMM 2016 Co-Chairs



Previous page Images from top: Estancia Benneton enroute Bariloche to Rio Chico. The regional centre is the city of San Carlos de Bariloche. Near to Bariloche on the journey to the field sites the road passes Estancia Benneton, an extensive property providing fine merino wool to the vertically integrated Benneton clothing organisation. Here, just a portion of the sheep involved in a late afternoon muster can be seen.

Dawn at one of the field locations, Anecon Grande covered in overnight snow. Pretty to look at, not so pretty to work in!

Post mortem examination of sheep. Here we are examining the omentum and abdominal organs for evidence of *Taenia hydatigena* infection (provides evidence of past practices that are also a risk for hydatid infection)

Images this page from top (clockwise): Farmers involved in the work.

View inside a typical farm house. A solar panel provides a rudimentary source of electricity and supplements the gas lighting. Earth walls and floors and a wood-burning stove.

The hydatid control field team from the Rio Negro Ministry of Health. Edmundo Larrieu second from the right in the front row, Marshall Lightowlers centre rear.

Events

Abstracts and registration for BSP2015 open



The British Society of Parasitology Spring Meeting is being hosted in Liverpool on 16-18th April 2015 at the BT Convention Centre. The theme of BSP2015 is "Malaria, Neglected Tropical Diseases (NTDs) and their Vectors". Attached is a preliminary programme with session titles for abstract submission. We are finalising our exciting line-up of headline acts, keynote speakers and social events and will publicise this by the end of January.

We have capacity for 145 oral presentations and welcome abstracts from all areas of parasitology. We have 7 plenary speakers and 16 keynote speakers; with sessions on both applied and fundamental areas of parasites we aim to cater for parasitologists from every discipline.

The opening reception will be held on the 15th April in the new Museum of Liverpool on the striking heritage waterfront of Liverpool City Centre. The poster session on the 16th April will be followed by the Young Parasitology Party (for those young at heart) in a great venue, Tribeca, with a buffet and DJ. Finally, our social events end with the conference dinner and entertainment at the Maritime Museum on Friday the 17th April.

For further information on abstract submission please see the tab at the bottom of the events page: <http://www.bsp.uk.net/news-and-events/bsp-events/bsp-spring-meeting-2015-liverpool/>

\$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 2015 prizes must be made by the eligible University to the ASP Treasurer or Secretary by the 30th September 2015. Requests for prizes must include the following for each eligible course:

1. Course name/code/degree year
2. Number of Students enrolled in 2015
3. Number of hours dedicated to parasitology (and total number of hours for the course)
4. Name of financial ASP member (of at least 1 year standing) teaching course

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. ASP President Robin Gasser would like to emphasise that the funds can be used to support a wide range of activities - from seminars, 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.

Events cont...

Parasitology and Tropical Medicine Master Class 2015, 6th – 7th March, Perth



Venue: Fremantle Hospital (<http://goo.gl/maps/TQ5I7>). Lecture Theatre 1, adjacent to CC Bennett Theatre

Speakers include:

Prof Katja Polman; Professor of Helminthology, Medical Helminthology, Dept. of Biomedical Sciences, Institute of Tropical Medicine, Antwerp, Belgium; Dr Joel Barrett; Prof Tim Inglis; Dr Douglas Chan; Dr Matthew Watts; Prof Andy Thompson; Dr Miles Beaman; Dr Harsha Sheorey; Dr Richard Bradbury; Dr Christopher Peacock; Dr Smathi Chong; Prof Adrian Miller; Dr Damien Stark and Dr Chuan Kok Lim.

The Master Class includes:

- Seminars and hands-on laboratory sessions by experts
- Case studies
- Interactive sessions and Quiz
- Daily catering (lunch, morning and afternoon tea)
- Discount registration for ASM and RCPA members
- Master Class social evening

Who Should Attend:

- Laboratory Scientists/Technicians – Microbiology, Molecular
- Consultants & Trainees - Clinical Microbiology, Infectious Diseases
- Anyone interested in medical parasitology and tropical medicine

Register early in order not to miss out go to <http://www.trybooking.com/113441>

Suggestions for hotels (please book directly with hotel)

- The Hougoumont Hotel, Fremantle <http://hougoumonthotel.com.au/>
- The Esplanade Hotel, Fremantle
<http://www.rydges.com/accommodation/perth-wa/esplanade-hotel-fremantle-by-rydges/welcome/>

Website: www.theasm.org.au/parasitology/ Contacts: Main contact: Shirley.Ho@health.wa.gov.au
Secondary contacts: harsha.sheorey@svha.org.au or r.bradbury@cqu.edu.au

Events cont...



3rd International Workshop on Symbiotic Copepoda

10-16 July, 2016 • Heron Island Research Station, Queensland, Australia



Every three years, researchers and students from around the world meet to exchange ideas and learn taxonomic techniques on symbiotic copepods from leading experts.

This 5-day workshop will include:

- Lectures
- Discussions
- Oral & poster presentations
- Dissection and identification techniques
- Lab tutorials
- Illustration techniques
- Identification of personal material
- One day dedicated to symbiotic isopods

If interested, please contact Dr Kate Hutson (kate.hutson@jcu.edu.au; +61 7 478 16216).



Organizing committee:

Dr Kate Hutson, James Cook University, Australia
Dr Julianne Kalman Passarelli, Cabrillo Marine Aquarium, USA
Dr Danny Tang, Orange County Sanitation District, USA

Jobs

www.parasite.org.au/jobs/

Junior research scientist position, France



Junior research scientist position (CR2, ie PhD + 1 or 2 post-doc), open to applicants of all nationalities. This permanent position is available at INRA Center Val de Loire (Tours/France) to work on apicomplexan/intestinal epithelial cell interactions and develop new control therapies

The recruited scientist will investigate the mechanisms developed by intestinal protozoan parasites (*Eimeria*, *Cryptosporidium*) to replicate in the intestinal epithelial cells in order to develop new control methods based on chemotherapy or vaccination. He/she will benefit from an active collaboration set up with chemists to generate new anticoccidians, and the presence of other scientists in the team who initiated transgenesis and have a long experience of the host immune response to the infection. Strong skills in molecular protozoology (host cell/ parasite interactions, metabolic pathways, virulence factors etc.) are necessary. An experience of genetic manipulation of model apicomplexan parasites would be greatly appreciated. In addition to French citizens, English speakers from all nationalities are very welcome to apply.

The position is located in France at INRA Center Val de Loire close to Tours in the large research unit "Infectiology and Public Health" that includes 14 research teams working on parasites, bacteria or viruses that infect animals and/or humans.

Applications will be open from 29 January to 2 March 2015 (<http://jobs.inra.fr/en>). Highly motivated applicants should feel free to contact now Dr F. Laurent (Director of the laboratory) or Dr D. Buzoni-Gatel (Director of the Research Unit) Fabrice.Laurent@tours.inra.fr; Dominique.Bozoni@tours.inra.fr.

<http://jobs.inra.fr/en/Career-opportunities/Researchers/Research-scientists> for more information about career development at INRA and <http://www.val-de-loire.inra.fr/Les-poles-de-recherches/Sante-animale-et-sante-publique/UMR-ISP2> for information on the research unit where the position is located.

Program Leader Livestock Health, Canada



The Agriculture and Food Security Program at the International Development Research Centre is expanding its programming with a new 5.5 year, CAD 60 million initiative providing global leadership in research for livestock vaccines affecting Africa and Asia.

It will provide funding for research to develop and improve vaccines utilizing the latest scientific tools, as well as for engineering and repurposing vaccines for multiple needs, settings and underserved markets, particularly targeting neglected diseases. It will fund innovations in product development and delivery, particularly through private sector collaboration, to bring newly developed and enhanced vaccines to market. And it will find ways for vaccines to be part of effective veterinary extension systems by catalysing the private and public institutions, markets and information systems that are necessary to manufacture, distribute, increase access and use vaccines as important tools in wider livestock health and productivity improvement programs in developing countries in Africa and Asia.

IDRC is looking for Program Leader - Livestock Health to join this new initiative based in Ottawa, Canada.

Applications close 15th February 2015

More information <http://idrc.ca/EN/AboutUs/Careers/JobPostings/Pages/Program-Leader.aspx>

For up to date opportunities in parasitology keep checking the jobs pages on the ASP website

www.parasite.org.au/jobs/

and also the World Federation of Parasitologists



www.wfpnet.org jobs page
http://www.wfpnet.org/page_jobs.php?lang=en

Jobs



McGill

Dean, Faculty of Agricultural and Environmental Sciences

McGill University is seeking an outstanding individual with demonstrated leadership, excellence in scholarship, and administrative abilities to become the next Dean of the Faculty of Agricultural and Environmental Sciences (FAES).

McGill University has established a global reputation for academic and research excellence across a wide-ranging number of disciplines that distinguishes it as Canada's most international university and a leader in higher education. Information about McGill can be found at www.mcgill.ca. FAES is housed on McGill's Macdonald Campus, located on a beautiful 650 hectare waterfront setting on the western tip of the Island of Montreal. The Macdonald Campus contains state-of-the-art facilities for teaching, training and research, an arboretum, working animal and seed farms, horticulture centre and greenhouses, and is connected to the downtown campus by public transit and a McGill-operated shuttle service.

FAES comprises the following academic units, all of which have both strong undergraduate and graduate programs: Agricultural Economics, Animal Science, Bioresource Engineering, Food Science and Agricultural Chemistry, Natural Resource Sciences, Plant Science, the School of Dietetics and Human Nutrition, and the Institute of Parasitology. In addition, the Dean of FAES presides over the multi-Faculty program housed in the McGill School of Environment. The Faculty has approximately 1400 undergraduates, 500 graduate students, over 100 tenured and tenure-track academic staff, as well as lecturers and other teaching staff, professionals, and administrative and support staff. The Faculty has strong research programs that are supported by national and provincial competitive funding programs. Further information about McGill's Faculty of Agricultural and Environmental Sciences may be found at www.mcgill.ca/macdonald.

Reporting directly to the Provost, the Dean of FAES is expected to possess the expertise and vision to lead the Faculty in teaching, research and scholarship, and service. He/she will be an innovative thinker and excellent communicator and will be committed to interdisciplinary teaching and research and the success of all students, faculty and staff. Experience in building diverse and collaborative teams, relating to a range of partners including local communities and municipal, provincial and federal governments, and an interest in or experience with fundraising will be important assets. The new Dean must have, or be willing to develop, the skills to work in French as well as English.

McGill University is committed to equity in employment and diversity. It welcomes applications from indigenous peoples, visible minorities, ethnic minorities, persons with disabilities, women, persons of minority sexual orientations and gender identities, and others who may contribute to further diversification. All qualified candidates will be considered; Canadians and permanent residents will be given priority.

The review of nominations, applications, and expressions of interest will begin immediately and will continue until the position is successfully filled. This appointment is for a five-year renewable term, and will take effect 1 July 2015 or as soon thereafter as possible. Applications and nominations should include a letter of introduction, curriculum vitae, and the names of three references (who will not be contacted without consent of the candidate) and be forwarded electronically in confidence, to:

Laverne Smith & Associates Inc.
1 Yonge Street, Suite 1801
Toronto, Ontario M5E 1W7
McGillFAES@lavernesmith.com

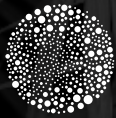
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www.lavernesmith.com

www.parasite.org.au/jobs/

Jobs



**AITHM | AUSTRALIAN INSTITUTE
OF TROPICAL HEALTH & MEDICINE**

Career Opportunities at AITHM

Be involved in shaping the development of tropical regions worldwide

About AITHM

The Australian Institute of Tropical Health and Medicine (AITHM) has recently been established at James Cook University (JCU) located in northern Australia. With \$84 million in establishment funding from the Queensland and Commonwealth Governments, AITHM is aspiring to be a world-leading health and medical research institute addressing health problems of major importance to tropical Australia, South East Asia, the Pacific and the tropics worldwide. AITHM is seeking enthusiastic health and research professionals to join a dynamic team of research professionals already established in AITHM.

Northern Queensland Lifestyle

Northern Queensland encompasses the thriving cities of Townsville, Cairns and Mackay and is located adjacent to the World Heritage listed Great Barrier Reef. With a growing population of over 500,000, northern Queensland offers a tropical lifestyle with the benefits of a metropolitan region. Offering a range of outdoor activities, entertainment, restaurants and cafes, parks and zoos and cultural experiences, northern Queensland is an unspoiled harmony of natural wonders and unique attractions. Cairns and Townsville have access to an international airport which greatly facilitates connectivity.



JCU Campus, Cairns



Great Barrier Reef



The Strand, Townsville

**Senior/Principal Research Fellow,
Health Economics - REF No. 14309
(Cairns or Townsville)**

AITHM is seeking an enthusiastic economist to help shape health service policy focussed on efficient and equitable delivery across diverse communities. The role can be shaped by the right candidate, and may appeal to either a trained health economist or econometrician. The appointee will be responsible for building an independent research and publication profile, and will have access to large, linked datasets to inform practical decision making in support of their research endeavour.

Apply now at www.jcu.edu.au/jobs

**Senior/Principal Research Fellow,
Epidemiology/Statistics - REF No.
14307 (Cairns or Townsville)**

AITHM is seeking an enthusiastic epidemiologist or biostatistician to support a wide range of strategic multidisciplinary research projects in the field of tropical health and medicine, with a particular focus on infectious diseases and biological determinants of chronic disease. The appointee will be responsible for building an independent research and publication profile, focussing on rural and remote, tropical and Indigenous populations in northern Australia.

Apply now at www.jcu.edu.au/jobs

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State News

New South Wales

Charles Sturt University

2014 was a busy year for Parasitologists at School of Animal and Veterinary Sciences. A new additional subject for vet students with focus on veterinary important micro-organisms including parasites was taught for the first time. Student feedback was very positive and the subject was highly regarded by students. Many staff including **Joanne Connoley, Dave Jenkins, Rob Woodgate and Shokoofeh Shamsi** and several technical staff and demonstrators were involved in teaching this subject and put a lot of efforts into it, resulting in a high quality output. The Parasitology Subject offered to internal and distance students also received the highest evaluation score so far, with interesting comments from students such as "since I'm sitting in Parasitology lectures all I talk about with my boyfriend is parasites" It also had the highest number of international postgraduate students enrolling in the subject.

We also have a number of postgraduate students who are doing well. **Alice Banyan** is doing her Masters Degree on epidemiology of barber pole's worm in NSW with **Rob and Shokoofeh**. **Anita Poupa** completed her work on morphological and genetic characterisation of gastrointestinal worms of sheep and camel from Iran with **Shokoofeh**. **Alexandra Swan** is well underway on her Honours project on Prevalence of Common Faecal Parasites and Salmonella in captive *Morelia species* in Australia under supervision of **Joanne, Shokoofeh and Rob**. **Alex Kannegieter** completed his Honours on parasite infections in zoo animals under supervision of **Rob, Shokoofeh and Kris Hughes**. **Jaydip Suthar** from India commenced his Masters on Occurrence and abundance of zoonotic parasites in selected edible fish from Australian fish markets under Shokoofeh's supervision. Shokoofeh was invited as a guest speaker for The Australian and New Zealand College of Veterinary

Scientists, Science Week Conference held in Gold Coast, 10-12 July 2014. She also was invited as a keynote speaker of the Global Biodiversity Meet on Parasites and Aquatic Ecosystem Health by University of Allahabad, India where she also ran a two days workshop on molecular diagnosis of nematode parasites for audience from major Indian universities. She received Recognition Medal at the conclusion of the conference.

University of Western Sydney

Leah Stroud (Cronin) has arrived home after working in **Professor John Dalton's** lab at Queen's University, Northern Ireland for the past three months which was made possible thanks to the ASP-funded researcher exchange grant scheme and Prof. Dalton's generosity (so a big thanks to both parties for this amazing opportunity. While there she learned a great deal about recombinant protein expression and how to biochemically characterise cysteine protease activity, which she will apply to her research on the protozoan parasite *Tritrichomonas foetus*. She even had the opportunity to be trained to use a bioreactor, which is a device that cultures organisms on a large scale and can be used in the production of live-cell vaccines in accordance with good manufacturing practice (GMP) standards. Leah was also given the opportunity to visit with **Dr Esther Collantes** and her lab, SALUVET, at University Complutense of Madrid. This was an invaluable visit for Leah as SALUVET is the main diagnostic centre for bovine trichomoniasis in Spain. Leah was given the opportunity to present her research to the vet school and to develop collaborations for future research on trichomoniasis. We also have two students who will be starting in the lab in 2015, **Farnaz Eghanian** who will be starting her masters and **Priya Kumar** who will be starting honours. We look forward to have both of them on board and to introducing them to the joys of parasitology.



Picture of Leah and John working hard trying to grown *T. foetus* in the bag bioreactor at Queen's University Belfast.

University of Sydney

Laboratory of Veterinary Parasitology @ McMaster Building Clinical Tropical Medicine Laboratory



Jan Šlapeta is about to start his sabbatical with a stint at UTS, The University of Georgia and KAUST. Recently, Jan was invited to present at his alma mater in Brno in the Czech Republic as part of the "Internacionalization of veterinary education as a way to European

State News continued

employment market" project. You may not know, but carp is sold on the streets in the Czech Republic (see image above) and served for Christmas dinner.

Christie Foster (PhD student) is currently in the process of finishing up and writing her thesis. Good luck, Christie! Congratulations to **Victoria Morin-Adeline** (PhD student) whose paper on the comparative transcriptomics of bovine and feline isolates of *Tritrichomonas foetus* was recently published in *BMC Genomics* (DOI: 10.1186/1471-2164-15-955). This study was in part carried out during Vicky's ASP-funded researcher exchange visit to the Genomics of Gene Expression lab at the Centro de Investigacion Principe Felipe, Spain.

Shannon Donahoe (PhD student) has recently published two papers on toxoplasmosis in a New Zealand fur seal (Veterinary Parasitology; DOI: 10.1016/j.vetpar.2014.07.022) and wombats (Parasitology International; DOI: 10.1016/j.parint.2014.11.008). Both papers confirm that type-II *Toxoplasma gondii* using multilocus genotyping.

Anthea Brennan (MSc student) won the Merial student research award for her presentation on toxoplasmosis in cats at the International Society for Companion Animal Infectious Disease Symposium, Niagara on the Lake, Ontario, Canada.

Together with **Dr Abdullah Alanazi** (Shaqra University, Saudi Arabia) we have developed and published a workflow for detecting **Theileria equi** (the causative agent of the tick-borne disease equine piroplasmiasis) in asymptomatic, persistently infected horses (Veterinary Parasitology; DOI: 10.1016/j.vetpar.2014.09.019).

Two 2014 Honours students have finished with flying colours. **Rowena Chong** confirming presence of cat fleas *Ctenocephalides felis* across Sydney and **Kai Mueller** re-discovering *Tritrichomonas foetus* in domestic pigs.

Our lab group's new Facebook page is going strong; 309 'likes' and counting! (www.facebook.com/UsydVetParasitology) At the Faculty we will be starting the last year

of BVSc's Veterinary Parasitology in Semester 1 while commencing DVM!

Legendary parasitologist "Hughey" Gordon comes "home on loan"

In a special informal ceremony on November 20th 2014, at the McMaster Building, University of Sydney, a painting of the eminent parasitologist, **Dr Hugh McLeod Gordon** (DVSc, AM), was loaned to the Faculty of Veterinary Science. On behalf of the Hugh's children (sons Hugh [Mac], David and Ian and daughter, Anne) extended family members, Ian and his wife, Diane, their daughter Sally, together with Peter Roach, presented the portrait to the Faculty, represented by the Dean, Prof Rosanne Taylor, ProDean Assoc Prof Paul Sheehy, CVE Director, Dr Hugh White and current parasitologists **Prof David Emery and Assoc Prof Jan Slapeta**.

The loan of the portrait reflects Hugh's long and illustrious career at the McMaster laboratory with other prestigious parasitologists of the time, such as (Sir) Ian Clunies Ross, as well as his amazing and sustained teaching contributions to the Veterinary graduates from this University. In the former role, Hugh laid the foundation for veterinary parasitology of livestock, which formed the epidemiological basis for integrated parasite management. He is widely reknown for his work with phenothiazine as an anthelmintic as well as the co-development of the formidable McMaster technique for faecal egg counts! As a teacher, he cajoled the neurones of veterinary undergraduates (officially) from 1937-1970, but was constantly sought for his camaraderie and sheer depth of knowledge and enthusiasm, for tutorials in practical classes for many years after he "retired". Among his many other achievements, Hugh was a founding member of the ASP.

Hugh, resplendent in his robes on the occasion of his Doctor of Veterinary Science (DVSc) award in 1968, will preside over the mid-floor landing of the original entrance stairway of the "Council of Scientific and Industrial Research" (CSIR) in the McMaster building (facing Parramatta Rd). His current abode is less than 10m from his erstwhile office in room 252

and in close proximity to the parasitology labs where ruminant nematodes reigned supreme. His spirit will be "at one" with all of that parasitological knowledge that lies within the mortar of the McMaster building and his presence will be a lingering inspiration and link to "those giants who went before".



At the presentation of Hugh Gordon's portrait in the McMaster building. From left; Assoc Prof Paul Sheehy (ProDean), Prof David Emery, Mr Peter Roach, Ms Sally Gordon, Prof Rosanne Taylor, (Dean, Faculty of Veterinary Science), Ian and Diane Gordon, Assoc Prof Jan Slapeta, Dr Hugh White (Centre for Continuing Veterinary Education).



A legend returns to the scene of his illustrious Career



Hugh Gordon (right) and Prof Marsh Edwards (Dean of Veterinary Science) at the award of Hugh's DVSc at the University of Sydney of Sydney in 1968.

State News continued

The University of New England

Dr Tommy Leung co-administrator and writer for the Parasite of the Day blog (<http://dailyparasite.blogspot.com.au/>) recently wrote an article for The Conversation on the ecological impact of parasitic barnacles on crabs:

<https://theconversation.com/the-crab-castrating-parasite-that-zombifies-its-prey-27200>

This article recently got picked up by the IFLScience site and it ended up getting >190000 views:

<http://www.iflscience.com/plants-and-animals/crab-castrating-parasite-zombifies-its-prey>

ACT

The Australian National University

Research School of Biology

It's been a busy few months for the ACT parasitology community. Three ACT-based students participated in the inaugural ASP 'Concepts in Parasitology' course – **Adelaide Dennis (Kirk lab)**, **Kathryn Parker (van Dooren lab)** and **Katharina Quadt (Maier lab)**, visiting from the University of Heidelberg). Numerous ANU lab leaders and staff contributed to teaching on the course, notably director **Alex Maier**, as well as **Kevin Saliba**, **Melanie Rug**, **Ian Cockburn** and **Markus Winterberg**, who ran ANU-based experimental modules during the course, and **Giel van Dooren** and visiting fellow **Margaret McKinnon**, who were part of the teaching team at the coastal campus in Kioloa.

Kiaran Kirk and colleagues contributed to two recent publications that identified novel drugs in the fight against malaria. Notably, these compounds all target the protein PfATP4, which the Kirk lab has demonstrated plays a critical role in sodium homeostasis in the parasite. **Kiaran, Adele Lehane, Adelaide Dennis and Natalie Spillman** (formerly a PhD student in the lab and now on an NHMRC Fellowship in the US) were part of two large teams that demonstrated potent activity of dihydroisoquinolones and pyrazoleamides against *Plasmodium falciparum* parasites. These studies were published in PNAS and Nature Communications, respectively. Adele and Kiaran published a third paper in Molecular Microbiology, demonstrating that 7 % of compounds in the 'Malaria Box', a chemically diverse group of 400 antiparasmodial drugs, also disrupt sodium homeostasis in the parasite, likely by targeting PfATP4.

Finally, **Simon Foote** has commenced his position as the Director of the John Curtin School of Medical Research at ANU. The coming months will see his colleagues **Brendan McMorran** and **Gaetan Burgio** move their lab to ANU. They will add to ANU's burgeoning parasitology community, which will comprise approximately a dozen lab leaders, and include diverse aspects of parasite research, including cell biology, biochemistry, immunology and epidemiology.



Victoria

The University of Melbourne

Faculty of Veterinary Science

Congratulations to **Emeritus Professor Ian Beveridge**, who won a 2014 **World Federation of Parasitologists Distinguished Achievements Award** presented at ICOPA XIII in Mexico.

"Bevo's travelogue continues after 'official' retirement"

Emeritus Professor Ian Beveridge attended ICOPA in Mexico City and gave a talk on the new e-text for Australian and New Zealand veterinary students. This was followed by attending the 8th International Workshop on Cestode Systematics near Sao Paulo in Brazil. Bjoern Schaeffner, formerly a PhD student at the University of Melbourne, and currently a post doc at the University of Sao Paulo was also present. The main purpose of the meeting was to discuss the final report to the USA National Science Foundation for a 5 year project worth over \$US 1 million, to Janine Caira of the University of Connecticut, to study cestode systematics globally; both Ian and Bjoern had been recipients of this funding and are actively involved in preparing the final report.

In October, **Ian** travelled to China, giving seminars on current research activities at the Veterinary School of the University of Guangshi in Nanning. Following which, he moved on to the Veterinary School in Wuhan to present a lecture series to Masters students. This was his third year of teaching in Wuhan. **Professor Robin Gasser** had been visiting Xing Zhu in Langzhou over joint research programs and as an Adjunct Professor at the Veterinary School in Wuhan, joined Ian at the end of his lecture series and continued the lectures after Ian returned home. The University of Melbourne hopes to continue

State News continued

and extend these teaching and research activities in China which are now based on a number of years of active involvement of Robin and Ian in various veterinary schools in China.



Image above **Ian Beveridge** with postgraduate students studying Parasitology



Read about **Professor Marshall Lightowler's** efforts to promote cysticercosis and cystic echinococcosis vaccines on page 36.

Image above **Marshall Lightowlers** with **Aashima Auplish** - University of Melbourne's undergraduate veterinary student and below Relaxing after a hard day's work with a little Pisco (or was it before a hard day's work?...). Edmundo Iarrieu with friend and Marshall Lightowlers)



In this image Guillermo Mujica and Marshall Lightowlers are being interviewed about hydatid control on Argentine National Public Radio at the Bariloche studios (photo: Argentine National Public Radio)

Significant publications

1. Hagen J, Young ND, Every AL, Pagel CN, Schnoeller C, Scheerlinck J-PY, Gasser RB*, Kalinna BH* 2014. *Omega-1* knockdown in *Schistosoma mansoni* eggs by lentivirus transduction reduces granuloma size in vivo. *Nature Communications*. In Press 25 Sept 2014. *Joint last authorship.
2. Tang YT, Gao X, Rosa BA, Abubucker S, Hallsworth-Pepin K, Martin J, Tyagi R, Heizer E, Zhang X, Bhonagiri-Palsikar V, Minx P, Warren WC, Wang Q, Zhan B, Hotez PJ, Sternberg PW, Dougall A, Gaze ST, Mulvenna J, Sotillo J, Ranganathan S, Rabelo EM, Wilson RK, Felgner PL, Bethony J, Hawdon JM, Gasser RB, Loukas A, Mitreva M 2014. Genome of the human hookworm *Necator americanus*. *Nature Genetics* 46, 261-269.
3. Young ND, Nagarajan N, Lin SJ, Korhonen PK, Jex AR, Hall RS, Safavi-Hemami H, Kaewkong W, Bertrand D, Gao S, Seet Q, Wongkham S, The BT, Wongkham C, Intapan PM, Maleewong W, Yang X, Hu M, Wang Z, Hofmann A, Sternberg PW, Tan P, Wang J, Gasser RB 2014. The *Opisthorchis viverrini* genome provides insights into life in the bile duct. *Nature Communications* 5:4378
4. Jex AR, Nejsum P, Schwarz EM, Hu L, Young ND, Hall RS, Korhonen PK, Liao S, Thamsborg S, Xia J, Xu P, Wang S, Scheerlinck JP, Hofmann A, Sternberg PW, Wang J, Gasser RB 2014. Genome and transcriptome of the porcine whipworm *Trichuris suis*. *Nature*

Genetics 46(7):701-6

Travel/Conference participation

Associate Professor Rebecca Traub

was sponsored by Bayer Animal Health to travel to Colombia, Argentina and Brazil in August and Vietnam and the Philippines in November to share information relating to updated guidelines for the control of canine gastrointestinal parasites and vector-borne diseases in the tropics. Although a challenge to cover each country in a mere of two days, Rebecca managed to 'squeeze' in a short visit to Copacabana beach (wow!) to take in the sights and sounds of Rio. Despite her efforts and to her dismay, she was not successful in picking up cutaneous larva migrans! Rebecca was an Invited Speaker at the Zoonosis Conference organised by Australian Society for Infectious Diseases, Brisbane from 25th to 26th July 2014 and presented on "Cat flea-borne spotted fever in humans – is the dog to blame?"

Associate Professor Bernd Kalina attended a conference on Molecular and Cellular Biology of Helminth Parasites VIII in Hydra, Greece from the 1st to September 2014.

New arrivals/visitors

Christopher Lee joined Gasser Laboratory as a PhD student. **Hagos Gebrekidan**, lecturer in Animal Genetics at Jimma University College of Agriculture and Veterinary Medicine, Jimma, Ethiopia, joined **Dr Abdul Jabbar** for his PhD studies on tick-borne diseases of bovines.

Bio21 Molecular Science and Biotechnology Institute – Tilley's laboratory

Grant successes

2014-2016: National Health and Medical Research Council. APP1060357; CIA - **Prof Leann Tilley** CIB - Prof Philip Rosenthal CIC - Doctor Arjen Dondorp. Elucidating the mechanisms of action of and resistance to endoperoxide antimalarials. \$693,458

State News continued

2014: OzEMalaR Travel Awards. **Leann Tilley and Matt Dixon**. \$5,000 each.

2015-2017: National Health and Medical Research Council. APP1078065 Breaking malaria's lethal grip: Targeting the assembly of an adhesive complex on infected red blood cells; CIA - **Prof Leann Tilley CIB Dr Paul Gilson, CIC Assoc Prof Tania de Koning-Ward, CID Dr Matthew Dixon**. \$792,182.50

Significant publications

Jones, M.W.M., Dearnley, M.K., van Riessen, G.A. Putkunz, C.T., Abbey, B., Junker, M.D., Vine, D.J., McNulty, I., Nugent, K.A., Peele, A.G., Tilley, L. (2014) Rapid, low dose X-ray diffractive imaging of the malaria parasite *Plasmodium falciparum*. *Ultramicroscopy* 143, 88–92

Katris, N.J., van Dooren, G.G., McMillan, P.J., Hanssen, E., Tilley, L. and Waller, R.F. (2014) The apical complex provides a regulated gateway for secretion of invasion factors in *Toxoplasma*. *PLoS Pathogens* 2014 10 (4), e1004074.

Maiorca, M., Millet, C., Hanssen, E., Abbey B., Kazmierczak, E. and Tilley, L. (2014) Artifact reduction in electron tomography using local regularization of tilt projections. *Journal of Structural Biology* 186 (1), 28-37.

Khoshmanesh, A., Dixon, M.W.A., Kenny, S., Tilley, L., McNaughton, D. and Wood B.R. (2014) Detection and quantification of early stage malaria parasites in laboratory infected erythrocytes using Attenuated Total Reflection Infrared (ATR-IR) spectroscopy and multivariate analysis. *Analytical Chemistry* 86 (9), 4379-4386 (IF: 5.825).

Luu, M. B., van Riessen, G. A., Abbey, B., Jones, M.W.M., Phillips, N.W., Elgass, K., Junker, M. D., Vine, D.J., McNulty, I., Millet, C., Cadenazzi, G., Nugent, K. A., Tilley, L., and Peele, A. G. (2014) Fresnel coherent diffractive imaging tomography of whole cells in capillaries. *New Journal of Physics* 16 (9), 093012.

Wood B.R., Bamberg, K.R., Dixon, M.W.A.,

Tilley, L., Nasse, M.J., Mattson, E., and Hirschmugl, C.J. (2014) Diagnosing malaria infected cells at the single cell level using focal plane array Fourier transform infrared imaging spectroscopy. *Analyst* 139, 4769–4774

Xie, S.C., Dogovski, C., Kenny, S., Tilley, L. and Klonis, N. (2014) Optimal assay design for determining the in vitro sensitivity of ring stage *Plasmodium falciparum* to artemisinins. (2014) *International Journal for Parasitology* (IF: 3.404) 15 October, 44 (12), 893–899.

Hliscs, M., Millet, C., Dixon, M.W.A., McMillan, P., Siden-Kiamos, I. and Tilley, L. (2014) Organisation and function of an actin cytoskeleton in *Plasmodium falciparum* gametocytes. *Cellular Microbiology* (Epub 1/9/2014).

Marzec, K.A, Perez-Guaita, D., de Veij, M., McNaughton, D., Baranska, M., Dixon, M.W.A., Tilley, L. and Wood, B.R. (2014) Red blood cell resonators polarize green laser lights and reveal hemoglobin's hyper-enhanced non-fundamental Raman modes. *Chem Phys Chem* (IF: 3.360) (accepted 4 September 2014)

Monaghan, P., Green, D., Pallister, J., Klein, R., White, J., Williams, C., McMillan, P., Tilley, L., Lampe, M., Hawes, P. Wang L-F. (2014) Detailed morphological characterisation of Hendra virus infection of different cell types using super-resolution and conventional imaging. *Virology Journal* (accepted, 7 November, 2014)

Conference participation

7th Asian Pacific Organization of Cell Biology (APOCB) Congress in partnership with the American Society for Cell Biology (ASCB), February 24-27, 2014, Singapore. Plenary Talk and Symposium talks.

Focus on Microscopy 2014 (FOM2014) April 13 - 16, 2014, Sydney, Australia. Plenary Talk. "Malaria Parasites in Focus: Sex, Drugs and Virulence" and Chair of 2 sessions.

Burroughs Wellcome Gametocytes and Bone Marrow Workshop, June 23-24, Harvard

University, USA.

50th Anniversary Conference of the Australian Society for Parasitology, Future of Australian Parasitology session talk, June 30 to July 3 2014, ACT.

International Union of Pure and Applied Biophysics meeting (IUPAB). Imaging *Plasmodium falciparum*: Sex, drugs and virulence" August 3-7, 2014.

International Congress of Parasitology, ICOPA XIII, Mexico City, August 10-15, 2014. "Virulence protein trafficking in *P. falciparum*". And "Host cell remodelling in *P. falciparum* gametocytes".

8th International Heme Oxygenase Conference. Invited presentation. "Molecular basis of action of and resistance to the antimalarial drug, artemisinin". Sydney, October 8 - 11, 2014.

Appointment

Professor Leann Tilley was appointed as a representative for the Australian Society for Biochemistry and Molecular Biology (ASBMB) at the Federation of Asian and Oceanian Biochemists and Molecular Biologists (FAOBMB)

Deakin University

Successful NHMRC project:

CIs: **de Koning-Ward TF and Gilson P:** Functional dissection of the malaria RhopH complex and its contribution to new permeation pathways.

St Vincent's Melbourne

Parasitology and Tropical Medicine Master Class 2015 will be held in Perth on 6th – 7th March 2015, see advertisement on page 39 for more details or go to the website <http://www.theasm.org.au/parasitology/>

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Walter and Eliza Hall Institute

New compound blocks 'gatekeeper' enzyme to kill malaria.

A research team led by **Dr Brad Sleebs** and **Dr Justin Boddey** at the Walter and Eliza Institute are homing in on a new target for malaria treatment, after developing a compound, WEHI-916, that blocks the action of a key 'gatekeeper' protease essential for malaria parasite survival. The team has shown that WEHI-916 blocks the function of the aspartic protease Plasmepsin V from *P. falciparum* and *P. vivax* and prevents transport of effector proteins from the parasite to the host erythrocyte. They have demonstrated in a model system that *Plasmodium* parasites treated with WEHI-916 were unable to engineer the natural mechanism to evade the host immune system and showed that WEHI-916 killed *P. falciparum* blood stage parasites as a direct result of blocking the function of Plasmepsin V (Sleebs B.E., Boddey, J.A. PLoS Biol. 12, e1001897; *J. Med Chem.* 57, 7644-7662). These promising findings provide the foundation to develop a first in class antimalarial therapeutic targeting a novel mode of action.

New arrival

Justin Boddey and his wife Catherine Kennedy welcomed their first child Zachary Edwin Boddey, weighing 3 kg, on November 10th and pictured right. Congratulations!



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