



# NEWSLETTER

Volume 29 Issue No.3 December 2018

## Season's greetings from the ASP



Image of penguin courtesy  
Andrew Thompson/IJP:PAW

Australian Society for Parasitology Annual Conference

# Adelaide 2019

Monday 8th to Thursday 11th July 2019.

The 2019 Australian Society for Parasitology Annual Conference will take place at the Adelaide Convention Centre, Adelaide, South Australia, from Monday 8th to Thursday 11th July 2019. The conference dinner will take place at the Stamford Plaza, Adelaide.

Please contact the Conference Coordinator, Lisa Jones by email ([lisa.jones1@jcu.edu.au](mailto:lisa.jones1@jcu.edu.au)) or telephone +61 (0)7 4232 1311 with any queries.



ASP Annual Conference

**Adelaide 2019**

[parasite.org.au/2019conference](http://parasite.org.au/2019conference)



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#### Dear Members,

The ASP Executive and I wish you all a wonderful and relaxing Christmas and best wishes for a Happy New Year!

It has been a fantastic year for Parasitology. Our 2018 AGM in St. Kilda was a great success covering a wide range of topics as well as a Public Outreach & Education Symposium, an ECR workshop and a showcase of the ASP Concepts in Parasitology Course Alumni.

During the conference, Prof. Nick Smith was awarded the Bancroft-Mackerras Medal for Excellence and three of our members were made Fellows of the society for their outstanding contributions to parasitology and the society: Leann Tilley, Barbara Nowak and Alex Maier. Warmest congratulations to Nick and our new

#### Fellows.

We would also like to welcome our new ASP State Representatives, Tommy Leung (NSW), Stephen Kho (NT), Alireza Zahedi Abdi (WA) and Scott Carver (Tas).

At the 2018 ASP AGM Thursday 27th September; It was resolved, by a vote of greater than two-thirds of those present, 120/154 members or 77% of those present (counting ceased once 120 raised hands were counted), that:

The Society approve the revised Constitution of the Australian Society for Parasitology Inc., as posted on the Society's Website on July 31, 2018 in Volume 29, Issue 2 of its Newsletter, noting the correction to the typographical error in Article 31(3), where the Secretary is incorrectly referred to as the Executive Secretary

## *From the President's Desk continued*

Proposer: Crystal Cooper  
Second: Rebecca Traub

It was also resolved, by a vote of greater than two-thirds of those present (there was a near-unanimous raising of hands meaning a tally was unnecessary), that:

The Society approve the Principles, By-Laws and Guidelines for Awards, Grants, Journals, Committees and Archives of the Australian Society for Parasitology Inc., as posted on the Society's Website on July 31, 2018 in Volume 29, Issue 2 of its Newsletter

Proposer: Gillian Fisher  
Second: Mark Sandeman

Discussion was held about whether to replace Article 1 of the newly approved Principles, By-Laws and Guidelines for Awards, Grants, Journals, Committees and Archives of the Australian Society for Parasitology Inc. with, "The Australian Society for Parasitology, herein referred to as the Society, recognises that we operate in diverse local, national and global communities. The Society is committed to sustaining a diverse culturally and socially inclusive membership and supports multiculturalism and anti-discrimination including non-discrimination on the basis of sex, sexual orientation, race or disability. The Society strives to achieve gender equality and equal opportunity in all aspects of its governance, administration, awards and conference participation." This question remained unresolved.

It was, therefore, resolved that:

Article 1 of the newly approved Principles, By-Laws and Guidelines for Awards, Grants, Journals, Committees and Archives of the Australian Society for Parasitology Inc. be referred to Council for consideration of rewording.

The ASP Council met by Zoom on the 27th November 2018, as it is a requirement of the Queensland Association Incorporations Regulation 1999, that the Council meets three times a year. At the November Council meeting, this statement was

discussed and revised wording is currently under review by the Council.

On 20th November 2018 the Queensland Government, Office of Fair Trading, Department of Justice and Attorney-General wrote to advise the Australian Society for Parasitology Inc. that they could not register the Amendment of Rules until a special resolution to change the rules to replace 'two-thirds majority' with 'three-quarter majority' to comply with the Associations Incorporation Act 1981. Once this rule has been voted on and changed then the 2018 ASP Constitution will be able to be registered; until then we will be governed by the 2012 ASP Constitution.

The 2019 ASP Annual Conference will take place at the Adelaide Convention Centre, Adelaide, South Australia, from Monday 8th to Thursday 11th of July.

As part of the strategic plan, we have established an ASP Educational Committee, which aims to develop a framework and educational resources for parasitology teaching in Australia. Dr. Abdul Jabbar has been appointed as Convenor of the Committee. Any ideas/suggestions or electronic teaching resources that you may have can be sent to Abdul.

The 2018 Concepts in Parasitology course (25th November – 8th December 2018) has recently been delivered and the society is indebted to our new convenor, Stuart Ralph and to the co-convenor Alex Maier for all the work they have done to make the 2018 course such a great event. Many thanks also to all the lecturers who contribute so generously to the course.

As we come to the end of the year, I would like to thank our Journal Editors for all the wonderful work they do; Brian Cooke and the editorial team at IJP (Alex Loukas, Jan Šlapeta and Maria Meuleman), Andrew Kotze and Kevin Saliba at IJP-DDR and Andy Thompson and Susan Kutz at IJP:PAW.

We have had a wide variety of exciting

outreach events this year and we are very grateful for the energy and enthusiasm of all the organisers. See recent updates in the ASP outreach researcher news and state news in this newsletter. We also have JD Smyth Travel Award reports from Mai Dang, University of Tasmania and Daniel Huston, University of Queensland as well as an ASP Travel and Training Award report from the Tropical Marine Fish Parasitology Workshop and an ASP Network Researcher Exchange, Training and Travel Award from Melanie Ridgway who attended the Biology of Parasitism Course.

Sadly, we have lost several eminent parasitologists this year; Dr. Joseph Boray, who passed away in July this year and Dr. Norman Anderson from CSIRO Animal Health at Parkville and Dr. Lloyd Whitten who worked as a parasitologist at Wallaceville Research Centre in New Zealand. Dr Boray's obituary is available to read in this newsletter.

Many thanks to Amanda and Charlotte on the ASP Executive for all their help and support throughout the year and last but by no means least, thank you to Nick and Lisa for everything you do for this society. It is greatly appreciated.

**Best regards,**

**Una Ryan**  
**President of the ASP**

[www.parasite.org.au](http://www.parasite.org.au)  
[www.facebook.com/ASParasitology](https://www.facebook.com/ASParasitology)  
[www.twitter.com/AS\\_Para](https://www.twitter.com/AS_Para)

# Vale Jospeh C. Boray (1926-2018)

**Australia and the global parasitology community have lost a great scientist and friend with the passing of Joseph Boray, Fellow and Past President of the ASP. Joe passed away in July 2018, in Sydney, aged 91 years and 8 months.**

Australia and the global parasitology community have lost a great scientist and friend with his passing in July 2018. Joe passed away in Sydney, aged 91 years and 8 months.

Joe studied Veterinary Science at the University of Budapest, Hungary and gained his DVM in 1950 and worked at the Small Animal Clinic of the Veterinary School. After 3 years of post-graduate studies he received his PhD and became Senior Lecturer of Parasitology at the same University. The epidemiology and control of echinococcosis was the research topic for his PhD but liver fluke disease in ruminants was soon to take over as he examined new and safer parenteral application of carbon tetrachloride, the only real remedy at that time.

Joe, Eva and infant son Peter were part of the wave of migration from Hungary to Australia in the mid-1950s' and a new life phase began after what was a turbulent and dangerous time in Eastern Europe. In 1956, following widespread student protests, the Hungarian people sought some independence. Many people died and over 200,000 Hungarians fled. These refugees included some of Hungary's best and brightest and many have made prominent contributions to Australia.

On his arrival in Australia he was employed by the Commonwealth Scientific and Industrial Research Organization (CSIRO) at the McMaster Animal Health Laboratory in Sydney and reached the position of Principal Research Scientist. Liver fluke again was his passion, developing reliable assessment tools to determine the efficacy

of drugs as well as defining research on the epidemiology and control of the disease.

A Post-Doctoral Fellowship led Joe back to Europe to the Institute of Parasitology, University of Veterinary Medicine Hannover/Germany under Professor K. Enigk. Joe studied the basic biology of Lymnaeid snails including susceptibility to infection and survival of the metacercariae under different climatic conditions, all basic questions directed at practical control options. In 1968 he joined the Institute of Parasitology of the University of Zurich/Switzerland, in 1971 he was promoted to Associate Professor of Helminthology, teaching parasitology in both the Veterinary and Medical Faculties, until 1972. Together with several colleagues he received a research grant from the Swiss National Science Foundation to work on the epidemiology and control of microcoeliosis of sheep and cattle, and continued to work on the chemotherapy and chemoprophylaxis of fasciolosis.

In 1972 Joe joined the Agriculture Division of CIBA-GEIGY and as head of the Ciba Geigy Research Centre, Kemps Creek, Australia. This was a productive time developing many products including amidine compounds for the treatment of resistant cattle tick, triclabendazole for *F. hepatica*, cyromazine for the prevention of strike from *Lucilia cuprina* (sheep blowfly) and nitroscanate for the treatment of intestinal parasites of dogs. Many insecticides were also developed to the market for grain protection and household pests. For those from industry, this was a remarkable period in terms of both the number and quality of the products that were developed. To add some formality to his credentials, Joe completed a program on the Management of Research and Development in the Massachusetts Institute of Technology, USA.

As a Principal Research Scientist in the NSW Department of Agriculture, Joe shifted focus to resistance management in internal and external parasites such as *Bovicola ovis*, (sheep body louse), *F.*



*hepatica* and *Haemonchus contortus* (Barbers Pole worm of sheep). New control options for liver fluke was never far away as he led the evaluation of a GST vaccine against *F. hepatica* and the development of synergistic drug combinations (including patents) for the prevention and treatment of resistant strains. Joe "retired" at age 73 when he received the "Meritorious Service Award" by the Minister of Agriculture in New South Wales. Not having ever retired, Joe continued for many years to produce metacercariae from his well-equipped home laboratory and worked as a consultant to many private and public sector organizations. He was a master of breeding many species of vector snails. At a congress, he was asked what specific conditions snail breeding requires. His short answer was "you should love your snails".

In over 60 years of research Joe contributed to an enormous wealth of knowledge in veterinary parasitology including the epidemiology and control of trematode diseases, host parasite relationships in trematodes of mammals, humans and the intermediate host snails, the chemotherapy and chemoprophylaxis of trematodes, cestodes, nematodes and external parasites and management of drug resistance in



## Vale Joseph C. Boray continued

these groups of parasites. His research was always focused on practical outcomes so that farmers and advisors could use the information to manage what are economically important diseases. He developed easy to understand regional control programs for *F. hepatica* in Australia for sheep and cattle and based on the strong epidemiological science that was researched in his earlier career. These programs were expanded to provide a similar approach in some 42 countries as part of his work with the United Nations Food and Agriculture Organization. Importantly for the disease in human, control programs were developed for the World Health Organization, where he pioneered the use of triclabendazole for humans use. This was an example of "one health" when the term had not been used.

Joe published more than 150 papers, monographs, books and book chapters with much material still sitting in the filing cabinet. Joe was a great mentor to young scientists and students where he imparted his wealth of knowledge and a practical

approach to parasitology.

Joe contributed to his profession enormously as a foundation member of the Australian Society for Parasitology (past President and Fellow of the Society), a life member of the Australian Veterinary Association, a foundation member of the World Association for the Advancement of Veterinary Parasitology (WAAVP) and the Australian College of Veterinary Scientists (Fellow, Pharmacology Chapter). He was a registered Specialist Veterinary Surgeon (Pathobiology) with the Board of Veterinary Surgeons of NSW. He was an Honorary Member of the Hungarian Society of Parasitology, the WAAVP and the Latin American Society of Parasitology and past President of the International Society of Medical and Applied Malacology.

Joe was at his best when imparting his passion for liver fluke. His embalmed liver fluke was always in his pocket (encased of course) and ready for immediate display. He was able to communicate this passion

to a wide range of audiences from skeptical farmers, hard-nosed pharma scientists, students and bureaucrats. On his softer side, his hobbies (apart from parasitology and liver fluke) were classical music, opera, reading, travelling and gardening. In the background and with all of our admiration, was his wife Joanna who was able to provide support in selfless dedication during Joe's career and especially in his later years. Our deepest sympathy goes to Joanna, Joe's son Peter, grandchildren Melissa and Stephen, step family Mark, Jane and Margaret, Jessica, Benjamin and Jessie.

Vale Joe, completing his life cycle.

**Dr. Joseph Coloman Boray D.V.M., Dr.Vet. Sc., PhD (Budapest), Dr. med. vet. habil., (Zurich), FACVSc, (Sydney)**

**31st October 1926 – 8th July 2018**

Contributors: Peter Rolfe, Johannes Eckert, Steve Love, Bruce Watt, G-Halli Rajasekariah (Raj)

## Meet your new State Reps

**Steven Kho of the Menzies School of Health Research is the new ASP State Representative for the Northern Territory.**



Steven is a PhD student in Professor Nick Anstey's group at the Menzies School of Health Research in Darwin, Australia. His research focuses on understanding the pathophysiological role of the spleen and innate host components such as platelets and neutrophils in human malaria. Steven is currently working to determine if the human spleen is a

subclinical reservoir for *Plasmodium* parasites. His field studies in Papua has found that platelets directly attack and kill parasites in the blood of malaria patients, which may lead to the identification of novel therapeutic targets to treat malaria or alleviate disease severity.

**Tommy Leung of the University of New England is the new ASP State Representative for New South Wales.**



"I am a lecturer in Parasitology and Evolutionary Biology at University of New England. My research interests in parasites mainly relates to (1) how host characteristics affect parasite diversity and abundance, (2) evolutionary ecology of parasites, (3) factors that influence parasite-host interactions, and (4) ecological patterns in the diversity, distribution and life history of parasites and pathogens.

"I also write the Parasite of the Day blog (<https://dailyparasite.blogspot.com/>) where I summarise and discuss newly published research papers on parasites of various types including helminths, parasitoids, entomopathogenic fungi, parasitic plants, and much more!"

# Leann Tilley, FASP 2018

**Professor Leann Tilley of the University of Melbourne has been elected Fellow of the ASP.**

Professor Leann Tilley is an internationally recognised expert in *Plasmodium* cell biology and drug development. She obtained her PhD in 1984 from The University of Sydney and is currently Professor of Biochemistry and Molecular Biology at The University of Melbourne. Her laboratory currently includes six graduate students, three research officers and five postdoctoral fellows.

Her research explores fundamentally new methodologies and has led to substantial research innovation. This led to her appointment as Deputy Director in 2006 and Director (2013-2014) of the ARC Centre of Excellence for Coherent X-ray Science. The Centre brought physicists and biologists together to develop new approaches to probing biological structures and processes. She also served as Associate Director (Structural Biology) of the Bio21 Molecular Science Institute. She is current President of the Australian Society for Biochemistry and Molecular Biology.

In 2016, Leann was awarded the Georgina Sweet Australian Laureate Fellowship, the highest award of the Australian Research Council, following her Australian Professorial Fellowship (2011-15). She has also been awarded the Bancroft-Mackerras Medal from the Australian Society for Parasitology in 2010, the Beckman Coulter Discovery Award of the Australian Society for Biochemistry and Molecular Biology in 2011, the Eureka Prize for Infectious Diseases Research in 2016 and the Bob Robertson Award from the Australian Society for Biophysics.

Leann has generated >\$40M in research funding over the course of her career and in addition to strong support from the National Health and Medical Research Council (NHMRC) and the Australian Research Council (ARC), Professor Tilley



has played a leading role in initiatives that have brought substantial benefit to many including numerous major equipment bids, Co-Operative Research Centres, an ARC Centre of Excellence and, of particular significance to the ASP, the ARC/NHMRC Research Network for Parasitology bid; Leanne was, subsequently, an important member of the Network's Management Committee.

Leann has published 189 manuscripts in highly ranked international journals including *Nature*, *Nature Communications*, *Nature Reviews Micro*, *PNAS*, and *Blood*. The quality of the images from her lab has been recognized by 16 journal front covers. Her research has been cited >9300 times and she has a h-index of 58.

Leann is an outstanding mentor. She has supervised more than 40 higher degree research students to completion and, in the last 5 years, four of her students were awarded the Rob Lewis Medal and recognised as giving the best presentations at international conferences. She has

also mentored 26 post-doctoral fellows and is particularly keen to promote the involvement and success of women and early career researchers in parasitology research and eagerly contributes to relevant mentorship schemes. Professor Tilley has been an outstanding role model for women in parasitology. Her Georgina Sweet Laureate Fellowship includes a role as an ambassador for women in science. In this role, she has established and sought funding for travel and research awards for women including three awards of \$25,000 each year to Australian female researchers, and four Travel Support awards (\$3,000) for Female Keynote Speakers at Australian conferences.

In view of her outstanding contributions to science, parasitology and the society, Prof Leann Tilley is an extremely worthy recipient of the title, Fellow of the Australian Society for Parasitology.

# Alex Maier, FASP 2018

**Professor Alex Maier of the Australian National University has been elected Fellow of the ASP.**

Alexander Maier became intrigued by parasites as an undergraduate student during a study year in the United States and, subsequently, graduated with a major in zoology/parasitology from the University of Tübingen in Germany in 1996. He completed a PhD on trypanosomes at the Centre for Molecular Biology in Heidelberg where he brought together aspects of cellular and molecular biology, a recurrent theme for much of his work. In 2000, he moved to the Walter and Eliza Hall Institute in Melbourne to study invasion mechanisms of the malaria parasite and established and ran the Malaria Functional Genomics Facility there for 6 years. In 2008, he joined the Biochemistry Department at La Trobe University as an ARC Australia Fellow. In 2012, he moved to the Research School of Biology at the Australian National University (ANU) where he holds a tenured position.

Alex has an excellent research record. He has published 54 papers in high impact journals and is widely cited. His publications are comprehensive, pioneering studies that have led to pivotal conceptual and methodological advances, resulting in multiple patents. His research has focused on molecular mechanisms of malaria pathogenesis, considering different aspects such as membrane modifications, chaperone molecules, gametocyte proteins, and lipids.

His work has made significant impact as evidenced by the award of 16 grants worth \$4.8 million, extensive local, national and global collaborations and international recognition as a reviewer, spokesperson and invited speaker. His analyses of the invasion mechanisms used by malaria parasites laid the groundwork for multiple vaccine field trials published in *Nature Medicine*, *Science* and *PLOS Pathogens*. Under his guidance, the first genetically attenuated livevaccine to enter clinical trials



was generated.

Alex has an excellent grasp of educational theory and practice, valuing understanding over knowledge, facilitating active learning, and using de-constructionist approaches to complex problems to promote integrated relational thinking. He has published several papers on teaching and learning, contributed to a range of undergraduate courses and has mentored 22 postgraduate students; it is testament to his philosophy and dedication that students remark on his compassion, understanding and support.

Alex provides senior service to his university, his profession and his community. He sits on many university committees for resourcing, policy development, curriculum review and research training. He is a passionate advocate for the discipline of parasitology and a strong promotor of science in general, participating in many outreach initiatives through school projects, museum exhibitions, thematic talks, Science Meets Parliament, political lobbying and press articles.

Alex's enthusiasm for parasitological research, teaching and mentorship has resulted in two outstanding initiatives.

He altruistically, and in exemplary fashion, developed the ASP's *Concepts in Parasitology* course, which was launched in 2014. He has served the Society as Convenor of this course ever since. The remarkable success and quality of this course, and the contribution it makes to the development of young parasitologists, is a source of great pride and satisfaction for the Society. Then, in 2017, Alex spearheaded the establishment of an International Research Training Group, "*Crossing boundaries: molecular interactions in Malaria*". The program comprises nine groups at the ANU and eleven groups at the Humboldt University in Berlin in a unique, synergistic partnership that takes advantage of the expertise of the two Universities. Through the program, 75 PhD students will be trained over the next

9 years with the aid of initial funding of over \$9 million. The objectives of this graduate school reflect Alex's vision and passion for the discipline. It will provide the students with molecular insights into parasitic infection with the view to developing novel intervention strategies using state-of-the-art research in biology, computation and medicine and will train students to become independent, innovative and interdisciplinary researchers able to deal with complex problems on an international stage.

For his endeavours, Alex has received an ANU Vice Chancellor's Award for Excellence, been a finalist for Eureka Prizes for Scientific Research and the People's Choice Award, won a UNESCO Khwarizmi International Award, and been awarded an Alexander von Humboldt Fellowship.

As a dedicated visionary and accomplished parasitologist who has been an outstanding ambassador and servant for the discipline and the Australian Society for Parasitology, Alex Maier is an extremely worthy recipient of the title, Fellow of the Australian Society for Parasitology



# Barbara Nowak, FASP 2018

**Professor Barbara Nowak of the University of Tasmania has been elected Fellow of the ASP.**

Professor Barbara Nowak is internationally renowned for her research on fish parasitology, specifically finfish. She obtained her PhD in 1991 from the University of Sydney and in 2004, obtained her DSc from the University of Agriculture in Szczecin Poland. She is currently Professor at the Institute for Marine and Antarctic Studies (IMAS) at University of Tasmania and Associate Dean for Research Training.

Over the course of her career, she has received >78 grants totalling \$18.5 million dollars. Her research is concerned with the health of farmed fish with a focus on the interaction between host, parasites and the environment. In particular, her research is concerned with disease control and investigation of fish mortalities. The research has had a significant impact on improving aquaculture production and sustainability. For example, she led a project to develop a method to detect blood flukes in bluefin tuna, in collaboration with Japanese and Australian scientists, uncovered a new species and intermediate host, and developed a treatment solve the problem of blood flukes in the bluefin tuna industry. Her findings were adopted by the industry and reduced bluefin tuna mortality in the Australian industry from 12% to below 1%.

Professor Nowak is currently working closely with the international Atlantic salmon farming industry, seeking similar results for amoebic gill disease. Her lab has discovered the parasite that causes the disease, determined the extent of gill lesions caused by the parasite, and is developing control methods.

She is an outstanding PhD supervisor with >43 PhD and 3 Masters completions and is currently supervising 8 PhD students and 1 Masters student. In the last five years,



four of her students were awarded the Rob Lewis Medal and recognised as giving the best presentations at international conferences.

Her research standing in the international community is evidenced by Membership of the several Journal Editorial boards; Editorial Board, *Acta Ichthyologica et Piscatoria* (2001 to present), *PeerJ* (2014 – present), Associate Editor, *Journal of Aquatic Animal Health* (2002 – 2012), Member of Editorial Board, *Journal of Fish Diseases* (2005 – 2014) and Associate Editor, *Journal of Fish Diseases* (2015 – 2016).

She is also Project advisor/member of the steering committee for ADIOS Department of Agriculture Food and the Marine Ireland 2017- 2019; Functional Annotation of Salmonid Genomes (FAASG) 2016-date; MBIE Feed Efficient Salmon (New Zealand) 2016-2021; Gill Health Initiative 2013-present; Genomics in Lice and Salmon (GiLS) BC; Genome Canada project 2008 – 2010

Professor Nowak is sought after as a conference speaker, invited to give keynote presentations around three times per year and has been an invited speaker at >16

international conferences.

Professor Nowak strives to promote Australia as a centre for parasite research and foster international scientific interaction. In 2006, Professor Nowak successfully applied for ARC/NHMRC Research Network for Parasitology funding for a Researcher Exchange for Prof Iva Dyková at the Academy of Sciences in the Czech Republic to visit the University of Tasmania to do research on *Neoparamoeba* spp. and run a short training workshop for researchers and PhD students. In 2007, Professor Nowak won an ARC/NHMRC Research Network for Parasitology Award for a Researcher Exchange to visit the Pacific Biological Station in Canada and salmon farms on the Pacific Coast of Canada and the USA.

In addition to her scientific contributions to the field of Parasitology, Professor Nowak has worked tirelessly for the ASP. Before joining the ASP in 2006, Professor Nowak helped to organise the 2002 ASP Annual Conference which was held in Hobart. She was invited to give a keynote presentation at the 2006 ASP Annual Conference and was co-chair of the 2012 ASP Annual Conference held in Launceston. Professor Nowak became the ASP Tasmanian State Representative from 2006 to 2009 and from 2016 until the present. Under the ASP banner, Professor Nowak continuously strives to promote parasitology to the public and to the local scientific community. Professor Nowak has run regular parasitology events for the parasitology community to promote parasitology research and to attract new ASP members from Tasmania and is the driving force behind this strong ASP presence. Among her many contributions, Professor Nowak runs the annual Fish Histopathology workshops.

In view of her outstanding contributions to science, parasitology and the Society, Barbara Nowak is an extremely worthy recipient of the title, Fellow of the Australian Society for Parasitology.

# Student awards

## Congratulations to the 2018 Conference Student Prize winners!

Pictured right: clockwise from top left.

Best Poster Presentation **Sashika Richards**, ANU for her poster "Characterisation of the malaria parasite's 'multidrug resistance protein 1' in *Xenopus laevis* oocytes"

Best 2 minute Poster Oral Presentation **Hanh Nguyen**, University of Melbourne, for her poster "Characterisation of bromodomain protein in the malaria parasite *Plasmodium falciparum*"

Best 5 min Presentation **Kit Kennedy**, University of Melbourne for his presentation "Delayed death in the malaria parasite: Prenylation dependant disruption of intracellular trafficking" (prize received by Stuart Ralph)

Best 15 min Presentation **Sarah Shafik**, ANU for her presentation "The natural substrates and normal physiological role of the malaria parasite's 'chloroquine resistance transporter'"



# Awards and prizes



## Undergraduate Prize

In June, Tsz Yau Mok (left) was presented with the 2019 ASP Undergraduate Prize for best UTS Parasitology student by Professor Nick Smith of the University of Technology Sydney and the Australian Society for Parasitology.

## Griffith Sciences Outstanding Alumnus

Professor Alan Cowman (pictured right with Professor Katherine Andrews) was presented with the Griffith Sciences Outstanding Alumnus Award at a ceremony in Brisbane in September.





# Celebrating the first year of the ACREME

Stephen Rogerson describes the Australian Centre of Research Excellence in Malaria Elimination as it celebrates its first birthday.



November 2018 marked the first anniversary of the formation of the Australian Centre of Research Excellence in Malaria Elimination (ACREME), an NHMRC-supported network of multi-disciplinary malaria researchers based at University of Melbourne, Burnet Institute, Menzies Institute of Health, Curtin University, QIMR Berghofer, Australian National University and WEHI, with partners in Papua New Guinea, Myanmar, Indonesia and Malaysia.

The primary goal of ACREME is to accelerate malaria elimination in the Asia Pacific region, by undertaking collaborative clinical research to address roadblocks in the surveillance, diagnosis, and treatment of malaria. Working closely with long-standing colleagues in malaria endemic countries and international partners, ACREME aims to translate research findings into evidence-based policy and practice, particularly for malaria control and elimination programs in our region. One of the key strengths of ACREME is cross-cutting expertise in mathematical modelling, high-level statistics, and mapping.

It has been a big year for ACREME, as we have established ourselves as a network of over 70 malaria researchers working on more than 20 collaborative projects in Australia and the Asia Pacific. Whilst many research collaborations were already underway when ACREME commenced, others have been formed throughout our first year, particularly among early career



**ACREME Researchers at Kick-Off meeting in February 2018.**

researchers.

A strong component of the ACREME collaboration is to build new research capability and capacity both in Australia, and in partner countries in the Asia Pacific. In 2018, ACREME commenced a competitive seed grant scheme for early career researchers, a travel and training award scheme, and a PhD top-up award for students working on collaborative projects between ACREME nodes. Congratulations to Rhea Longley (WEHI), Angela Devine (Menzies), Pengxing Cao (University of Melbourne), and Gaoqian Feng (Burnet Institute) who are lead investigators on successful seed grants for 2018. We look forward to hearing more about their innovative pilot projects within the themes of malaria surveillance, diagnostics, and treatment.

Travel and training awards were received by Zoe Liu (WEHI), Damien Drew (Burnet Institute), Roslyn Hickson (University of Melbourne), and Azrin Rahman (QIMR Berghofer). Zoe Liu recently travelled Mahidol Vivax Research Unit (MVRU) in Bangkok, to further extend her investigation on naturally acquired antibody responses to a panel of *P. vivax* antigens in a region of low *P. vivax* transmission and Damien Drew visited the head offices of PATH in Seattle, USA, to further the development of a quantitative G6PD point of care test.

You can find out more about ACREME's network of researchers and research projects at [www.acreme.org.au](http://www.acreme.org.au). Please email [acreme-contact@unimelb.edu.au](mailto:acreme-contact@unimelb.edu.au) if you would like any further information.



# \$2.5m AWI grant for flystrike vaccine research

Australian Wool Innovation (AWI) has announced a \$2.5 million investment in flystrike vaccine investigation.



The \$2.5 million four-year research investment is a collaboration between AWI, the University of Melbourne and CSIRO to undertake preliminary research into the development of a flystrike vaccine targeting the Australian sheep blowfly (*Lucilia cuprina*).

AWI General Manager for Research, Dr Jane Littlejohn explained the Flystrike Vaccine project is expected to deliver an advanced flystrike prevention tool, providing whole animal protection.

"The investigation includes a detailed blowfly population study, led by the University of Melbourne, during the next

three flystrike seasons across all Australian states. This research will identify any differences in the genetics of blowflies from different regions of Australia," Dr Littlejohn shared.

University of Melbourne researcher Dr Trent Perry said that the population sampling data is essential for any effective control strategies contribute to our identification of potential candidate antigens, the development of chemical treatment protocols and monitoring of insecticide resistance.

"The second component of the University of Melbourne project is to detect the proteins and molecules released by both the blowfly larvae and the affected sheep during flystrike, which will determine the type, timing and magnitude of the sheep immune response during a strike," Dr Perry explained.

CSIRO Senior Experimental Scientist and Flystrike Vaccine research lead Dr Tony Vuocolo highlighted the CSIRO has identified a group of candidates that are involved in blowfly larval establishment and growth on sheep.

"We believe that targeting these proteins through a vaccine has the potential to inhibit larval growth and ultimately kill the blowfly larvae," Dr Vuocolo said.

"The candidate antigens identified as inducing a strong immune response in sheep and that severely impact early fly larval development will be developed further with the aim to develop a commercial vaccine with a VetPharma partner. If successful, this project will culminate in a flystrike vaccine that will protect sheep right across Australia."

Dr Jane Littlejohn added, "A number of previous AWI-funded projects have enabled the advancement of the science and we have committed to the investigation of the development of a flystrike vaccine on the back of this research. A flystrike prevention tool of this kind has never before been realised."

Original story: [https://www.wool.com/about-awi/media-releases/awi-announces-\\$2.5-million-investment-in-flystrike-vaccination-research](https://www.wool.com/about-awi/media-releases/awi-announces-$2.5-million-investment-in-flystrike-vaccination-research)

## \$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 2017 prizes must be made by the eligible University to the ASP Treasurer by the 30th September 2017. Please complete the online application form:**

[www.parasite.org.au/awards/asp-undergraduate-prizes/](http://www.parasite.org.au/awards/asp-undergraduate-prizes/)

# Di Barton's shark dissections

Di Barton, an adjunct academic with the School of Animal and Veterinary Sciences, Charles Sturt University, is currently involved in a project to determine the usefulness of parasites for management of populations of hammerhead sharks around the northern Australian coast.

This project is jointly funded by the National Environment Science Program (NESP) Marine Biodiversity Hub at James Cook University and the Northern Territory Fisheries Research Division. Two species of sharks are being studied: the scalloped hammerhead, *Sphyrna lewini*, and the great hammerhead, *Sphyrna mokorran*, both of which are threatened with population

decline due to overfishing as by-catch and by-products of various fishing practices.

In May, Di headed to Townsville and Darwin to complete dissections of over 250 sharks that had been caught over the last few years. Gills, nasal fossae and the intestinal system were examined for parasites. A wide variety of parasites were found, including copepods and monogeneans on the gills and nasal fossae, and nematodes, cestodes and a few acanthocephalans from the intestinal system.

Most of these specimens are being sent to various experts for identification, with the potential of a number of new species to be described. Preliminary statistical analyses have shown that there is some population structure between the east coast of Australia and the Northern Territory waters. A final report is currently in preparation.



**Above: a collection of cestodes from the intestinal system of a shark**



**Top: student helpers at JCU learning the finer techniques of hand washing a spiral valve to remove the parasites**

**Above right: in some sharks, nodules were found on the stomach wall which were full of nematodes. Each nodule had a single entry/exit hole from which the nematodes would emerge when the stomach was full of food. Over 200 nematodes were collected from this nodule.**

# Two cattle stories

**Gemma Rush and Nichola Calvani of the University of Sydney have both enjoyed recent field trips, looking at bulls in the NT and cows in Laos.**

## A trip to the Northern Territory

Honours student **Gemma Rush** focused her year on addressing sample collection as a constraint to *Trichostrongylus axei* diagnosis in extensively managed cattle. During her year she and supervisor Mike Reynolds were lucky enough to travel to the Northern Territory to collect samples from bulls. Gemma utilised freeze-drying as a means of improving the longevity of the current laboratory prepared liquid medium. This media was used on the bulls of the Northern Territory, inoculated by rinsing of the preputial sampling tool into the vial. Local producers were eager to ensure the health of their cattle, and as a result the week was used to not only sample

for *T. foetus*, but also other reproductive pathogens such as *Campylobacter* and *Leptospira*. The trip was the perfect pilot study for the use of the freeze-dried media in the field, which demonstrated proficiency during transport, reconstitution and inoculation. The experience was invaluable for Gemma, with her aim to now spend her future career in disease management in extensive cattle industries.



## When is a tick not a tick?

After her time in Europe, PhD student **Nichola Calvani** recently returned to Laos, once again collecting samples from local cattle for her work on liver fluke diagnosis and control. However just as any good parasitologist should, Nichola made the most of the experience, collecting anything and everything that came her way. This included ticks, which are found in abundance on animals left to roam the forests freely during the day and where ectoparasite control is rarely employed. The local farmers, though slightly perplexed, were more than happy to help. This usually involved them excitedly pointing out when an animal had an unusually high abundance of ticks, leaning in to grab them mid-faecal collection, and occasionally laughing at the more delicately-located samples. One such instance was a little different, however: a farmer pointed out

**Left and below: images from the trip to NT by Gemma Rush and Mike Reynolds**





## Two cattle stories continued

that there were MANY ticks on the tail of a cow coming up for faecal collection.... only this time they weren't ticks, but *Haematopinus* nits and adults! Cue a confusing few minutes trying to explain the difference without the aid of a translator. In the end it came down to the use of a very common saying in Asia; "same same but different". A similar situation arose the following week when the field team insisted they had found a dog, which instead turned out to be a golden jackal, but that's a story for another time!



Images from Nichola Calvani's trip to Laos

Top: nits on a cow's tail.

Middle: Ticks are commonly found around the back side of the cow.

Bottom: *Haematopinus eurysternus* – possibly the largest louse on domestic mammals, even bigger than the pig louse (*H. suis*) measuring easily 4-5 mm in length.





# Science in ACTION

During National Science week in August, parasitologists from the ANU returned with their parasite themed stall to Science in ACTION, a two-day STEM showcase.

Prior to the event, the parasitologists came together to develop several new exhibits to expand and increase the interactivity of the stall. The first day of the event – open to Schools – was attended by 2500 students plus their teachers, and on the following day, a further 7000 - 8000 members of the general public attended.

The revamped stall certainly attracted attention! Visitors to the stall had the opportunity to (i) discover what a parasite feels like by putting their hand into the parasite mystery boxes, (ii) combat parasites with drugs using nerf guns, (iii) learn about the sources and routes of infection of parasites with the help of PAM (our

Parasitology Assistant Mannequin), (iv) learn what parasites eat, and (v) pose as a parasite for a photo.

As in previous years they also had the chance to “match parasites with their host” and see the specimens (some live!) on show. Younger visitors to the stall also enjoyed colouring in parasites, and a storytelling of “My Mad Scientist Mummy” by Rina Fu, told by Adele Lehane, and Hannah Lewis drew a crowd with her popular face painting.

Lucky visitors relished the parasite-related prizes from parasite sweets to parasite badges and tattoos.

**Esther Rajendran** (van Dooren group) and **Christina Spry** (Saliba group) organised the stand, while **Erick Tjhin**, **Cibelly Goulart**, **Edwin Tjhin**, **Sanduni Hapuarachchi**, **Yi Xue**, **Soraya Zwahlen** (van Dooren group), **Alex Maier**, **Ben Lodder**, **Meenu Pratap** (both Maier group), **Sarah Shafik**, **Sashika Richards**

(both Martin group), **Kevin Saliba**, **Ayman Hemasa**, and **Vanessa Howieson** (both Saliba group), **Sadaf Ilyas** (Burgio group), **Melanie Rug**, and budding parasitologists **Oskar and Phoebe Maier**, developed new exhibits for the stall and/or volunteered their time to share their enthusiasm for parasites.

**Below: Science in ACTION photos (courtesy of Esther Rajendran). Clockwise from top left: Alex Maier showing parasites of all kinds to visitors to the stall, Edwin Tjhin with PAM, Cibelly Goulart and Yi Xue posing as parasites for a photo, Hannah Martin creating some parasite-related face art, visitors taking aim at parasites, Oskar Maier getting ready for visitors to combat more parasites, and Adele sharing a story with captivated onlookers.**



# Rina Wong's Perth book launch

230 guests gathered at Scitech in Perth in early November to celebrate the launch of Rina Wong's book *My Mad Scientist Mummy* and to enjoy some science outreach. Rina describes the event.

The launch on Sunday night went really well. We had about over 230 guests at Scitech for the launch of "My Mad Scientist Mummy" (with over 100 children from 0 - 11+). From some of their feedback, they really enjoyed the interactive science activities including: "Feed Me Blood" (feeding malaria parasites using real lab equipment), "Achoo Boogies" (shooting snot out to learn about the velocity of a sneeze), "Little Scientist Corner" (precision

skills of liquid transfer and play-based learning", "Fishy Parasites" (fishing out of a pond to catch worm infested fish like the recent discovery in Perth last month by ASP member Cindy Palermo), just to name a few.

The Theatre Show was also well received with Seto the quokka lab assistant (puppet)'s quirky sense of humour together with the foaming, flaming experiments 'Dr Rina' did with audience participation, a sing-along and fireworks. I was most impressed during Q & A, I answered about a dozen questions from each session all (except one) came from young children asking questions ranging from how to treat malaria to asking how I became a scientist. We had a cameraman from Lake Joondalup Baptist College as well as a reporter from Seven News Perth capturing highlights of

the event. I also decided to hire an AUSLAN interpreter for a little boy who is completely deaf and relies on sign language, to help during the science show and sing-along. It was quite costly and unfortunately I had no luck with any in-kind support for an interpreter, but I felt it it was the right thing to do, to make science accessible to all, particularly children with special needs :)

As a result of this, we have opened the dialogue with two hearing schools to do science outreach for children with hearing impairment. I'm learning to do my songs in AUSLAN!





# Tropical Marine Fish Parasitology Workshop

**James Cook University recently trained professional delegates from Pacific Island nations in marine parasitology.**

In June, James Cook University hosted a workshop on parasites of tropical marine fish for 25 participants from Pacific Island nations to learn how to identify, treat and manage parasite infections in fish. Workshop convenor, Kate Huston, leads the Marine Parasitology Laboratory in the College of Science and Engineering where her team specialise in parasites that infect wild and aquaculture fish. Her team equipped participants with the knowledge and skills to make informed decisions on the management and development of aquatic resources. Specifically they provided laboratory and field based training on detection, preservation, identification, biosecurity and surveillance of parasites that infect marine fish.

The workshop was developed in conjunction with the Secretariat of the Pacific and included participants from Fiji, French Polynesia, Kiribati, Republic of the Marshall Islands, New Caledonia, Palau,

Papua New Guinea, Samoa, Tonga, and Vanuatu. The participants included industry professionals, fisheries and biosecurity officers, aquaculture managers, veterinary officers and researchers.

The Tropical Marine Fish Parasitology Workshop placed an emphasis on laboratory and experiential learning to reflect real world situations and included hands-on dissections, identification and surveillance scenarios. The event included an official welcome ceremony from traditional landowners, the Deputy Vice Chancellor, Iain Gordon, and the Bindal Yalloron Dancers. Laboratory sessions included dissections of wild captured fishes, parasite fixation, staining and mounting, parasite identification and surveillance techniques. The workshop also included a site visit to a marine finfish production facility to observe biosecurity protocols and standards and a social excursion to Townsville's local aquarium, Reef HQ.

The workshop was a great success and we thank the Australian Society for Parasitology for partial sponsorship and look forward to continuing professional training in this important area of parasitology.

**Text and images courtesy Kate Huston**





# University of Tasmania Open Day

The ASP were represented by Mai Dang and colleagues at this event primarily targeted at children between ages 5 to 10 years old.

For this event we had a craft corner which featured a large fish poster showing location of infection of four species of parasites (amoebae, blood flukes, isopods and copepods) which are researched by the Aquatic Animal Health research group. To encourage active participation, we had pool with toy fish with attached parasites corresponding to those in the poster. A kiddie pool was filled with water and populated with floating fish "infected" by the four parasites of focus. Children were given fishing poles with magnetic lures and allowed to catch fish. If they caught one fish infected with each of three parasites and properly identified the parasites they were allowed to choose a prize from a selection of plush parasites or battery operated swimming fish which were featured as part of the game. Throughout the activities PhD students from our research group worked with participants and provided more information.

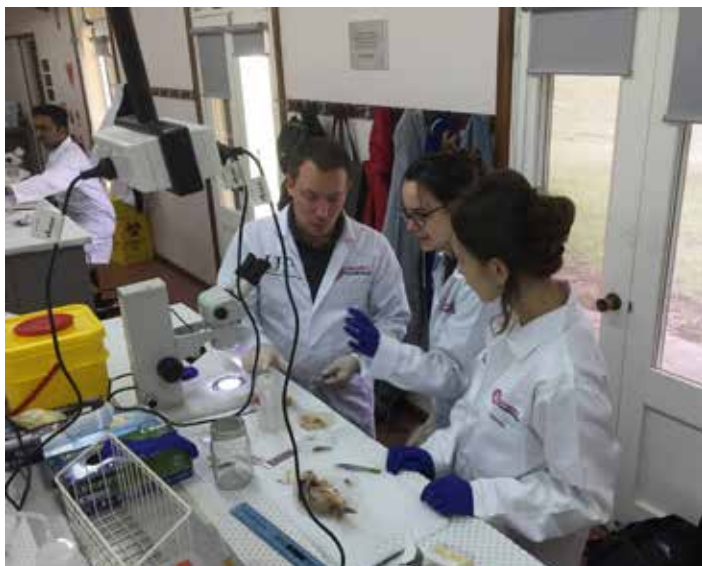
The ASP event was very successful with many children joining in the activities and before the end of the day we run out of prizes. There was a parasite display for adults with microscopes and a day in the life of a fish parasitologist display that went more in depth into the technical side of research. The ASP sponsorship for this event were used to purchase the materials necessary to construct and decorate at all activities and to purchase some prizes. This event was advertised by UTAS as part of the Open Day. ASP banner was displayed. Many children experienced their first exposure to fish parasites and clearly demonstrated the absorption of their new knowledge. The interactive participation in activities helped to foster curiosity about parasitology. We received very good feedback from the visitors and from UTAS staff regarding all of the activities.





# Concepts in Parasitology 2019

Rob Adlard from the Queensland Museum and Terrence Miller from Department of Fisheries, Western Australia, take students through the huge impact of aquatic parasites on the international trade in seafood at the 2019 ASP Concepts in Parasitology course the ANU Kioloa Coastal Campus





## *Concepts in Parasitology continued*

Things started to get a bit smelly at the ASP Concepts in Parasitology course as Barry Hosking, Sarah George and Dominique Marendy from Elanco showed us how to extract Barber's pole worm from the stomach and intestine of infected sheep, then to look for larvae in faecal samples.



# ANU-Humboldt PhD Program Retreat

**Participants in the ANU-Humboldt "Crossing Boundaries" program recently visited the ASP conference in St Kilda and the ANU's Canberra and Kioloa campuses.**

Eleven PhD students participating in the dual ANU-Humboldt PhD program "Crossing Boundaries: Molecular Interactions in Malaria" and their supervisors, travelled from Berlin to attend the ASP annual conference in St Kilda. There they relished the opportunity to meet the friendly ASP community, learn about the diverse parasitology research being undertaken in Australia, and share their own work, before flying on to Canberra. The visit to Canberra, which formed the first part of a retreat with the ANU-based PhD students and lab leaders involved in the ANU-Humboldt PhD program in Canberra, began with a tour of the ANU Campus and dinner at University House. This gave the Berlin students a taste of the University at which they will spend one year of their PhD. A jam-packed day of exploring what Canberra has to offer followed.

The day involved getting a birds-eye view of Canberra from Mount Ainslie (see photo) and the National Arboretum, a visit to Questacon – the National Science and Technology Centre, a picnic by the lake, a tour of Parliament House, and experiencing Australian wildlife at night during a night time tour

at Mulligans Flat Woodland Sanctuary. The chance to see bettongs, sugar gliders, wallabies and kangaroos was a definite highlight.

The next stop for the group was the ANU coastal campus at Kioloa where they encountered several more kangaroos, and to the dismay of some, also some reptiles, spiders and parasites. Importantly, the Berlin and Canberra PhD students in the program also had a chance to get to know their Berlin and Canberra supervisors, present their work, receive feedback and discuss future directions, as well as make plans for their upcoming exchange year of

After enjoying a week at Kioloa with our Berlin visitors, we bid most of them farewell as they returned home to Berlin, but welcomed two students who remained – Francois Korbmacher and Julie-Anne Gäbelich. Francois and Julie-Anne have commenced the ANU-based year of their PhD with Alex Maier and Melanie Rug, respectively, and several more of the PhD students from Berlin will return early in 2019 to join them. Thank you to Alex Maier, Kai Matuschewski and Marylu Grossman who worked with the help of Kevin Saliba, Melanie Rug, Merryn Fraser and Christina Spry, to put together a successful retreat enjoyed by all.



**Photos from the ANU-Humboldt retreat held in Canberra and Kioloa (courtesy of Frank Seeber and Marylu Grossman). The Humboldt and ANU researchers gathering for a picture atop Mount Ainslie in Canberra (top) and enjoying a beach break at Kioloa (below). Top, from left: Alex Maier (ANU), Christian Schmitz-Linneweber (Humboldt), Christina Spry (ANU), Ayman Hemasa (Saliba lab, ANU), Marylu Grossman (Humboldt), Kai Pohl (Sander group, Humboldt), Simone Reber (Humboldt), Will Hirst (Reber lab, Humboldt), Jorin Diemer (Klipp lab, Humboldt), Kevin Saliba (ANU), Edda Klipp (Humboldt), Francois Korbmacher (Matuschewski lab, Humboldt), Theresa Störiko (Gupta lab, Humboldt), Merryn Fraser (Maier lab, ANU), Andreas Hermann (Humboldt), Kai Matuschewski (Humboldt), Frank Seeber (Humboldt). Bottom, from left: Melanie Rug (ANU), Alyssa Ingmundson (Humboldt), Theresa Störiko, Merryn Fraser, Jorin Diemer, Francois Korbmacher, Kevin Saliba, Frank Seeber, Alex Maier, Bertram Linderkamp (Sander group, Humboldt).**

research in Canberra / Berlin. There was plenty of opportunity for the students and lab leaders from Berlin and Canberra to get to know one another and discuss research in a relaxed setting, as well as participate in professional development and cultural workshops.



# Images from St Kilda

Part 1: memories of the social side of the 2018 ASP Annual Conference held in St Kilda.

## Welcome drinks





# ST.KILDA 2018

*Images from St Kilda continued*

## Welcome dinner





## *Images from St Kilda continued*

### **Luna Park**





# ST.KILDA 2018

*Images from St Kilda continued*

## Conference Dinner





## *Images from St Kilda continued*

### Conference dinner





# ST.KILDA 2018

*Images from St Kilda continued*

## Around the conference





## Images from St Kilda continued

### Around the conference



## News from the ASP Network for Parasitology

### Welcome



### ASP Annual Conference Adelaide 2019

The 2019 ASP Annual Conference, will be held at the Adelaide Convention Centre from Monday July 8 – 11. The 2019 ASP conference will open with the Bayer Cocktail Event “Extraordinary Women in Parasitology”, this will be a family friendly public event featuring the stories of trail-blazing women parasitologists, a cocktail on arrival and parasitology-themed face painting and followed by the Conference Welcome Reception. The three-day program will include an outstanding mix of quality international and Australian scientists covering themes of Parasites, Livestock and Feeding the World; Wildlife Parasitology; Parasites, Fish and Feeding the World; Parasites of Humans, Drugs and Resistance; Novel Approaches to Control Helminth Parasites in Livestock (NACHPL) and Ticks and Tick-Borne Bacteria and Viruses in Australia. The Conference Dinner, sponsored by Virbac, will take place at La Boca Bar and Grill Argentinian restaurant. So mark your diaries, tell all of your parasitology friends and check the conference website for more details in the new year [www.parasite.org.au/2019conference](http://www.parasite.org.au/2019conference)

We would like to acknowledge the generous support of our 2018 ASP conference sponsors, thanks to Virbac, Elsevier Parasitology and the International Journal for Parasitology (IJP), IJP DDR and IJP PAW, and Bayer.

#### ASP Network Researcher Exchange and Travel Awards

This newsletter features JD Smyth Award and Researcher Exchange and Travel Award winners **Mai Dang** from The University of Tasmania who attended a course on mucosal mapping and Researcher Exchange at the Department of Biology, University of Bergen, Norway and **Daniel Huston** from The University of Queensland for a Researcher Exchange to the Natural History Museum in London, United Kingdom; and ASP Network Researcher Exchange, Training and Travel Award winners **Kate Hutson** from James Cook University with a report from the Tropical Marine Fish Parasitology Workshop and **Melanie Ridgway** from The Australian National University who attended the Biology of Parasitism Course and Researcher Exchange to Boston and New York City, USA.

Applications for the 2019 Network Researcher Exchange and Travel Awards rounds close on 22 March 2019 and 27 September 2019. Check the ASP website for guidelines and the application form.

[www.parasite.org.au/awards/jd-smythpostgraduate-travel-awards/](http://www.parasite.org.au/awards/jd-smythpostgraduate-travel-awards/)

Congratulations to all recent ASP Network Researcher Exchange and Travel Awards winners.

#### JD Smyth Postgraduate Travel Award September 2018

**Elise Kho**, University of Queensland, to attend a Vibrational Spectroscopy and Chemometrics workshop in Belgium followed by two Researcher Exchanges to Prof. Soren Balling Engelsen at the University of Copenhagen to test many different types of spectrometers that could serve as the diagnostic tool for parasites, and to visit Prof. Paul Geladi, Professor of Chemometrics at the Swedish University of Agriculture Science to intensively to

work through the current challenges with chemometrics in its application to parasite detection.

#### ASP Network Researcher Exchange and Travel Awards September 2018

**Hong You**, QIMR Berghofer, for a Researcher Exchange to Peter Hotez's laboratory at National School of Tropical Medicine, Baylor University, Texas, to learn novel adjuvant technologies and exchanging ideas in parasite vaccinology USA.

**Michael Smout**, James Cook University, for a Researcher Exchange to Prof Zee Upton and Dr David Leavesley – from Institute of Medical Biology Skin Research Institute of Singapore Agency for Science, Technology and Research (A\*STAR) to learn the ex-vivo wound healing model routinely being used in Singapore.

**Sarah Jackson**, Monash University, for a Researcher Exchange to the Tobin laboratory at the University of Glasgow, Scotland for *P. falciparum* research. Cecilia Power, RMIT, to attend a Fish Histopathology course, University of Tasmania.

**Sarah Preston**, Federation University, to attend a science communication camp in LA, USA followed by shadowing of podcaster, Cara Santa Maria (Emmy award-winning journalist, TV presenter, podcaster and PhD candidate in neuroscience) to learn how she podcasts, Los Angeles, California.

#### Congratulations to the latest NHMRC 2018 grant winners from the parasitology community:

**Dr Jack Richards**, (Burnet Institute), International Collaboration - NHMRC/NAFOSTED Joint Call for Collaborative Research Projects, awarded \$495,790 for “Integrating geospatial surveillance for infectious diseases with malaria elimination activities in Vietnam”. Infectious diseases are a major health



burden in Vietnam and there is a need for surveillance data to target interventions effectively. This project will create a new infectious diseases surveillance system by integrating with current malaria elimination activities. It will test a novel Australian designed blood sampling device. These approaches will provide precise mapping of infectious diseases in 2 remote provinces in Vietnam and predict the impact of interventions to prevent transmission.

**Dr Kamala Ley-Thriemer**, (Menzies School of Health Research), International Collaboration - NHMRC/NAFOSTED Joint Call for Collaborative Research Projects, awarded \$413,599 for "Radical cure for falciparum malaria in co-endemic areas". In areas co-endemic for the two main species of malaria *P. falciparum* and *P. vivax*, Primaquine the only drug currently available to treat the dormant liver forms of *P. vivax* malaria and therefore reduce relapses is only used in patients presenting with acute vivax malaria. However there is mounting evidence that *P. falciparum* infection increases the risk of *P. vivax* relapse. Therefore we propose to assess the benefit of administering Primaquine to patients with *P. falciparum* mono-infection.

**A/Prof Ian Cockburn**, (Australian National University), Project Grants, awarded \$963,803 for "Modifying the B cell response to Plasmodium to make better vaccines". All our current vaccines are based on the development of protective antibody responses. However existing malaria vaccines (and vaccine candidates) are only able to induce very transient antibody responses. In this project we test the idea that this is because existing vaccines stimulate a burst of antibody producing cells, but fail to induce the immunological memory required for sustained effectiveness. We will then examine ways we can induce better long-term protection.

**Dr Adele Lehane**, (Australian National University), Project Grants, awarded \$321,180 for "Understanding high-level resistance to antimalarial PfATP4 inhibitors". Recent years have seen new, urgently-needed malaria medicines enter the clinical development pipeline. One new medicine that has performed very well in clinical studies is cipargamin. Unfortunately, we have shown that malaria parasites grown in the laboratory are capable of acquiring a high level of resistance to this medicine. We seek to understand the cause and features of this high level resistance in order to assess the magnitude of the threat it poses and devise risk mitigation strategies.

**Dr Wai Hong Tham**, (Walter and Eliza Hall Institute of Medical Research), Project Grants, awarded \$672,521 for "Isolation of broadly neutralizing human antibodies against Plasmodium falciparum". Plasmodium falciparum is the most lethal malaria parasite which infects humans. Our work will understand the role of human antibodies in controlling malaria infection and facilitate the rational design of novel vaccine targets against malaria infection.

**Dr Darren Creek**, (Monash University), Project Grants, awarded \$890,314 for "Host and pathogen contributors to

artemisinin resistance". Drug-resistance threatens our ability to treat deadly malaria infections, and resistance has now emerged against artemisinins, the last-line medicines for malaria. This work will use modern analytical and computational techniques to measure the molecules present in parasites, and blood, that are associated with artemisinin resistance. Understanding these factors will allow development of new strategies to monitor, and manage, the spread of resistance to this essential drug.

**A/Prof Alyssa Barry**, (Walter and Eliza Hall Institute of Medical Research), Project Grants, awarded \$1,108,761 for "Genetic determinants of antigenic escape in malaria parasites". This project aims to understand how malaria parasites to evade immune responses, which is critical for development of vaccines and diagnostic tests. Using samples from people who are naturally infected with malaria, we will analyse their immune responses and the strains they are infected with to understand what mutations are required for parasites to repeatedly infect their hosts. The major outcome of this project will be a system for designing more effective malaria interventions.

**A/Prof Freya Fowkes**, (Burnet Institute), Project Grants, awarded \$580,476 for "Malaria Immunity and the Elimination of Malaria and Drug Resistance". Significant obstacles to achieving malaria elimination include increasing drug resistance and undetected malaria parasites. Mass Drug Administration, is a potential intervention to eliminate undetected malaria but there are concerns it may cause rebounds in clinical malaria due to loss of naturally acquired immunity. This project will determine the impact of Mass Drug Administration on immunity and patterns of malaria and drug resistance in order to inform Mass Drug Administration policy.

**Prof Geoffrey McFadden**, (University of Melbourne), Project Grants, awarded \$812,657 for "Can we build a genetic trap for drug resistant malaria parasites?" Malaria is a major global health issue. Drugs are key weapons against malaria, but resistance typically emerges and spreads, rendering a

## Closing dates for ASP awards

### ASP Fellowships

Nominations may be submitted to the ASP Secretary at any time

### ASP Researcher Exchange, Travel and Training Awards & JD Smyth

22 March 2019,  
27 September 2019

### Bancroft-Mackerras Medal for Excellence

30 September 2019

More information  
[www.parasite.org.au](http://www.parasite.org.au)

succession of drugs useless. We recently identified a safe and cheap drug for which the spread of resistance is severely constrained. We propose to identify more such resistance-proof drugs that can be used in combination with other drugs to better manage the spread of resistance and better control disease.

**Dr Darren Creek**, (Monash University), Project Grants, awarded \$767,521 for "New aminobenzimidazole antimalarial agents with a novel mechanism of action". Malaria is a disease with a globally significant burden and distribution, including a presence in Australia's northern neighbours East Timor, Indonesia and Papua New Guinea. Resistance to all major classes of antimalarial drugs has emerged in Asia in the last decade, meaning new antimalarials with unique mechanisms of action are urgently needed. This project seeks to identify the novel mechanism of action responsible for the activity of a new class of aminobenzimidazole antimalarials.

**Dr Katja Fischer**, (QIMR Berghofer Medical Research Institute), Project Grants, awarded \$1,368,859 for "Novel drugs to reduce the human Scabies burden". Scabies and associated co-infections cause substantial illness and burden affecting the world's poorest people. In Australia an alarming prevalence persists in remote Aboriginal communities. This project combines cutting-edge basic research and unique pre-clinical studies, to deliver novel drug candidates that kill mites and eggs and in vivo data comparing their efficacy to currently recommended treatments for scabies.

**A/Prof Alyssa Barry**, (Walter and Eliza Hall Institute of Medical Research), Project Grants, awarded \$792,588 for "Defining host and parasite mechanisms that drive asymptomatic malaria". The presence of malaria infection with no symptoms (asymptomatic malaria) poses a major challenge for malaria endemic

countries aiming to eliminate the disease. This project will investigate how changes in malaria parasite diversity and corresponding human immune responses facilitate asymptomatic infections. The project will provide key insights into the factors influencing the prevalence asymptomatic malaria, leading to more effective approaches to control the disease.

**A/Prof Stuart Ralph**, (University of Melbourne), Project Grants, awarded \$859,130 for "Regulation of stage differentiation in apicomplexan parasites by alternative splicing". Multicellular organisms possess different specialised cells with different gene products in different cell types. Much of this specialisation is due to alternative processing (splicing) of gene transcripts. We have recently described the same phenomenon in unicellular parasites. We will now test how alternative splicing drives cellular differentiation to generate specialised parasite forms that infect mosquito vectors, and forms that cause latent, untreatable infections.

**Dr Wai Hong Tham**, (Walter and Eliza Hall Institute of Medical Research), Project Grants, awarded \$702,521 for "Identification of novel host-pathogen interactions in malaria parasite invasion". *Plasmodium vivax* is a parasite that invades the youngest of human red blood cells. Our work will reveal how this malaria parasite enters our blood cells and the molecular mechanisms that allows successful invasion. This proposal will redefine our understanding of *P. vivax* invasion and explore novel ways to block its entry into red blood cells and therefore prevent malaria infection.

**Dr Pengfei Cai**, (QIMR Berghofer Medical Research Institute), Project Grants, awarded \$505,189 for "Developing optimal diagnostic tools for schistosomiasis: the public health implications for control and elimination".

Schistosomiasis, one of the most socioeconomically devastating parasitic diseases, affects more than 200 million people worldwide. One major obstacle to controlling the disease is the lack of accurate and sensitive diagnostic tools. This project aims to develop affordable commercially viable kit(s) for accurate diagnosis of schistosomiasis, not only in Asia, but also in Africa. With such cost-effective, specific and sensitive tools, eradication of schistosomiasis can become a realistic prospect.

## Network Mentorship Scheme

Network Mentorship Scheme Early career researchers are encouraged to apply to the Network Convenor ([nick.smith@parasite.org.au](mailto:nick.smith@parasite.org.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 and covers mentorship across all aspects of working in parasitology including research, teaching, leadership, communication and outreach and other areas of professional development.

**With best wishes,  
Nick and Lisa**



# JD Smyth Postgraduate Travel Award

**Mai Dang of the University of Tasmania travelled to Norway in early 2018.**

In my research about effects of pollution on the health of wild fish, I have been investigating parasite communities including their interactions with the mucosal layer, which is the first immune barrier of fish that parasites confront, of sculpin. I was granted the prestigious JD Smyth Postgraduate Travel award 2017 to attend a short training course on mucosal mapping with Professor Karin Pittman (the inventor of mucosal mapping) and analyse my samples at the Department of Biology, University of Bergen (UiB), Norway from 31st December 2017 to 19th Jan 2018.

My exchange has been established the first collaboration between the Aquatic Animal Health group at the University of Tasmania (UTAS), Australia and the Slime research group at the Department of

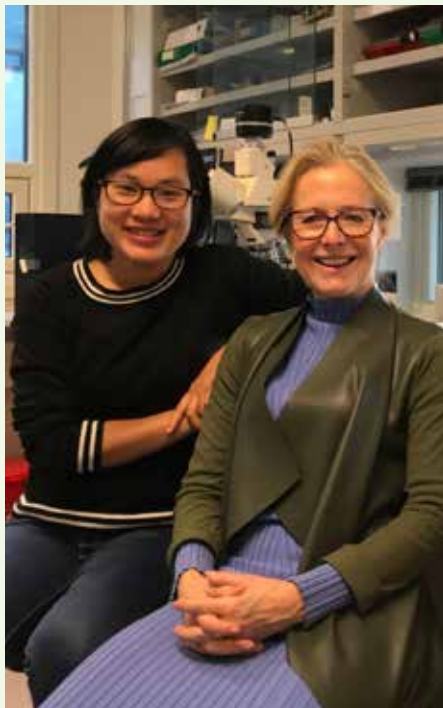
Biology, UiB, Norway. After the trip, we got some interesting results which will be developed to become a chapter of my PhD about the interactions between parasites and host mucosal responses. We are drafting a paper about "Application of a novel mucosal quantification to investigate complicated interactions among host – parasite – pollutant in shorthorn sculpins (*Myoxocephalus scorpius*)". We will work closely with Prof. Pittman to publish this nice piece of work.

The visit was a precious opportunity to me to communicate my research with the fish experts and students at Department of Biology, UiB. During the trip, I attended two presentations about co-evolution of parasites in wildlife from students at UiB. After the exchange, I gave a talk about mucosal mapping technique for the Aquatic Animal Health group at UTAS.

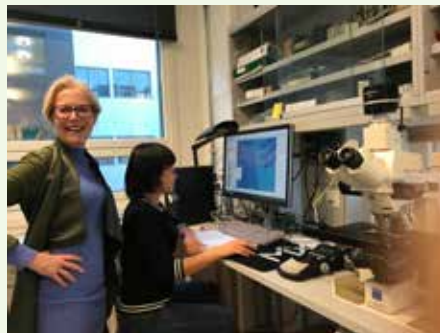
My exchange to Norway was memorable

and valuable to me due to a number of reasons. The trip was super long because it took me 4 flights and more than 2 days just to get there. I arrived at midnight of the New Year Eve and still had enough time for counting down, enjoying firework and celebrating with new friends. Bergen was dark, freezing and so peaceful most the time I were there. Since the trip, I have been developed multiple skills such as networking and time management. I have learnt how to work and get support from people who hibernate in emails. I have learnt to prepare for unexpected circumstances especially in research.

I sincerely appreciated ASP for providing me this opportunity to apply a novel technique into my research, to learn a number of skills which are critical for my future career and to enjoy Norway.



**Mai Dang with Prof. Karin Pittman in her Quantidoc Lab, University of Bergen, Norway**



**Mucosal map techniques**



**Snow was everywhere**



**With Dr Diep Mach**



**New Years Eve fireworks**

# 2018 ASP Network Researcher Exchange, Training and Travel Award

**Jingyi Tang of the University of Melbourne visited the Institute of Microbiology at the University Hospital Erlangen in Germany.**

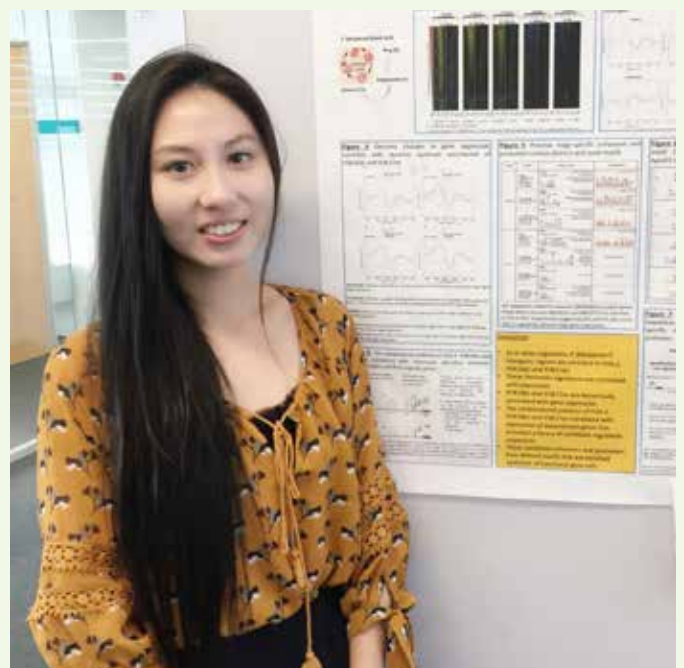
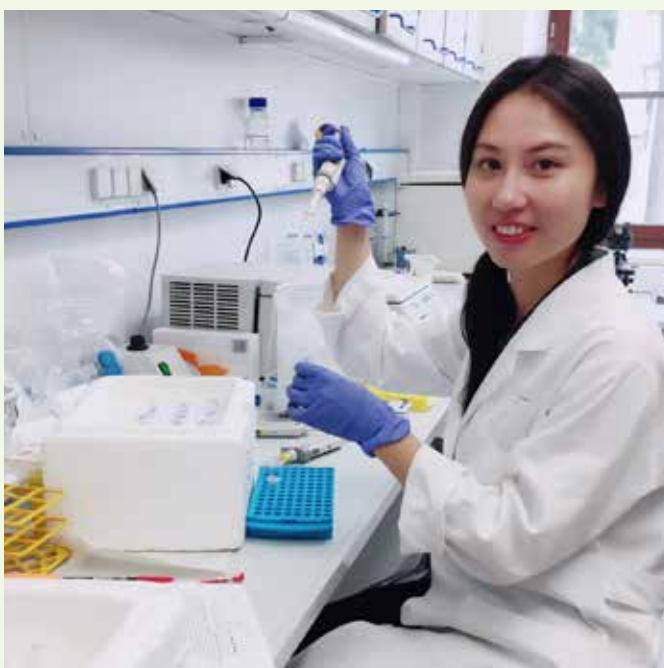
With the award of the 2018 ASP Network Research Exchange, Training and Travel Award, I had a unique opportunity to work a collaborative project on chromatin structure dynamics in the sexual forms of the malaria parasite *Plasmodium falciparum* in Dr Michaela Petter's laboratory. It is a modern lab located in a historical building, the Institute for Microbiology at the University Hospital Erlangen in Germany. I am truly grateful for the ASP funding, without which I would not have been able to complete the wet lab experiments, generate more data and finalize figures and charts for publication during the period of the 25th of May to the 15th of June 2018.

During the research exchange, I optimized a chromatin immunoprecipitation (ChIP) protocol with Dr Michaela Petter's expertise in the area. Using the nuclei from female and male gametocytes of different stages that were brought from Australia to Germany, I performed ChIP for forty- four samples. ChIP- qPCR was then carried out to assess the enrichment patterns of the chromatin marks. Finally, twenty- four ChIP- DNA libraries were prepared for the next generation sequencing. Once these libraries are sequenced, data generated will allow us to investigate the association of chromatin structure dynamics with gene expression in both male and female gametocytes and to further study the differences between male and female gametocytes. During the visit, we have also discussed our ChIPseq and RNAseq data of female gametocytes from the previous sequencing run. Most of the figures and charts are ready to be incorporated into a paper. The outline of

the paper has also been drafted.

During this program, I have learned new experimental techniques. I have also shared my protocols and promoted the ASP to lab members in Erlangen, which raised insightful discussions. I was given the opportunity to present my work during the poster session in the EMBL BioMalPar XIV Conference in Germany with the awarded EMBL fellowship, where I also actively promoted the ASP. This research exchange allowed me to find more collaboration opportunities and truly helped shape my career path.

**Left: Jingyi Tang performing chromatin immunoprecipitation experiments in Dr Michaela Petter's laboratory Right: Jingyi Tang presenting in the poster session of the 2018 BioMalPar XIV Conference in Heidelberg, Germany.**





## Melanie Ridgway of the Australian National University attended the Biology of Parasitism Course 2018 in Woods Hole, USA.

In the words of John Boothroyd: "the intensity of the instruction exceeds anything I have ever seen in any course at any institution with respect to the amount of material conveyed or the level at which it is pitched". Over seven weeks the course covered molecular parasitology, immuno-parasitology, vector biology and host-parasite interactions. Inspiring morning lectures by leading parasitologists were followed by parasitology experiments that often ran late into the night.

For the first two weeks I worked with Alex Paredes and his teaching assistant Elizabeth Thomas on protein trafficking in *Giardia lamblia* parasites during encystation. The highlight of the module was imaging the parasites after immuno-fluorescence staining.

In the immuno-parasitology module with P'ng Loke and his student Denis Loredan, I compared the immune response to *Heligmosomoides polygyrus* infection in BALBc-J and C57BL/6-J mice. I measured cytokine production and immune cell populations by flow cytometry and gained experience with both mouse models and cultured bone marrow-derived macrophages for the first time.

At this point we took a weekend break from the lab for a bioinformatics workshop. Omar Harb and Dan Beiting updated us on the latest sequencing technologies and gave a master class on EuPathDB. Afterwards we ran our own analysis of *Plasmodium* RNA seq data that was co-incidentally highly relevant to my PhD project – bonus!

When we returned to the lab it was abuzz with *Anopheles gambiae* mosquitos. Flaminia Catteruccia and her PhD student Kristine Werling lead the vector module in which I investigated the role of the

sex hormone 20E in male and female mosquitoes. Steady hands were a must for dissecting the male accessory gland and especially for microinjecting the mosquitoes.

In the final module taught by Vern Carruthers and My-Hang (Mae) Huynh, I generated CRISPR knock outs of *Toxoplasma gondii* genes putatively involved in endocytosis. Coming from a malaria research background, the speed of the process and the transfection efficiency in *Toxoplasma* was amazing!

In addition to learning the latest parasitology research, the course fostered a strong sense of community with both the course faculty and the other students. This was exemplified in the week following the course when several parasitology labs generously hosted me for short visits. At the Harvard T.H. Chan School of Public Health in Boston I visited the labs of Barbara Burleigh (host-parasite interaction of *Trypanosoma cruzi*), Dyann Wirth (*Plasmodium* drug resistance) and Flaminia Catteruccia (*Plasmodium* infection of *Anopheles* mosquitos). In New York City I visited Kirk Deitsch (var gene expression of *Plasmodium falciparum*) and

Björn Kafsack (*Plasmodium* gametocyte biology) at the Weill Cornell Medical School and Jayne Raper (host response to *Trypanosoma brucei*) at New York University. The visits were an excellent opportunity to follow up on some of my favourite topics of the course and also to meet the people behind the impactful research.

Overall this trip was an eye opening experience and has truly inspired me to pursue research in parasitology. Thank you to the ASP for enabling this transformative experience.

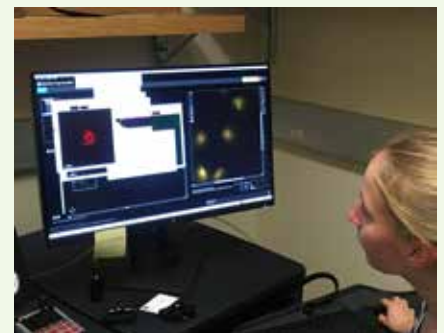
### Clockwise from top left

**Learning how to co-immuno-precipitate proteins. BoP students from left to right: Caroline Mota; Melanie Ridgway; Lucas Pagura, Reto Rufener, Shubha Bevkai**

**Imaging *Giardia* parasites after immuno-fluorescence labelling**

**Nobska lighthouse, Woods Hole**

**BoP students watching the sun set from the beach at Woods Hole**



# IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

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

**Editor In Chief: Brian Cooke**

**Facebook:** [www.facebook.com/  
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## IJP 2018 highlights

The IJP 2017 impact factor continues to hold us in good stead as one of the top-ranked discipline-specific non-review only journals in Parasitology (IJP: 3.078 (© Clarivate Analytics Journal Citation Reports 2018) and 3.51 CiteScore (© Scopus 2018)).

The IJP has continued to prosper under Brian's leadership and the IJP team is

looking forward to what lies ahead over the next few years.

IJP continued post to social media accounts, featuring issue contents and 'stories behind the cover' as well as photos from meetings and events supported by IJP and Elsevier. The IJP Facebook page has 2356 followers ([www.facebook.com/IJPara](http://www.facebook.com/IJPara)), the IJP Twitter account has 413 followers (@IJPara) and IJP has 76 followers to date on Instagram (ijpara). Look for the green on black IJP logo (the 'real' IJP page). We feature a 'story behind the cover' for each IJP issue, so if you have a paper accepted for publication, see what you can do to create an amazing cover image and submit it to us for consideration. If your submitted image is selected for the journal cover it, and your article, will be promoted on Facebook, Twitter and Instagram.

Together with Dale Seaton of Elsevier, Brian developed a talk, tailored to early-career researchers, based around the

Elsevier Publishing Campus on 'how to publish your papers'. Brian and Dale first presented the talk at a very successful ECR breakfast at the joint NZSP+ASP conference in Auckland, then again at MAM2016 in Lorne, at the ASP parasitology course in Kioloa, and at many other meetings. Please let Brian know if you would like him to give this presentation to your institution!

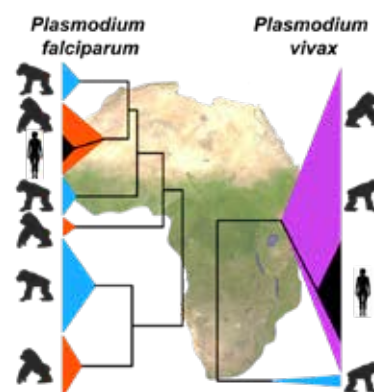
Elsevier now show PlumX Metrics data (captures, mentions, social media, citations) for IJP papers on the journal homepage.

Dorothy Loy and colleagues continue to generate a high level of social media activity with their MAM Special Issue (2017) review paper on the origins and evolution of the human malaria parasites *Plasmodium falciparum* and *Plasmodium vivax* (47:2/3, 87-97), with 209 captures, 11 mentions, 322 social media tweets, shares, likes and comments, and 29 citations to date.



**Season's Greetings from IJP.  
Wishing you a happy and successful  
2019.**

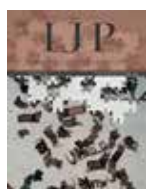
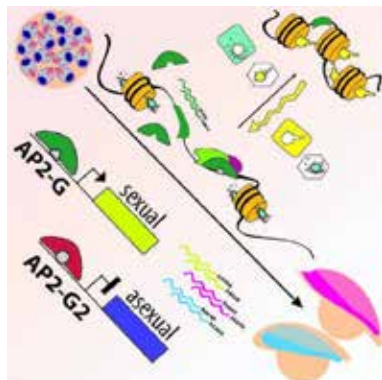
**Brian, Alex, Jan and Maria**



Dafni Bechti and Andy Waters continue to follow closely with their SingMalNet Special Issue review paper on genomics and epigenetics of sexual commitment in *Plasmodium* (47:7, 425-434), with 60 captures, 235 social media shares, likes, comments and tweets, and 9 citations to date.



## International Journal for Parasitology continued



We published a Special Issue on from the Molecular and Cellular Biology of Helminth Parasites XI meeting in 2018. The Editors are working hard on more

Special Issues to look forward to in 2019 including an issue on Babesiosis to be published early in the year. Keep your eyes peeled for what is to come!

As usual, 2018 has been a busy year for the IJP. We are grateful to our valued Editorial Board members, reviewers and authors who continue to maintain the high quality and reputation of the IJP. We are renewing our Editorial Board for the next 3 years and wish to express our thanks to people who have given their time and energy to assist us over the past 3 years, some of whom will finish their terms on 31 December, as well as welcoming some new Editorial Board members. It is always a pleasure to deal with such hard working, passionate and dedicated parasitologists!

We hope that you all enjoy a well-earned rest over the holiday season and look forward to working with you again in 2019 and beyond.

## Recent issues

## 48:09/10 (August)

Original Research Articles

## The kinetoplast DNA of the Australian

**trypanosome, *Trypanosoma copemani*, shares features with *Trypanosoma cruzi* and *Trypanosoma lewisi*** Adriana Botero, Irit Kapeller, Crystal Cooper, Peta L. Clode, Joseph Shlomaï, RC Andrew Thompson.

**Global phylogeography and genetic diversity of the zoonotic tapeworm *Echinococcus granulosus sensu stricto* genotype G1** Liina Kinkar, Teivi Laurimäe, Gerardo Acosta-Jamett, Vanessa Andresniuk, Ibrahim Balkaya, Adriano Casulli, Robin B. Gasser, Joke van der Giessen, Luis Miguel González, Karen L. Haag, Houria Zait, Malik Irshadullah, Abdul Jabbar, David J. Jenkins, Eshrat Beigom Kia, Maria Teresa Manfredi, Hossein Mirhendi, Selim M'rad, Mohammad Rostami-Nejad, Myriam Oudni-M'rad, Nora Beatriz Pierangeli, Francisco Ponce-Gordo, Steffen Rehbein, Mitra Sharbatkhori, Sami Simsek, Silvia Viviana Soriano, Hein Sprong, Viliam Šnábel, Gérald Umhang, Antonio Varcasia, Urmas Saarma

**Molecular alterations during larval development of *Haemonchus contortus* in vitro are under tight post-transcriptional control** Guangxu Ma, Tao Wang, Pasi K. Korhonen, Ching-Seng Ang, Nicholas A. Williamson, Neil D. Young, Andreas J. Stroehlein, Ross S. Hall, Anson V. Koehler, Andreas Hofmann, Robin B. Gasser

## 48:11 (September)

Current Opinion

**An Australian dog diagnosed with an exotic tick-borne infection: should Australia still be considered free from *Hepatozoon canis*?** Telleasha L. Greay, Amanda D. Barbosa, Robert L. Rees, Andrea Paparini, Una M. Ryan, Charlotte L. Oskam, Peter J. Irwin

Succinctus

**Proteomic diversity in a prevalent human-infective *Giardia duodenalis* sub-species.** Samantha J. Emery-Corbin, Daniel Vuong, Ernest Lacey, Staffan G. Svärd, Brendan R.E. Ansell, Aaron R. Jex

## 48:12 (October)

Original Research Articles

**The developmental lipidome of *Haemonchus contortus*.** Tao Wang, Shuai Nie, Guangxu Ma, Pasi K. Korhonen, Anson V. Koehler, Ching-Seng Ang, Gavin E. Reid, Nicholas A. Williamson, Robin B. Gasser

**Quantification of host-mediated parasite clearance during blood-stage *Plasmodium* infection and anti-malarial drug treatment in mice.** Rosemary A. Ago, David S. Khoury, Deborah Cromer, Trish Elliott, Jasmin Akter, Lily G. Fogg, Arya Sheela Nair, Urijah N. Liligeto, Megan S.F. Soon, Bryce S. Thomas, Clara P. S. Pernold, Aleksandra S. Romanczuk, Pawat Laohamonthonkul, Ashraful Haque, Miles P. Davenport

## 48:13 (November)

Original Research Articles

**A TGF- $\beta$  type I receptor-like molecule with a key functional role in *Haemonchus contortus* development.** Li He, Robin B. Gasser, Pasi K. Korhonen, Wenda Di, Fangfang Li, Hongrun Zhang, Facai Li, Yanqin Zhou, Rui Fang, Junlong Zhao, Min Hu

## 48:14 (December)

Original Research Articles

**Intermediate host switches drive diversification among the largest trematode family: evidence from the Polypipapiliotrematinae n. subf. (*Opecoelidae*), parasites transmitted to butterflyfishes via predation of coral polyps.** Storm B. Martin, Pierre Sasal, Scott C. Cutmore, Selina Ward, Greta S. Aeby, Thomas H. Cribb



**IJP** INTERNATIONAL  
JOURNAL FOR  
PARASITOLOGY  
**Drugs and  
Drug Resistance**

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Editors In Chief: Andrew Kotze & Kevin Saliba

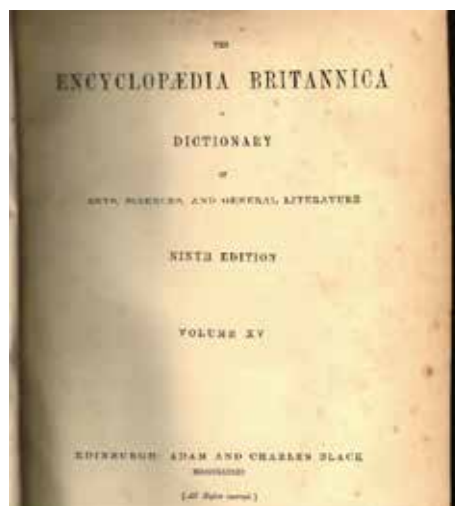
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# Three time points in our understanding of malaria: the Encyclopaedia Britannica in 1883 and 1902 and IJP:DDR today

Andrew Kotze is fortunate to own complete hard copy sets of the Encyclopaedia Britannica from the late 1800s (9th edition) and the early 1900s (10th edition). The volumes provide fascinating insights into the state of knowledge at these times. While looking at them recently he was struck by the description of malaria in the 9th Edition in 1883, and then the leap in knowledge that had occurred by the 10th Edition in 1902.

The following article describes this 1883 state, and then the leap forward that had occurred 19 years later. As Editors-in-Chief of IJPDDR Andrew and Kevin Saliba have added the present as a third point in time by also highlighting some recent malaria papers in the journal. We hope you enjoy!

## Encyclopaedia Britannica Ninth Edition 1883



Malaria as 'a poisonous substance' close to the ground

*Diffusion of Malaria.*—On the hypothesis that malaria is a poisonous substance, it is permissible to speak of its diffusion. It acts for the most part only within a few feet of the ground; in the East Indies the raising of dwellings on piles serves to keep off, or at least lessen, the liability to fever, and the Indians in South America escape it by sleeping in the branches of trees. Although it is not known to act beyond a few feet from the earth's surface,

Spread by wind

of the English (Channel) coast. There are instances where it has, so to speak, travelled along a narrow valley from an unhealthy marsh to a salubrious situation. Although a still night is most favourable to its production, there is a popular opinion that it is carried by the wind. In many malarious localities there is a definite "ague line," beyond which the noxious influence is not felt. A belt of trees, or even a wall, will "keep it off." It clings to those surfaces that are most easily bedewed. Situations to windward of a malarious swamp are usually reckoned safe.

Protection for humans by fire

clad, housed, and fed are most likely. Fires at night in a malarious locality are a well-known protection from fever;

Generated in the soil, or caused by nocturnal chills

characterized by a truly remarkable periodicity. The oldest and most prevalent hypothesis of malaria is that it is a specific poison generated in the soil. Perhaps not every soil is capable under circumstances of causing malaria, but it is difficult to assign limits to its potential presence.

no solid result. Another hypothesis is that malaria is a "telluric intoxication," generated by the vegetative power of the soil when that power is not duly exhausted by plant growth. Lastly, there is an hypothesis that malarial fevers are caused by the excessive and sudden abstraction of heat from the body under the influence of cold and damp, and that the specific effects of the nocturnal chill, amounting to intermittent and remittent fever, are most usual and most marked in hot climates because of the antecedent exposure of the body to great solar heat.

Emerging from the soil when disturbed

There are seemingly well-authenticated cases of malarial disease appearing during the making of railway cuttings, canals, and other excavations in places where malaria had not previously been known; and there is sufficient evidence that malaria has appeared in the track of cultivation in the western States of America, and that it follows on the upturning of virgin soil, and even of soil that has been long fallow. Attempts have been made, without success, to separate a malarious poison from the gases generated by swamps, or from the air of malarious localities. Still more

Present in many parts of Europe

In the British Islands, sporadic cases of ague may occur anywhere; but malaria is not now endemic except in a few localities, among which may be mentioned certain parishes on the Essex side of the Thames estuary. In France there are several districts that are still notoriously malarious. In the interior these are chiefly found in the

Westphalia that the disease is endemic. Scarcely any province of Holland can be said to be quite free from it, while

Some early treatments – no evidence that quinine works!

sion. There is no good evidence that the taking of quinine wards off the attack of malaria. The extent of cinchona planting in southern India, Ceylon, Jamaica, and elsewhere is the best measure of the value of quinine as a remedy, and more particularly as a remedy for ague. Arsenic has proved one of the most efficient substitutes for quinine.

Having a big impact

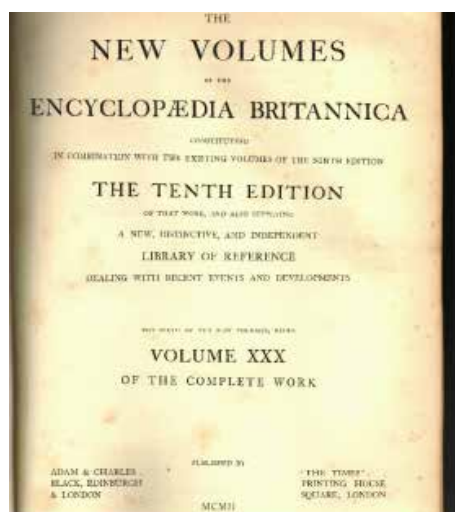
*Geographical Distribution and Prevalence.*—Malaria has been estimated to produce one-half of the entire mortality of the human race; and, inasmuch as it is the most common cause of sickness and death in those parts of the



## IJP:DDR continued

But, by the tenth edition in 1902, things had changed markedly

## Encyclopaedia Britannica Tenth Edition 1902



The mosquito connection

19th century. It has now been demonstrated by a series of accurate investigations, contributed by many workers, that malaria is caused by a microscopic parasite in the blood, into which it is introduced by the bites of certain species of mosquito. Many points still

scientific progress. The first substantial link in the actual chain of discovery was contributed in 1880 by Laveran, a French army surgeon serving in Algeria. On the 6th of November in that year he plainly saw the living parasites under the microscope in the blood of a malarial patient, and he shortly afterwards communicated his observations to the Paris

the solution of the problem. The labours of Golgi, Marchiafava, Celli, and others established the nature of the parasite and its behaviour in the blood; they proved

ment. Following up this line of investigation, Ross in 1895 found that if a mosquito sucked blood containing the parasite they soon began to throw out flagella, which broke away and became free; and in 1897 he discovered peculiar pigmented cells, which afterwards turned out to be the parasites of active autumnal malaria in an early stage of development, within the stomach-wall of mosquitoes which had been fed on malarial blood. He further found that only mosquitoes of the genus

With some sceptics still remaining

Académie de Médecine. They were confirmed, but met with little acceptance in the scientific world, which was preoccupied with the claims of a subsequently discredited *Bacillus malariae*. In 1885 the Italian pathologist

Arsenic still being trialled

effect. An experiment made on the railway staff at Bovino, a highly malarious district on the Adriatic, gave a striking result. The number of persons was 78, and they were divided into two equal groups of 39 each. One group was treated with arsenic, and of these 36 escaped altogether, while three had mild attacks; the remaining 39, who were not treated, all had fever. In a more extended experiment on 657 railway-men, 402 escaped. This was in 1889, but in spite of the encouraging results the use of arsenic does not appear to have made any further progress. Experiments in

The need for 'administrative' measures

(2) Much attention has been directed in scientific circles to the possibility of "stamping out" epidemic malaria by administrative measures. The problem is one of great practical importance, especially to the British empire. There are no data for estimating the damage inflicted by malaria in the British colonies. It is, indeed, quite incalculable. In Italy the

Important for the British Empire to solve the problem

consequent loss of several million francs. In British tropical possessions the bill is incomparably heavier. There is not only the heavy toll in life and health exacted from Europeans, but the virtual closing of enormous tracts of productive country which would otherwise afford scope for British enterprise. The "deadly" climates, to which so much dread attaches, generally mean malaria, and the mastery of this disease would be equivalent to the addition of vast and valuable areas to the empire. The problem, therefore, is eminently one for the statesman and administrator. A solution may be sought in several

And today, in the

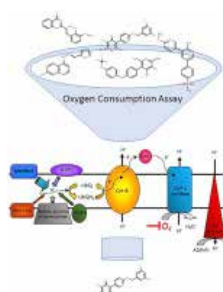
## International Journal for Parasitology: Drugs and Drug Resistance (IJPDDR)



Screening campaigns and target-based studies to identify new antimalarials:

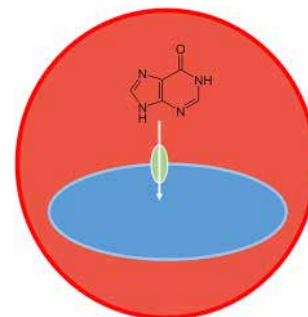
## Functional screening of selective mitochondrial inhibitors of *Plasmodium*

Volume 8, Issue 2 (2018) Pages 295-303



## Targeting the *Plasmodium vivax* equilibrative nucleoside transporter 1 (PvENT1) for antimalarial drug development

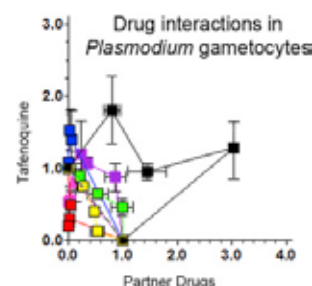
Volume 6 Issue 1 (2016) Pages 1-11



Drugs undergoing clinical evaluation investigated for potential interactions with future partner drugs:

## Interactions between tafenoquine and artemisinin-combination therapy partner drug in asexual and sexual stage *Plasmodium falciparum*

Volume 7, Issue 2 (2017) Pages 131-137

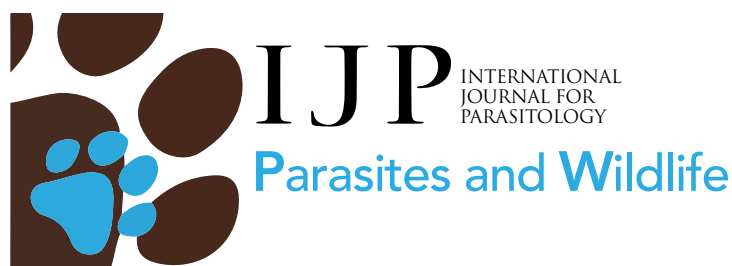


A step ahead with monitoring the emergence of resistance to compounds that are still in clinical trials:

## Genetic diversity of next generation antimalarial targets: A baseline for drug resistance surveillance programmes

Volume 7 Issue 2 (2017) Pages 174-180





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



## Review of 2018 by Andrew Thomson

2018 has been a very successful year for *IJP:PAW*. We received our first impact factor of 2.777 which places our journal at seventh out of 20 journals publishing parasitology, and just behind our two *IJP* partners.

At the time of writing this, we have received just over 120 submissions so far this year, already 32% more than last year with one month to go. The majority of papers still come from North America but submissions from Europe are steadily increasing.

Most pleasing is the high quality and diversity of manuscripts which we receive. A special issue on Emerging Zoonoses will appear in early 2019, with special issues on Urbanisation, Migrations, Co-Infections, and Polar Parasites, in various stages of planning.

## 2018 Impact Factors and CiteScores of journals publishing parasitology

Journal	Impact Factor	CiteScore
1. Trends in Parasitology	7.929	4.88
2. Advances in Parasitology	4.255	3.68
3. Parasites and Vectors	3.080	3.29
4. International Journal for Parasitology	3.078	3.51
5. International Journal for Parasitology: Drugs and Drug Resistance	3.030	3.81
6. <b>International Journal for Parasitology: Parasites and Wildlife</b>	<b>2.777</b>	<b>3.07</b>
7. Parasitology	2.713	2.45
8. Acta Tropica	2.509	2.47
9. Parasitology Research	2.558	2.46
10. American Journal of Tropical Medicine and Hygiene	2.549	2.42
11. Veterinary Parasitology	2.422	2.55
12. Transactions of the Royal Society of Tropical Medicine and Hygiene	2.270	2.12
13. Parasite International	2.055	1.87
14. Experimental Parasitology	1.821	1.85
15. Molecular and Biochemical Parasitology	1.741	2.09
16. Journal of Wildlife Diseases	1.552	
17. Journal of Parasitology	1.326	1.32





**Image credits (this page and previous): photographs of parasite hosts courtesy of Andrew Thompson/IJP:PAW**

# State News

## ACT

## ANU

### STEM Workshops in German

In October, Alex Maier led a workshop entitled "A hidden circus – the parasite extravaganza" as part of a series of STEM workshops conducted in German at Daramalan College, Canberra. In the workshop, the secondary school students had the chance to learn what parasites are, and through analogies with circus performers, discover the special talents of parasites. The students came away with a real insight into what we can learn by studying parasites

### Science in ACTION

During National Science week in August, parasitologists from the ANU returned with their parasite themed stall to Science in ACTION, a two-day STEM showcase. See the feature article earlier in this newsletter.

### Visitors from Germany

Participants in the ANU-Humbolt "Crossing Boundaries" program recently visited the ASP conference in St Kilda and the ANU's Canberra and Kioloa campuses.. See the feature article earlier in this newsletter.

## WA

## Murdoch

### Welcome, Dandan Liu

Vector and Waterborne Pathogens Research Group welcomes Dr. **Dandan Liu**, a visiting scholar from Yangzhou University-China. Dandan is a Preventive Veterinary Medicine Lecturer in Yangzhou University, and her research mainly focuses on avian coccidiosis, especially *Eimeria*. She has joined our group in early October and during her one-year stay



**Above: Dandan Liu**

here in Australia, Dandan will be collaborating with Prof. Una Ryan and her group on molecular characterization of *Eimeria* in Australian wildlife.

### Happy birthday, Peter Irwin

Sixty years ago, Francis Crick's central dogma of molecular biology was published, the Nobel Prize in Physiology or Medicine was awarded to George Wells Beadle, Edward

**Below: Fig 1 and 3: Red velvet Rhipicephalus sanguineus cake. Features of the genus Rhipicephalus include short caramel log mouth parts, jelly bean eyes and festoons made of fondant. Features of the species R. sanguineus include hexagonal-shaped basis capitulum outlined with liquorice. Anal grooves not shown. Fig 2: Peter Irwin and his birthday cake.**





## State News continued

Lawrie Tatum and Joshua Lederberg, and Peter Irwin was born on the 3rd of August 1958. Before he became a Professor of Veterinary Clinical Science and Principal of Murdoch University's Veterinary College, Peter fell in love with ticks in Kenya in 1980, where he studied East Coast fever during his undergraduate degree in Veterinary Medicine. A 35-year career studying vector-borne diseases of companion animals, with a special interest in canine babesiosis, ensued. Today, he co-directs the Vector and Waterborne Pathogen Research Group, a team of diverse and passionate parasitologists, who joined Peter in celebrating his 60th birthday with a *Rhipicephalus sanguineus* (brown dog tick) cake (Figure 1). This year also marks Peter's 20-year anniversary at Murdoch University. Congratulations Peter and wishing you many more years of *fantastick* research!

## Huge celebration night!

Dr. Amanda Barbosa, Dr. Khalid Al-Habashi and Dr. Alireza Zahedi (pictured) from Vector and Waterborne Pathogens Research Group attended their graduation ceremony on 18 September 2018. Well done and done well!

## Searching for an Exotic Parasite in Australia's Beef Capital, Rockhampton

In October this year, Prof. Peter Irwin



**Above: L-R Khalid Al-Habashi, Amanda Barbosa and Alireza Zahedi. Below: images from the Murdoch University visit to Rockhampton**

(Murdoch University), Telleasha Greay (Murdoch University) and Dr. Liisa Ahlstrom (Bayer Australia) visited Rockhampton, Queensland, the "Beef Capital" of Australia. But it wasn't the ribs and rumps that enticed the researchers to Central Queensland. Their novel finding of a Maremma Sheepdog infected with the exotic tick-borne pathogen *Hepatozoon canis*, published in IJP this year, prompted an epidemiological investigation

in the region. The study, generously funded by ACAHF, aims to determine whether the parasite has recently established, or if it has been endemic for some time. They were overwhelmed by the support and willingness of the community (pet owners and veterinarians) to assist with the study. Many gentle Maremma Sheepdogs, adventurous goats and friendly cats were encountered during the five-day field trip.



## State News continued

### Gut-on-a-chip tech to boost risk management of Australian water

Australia's drinking water is heading under the microscope through a three-year ARC Linkage Grant led by Prof **Una Ryan** at Murdoch University. Working in collaboration with Seqwater, WaterNSW, Melbourne Water, Dr **Mark O'Dea** from Murdoch University, Dr **Paul Monis** and Dr **Brendon King** from SA Water, Professor Benjamin Thierry from the University of South Australia and Associate Professor Jillian Carr at Flinders University, the project will develop gut-on-a-chip rapid detection and viability assays for three major waterborne pathogens; *Cryptosporidium*, Norovirus, and Adenovirus. This will lead to improved and more cost effective diagnostics and water disinfection assays, a commercial supply of *Cryptosporidium* oocysts for disinfection studies for water utilities globally and improved risk management.

## Queensland

### James Cook University

#### A delegation from the Pacific Islands

Dr Kate Hutson and colleagues recently welcomed twenty-five visitors from Pacific Island nations to JCU in Townsville. The visitors learned about biosecurity and aquaculture techniques that will help them to identify the risk of parasitic outbreaks and to tackle these outbreaks when they occur. Photos of this event are featured in this newsletter. A Channel 7 News story on the visit can be viewed at:

<https://www.facebook.com/7NewsTownsville/videos/1785242444855167/>



## New South Wales

### University of Sydney

#### Laboratory of Veterinary Parasitology @ McMaster Building

Time flew so quickly in 2018 and we are now rapidly approaching the end of the year. The first cohort of DVM students @ USYD are about to graduate and everyone is busy preparing for the upcoming accreditation visit next year. **Jan Slapeta**, **David Emery** and **Graeme Brown** are certainly pleased to see the end of 2018! The second half of the year was busy with several outreach and novel activities on top of the regular teaching schedule.

We farewelled our DVM3 Research and Enquiry students **Chelsie Kluber** and **Meera Kunathasan Chelliah**, as well as our AVBS Honours students **Gemma Rush** and **Nicole Crkvencic**. We wish them all the best.

**Shona Chandra** (PhD student) and **Clarencia Lie** (Master student) are busy writing up their work from the past year, but were able to take some time off to join the team in Melbourne at the ASP conference. They proudly presented their posters alongside **Bara Cervena** and **Nichola Calvani**.



**Above: David Emery is farewelling the ASP executive in 2018**

**Andrea Lawrence** is graduating from her PhD in December with a Thesis titled "Merging morphology, molecules and modelling: A unifying approach for understanding the common cat flea

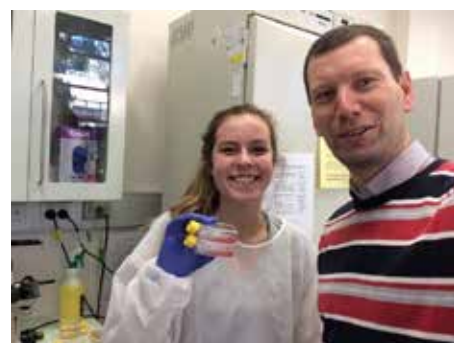
(*Ctenocephalides felis*) and related species worldwide". Congratulations and all the best in what lies ahead in the future!

**Nichola Calvani** (PhD student) has travelled to Italy to attend a ParSCo workshop and as well as enjoy some time with her family. She also managed a stint at the University of Liverpool vet school learning about microsatellites and later attending a Hydra molecular helminthology



**Above: ParSCo workshop participants collecting ticks in southern Italy**

In June and July we hosted **Hannah Danks** from the University of Texas, Austin for an internship. Hannah had fun culturing and learning about *Toxoplasma gondii*.



**Above: Hannah with Jan Slapeta**

**Bara Cervena** has joined the lab for a postdoctoral stay from the Czech Republic. Bara is working on a worm diagnostic assay to improve capacity of managers of mountain gorillas in Rwanda. While in Sydney she also helped us to collect blood from greyhounds at the annual greyhound adoption breakfast. We were testing them for heartworm, with no surprise that we found none positive! We were joined by **Ben Kwok** (DVM4 student), who is in fact one of our former DVM3 Research and Enquiry project students, whose paper on neosporosis was recently published in Veterinary Parasitology: Regional Studies and Reports. (<https://doi.org/10.1016/j>



## State News continued

vprrs.2018.07.011) – fantastic job to see a project from DVM3 published.



**Above: Ben, Georgina Child, Denise Wigney, Bara and Jan at the greyhound breakfast in September.**

Last but not least Jan Slapeta's dog Lucky wanted some attention and acquired a paralysis tick. Jan could not resist snapping a photo and safely left it there to check if the isoxazoline preventative will do the job as claimed on their labels. There was no need to pull the tick off and no need to panic! In less than 36 hours the tick was dead and fell off, so no engorged tick photo and no Lucky suffering from tick paralysis.



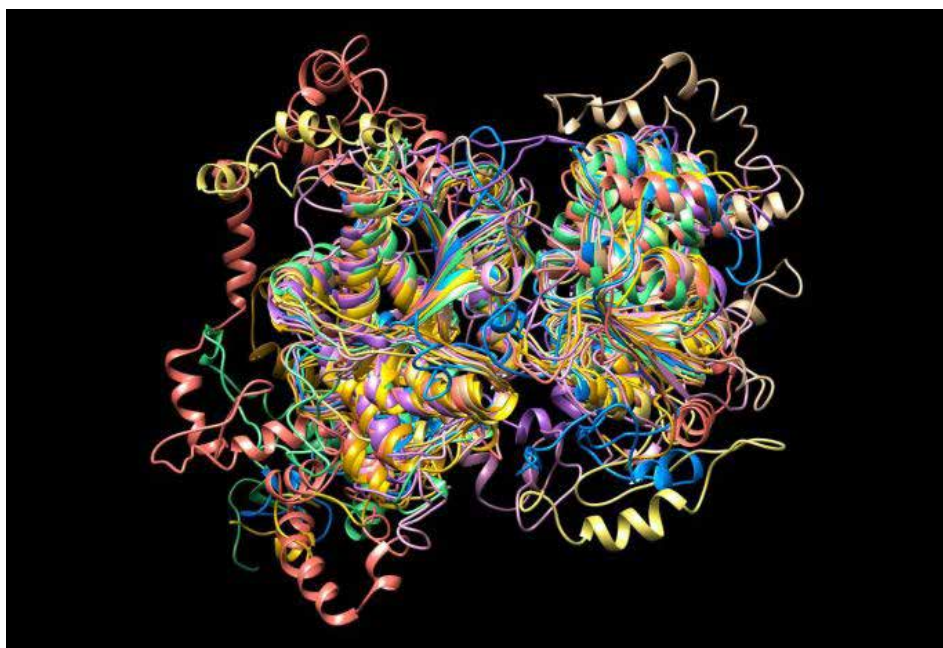
**Above: *Ixodes holocyclus* (paralysis tick) fully attached.**

## Victoria

### Walter and Eliza Hall Institute for Medical Research

#### Art of Science winning image

A 3D rendering of Giardia proteins by Brendan



**Below: the winning image of Giardia proteins courtesy WEHI**

Ansell, Balu Balan and Aaron Jex was winning image at the Art of Science award at this year's competition held at Federation Square in August.

An ABC news feature on the exhibition can be seen at:

<https://www.abc.net.au/news/science/2018-08-09/art-of-science-exhibition-showcases-deadly-beauty-in-3d/10083256>

## The University of Melbourne

#### McFadden Lab

Prof **Geoff McFadden** was awarded the Woodward Medal, from the University of Melbourne. **Dean Goodman** was promoted to level C. FadLab PhD students **Claire Sayers** (now at Sanger) and **Taher Uddin** (now at Griffith U) have both graduated and will receive their doctorates on December 10th.

Geoff, Dean and **Justin Boddey** (WEHI) were

awarded an NHMRC Project Grant to explore transmission of drug resistance.

#### Ralph Lab

**Stuart Ralph, Geoff McFadden and Dean Goodman** were awarded an NHMRC Project Grant to explore alternative splicing changes during the life cycle.

#### Mike Duffy

Congratulations to **Mike Duffy**, awarded an Australia-Germany Joint Research Co-operation Scheme with collaborators at with University of Erlangen.

#### Special Interest Group Meeting

The annual Parasitology special interest group meeting was held at Doherty Institute, University of Melbourne on 27 September 2018. Prof **Robin Gasser** gave an update on NGS/WGS in parasitology and Assoc Prof **Siddhartha Mahanty**, Dr **Shio Yen Tio** and Dr **David Griffin** presented three interesting (human) parasitology cases seen in various hospitals. Retiring parasitologist Dr **Norbert Ryan** (from VIDRL) was felicitated for his contribution to this Group and Parasitology in general.

## State News continued

### Gasser Lab

**Clare Anstead** & colleagues were awarded \$2.5M from Australian Wool Innovation. The \$2.5 million four-year research investment is a collaboration between AWI, the University of Melbourne and CSIRO to undertake preliminary research into the development of a flystrike vaccine targeting the Australian sheep blowfly (*Lucilia cuprina*).

**Andreas Stroehlein, Anson Koehler & Pasi Korhonen** were each awarded FVAS Research Initiative Fund Grants from the University of Melbourne.

**Andreas Stroehlein** was awarded the Chancellor's Prize for Excellence in the PhD Thesis "Kinomes of selected parasitic helminths - fundamental and applied implications".

**Dili Herath** won best oral presentation at the FVAS Postgraduate Symposium for her talk "Arylpyrrole and fipronil analogues that inhibit the motility and/or development of *Haemonchus contortus* in vitro".

There have been two recent promotions. **Tao Wang** was promoted to Level B Research fellow. **Clare Anstead** was promoted to Senior Lecturer.

**Yaqing Jiao** recently submitted her PhD thesis "Discovery of new chemicals with anthelmintic activity against barber's pole worm and other parasitic nematodes" in November.

**Clare Anstead** returned to work from maternity leave (baby Margot was born on April 23, 2018). **Neil Young** welcomed baby Emma to the family in June (big brother Alex is very excited). **Darcy Wang** was recently married in November.



**Above: PhD student Alynn Martin sampling a wombat under Scott Carver's supervision.**

## Tasmania

### University of Tasmania

#### Scott Carver's research group

2018 has seen an increase in the ASP membership in Tasmania, mostly due to 6 new members from Dr **Scott Carver's** research group. Scott joined University of Tasmania in 2012. He continues his research into disease transmission in puma, bobcats and domestic cats in North America, focussing on Feline Immunodeficiency Virus. He has reengaged in mosquito-borne disease ecology in Australia, with specific emphasis to understand the complex ecology and epidemiology of Ross River virus, particularly the role of marsupial hosts in human epidemic patterns. He has also established new research directions. A major focus of his lab is studying sarcoptic mange, which is the most threatening disease of wombats in Australia and infects >100 species of mammal globally. He collaborates and co-supervises students studying Tasmanian Devil Facial Tumour Disease. He also works closely with colleagues

studying the epidemiology Chlamydial infections among agricultural animals and koala, and vaccine development.

This year brought some breakthroughs in the research on sarcoptic mange, including testing of new drugs, which can prolong wombat's resistance for up to 3 month (current drugs work only for 1 week). In research published in the Royal Society journal Open Science earlier this year, PhD student **Alynn Martin** Alynn Martin showed that in addition to hair loss, skin thickening sarcoptic mange also causes a major loss of body heat, highly increased metabolic rate, detrimental behaviour changes and alteration of fat composition in wombats.

#### PhDs

**Tina Oldham, Jessica Johnson-Mackinnon** and **Jimena Balli Garza** have submitted their PhD theses earlier this year. We are hoping to celebrate their graduations in 2019. Tina moved to Norway where she started her postdoc and Jimena is working for Tasmanian salmon industry.



## State News continued

**Barbara Nowak**

In late August **Barbara Nowak** attended International Symposium on Aquatic Animal Health in Charlottetown, where she gave two presentations, one on Amoebic Gill Disease in the session on fish ectoparasites and one on Management of tuna parasites based on the knowledge of life cycles in the session on parasite life cycles. One of the conference highlights was Keynote Presentation by Prof Jerri L. Bartholomew from Oregon State University on Weapons of Micro-Destruction: An Interdisciplinary Approach to Understanding a Parasitic Cnidarian. It was fascinating not only because of the new information on parasitic cnidarians but also by the combination of science and art – including glass art produced by Jerri, music based on her data and other artistic representations of her research.

During her long service leave in Canada Barbara Nowak gave a research seminar at University of Victoria. The seminar title was "How to determine fish health - Lessons from Antarctica to Greenland" and discussed blood flukes in tuna and sculpin's parasites. On 2 November, which is celebrated as Day of the Dead in Poland, Barbara visited Dr Bob Kabata's grave to light a candle and leave some flowers. Dr Bob Kabata was well known fish parasitologist, who worked first in the UK and then in Canada.

**Mount Nelson Award**

**Below: Bob Kabata's grave on the Day of the Dead. White and red are national colours of Poland. Dr Bob Kabata was Polish freedom fighter and wrote patriotic poems during WWII.**

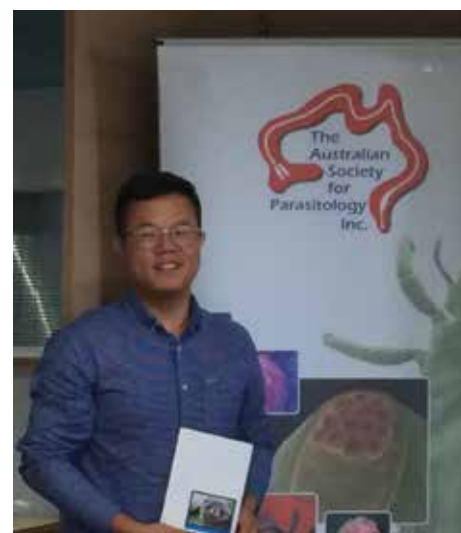


**Above: Mount Nelson Trustee Stephen Nichols presents the award to Peter Puskic**

PhD student Peter Puskic won Mt Nelson Award. The award presentation was held at the Grove Restaurant, Newnham campus on Wednesday the 21st of November. The Mount Nelson Board of Trustees were impressed with the passion and dedication Peter has shown for the environment. After receiving first class Honours, Peter joined the Adrift Lab 2018 field team ([www.adriftlab.org](http://www.adriftlab.org)) on Lord Howe Island where he collected preliminary data for his PhD. The Tasmania University Union Mount Nelson Award has been established by students, for students. Its aim is to promote and develop excellence in the Higher education sector. The Mount Nelson Award is given in recognition of an individual's potential to make a significant contribution to their chosen profession and a commitment to our community.

**Research presentation awards**

Competition for best research presentation by PhD student was a highlight of the ASP sponsored outreach event - lunch at Fish Histopathology Workshop in Launceston. This event was attended by visitors from New Zealand and interstate. The winner was UTAS PhD student Rico (Ruixiang Zhao), second place went to RMIT PhD student and ASP member Cecilia Power.



**Above: Rico and Cecilia with their presentation awards**

WORKSHOP ANNOUNCEMENT



# CURRENT TOOLS TO COMBAT MALARIA

with special focus on *Plasmodium knowlesi*

**4-8th March 2019**

RM1200 (Local) USD400 (International)



**DEPARTMENT OF PARASITOLOGY  
FACULTY OF MEDICINE  
UNIVERSITY OF MALAYA  
KUALA LUMPUR, MALAYSIA**

Only **20 seats**, early registration is strongly recommended

[amirahamir@um.edu.my](mailto:amirahamir@um.edu.my)

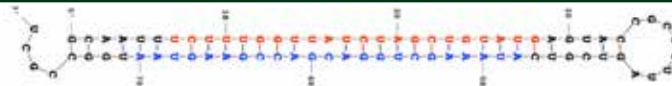
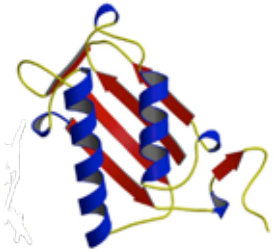


# Parasitic Helminths: New Perspectives in Biology and Infection



## Hydra, Greece

1-6 September 2019



The study of helminth parasites continues to excite great interest across the suite of modern scientific themes. With a wealth of genome information and high-throughput technologies, new drug and vaccine development, and intricate host-parasite molecular interactions, we are witnessing a new era of research on these organisms and the diseases they cause. ***Parasitic Helminths: New Perspectives in Biology and Infection*** will be the 13<sup>th</sup> in a highly successful series now held every year on the beautiful island of Hydra, Greece. All major helminth research areas are covered, including new genomics of animal- and plant-parasitic nematodes, interfaces with free-living helminths such as *C. elegans* and planarians, developmental and molecular biology, genetics, neurobiology, pharmacology, immunology and vaccine research, all aimed at creating new strategies for control of these prevalent parasitic organisms and the diseases they cause.

### Keynote Speaker

**Alejandro Sánchez Alvarado, USA**

### Confirmed Speakers include :

**Amy Buck**, Edinburgh, UK

**Luisa Cochella**, Vienna, Austria

**Alison Elliott**, Entebbe, Uganda

**Carolina Escobar**, Toledo, Spain

**Elodie Ghedin**, New York, USA

**Nicola Harris**, Melbourne, Australia

**Karl Hoffmann**, Aberystwyth UK

**P'ng Loke**, New York USA

**Peter Sarkies**, London, UK

**William Sullivan**, Santa Cruz, USA

### Conference Venue:

**Hotel Bratsera, Hydra, Greece**

**bratserahotel.com**



### Organising committee:

Richard E Davis, University of Colorado

Kleoniki Gounaris, Imperial College

Rick Maizels, University of Glasgow

Murray Selkirk, Imperial College

A key feature of the Hydra venue is the Bratsera Hotel which will host the scientific sessions, and its quiet, traffic-free town with ample facilities for informal interactions between delegates. A wide range of accommodation is available within 5-10 minutes walk of the conference venue, including pensions for those on a tight budget. Attendance is limited to 100 people, consistent with a discussion-orientated meeting in which every delegate is an active participant – early registration is encouraged!

### Register Online

from 14/01/19 until 29/03/19

at <http://hydra.bio.ed.ac.uk/>

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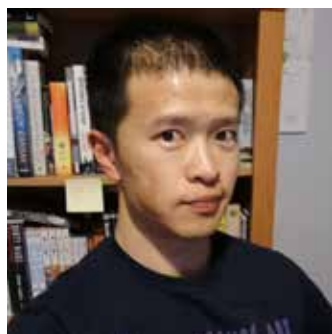
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ASP Council continued

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