



NEWSLETTER

Volume 27 No.2 September 2016



Marshall Lightowlers with children in a rural area in the Nepalgunj region of Nepal.

IN THIS ISSUE From the President's Desk

- 3 From the President's Desk
- 5 ICTMM 2016
- 6 IJP publications
- 7 IJP:PAW publications
- 8 IJP:DDR publications
- 9 Concepts in Parasitology
- 10 National Science Week
- 11 Outreach -
Perth, Launceston &
Melbourne
- 14 Undergraduate student
prizes
- 15 Researcher News -
Shookoofeh Shamsi,
Rebecca Traub &
Marshall Lightowlers
- 18 Network News,
- 19 JD Smyth Travel Award -
Hanh Nguyen
- 20 Events
- 21 Jobs
- 22 State News
- 29 ASP Council

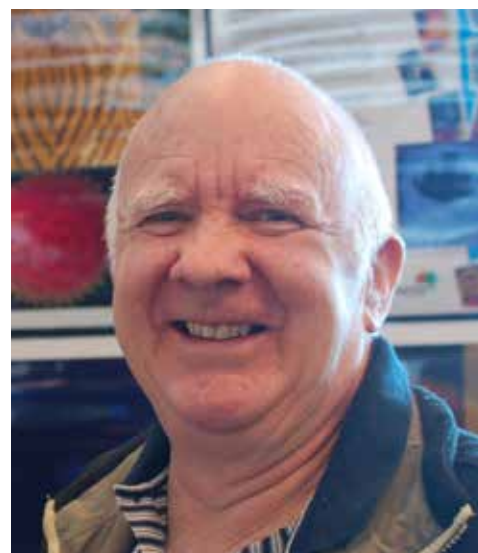
Dear Members,

Welcome to this pre-conference newsletter full of VITAL information for you to enjoy, even if you are not coming to Brisbane!

Just as exciting as ICTMM 2016 is the vision splendid (through a parasitologist's biased eye) of our joint sponsorship with Queensland Museum (QM) of **"Parasites Life Undercover"** exhibition at the QM until January 2017. QM took the initiative to bring it to us in time for the ICTMM conference and our AGM. So please enjoy in the spectacle during its time in Brisbane and keep a little attention for the AGM if you are attending! You will also note our logo and our own outreach project arising from the Inspiring Australia-ASP grant "Parasites, People, Art" collaboration <http://parasite.org.au/outreach/gula-guri-mayin/>. It is anticipated that ASP Outreach events should make use of both venue and this exhibition to promote our discipline and its adherents.

Conferences: ICTMM 2016 We have a comprehensive and exciting program; ASP Invited Lecturers are Professors Russell Stothard, Peter Crompton and Maria Dolores Bargues together with IJP invited speakers, Dr Thomas Romig and Professors Leann Tilley and David Fidock. Congratulations to Mal Jones and the Management Committee (Denise Doolan, Kathy Andrews, David Looke, James McCarthy and Paul Griffin) for this exciting event.

The **2016 ASP AGM** will take place at the Queensland Museum, Main foyer & Theatre, level 2, on the Corner of Grey and Melbourne Streets, South Bank, South Brisbane, QLD on Tuesday 20th September 2016 at 7pm. We will start the evening at 7pm sharp with light refreshments and you will be able to have a look at the ASP-sponsored exhibition "Parasites: Life



Undercover". We will then have a welcome from Professor Suzanne Miller, Director of the Queensland Museum, and then start our meeting at 730pm in the QM theatre on level 2. Please RSVP to Lisa.Jones1@jcu.edu.au if you are able to attend.

ICTMM final information – don't forget to visit the ASP stand at ICTMM, we have a wonderful parasite t-shirt for sale (\$25 cash)

ICTMM Opening Ceremony – FREE event, everyone is welcome! Join us on **Sunday 18 September 2016 at 430pm** for the official ICTMM 2016 Opening Ceremony. Kick off the Congress with a welcome from the Australian Society of Parasitology and Australasian Society for Infectious Diseases and a traditional Indigenous Welcome to Country followed by four of our most illustrious and entertaining scientists Peter O'Donoghue, Michael Good, Charlene Willis, and David Jenkins talking about topical tropical medicine, the convoluted evolution of malaria vaccine strategies, and the many weird and wonderful parasites and the scientists who love them - an event not to be missed!

Conferences: The **ASP2017** conference will be held in Leura, in the Blue Mountains

From the President's desk continued

near Sydney. We will be convening an industry symposium as part of the meeting to attract our members in Industry and Medical and Veterinary practice to a session of interest and broaden our appeal.

ASP are sponsoring the **9th International Tick and Tick-borne Pathogens (TTP9)** (<http://www.ttp9-aprc1.com/>) meeting in Cairns (Aug 27-Sept 1, 2017). ASP members Peter Irwin and Steve Barker will be keynote speakers.

Our proposed joint meeting with the American Society for Parasitology in Hawaii in 2019 will not be proceeding. Lisa and Nick conducted an on-site visit in July to ascertain costs and details. Due to the combination of the off-shore location, high costs and the WAAVP in July 2019 in Wisconsin, the Executive has opted to withdraw participation. We are discussing alternative collaborations with our American counterparts.

Included in the newsletter are all the reports of the ASP Outreach activities around Australia in Tasmania, Queensland and Western Australia. In addition, Shokoofeh attended EMOP on behalf of the ASP and presenting "Gula Guri Mayin" and the ASP's Parasitology Art and Science movie www.parasite.org.au/outreach/gula-guri-mayin/ and ASP JD Smyth Travel Award winner report from Hanh Nguyen. We are pleased to list several of the ASP Undergraduate Student Awards for parasitology. Keep us posted please. Other reports include the latest STA newsletter and as usual, lots of wonderful state news to see all of the energy of our ASP members.

Other news in this epistle: **IJP has hit 4.242!!** Congratulations Brian and the editorial team (Alex, Jan and Maria). Equally exciting amongst the published **impact factors was IJP-DDR with 3.746**, a wonderful outcome for Andrew Kotze and Kevin Saliba. Andy and Lydden are also making solid headway with IJP-PAW. Well done and our gratitude to all of our journal Editors- all have been re-appointed until 2018.

Eureka!! (prize that is). Congratulations to finalists and the winners, Professor Leann Tilley, Dr Nick Klonis, Associate Professor Julie Simpson and Associate Professor James McCaw, The University of Melbourne Eureka Prize for Infectious Diseases Research.

Two ASP members are able to attend *Science meets Business* October 24 in Melbourne, with the Minister for Industry, Innovation and Science, Greg Hunt, Shadow Minister for Innovation, Industry, Science and Research, Senator Kim Carr, Vice-President and Lab Director for IBM Research, Dr Joanna Batstone, and CEO of ANSTO, Dr Adi Paterson are among the speakers.

It was with great sadness that Professor Rick Speare, AM, whom many of you would know, died tragically in a car accident in June. As a medical practitioner, veterinary surgeon, public health physician, teacher and researcher, Rick's contribution to parasitology, wildlife and human health was immense. This is tragic loss for Australian parasitology. Rick's family have set up a special fund to ensure Rick's work in the Solomon Islands continues (<https://alumni.jcu.edu.au/RSpeareMemFund>). His obituary can be found at <https://www.jcu.edu.au/@jcu/source/vale-emeritus-professor-rick-speare-am>

ASP Strategic plan and Teaching workshops and MTM (Feb 7-9, 2017)

The new ASP strategic plan 2016-2020 is due for formulation by Council this year and will be presented to the AGM 2017. The process will be outlined at this AGM. You were invited to participate in Lisa's recent survey to provide guidance for the GOVERNANCE of ASP into the Future. The Executive proposes to utilise Lisa's report from the ASP member survey, involve the ASP Council and external interested parties, to create a sub-committee/working party in the next months and then have a 1-day facilitated workshop on Feb 8, 2017 coinciding with MTM2017 (Feb 9, 2017). Following the formulation of the next 5-year plan and ratification by Council, the strategic plan and any changes to the ASP constitution will be presented for discussion and voting at the 2017 AGM in Leura, NSW. One of the areas to be developed is supporting and developing important parasitological assets, including resources, archives and collections. Arising from a proposal from Council, the ASP will support a **National Veterinary Parasitology teaching workshop in Sydney on Feb 7, 2017**. This will focus on sharing curricular, methods and resources as well as maintaining the definition of the discipline. Industry participants will be encouraged to attend and assist. The meeting precedes the workshop on the ASP Strategic plan and MTM on Feb 8-9.

Changing of the ASP Vice-presidents: It is my great pleasure to announce that the next Executive for the ASP has been suggested to come from WA. Professor Una Ryan has been nominated for endorsement as the President-elect. I also thank most sincerely, and on behalf of Executive, Council and the ASP membership, Professor Robin Gasser, as outgoing Vice-President, for his enthusiasm and dedication to the ASP Executive over the past 4 years.

Best wishes to all,

David Emery on behalf of the Executive

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

International Congress for
**Tropical Medicine
and Malaria**
18–22 September
Brisbane Australia

2016



Final call for Registration!

Online registration
available for a
limited time

The countdown is on for the XIX
International Congress for Tropical
Medicine and Malaria 2016.

This is the first time Australia will
be hosting ICTMM and our hosts
cannot be more excited to share
this experience with you.

Register online today and save!

For more information visit
[www.tropicalmedicine2016.com/
registration](http://www.tropicalmedicine2016.com/registration).

ICTMM 2016 Opening Ceremony

**Join us on Sunday 18 September 2016 at 4:30pm for the official
ICTMM 2016 Opening Ceremony, a free event open to all.**

We will start with a traditional Indigenous Welcome to Country by
Songwoman Maroochy; followed by a welcome to ICTMM 2016 from our
hosts, Malcolm Jones, ICTMM Congress Chair David Emery, ASP President;
Cheryl Jones, ASID President; and Claudio Tadeu Daniel-Riberio, IFTM
President.

**Then four of our most illustrious and entertaining scientists; Peter
O'Donoghue, Michael Good, Charlene Willis, and David Jenkins, will
be discussing topical tropical medicine, the convoluted evolution
of malaria vaccine strategies, and the many weird and wonderful
parasites and the scientists who love them – an event not to be
missed!**

Date: Sunday 18 September 2016

Time: Arrive 4:15pm for a 4:30pm start

Venue: Great Hall, Brisbane Convention & Exhibition Centre

Cost: FREE

Bookings: www.tropicalmedicine2016.com

ICTMM 2016 Delegates are invited to join the

University of Queensland's School of Veterinary Science's 80th Anniversary Public Lecture

The public lecture will discuss 'Emerging Infectious Diseases - a rich vs poor nation problem' featuring Dr Federico Costa from the Universidade Federal da Bahia, Salvador, Brazil. Date: Monday 19 September 2016 Time: 7:00pm - 8:30pm
Venue: M4, Mezzanine level, Brisbane Convention & Exhibition Centre

IJP

INTERNATIONAL JOURNAL FOR PARASITOLOGY

www.journals.elsevier.com/international-journal-for-parasitology

Editor In Chief: Brian Cooke

Facebook: www.facebook.com/IJPara

Twitter: @IJPara

Instagram: ijpara

June 2016 (46:07)

Symposium for International Research and Innovations in Schistosomiasis (SIRIS) 2016 Special Issue

Current Opinion

Schistosomiasis elimination by 2020 or 2030?

Alan Fenwick, Peter Jourdan

Invited Reviews

Epigenetic modulation, stress and plasticity in susceptibility of the snail host, *Biomphalaria glabrata*, to *Schistosoma mansoni* infection

Matty Knight, Wannaporn Ittiprasert, Halime D. Arican-Goktas, Joanna M. Bridger

Female genital schistosomiasis (FGS): from case reports to a call for concerted action against this neglected gynaecological disease

Vanessa Christinet, Janis K. Lazdins-Helds, J. Russell Stothard, Jutta Reinhard-Rupp

Succincta

Identification of new markers for the *Schistosoma mansoni* vitelline lineage

Jipeng Wang, James J. Collins III

A next-generation proteome array for *Schistosoma mansoni*

Rafael Ramiro de Assis, Fernanda Ludolf, Rie Nakajima, Al Jasinskas, Guilherme C. Oliveira, Philip L. Felgner, Soraya T. Gaze, Alex Loukas, Philip T. LoVerde, Jeffrey M. Bethony, Rodrigo Correa-Oliveira, Carlos E. Calzavara-Silva

Original Research Articles

Independent origins of loss-of-function mutations conferring oxamniquine resistance in a Brazilian schistosome population

Frédéric D. Chevalier, Winka M. Le Clec'h, Nina Eng, Anastasia R. Rugel, Rafael Ramiro de Assis, Guilherme Corrêa, Stephen P. Holloway, Xiaohang Cao, P. John Hart, Philip T. LoVerde, Timothy J.C. Anderson

Protein kinase A signalling in *Schistosoma mansoni* cercariae and schistosomules

Natasha L. Hirst, Scott P. Lawton, Anthony J. Walker

Impact of two rounds of Praziquantel mass drug administration on *Schistosoma mansoni* infection prevalence and intensity: a comparison between community wide treatment and school based treatment in western Kenya

Isaac O. Onkanga, Pauline N.M. Mwinzi, Geoffrey Muchiri, Kennedy Andiego, Martin Omedo, Diana M. S. Karanja, Ryan E. Wiegand, W. Evan Secor, Susan P. Montgomery

Computational deconvolution of gene expression by individual host cellular subsets from microarray analyses of complex, parasite-infected whole tissues

Nirad Banskota, Justin I. Odegard, Gabriel Rinaldi, Michael H. Hsieh

Review Article

The Tao survivorship of schistosomes: implications for schistosomiasis control

Pengfei Cai, Geoffrey N. Gobert, Hong You, Donald P. McManus

July 2016 (46:08)

Original Research Article

J-dot targeting of an exported 1 HSP40 in *Plasmodium falciparum*-infected erythrocytes

Wiebke Petersen, Simone Külzer, Sonja Engels, Qi Zhang, Alyssa Ingmundson, Melanie Rug, Alexander G Maier, Jude M. Przyborski



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

Editors: R.C. Andrew Thompson, Lydden Polley

Facebook: www.facebook.com/IJPPAW/

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*

April 2016

5:1

Morphological and molecular characterization of *Eimeria purpureicephali* n. sp. (Apicomplexa:Eimeriidae) in a red-capped parrot (*Purpureicephalus spurius*, Kuhl, 1820) in Western Australia

Rongchang Yang, Belinda Brice, Una Ryan

August 2016

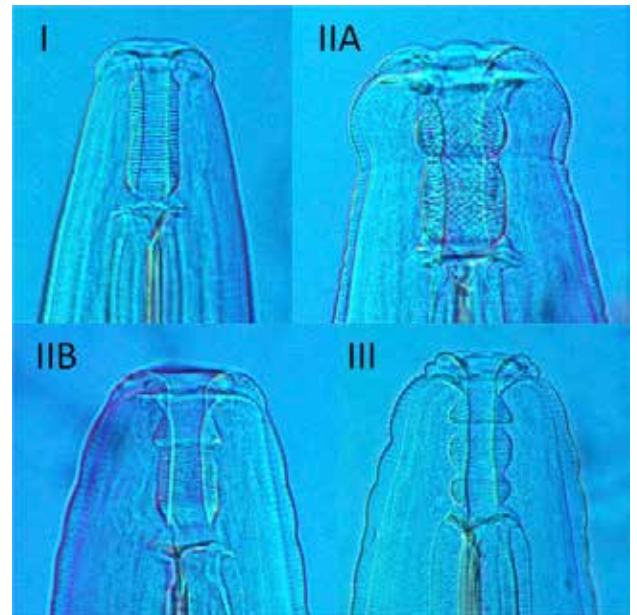
5:2

Detection of cryptic species of *Rugopharynx* (Nematoda: Strongylida) from the stomachs of Australian macropodid marsupials

Neil B. Chilton, Florence Huby-Chilton, Anson V. Koehler, Robin B. Gasser, Ian Beveridge

On the benefits of systematic reviews for wildlife parasitology

Neal R. Haddaway, Maggie J. Watson



Morphological buccal capsule types in the genus Rugopharynx. I, simple cylindrical buccal capsule, R. macropodis; IIA, bilobed buccal capsule with subequal divisions, R. epsilon; IIB, bilobed buccal capsule with anterior lobe shorter, R. rufogrisea; III, trilobed buccal capsule, R. longibursaris. Image copyright Neil B. Chilton, Florence Huby-Chilton, Anson V. Koehler, Robin B. Gasser, Ian Beveridge .



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

Editors In Chief: Andrew Kotze & Kevin Saliba

Facebook: www.facebook.com/IJPDDR/

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

July 2016

Polymorphism in ion channel genes of *Dirofilaria immitis*: Relevant knowledge for future anthelmintic drug design

Thangadurai Mani, Catherine Bourguinat, Kathy Keller, Elena Carreton, Andrew Peregrine, Roger K. Prichard

Screening of the 'Pathogen Box' identifies an approved pesticide with major anthelmintic activity against the barber's pole worm

Sarah Preston, Yaqing Jiao, Abdul Jabbar, Sean L. McGee, Benoît Laleu, Paul Willis, Timothy N.C. Wells, Robin B. Gasser

August 2016

Effects of in vitro exposure to ivermectin and levamisole on the expression patterns of ABC transporters in *Haemonchus contortus* larvae

Ali Raza, Steven R. Kopp, Neil H. Bagnall, Abdul Jabbar, Andrew C. Kotze

ABC-B transporter genes in *Dirofilaria immitis*

Catherine Bourguinat, Hua Che, Thangadurai Mani, Kathy Keller, Roger K. Prichard

Closing dates for ASP awards

ASP Fellowships

9 January 2017

ASP Researcher Exchange, Travel and Training Awards & JD Smyth

29 September 2016

Bancroft-Mackerras Medal for Excellence

30 September 2016

John Frederick Adrian Sprent Prize

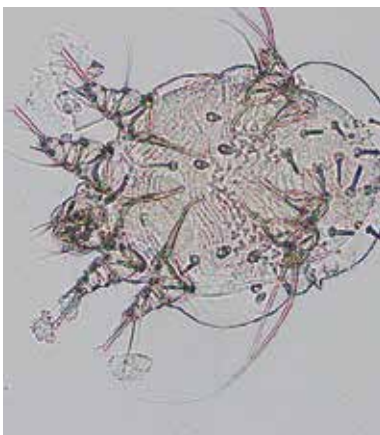
30 September 2016

More information
www.parasite.org.au

ASP Outreach Funding

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

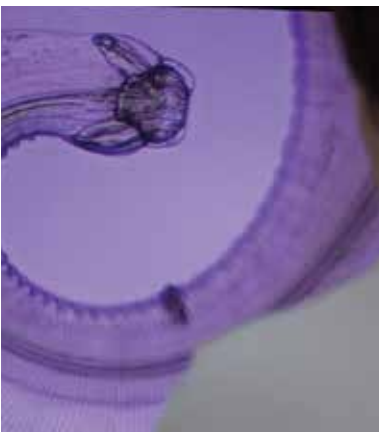
Submit your proposal to your ASP State/Territory Representative for consideration.



Over 25 experts
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Concepts ⁱⁿ Parasitology



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**27 November -
10 December 2016**

Australian
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University
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Campus

For more information, see our website
parasite.org.au/education/concepts-in-parasitology
or e-mail alex.maier@anu.edu.au



Concepts covered:

Evolution,
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Immune responses,
Diagnostics,
Bioinformatics
and many more



National Science Week 2016

Lisa Jones was awarded a Commonwealth of Australia National Science Week grant through the Department of Industry and Science for two events at The Tanks Arts Centre; **Café Scientifique: Science, Music & Art – All in the Mind** on Tuesday 16th August and **Pecha Kucha Night Cairns** inspired by science on Wednesday 17th August.

When hip-hop singer Naomi Wenitong woke up from a coma three months after being pronounced dead in a car accident it was her bushy eyebrows that shocked her, not the multiple fractures in her face or her complete loss of memory.

"My eyebrows were a mess, but my nails were amazing so I had to get on the phone to my sister and ask her what she had been thinking," Naomi laughed.

The accident and Naomi's incredible recovery from a brain injury made national headlines as the Indigenous performer had shot to fame as part of the ARIA chart-topping duo Shakaya in 2002.

Naomi relived her often hilarious story and share her music through this National Science Week event that tackles the serious issue of brain injury through science, art and music. Professor Alan Nimmo from James Cook University interviewed Naomi, delving into the science of our minds at Café Scientifique. Professor Nimmo also discussed his groundbreaking research on a drug to stop the brain swelling after a head injury. **Dr Kate Miller**, ASP member from James Cook University gave a wonderful talk on toxoplasma describing the parasite as a "puppetmaster". Dr Tasmin Rymer and Dr Ernest Jennings gave talks about a person's perception of pain and bizarre animal behaviour.

This National Science Week event also featured **Brainwave**, an interactive art piece created by JCU Creative Media Unit staff and students, that uses visual arts and multimedia to connect the science of our minds with the research taking place around us.

PechaKucha Night featured ASP members **Denise Doolan and Alex Loukas** who gave wonderful 6 minute presentations about worms and vaccines along with four other James Cook University researchers presenting on bees, solar energy and climate change.



Images top (L-R): young parasitologists enjoying parasite craft table, Kate Miller "Parasite Puppetmaster"; middle (L-R): Alex Loukas, the crowd enjoying Cafe Scientifique; bottom Alan Nimmo and Naomi Wenitong

Outreach

Andy Thompson and Alan Lymbery at Murdoch University have developed a project in partnership with the Eastern Metropolitan Regional Council of WA to raise awareness among the general public about 'One Health' as it applies to urban wildlife.

The project is supported by a LotteryWest grant of almost \$200,000. The project, called 'Healthy Wildlife Healthy Lives' aims to educate the community about 'One Health' focusing on human and domestic animal's contact with wildlife in urban areas. The hope is that this will help the community to interact positively with wildlife and protect and conserve the environment for the benefit of both wildlife and people. The project will initially focus on Perth's Eastern Region and will involve the community in the creation of an innovative, low cost and sustainable model of community education, including a dedicated website. The project will work closely with voluntary wildlife organisations as well as the Department of Parks and Wildlife and local veterinarians. Once developed, the project is expected to be applied beyond Perth's Eastern Region.

Many One Health projects in Australia have focused on the transfer of diseases from animals to humans and the public health consequences rather than the transfer of diseases from humans to animals and

the consequences for wildlife health and conservation. This new and innovative project will seek to address this gap. The project will be concerned with a number of parasites such as *Toxoplasma* and *Giardia* and how human activities can transmit infections to wildlife such as backyard feeding. The project will also educate the community about the important impact humans have on the environment and native animals, for example, releasing invasive fish species like goldfish into waterways that then not only compete with native species of fish, but also transfer new parasitic diseases to native species.

Outreach activities will be a major feature of the project, with community workshops held in the urban area. The first of these was held a few weeks ago with presentations from Alan, Alison Hillman and Andy. It was well attended and there was considerable interest from the public about which native animals are at risk from human activities, what parasitic diseases humans can inadvertently give to wildlife, and the threat of invasive species.



Above: Alison Hillman, Alan Lymbery and Andrew Thompson of Murdoch speaking to a community group in Perth about the importance of One Health.

Below: Year 12 hands-on parasitology workshop at 'A Day in the Life of a Murdoch student.'

The Parasitology Group at Murdoch present a hands-on workshop to 43 Year 12 students.

The Parasitology Group hosted 'A day in the life of a Murdoch University student', with Parasitology representing the Biomedical Sciences at this event. The session was the most popular of all those offered at the university, hosting 43 year 12 students from a range of high schools for a 1 hour hands-on workshop on parasitology. A ten minute talk was given by Dr **Amanda Ash** introducing the students to parasites and their importance. The students then worked through a series of microscopes in the laboratory, with a range of real parasite specimens to examine, including a flea identification station, whole specimens of gut and heart tissue containing worms, and

microscope slides of malaria, trypanosomes and histology sections of flukes and cysts.

The students seemed engaged for the hour-long workshop, and many were suitably grossed out and fascinated by the specimens on offer.



Outreach continued

Jessica Johnson-Mackinnon reports on an event for children between 5 to 10 year old at the University of Tasmania's Institute for Marine and Antarctic Studies Open Day.

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 foam sheets, pre-cut in the body shape of the four parasites, which kids could decorate with a wide variety of materials including glitter glue, pom poms, pipe cleaners, gems and markers. Once completed the

parasites were mounted on wooden dowels which allowed them to be used as fancy dress masks and taken home by the children.

In addition to making parasites, there was a colouring station with cartoons of the four different parasites and information on how they affect their fish hosts. At another station, children could look at labelled

plasticine models of each parasite to learn more about their anatomy and shape. Included in this station and new this year was "build a parasite" where kids were given lego kits and asked to build a parasite and draw a picture of where it would live. Finally, if kids completed both the colouring and mask making activity, they were given the opportunity to play a fishing game. 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. Also some parents participated with their children to make their own parasites, or

interactive participation in activities helped to foster curiosity about parasitology. Being able to take parasites home will help them retain the information and hopefully share the knowledge with other family members. The ASP logo was printed on all colouring sheets and informational signage used to draw in participants. Additionally a large ASP banner was on display at the Aquatic Animal Health station amidst all of the activities. We received very good feedback

from the visitors and from UTAS staff regarding all of the activities.



to help the younger ones. 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. Many of the resources created will be available for future events including the fishing game, colouring sheets and posters. This event was advertised by UTAS as part of the Open Day. Many children experienced their first exposure to fish parasites and clearly demonstrated the absorption of their new knowledge. The

Left: Craft corner where kids got a chance to decorate and colour in the parasites that they were learning about!

Right: Plasticine models and lego kits allowed the kids to learn about parasite anatomy in an engaging hands-on format.

Outreach continued

During May and June this year, eight Year 10 students from six Victorian country schools undertook parasitology-themed research projects for their work experience placements at GTAC, the Gene Access Technology Centre in Melbourne.

During May and June this year, eight Year 10 students from six Victorian country schools undertook parasitology-themed research projects for their work experience placements at GTAC. The projects enabled the students to immerse themselves for one week working in an authentic research environment. The students collaborated with practising parasitologist, Mackenzie Kwak (AgriBio, LaTrobe University) and educator, Tony Chiovitti (GTAC) exploring the phylogenetics of parasitic ticks of birds and platypuses. For their analyses, students used scanning electron and optical microscopy to collect morphological data, as well as generating DNA barcode sequences from their specimens. During the placements, Dr Abdul Jabbar, a Senior

Lecturer, took the students on a tour of the parasitology labs at the Faculty of Veterinary and Agricultural Science, University of Melbourne. The tour gave students insights into the burden of parasitic disease in companion animals and Australian livestock.

The students provided glowing feedback of their experience at the conclusion of the placements. For example, one student wrote: "I learnt so much but even though we focused on ticks, it wasn't all about ticks. I learnt about genetics, bioinformatics, morphology, chemistry, taxonomy and parasites. I also met some really nice, like-minded people who all had a passion for science." (SK, Year 10,

Wangaratta High School).

Coming up in August, GTAC will be hosting the Parasites in Focus student program for more than 90 students from 10 Victorian schools. This is followed by a fortnight of GTAC's DNA Barcoding program in which ~250 VCE Biology students will generate DNA sequences to explore tapeworm phylogenetics. Both programs are run in collaboration with the Australian Society for Parasitology.



ASP Undergraduate Student Prizes

Federation University

David Piedrafita presents Callum Tate with the ASP Award for Best Performing Student in Animal Health and Management at Federation University.



University of Sydney

At the University of Sydney's Faculty of Veterinary Science Student & Alumni Awards Reception at MacLaurin Hall, July 2016, David Emery, President of the ASP, presented the Society's ASP Parasitology prizes to the 2016 recipients. Pictured below (L-R) with David are Jessica Agius (Animal & Veterinary Biosciences) and Dominique Chan & Rosemary Davis (both Veterinary Science)



\$400 Undergraduate Prizes

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

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

Researcher News

Charles Sturt University's Shokoofeh Shamsi and PhD student Thomas Williams happily escaped some of the coldest days in Wagga to attend the 12th European Multicollloquium of Parasitology (EMOP) in Turku, Finland.

Shokoofeh Shamsi, from CSU's School of Animal and Veterinary Sciences was invited to Chair a scientific session on Taxonomy and Phylogenetics in the 12th European Multicollloquium of Parasitology (EMOP). EMOP is held every 4 years. This year the conference was held in Turku, Finland. Turku is where the Scandinavian-Baltic Society for Parasitology was founded in 1966, half a century ago and some of the great names of parasitologists come from Turku.

On July 19th, Shokoofeh and PhD student Thomas Williams happily escaped some of the coldest days in Wagga and arrived in Turku in a beautiful sunny summer day to attend the conference.

With the motto of "parasites are forever" there were some excellent and novel topics in the conference such as Alien Species in Parasitology or Paleoparasitology.

Thom gave an oral presentation covering some of the outcomes of his PhD project on Buffalo Production Systems in Pakistan and Australia. Shokoofeh represented ASP, CSU and Graham centre for Agricultural Innovations by giving two oral presentations on emerging foodborne parasites, including:

- Infection with tongue worms in Australian livestock and wildlife
- Revision of emeraina foodborne

parasites in Australia

Shokoofeh also presented 4 posters which

were collaborative works with Honours and Master students as well as international collaborations, including:

- Parasites of edible fish in New Caledonian waters
- Australian cormorants and their role in transmission of seafood borne parasites
- A revised method for detection of parasites in seafood
- New species of zoonotic parasites in edible fish from Persian Gulf

In addition to the scientific session EMOP hosted the First International Parasite Film Festival where Shokoofeh on behalf of the Australian Society for Parasitology presented "Gula Guri mayin" (which means "Heal the body"), one of the outcomes of the partnership of the society with a group of artists in Far North Queensland. To find out more see: <http://parasite.org.au/outreach/gula-guri-mayin/>.

The movie was well attended by a good number of spectators.

Interestingly there is also a movie called "Gula gula" (which means hear the voices of the foremothers) by the Norwegian Sami artist and musician Mari Boine Persen.



Top: Thomas Williams presenting his work

Bottom: Shokoofeh and Prof Antti Oksanen, Head of Research Unit, Finnish Food Safety Authority Evira (Conference organiser)

Researcher News continued

Two trips to Asia by researchers from the University of Melbourne.

Rebecca Traub spent a week in Roveing District, northeast Cambodia training laboratory technicians for an upcoming hookworm efficacy trial that is being carried out in collaboration with the National Centre For Parasitology, Entomology and Malaria Control, Cambodian Ministry of Health and the Swiss Tropical Medical Institute, Basel.

The experience was highly enlightening for Rebecca, who feels she got her research in tropical parasitology 'mojo' back.

Marshall Lightowlers travelled to Nepalgunj in Nepal as part of his involvement with the Global Alliance for Livestock Veterinary Medicines (GALVmed) which is facilitating commercialization of the University of Melbourne's TSOL18 vaccine against *Taenia solium* infection in pigs. Use of the vaccine has the potential to reduce *T. solium* transmission and reduce the incidence of human neurocysticercosis. In Nepal, Marshall worked with staff of the NGO Heifer, as well as students from the Institute of Agriculture



and Animal Science at Tribhuvan University, to undertake detailed necropsies on 110 pigs purchased from Dalit communities in the area. The necropsies provided baseline data on *T. solium* infection levels prior to implementing treatment of pigs with the TSOL18 vaccine and oxfendazole. Almost a third of the pigs were found to be infected with *T. solium* cysts, some with very heavy infections.

The experience was highly enlightening for Rebecca, who feels she got her research in tropical parasitology 'mojo' back.

Above: Rebecca Traub in Cambodia

Below: Marshall Lightowlers with children in a rural area in the Nepalgunj region of Nepal.



Researcher News continued

Images from Marshall Lightowlers visit to Nepal

Top left and bottom: Undertaking necropsy assessment of *Taenia solium* infections in pigs in Nepal.
Top right: Pork meat from an animal infected with *Taenia solium*



News from the ASP Network for Parasitology

Welcome

Conference News

We are looking forward very much to seeing everyone at the ASP's Annual Conference, being held in conjunction with the International Congress for Tropical Medicine and Malaria (ICTMM) at the Brisbane Convention and Exhibition Centre next week. It is sure to be a fantastic event and we hope that you will all visit us at the ASP Stall in the Exhibition Hall throughout the conference, where you can buy a souvenir t-shirt featuring the wonderful painting Gula Guri Mayin for \$25 (cash only).

Aside from an outstanding program of scientific presentations, there are lots of exciting events planned for the conference including these two, which you absolutely shouldn't miss:

The Opening Ceremony – everyone is welcome to this FREE event! Join us on Sunday 18 September 2016 at 4:30pm to kick off the Congress with a welcome from the Australian Society of Parasitology and Australasian Society for Infectious Diseases, together with a traditional Indigenous Welcome to Country, followed by four of our most illustrious and entertaining scientists Peter O'Donoghue, Michael Good, Charlene Willis, and David Jenkins talking about topical tropical medicine, the convoluted evolution of malaria vaccine strategies, and the many weird and wonderful parasites and the

scientists who love them!

Our Annual General Meeting will be held at the Queensland Museum, starting at 7:00pm, on Tuesday September 20, with food and drinks and your big chance to explore Parasites: A Life Undercover, an international exhibition of outstanding quality, which the ASP is sponsoring at the Queensland Museum until January 2017.

Thankyou to Shokoofeh Shamsi

A big thankyou to our NSW State Rep, Shokoofeh, for presenting "Gula Guri Mayin" and the ASP's Parasitology Art and Science movie <http://parasite.org.au/outreach/gula-guri-mayin/> at the European Multicolloquium of Parasitology in Turku, Finland in July

Parasitology Wins at the Eureka Prizes Again!

Continuing a fine winning tradition for parasitology at the prestigious **Eureka Prizes**, **Professor Leann Tilley, Dr Nick Klonis, Associate Professor Julie Simpson and Associate Professor James McCaw, from The University of Melbourne, took out the Australian Infectious Diseases Research Centre Eureka Prize for Infectious Diseases Research** for their key scientific discoveries leading to insights into how artemisinin resistance by the malaria parasite may be overcome.

Our congratulations also to several other finalists for this year's awards including: The Boddey, Sleebs and Cowman team,

Walter and Eliza Hall Institute of Medical Research, in the Australian Infectious Diseases Research Centre Eureka Prize for Infectious Diseases Research category for their research into determining how malaria parasites use a unique protein export pathway across the parasite's lifecycle, enabling collaboration with industry that is accelerating the development of a new antimalarial drug.

The SHIFT Team, a collaboration between Murdoch Childrens Research Institute, The Kirby Institute, St Vincent's Hospital, Menzies School of Health Research and the Fiji Ministry of Health that has produced a landmark study showing that mass drug administration with the oral drug ivermectin is highly effective in controlling scabies and related bacterial skin sores. SHIFT has transformed the global conversation on integrated programs for neglected tropical diseases. (Finalist in the Australian Infectious Diseases Research Centre Eureka Prize for Infectious Diseases Research category).

Professor Miles Davenport, Dr Deborah Cromer, Dr Mykola Pinkevych and, Dr David Khoury, Kirby Institute, UNSW; Professor Stephen Kent, Peter Doherty Institute, The University of Melbourne; and Dr Ashraf Haque, QIMR Berghofer Institute for their unique integration of mathematicians, computer scientists and physicists, in close collaboration with experimental scientists and clinicians, to develop a novel understanding of the 'mathematics of infection'. The team has used these insights to design and optimise treatment and vaccination for major infectious diseases. (Finalists in the UNSW Eureka Prize for Excellence in Interdisciplinary Scientific Research category).

Finally, don't miss the ASP JD Smyth Travel Award report from Hanh Nguyen in this edition of the Newsletter.

Cheers,
Nick and Lisa



Image of Leann Tilley source: the University of Melbourne

JD Smyth Travel Award: Hanh Nguyen

Hanh Nguyen from the University of Melbourne was awarded an ASP Network Researcher Exchange, Training and Travel Award to attend a training course in Malaria Experimental Genetics at the Wellcome Trust Genome Campus, UK in May 2016

I attended the Malaria Experimental Genomics course at the Wellcome Trust Genome Campus in Hinxton from 8th May to 14th May 2016.

The course was conducted by Julian Rayner, Oliver Billker and Marcus Lee. The course took place at the CL1 and CL3 teaching laboratory at the Sanger Institute under the supervision of the demonstrators. The course covers gene editing methods, malaria parasite transfection, genotyping, flow cytometry and RNA-sequencing analysis visualisation. There were presentations from international invited speakers from the United States, Europe and Australia as well as local speakers. While the topic discussed was broad, the focus revolves around the discussion of the conditional

stranded guide RNA and I successfully incorporate it into one of his pre-designed vector. This vector will be used as part of my project to generate edited bromodomain protein lines. Recently, I returned to my laboratory and aimed to set up an adaptable, efficient and easily operated CRISPR system for all of our members.

In addition, the course also focus on performing and comparing the difference between different eletroporation systems when working with *P. falciparum*, *P. berghei* and *P. knowlesi*. In my laboratory, we routinely use Biorad electroporation system for *P. falciparum* system which is cheaper to operate with relatively decent yield. However, the Biorad is inefficient for experiments requiring

course by Dr. Thomas Otto. Everyone was also provided opportunity to visit a loader, whose job is to set up the sequencing machine, and show us that Sanger Institute is truly a sequencing leading centre.

My project aims to generate bromodomain protein knockdown parasite lines to test the influence of bromodomain inhibitors on them. Dr. Marcus Lee is funded by the GSK to generate bromodomain protein knockout parasite lines with similar purpose; and through the course, we discussed the project where he suggested some insights that I will try incorporate into my project. It was a great place to study and talk to other experts in the field.



knockdown system used for different settings and experimental purposes.

The talks were particularly informative as students were provided chances to ask questions and discuss specific projects with the speakers during the talk or over the next few days of the course. Gene editing using CRISPR was one of the major themes for the course. Marcus Lee guided me to design CRISPR single-

multiple transfections. The Lonza (Amaxa) is better suited for this purpose as there is a plate format that can hold up to 96 transfections where each condition requires less input DNA. The electroporation is also gentler on the cells which may lead to better transfection yield. My laboratory is exploring Amaxa as an alternative option. Bioinformatic analysis such as RNA-sequencing analysis visualisation was also explained during the

I am most grateful to the ASP for providing me with this opportunity.

Images: Hannah in her lab;
course attendees at Hinxton

Events

Parasitology and Tropical Medicine (PTM) S.I.G Organised by the Australian Society for Microbiology Victorian Branch In collaboration with Doherty Institute

The annual meeting of PTM SIG for 2016 will be held at Doherty Institute Auditorium, 792 Elizabeth St, Melbourne 3000 (University of Melbourne) on Tuesday 16 Aug 2016, 6-9 pm

Program Meet and greet over Drinks/

9th Tick & Tick-borne (TTP9) Pathogen Conference, Cairns 2017

Planning for the 9th Tick & Tick-borne (TTP9) Pathogen Conference to be held in Cairns in 2017 is coming along well with 7 confirmed plenary speakers including some of our 'home grown' with Profs Steve Barker and Peter Irwin. The conference is being held in conjunction with the 1st Asia-Pacific Rickettsia Conference.

See conference website:
<http://www.ttp9-aprc1.com/>

Dinner: 6 – 7.30 pm (Chandra's curries are back!) Talks: 7.30 to 9 pm

1. Evaluation of protozoa PCR in Netherlands: Dr Bert Mulder (Netherlands)
2. Perils of a Peripatetic Pursuit: Dr Andrew Steer (RCH)
3. Other speakers TBA

Register through TryBooking
<https://www.trybooking.com/LXUT> OR
<https://www.trybooking.com/209423>



24 – 27 September 2017

SAVE THE DATE

2ND INTERNATIONAL
CONGRESS ON PARASITES
OF WILDLIFE (ICPOW2) 2017
Skukuza | Kruger National Park |
South Africa

1st announcement to follow

www.savetcon.co.za

Jobs

www.parasite.org.au/jobs/

Technical Assistant (Parasitology)



THE UNIVERSITY OF
MELBOURNE

**Pathobiology Section
Faculty of Veterinary and
Agricultural Sciences
The University of Melbourne**

Position 0041443

Classification

This position will be offered at either PSC 5 or 6, based on the candidates application, qualifications and experience.

Salary

PSC 5 : \$66,562 – \$76,454 p.a.
PSC 6 : \$77,207 – \$88,573 p.a.

Superannuation

Employer contribution of 17%

Employment type

Full-time continuing position

Other benefits

<http://about.unimelb.edu.au/careers/working/benefits>

Current occupant

Vacant

How to apply

Online applications are preferred. Go to <http://about.unimelb.edu.au/careers/>, under 'Job Search and Job Alerts', select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number.

Contact

Dr Abdul Jabbar
Tel +61 3 9731 2022
Email jabbara@unimelb.edu.au

Please do not send your application to this contact

Postdoctoral Position for Molecular Parasitologist / Systems Biologist



Walter+Eliza Hall
Institute of Medical Research

Mueller Lab, Population Health & Immunity Division, Walter+Eliza Hall Institute of medical Research

The Post-doctoral Fellow will be responsible for establishing the required laboratory and bioinformatics protocols for the transcriptomic analyses of field samples. In particular, s/he will be responsible for establishing single cell protocols (based on FACS sorting and/or DropSeq technologies) for transcriptomic analyses of individual sporozoites that were preserved at endemic sites in the Asia-Pacific. This part of the project will be done in collaboration with researchers in the Jex Lab and Sequencing Platform at WEHI. In addition, the post-doc will work collaboratively with specialist in human apoptosis (Huang Lab, Cancer and Haematology Division) to produce a lentiviral cDNA library from *P. vivax* sporozoites mRNA and screen this library for anti-apoptotic activity in human hepatocytes. The position will require close collaboration with endemic country scientist including the mentoring of PhD and MSc students and a willingness to spend time

working in the endemic countries.

Candidates should have a PhD in molecular parasitology or systems biology, with a solid knowledge of genomic, transcriptomic and/or analyses (DNA/RNAseq/ChIPseq and bioinformatics analyses).

The position will require a high degree of self-motivation and ability to work independently as well as a willingness to work in international collaborative environment (incl. spending time in malaria endemic countries and/or overseas laboratory). Previous experience in malaria or other tropical infectious diseases, single cell methodologies or high throughput screening would be beneficial but not a requirement.

This position is available for 2 years (with potential extension) starting in the last quarter of 2016 or 1st quarter of 2017. Salary is dependent on qualifications and experience. Up to 17% superannuation and attractive salary packaging options are available.

A position description is available at <http://www.wehi.edu.au/senior-research-officer-postdoctoral-scientist>

General enquiries can be directed to Professor Ivo Mueller- mueller@wehi.edu.au

Applications should include a Cover Letter, CV and the names of 3 professional referees emailed in pdf format to jobapplications@wehi.edu.au quoting reference WEHI/CAIM in the subject line.

**Application closing date: Sunday
23 October 2016**

State News

New South Wales

University of Sydney

Laboratory of Veterinary Parasitology @ McMaster Building

The University of Sydney's veterinary science is being transformed and we will farewell the Faculty of Veterinary Science at the end of the year. DVM teaching is keeping everyone busy especially because veterinary parasitology is no more as an independent unit but a component of clinically oriented modules within a larger unit called the Principles of Animal Disease.

Vicky Adeline-Morin has been awarded PhD! Fantastic news and well deserved! We are allowed to reveal that her imminent plans are to leave academia and cross to the evil (commercial) side. Vicki has been successfully working very closely with the local authorities in Seychelles and already has a big ball rolling to open her own veterinary and environmental diagnostic lab. By the time the newsletter comes out – she will hopefully (!!) have received her letter from the cabinet of ministers. So ASP watch the space!

Meantime, Prof **David Emery** continues

to process ticks for *Theileria*, but is eagerly awaiting the coming summer for more definitive hosts.

Jan Šlapeta as part of a team led by Dr **Rachel Grey** from USYD has been awarded the Hermon Slade Foundation grant – “Investigation and mitigation of reduced fecundity due to infectious disease in the endangered Australian sea lion, *N. cinerea*”. Hence some more work on our successful collaboration on parasitic diseases in sea lions, such as hookworm and cyst-forming coccidia.

Jan Šlapeta is expanding his collaboration with the Drs **Ondrej Hajdusek** and **Radek Sima** from the Laboratory of Tick Transmitted Diseases, Biology Centre v.v.i. Institute of Parasitology, Czech Academy of Sciences, Czech Republic. The collaboration is supported by the Dugdale Guy Peele Bequest from the Faculty of Veterinary Science.

Some years ago in 2011, ASP organised “Chromera conference and workshop at the Heron Island Research Station”. At that workshop Jan presented a talk on the other coral parasites and symbionts and highlighted the neglected *Ostreobium* alga that sometime steps into take the role of the usual zooxanthellae to feed to coral. A chat with Prof **Patrick Keeling** from UBC in Canada at the conference led to now published paper in prestigious *The ISME Journal* – a direct outcome of this conference. Thanks ASP.

del Campo J, Pombert J-F, Šlapeta J, Larkum A, Keeling P (2016). The “other” coral symbiont: *Ostreobium* diversity and

distribution. *THE ISME JOURNAL* [<http://dx.doi.org/10.1038/ismej.2016.101>]

Anthea Brennan has been awarded the Master of Science in Veterinary Science for her work on genotype diversity of *Toxoplasma gondii* in clinically healthy and diseased cats. Her paper has now been published in *Veterinary Parasitology*.

Brennan A, Donahoe SL, Beatty JA, Lindsay S, Belov K, Briscoe KA, Šlapeta J, Barrs VR (2016). Comparison of genotypes of *Toxoplasma gondii* in domestic cats from Australia with latent infection or fatal toxoplasmosis. *VETERINARY PARASITOLOGY* [<http://dx.doi.org/10.1016/j.vetpar.2016.06.008>]

Collaboration with Dr **Umberto Molini** from the Central Veterinary Laboratory, Namibia and Dr **Caroline Frey** from the Vetsuisse Faculty, University of Bern, Switzerland has led to rather unexpected discovery of a distinct African *Tritrichomonas foetus* causing abortion and infertility in Namibian cattle. So far all cattle *T. foetus* strains from US, Europe and Australia we studied were identical so we expected the African isolates will follow the suite. We do not know yet what are the implication of the novelty in Africa, but we are eager to follow up and find out!

Casteriano A, Molini U, Kandjumbwa K, Khaibab S, Frey CF, Šlapeta J (2016). Novel genotype of *Tritrichomonas foetus* from cattle in Southern Africa. *PARASITOLOGY* [<http://dx.doi.org/10.1017/S003118201600158X>]:



Above: Namibian bulls are host of a globally distinct *Tritrichomonas foetus* (bottom right – note the 3 anterior flagella; Giemsa stained). *Tritrichomonas foetus* causes infertility and abortion in cattle.

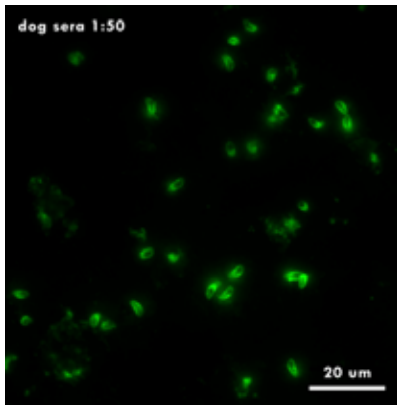
In August, we hosted Melbourne University's student **Sarah Sloan** to undertake serology of her Victorian dog sera for *Neospora caninum* using ELISA as well as IFAT. Sarah is supervised

Left: Vicky Morin-Adeline on the way around her home and, right, two of our recent PhDs, Vicky and Christie - Happy days!



State News continued

by Dr **Christina McCowan** (Victorian Department of Economic Development, Jobs, Transport and Resources) and Dr **Abdul Jabbar** (University of Melbourne). *Neospora caninum* causes late abortion in the final trimester of cattle pregnancy – a great concern to producers esp. if it manifests as an abortion storm (Trivia: The cattle pregnancy is 9 months). Dog is definitive host and sheds oocysts of *N. caninum* contaminating the pasture/feed. Finding dog that sheds oocysts of *N. caninum* is like looking for a needle in a haystack, but finding seropositive dog is not that difficult. Sarah's work is the most comprehensive serosurvey yet for Victoria.



Above: The immunofluorescence antibody test (IFAT) for the diagnosis of *Neospora caninum* IgG in sera of dogs. The conjugate if coupled with FITC hence shines bright green and nicely outlines the banana shaped tachyzoites of *N. caninum*.

Two new students joined our group. **Nichola Calvani** started her PhD on fasciolosis and **Karen Smith** an AnimalVet BioScience Honours working on tick borne disease molecular diagnostics.

55 year reunion of the final year Veterinary Science Class of 1961

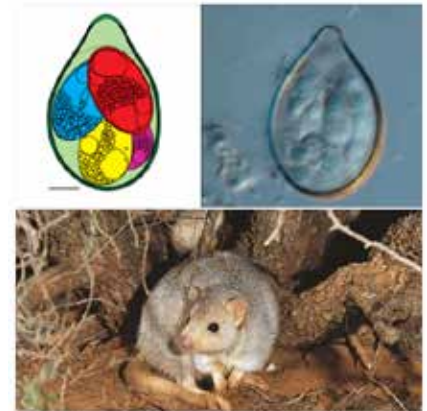
Recently a 55 year reunion of the final year Veterinary Science Class of 1961 at Sydney University was held in Sydney. Among the 39 graduates of that class 9 later made their mark in parasitology or related disciplines, or in veterinary education: Colin Carrig (Virginia-Maryland College of Veterinary Medicine, USA), Peter Claxton (NSW Department of Agriculture and Arthur Webster Pty Ltd), Keith Dash (CSIRO), Frank Doughty (NSW

Department of Agriculture), Geoff Ford (Institute of Medical & Veterinary Science, Adelaide), Jacob Malmö (University of Melbourne), Bob Ratcliffe (University of Sydney), John Plant (NSW Department of Agriculture) and Malcolm Smeal (NSW Department of Agriculture). There were only 4 women in the class of 39. Loma Nash, from South Australia, was their sole representative at the reunion and was elected to cut the celebratory cake that the Veterinary School provided for the group.



Above: The reunion group at the Veterinary School, Sydney University, on 16 May (excluding those who had gone off to lunch at Watsons Bay). Frank Doughty (left end front row), Keith Dash (centre middle row, looking left), John Plant (right end middle row, looking right) and Jake Malmö (centre back row, 4th from right with broad smile). Photo by Jake Malmö.

Last but not least. We are running a facebook campaign (www.facebook.com/UsydVetParasitology/) to help us name a new parasite species! It is coccidia from Burrowing Bettongs aka 'Boodies'. The Boodies are rather rare, with introduced species, such as foxes and feral cats, wiping them out in mainland Australia. So, if the Boodie is endangered, then their parasite is endangered too! Along with our fellow collaborators, The Taronga Zoo (<https://taronga.org.au/taronga-zoo>) and the Australian Wildlife Conservancy (<http://www.australianwildlife.org/sanctuaries/scotia-sanctuary.aspx>), in particular Dr Frances Hulst and Leah Kemp, we ponder what the followers will come up with? We are accepting names posted until the end of June, and then we will run a poll and pick the one with the most votes.



Above: the parasite that is looking for a new name (upper row). The lower image shows the boodie (courtesy of AustralianWildlife), that so far does not mind sharing the parasite with us.

University of Technology Sydney

Rory Gough, PhD student working under supervision of Dr **Joel Barratt** achieved paper of the month at the University of Technology Sydney for a paper recently published in Trends in Parasitology: DOI: <http://dx.doi.org/10.1016/j.pt.2016.05.014>. Well done Rory!

Charles Sturt University

Charles Sturt University's Shokoofeh Shamsi and PhD student Thomas Williams happily escaped some of the coldest days in Wagga to attend the 12th European Multicollloquium of Parasitology (EMOP) in Turku, Finland. (See the feature earlier in this newsletter)

State News continued

News from ASP members now overseas

Dr **Crystal Kelehear** now is working on a postdoctoral fellowship (George E. Burch Fellow in Theoretic Medicine and Affiliated Theoretic Science) with the Smithsonian Tropical Research Institute in Panama under the supervision of Dr Mark Torchin, studying parasites of cane toads in multiple native (Panama, Guyana, French Guiana, South Texas) and introduced ranges (Hawaii, Bermuda, Florida) and tying this in with the PhD research that she did on invasive cane toads in Australia. one of her recent publications is "The impact of lungworm parasites on rates of dispersal of their anuran host, the invasive cane toad". (Brown, G. P., Kelehear, C., Pizzatto, L. & Shine, R. (2016). *Biological Invasions* 18: 103-114)

Queensland

University of Queensland

QAAFI/CAS – Animal Biotechnology Laboratory

Manuel Rodriguez Valle and **Ala Lew-Tabor** together with the research activities of several students, just completed the ARC Linkage paralysis tick (*Ixodes holocyclus*) research project. We are awaiting on some commercial decisions with our exciting results – watch this space ! Ms **Sonia McAlister** obtained a First Class Honours degree from UQ for her project entitled 'Novel Immunotherapies against paralysis tick' completed June 2016. **Tom Karbanowicz**

sailed through his PhD confirmation which is all about novel biotechnologies applied in tick research eg. Proteomics and yeast display. Meat & Livestock Australia cattle tick vaccine trials continue with a forth tick challenge trial underway currently. Ala and Manuel are invited members of the International Cattle Tick Vaccine consortium (CATVAC) which was established following an initial meeting in Morocco in 2015 funded through the Bill & Melinda Gates Foundation. The meeting outputs were recently published in *Parasites & Vectors*: <http://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-016-1386-8> The CATVAC group consisting of 13 researchers from around the world from 11 Institutions (including UQ from Australia) aim to test their cattle tick vaccine antigens simultaneously in cattle trials to be undertaken in Morocco (~2017).

Department of Agriculture and Fisheries

Jess Morgan (DAF) has been collaborating with **Di Barton** (DPI) in Darwin to create morphological and genetic descriptions of infective pentastomid nymphs belonging to the family Sebekidae. A research article on their findings has recently been accepted by *Folia Parasitologica*.

Central Queensland University

Lee Barnett is mourning the loss of the only other ASP member on staff as **Richard Bradbury** has left CQU for more exciting work as Team Lead of the Diagnostic Parasitology Reference lab at the CDC, and who could blame him for that! She wishes him all the best for his new job, but is still trying to recruit new members to ASP so she isn't the sole ASP member on staff. Lee has finally cut back on some of her teaching

duties to try to get back into some research again, and is looking forward to catching up with friends at the ASP meeting in September.

Griffith University

Discovery Biology – Avery Laboratory

Dr **Amy Jones** attended the American Society of Microbiology Meeting in Boston, USA (held June 16th-20th) and Dr **Melissa Sykes** participated in the Global Challenges In Neglected Tropical Diseases Conference held in León (Spain) on July 13 to 15. They both gave oral presentations. Amy received a CASS travel grant and ASM travel award to attend the ASM and also was awarded an ASP travel grant to attend the EuPathDB Workshop in Melbourne from 15-19th Feb, 2016. Finally, Amy is participating in the 2016 Theo Murphy High Flyers Think Tank – An interdisciplinary approach to living in a risky world (Australian Academy of Science) to be held on 20-22 July in Canberra, which is sponsored by the Theo Murphy (Australia) Fund and administered by the UK Royal Society – go Amy!

Congratulations to **Bilal Zulfqar** – a PhD student in the Avery Laboratory – who has completed his confirmation of candidature. Bilal has also been awarded an ASP Student Conference Travel Grant to attend the International Congress for Tropical Medicine and Malaria (ICTMM) in Brisbane in September.

Elsbeth Johnson joined Discovery Biology in May working in Malaria with **Sandra Duffy**. Sandra, **Sasdekumar Loganathan**, **John P. Holleran** and **Vicky Avery** have published a Nature Protocols article entitled "Large scale production of *Plasmodium falciparum* gametocytes for malaria drug discovery".

Fresh Science Southeast Queensland was recently held in Southeast Queensland and a big congratulations go to Amy Jones who won the Judges' choice at the event. This was a public science night where Amy presented 'New drug to fight neglected

State News continued

tropical disease' in the time it took a party sparkler to burn out! Fresh Science Southeast Queensland also ran a day of media and communication training at the University of Queensland.



Di Farmer @DiFarmerMP · 25m
#freshscience-encouraging our young scientists to tell their stories. Completely incredible. Rapping @LeanneEnoch

Above: Amy Jones at Fresh Science

Tropical Parasitology Laboratory

Megan Arnold from the Griffith University Tropical Parasitology lab, headed by A/ Prof **Kathy Andrews**, was awarded an Advance Queensland PhD Scholarship (\$45,000) to help facilitate links with industry partners during her PhD. Megan's project involves discovery and development of new prophylactic drugs for malaria. Megan recently spent a very productive week with her CSIRO collaborators at the Clayton campus in Melbourne learning about in silico tools for chemical compound profiling.



Above: Dr Andrew Riches (CSIRO), Megan Arnold (Griffith University) and Dr Simon Saubern (CSIRO).

MJ Chua, also carrying out her PhD in the Tropical Parasitology lab, was selected as a Griffith University representative to the International Student Research Forum in Beijing, China in June. MJ presented some of her work on investigating HDAC inhibitors as anti-parasitic agents, networked with students from around the world and visited the amazing Great Wall of China during this visit.



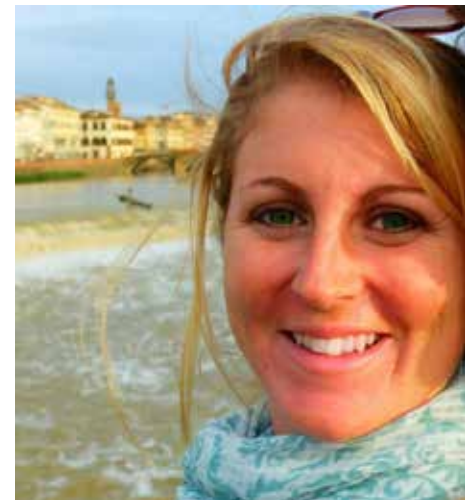
Above: MJ Chua presenting at the International Student Research Forum in Beijing.

Her findings will assist the salmon industry in planning future management and mitigation strategies in order to maximize fish welfare and production performance. Tina is doing her PhD at the Institute of Marine and Antarctic Studies University of Tasmania and is co-supervised by Assoc Prof Tim Dempster (University of Melbourne), Dr Phil Crosbie and Prof Barbara Nowak (both University of Tasmania).

Tasmania

The University of Tasmania

PhD student **Tina Oldham** won 'FRDC student presentation award' at the joint NZMSS and AMSA conference in Wellington, New Zealand 4-7 July 2016 for her talk on the occurrence and implications of hypoxia in Tasmanian Atlantic salmon cages – biological and environmental influences. Her work explored the heterogeneity of dissolved oxygen in production cages, and demonstrated the production performance implications of observed fluctuations. With warmer than average summer waters increasingly common in Tasmania, a global hotspot of sea temperature increase, farmers are reporting more frequent problems with low dissolved oxygen events ranging from reduced feed intake to sudden mortality.



Above: Tina Oldham

In June this year, Prof **Barbara Nowak** presented an update on Amoebic Gill Disease research at Gill Health Initiative meeting at Stirling University, Scotland. The meeting was attended by researchers and industry from Europe, Australia and Chile. At the University of Copenhagen she delivered a fish histopathology workshop focusing on fish parasites in sections and effects of pollution on fish histology. The participants were from University of Copenhagen, Aarhus University and Copenhagen Aquarium. This workshop was part of collaborative research on health of fish from Greenland. Prof Christian

State News continued

Sonne from Aarhus University, Denmark is the leading this project.

Next Fish Histopathology workshop will be run at University of Tasmania in Launceston on 22 November (Introduction to Fish Histopathology) and 23-25 November (Fish Histopathology Workshop). For more information please contact B.Nowak@utas.edu.au



Above: Fish Histopathology Workshop participants Copenhagen May 2016

Victoria

La Trobe University

Terry Spithill has commenced working as a Emeritus Prof at La Trobe.

Terry Spithill, Travis Beddoe Glenn Anderson and **Rob Dempster** won an ARC Linkage grant 2016-19 for fluke vaccine work with Virbac

Terry's group also won a grant from Gardiner Foundation/Dairy Australia 2016-17 for fluke ecology and drug resistance work in dairy cattle in Victoria

Prof **Mike Stear** arrived at La Trobe in June as an AgriBio Professor. He is an immunogeneticist in parasitology from Univ Glasgow first class scientist will be a new ASP member.

The University of Melbourne

Gasser Lab

Clare Anstead has joined Robin Gasser's team, accepting the position of lecturer in Parasitology that was advertised earlier this year.

Clare is a PhD graduate from the Chilton Parasitology laboratory at the University of Saskatchewan (Thesis: Comparison of the Ticks and Tick-Borne Bacteria of Small Mammals in Western Canada), and joined the Gasser Parasite Genetics and Genomics laboratory, Faculty of Veterinary and Agricultural Sciences as a Postdoctoral Research Fellow in 2014. Her research expertise includes ectoparasite identification, parasite population genetics, parasite microbiome analyses, and parasite genomics. In her current research, she is working on the assembly and annotation of genomes and transcriptomes of parasites of major socioeconomic importance, with a major systems biology focus. Specifically, she is working on post-genomic investigations of the recently published genome of *Lucilia cuprina*, the Australian sheep blowfly.

Clare is passionate about teaching and will be involved in the delivery of the Veterinary Parasitology units within the Infections Population and Public Health subject to the DVM2 and DVM3 students. In her "free" time, Clare enjoys travelling and spending time with her partner and their three dogs, Louis, Taya and Elliott.



Above: Clare Anstead

Traub Lab

Rebecca Traub spent an enlightening week in Roveing District, northeast Cambodia. Rebecca's trip is featured earlier in this newsletter.

Ngoc Dinh Nguyen a PhD student under the supervision of Rebecca just returned from a traineeship with the Centres for Disease Control, Atlanta on immunodiagnostic techniques for *Taenia solium* cysticercosis. Dinh is working on the epidemiology of pork-borne parasitic zoonoses in the central highlands of Vietnam.

Lightowlers Lab

Marshall Lightowlers travelled to Nepalgunj in Nepal as part of his involvement with the Global Alliance for Livestock Veterinary Medicines - another trip featured earlier in this newsletter.

Marshall and **Charles Gauci** were co-authors on a seminal paper published in the New England Journal of Medicine on 16th June. The paper describes the elimination of *Taenia solium* transmission in the northern Tumbes region of Peru. The intervention involved a number of measures, one of which was their TSOL18 vaccine for pigs.

http://www.nejm.org/doi/full/10.1056/NEJMoa1515520?query=featured_home

Centre of Animal Biotechnology

The seminar "Cystic echinococcosis in Chile, advancements in control and diagnostics" held in Santiago, Chile on the 21-22 January 2016, organized by Dr. **Cristian Alvarez** and collaborators in Chile attracted around 140 people, including a broad range of influential partners from academia, stakeholders and public health workers. Laureate Professor Marshall Lightowlers and Dr. Francesca Tamarozzi were the keynote speakers. One of the positive outcomes of the seminar was the establishment of the "Study group

State News continued

for Cystic Echinococcosis in Chile” which will continue working in the analysis, research and proposals for the control of the disease in Chile.

The meeting provided a perfect opportunity for interaction between academia and government authorities to:

- contribute to the knowledge of the activities included in the control programs currently existing in Chile
- discuss the new strategies for the control of the infection, including the use of the EG95 vaccine with international experts
- promote future research and foster collaborations resulting in joint proposals.



Above: from left to right: Dr. Fernando Fredes, Dr. Marisa Torres, Dr. Sandra Cortes, Dr. Francesca Tamarozzi, Dr. Rodolfo Paredes, Dr. Cristian Alvarez, Laureate Prof. Marshall Lightowlers and Dr. Gerardo Acosta-Jamett.

The Peter Doherty Institute for Infection and Immunity

The Doherty Institute, a joint venture between The University of Melbourne and the Royal Melbourne Hospital, is a Grand Challenges Explorations winner, an initiative funded by the Bill & Melinda Gates Foundation. Professor **Stephen Rogerson**, Laboratory Head will pursue an innovative global health and development research project, titled Ultra-Sensitive Non-Invasive PoC Immunosensor for Malaria.

Grand Challenges Explorations (GCE) funds individuals worldwide to explore ideas that can break the mold in how we solve persistent global health and development

challenges. Professor Rogerson's project is one of more than 40 Grand Challenges Explorations grants announced today by the Bill & Melinda Gates Foundation. To receive funding, Professor Rogerson and other Grand Challenges Explorations winners demonstrated in a two-page online application a bold idea in one of five critical global health and development topic areas.

Monash University

Dr **Teresa Gil Carvalho** from the Doerig Laboratory, recently attended the BioMalPar conference in Heidelberg, Germany (May 2016). She gave two presentations (one being a selected talk for a poster presentation) at this conference. Dr Carvalho also visited the lab of Prof Katja Becker at Giessen University, Germany and the lab of Prof Lang in Tübingen, Germany to establish new collaborations. These lab visits were funded by the Australia-Germany Joint Research Cooperation Scheme (awarded to K. Becker and C. Doerig labs) and a travel award from the Biomedicine Discovery Institute, Monash University.

Dr **Teresa Gil Carvalho** was recently recruited by La Trobe University as a Lecturer in the Microbiology Department. It's a T&R position that she will start in January.

Walter & Eliza Hall Institute

Dr **Alyssa Barry** from the Population Health and Immunity Division at WEHI, recently attended the Genetic Epidemiology of Malaria (GEM) meeting in Hinxton, UK as an invited speaker where she presented her team's work on the Transmission Dynamics of *Plasmodium falciparum* and *Plasmodium vivax* in the South West Pacific. The conference was a huge success with many exciting talks including studies describing the basis of Piperaquine resistance, PacBio sequencing of *P. falciparum* isolates and methods for analysing relatedness amongst *Plasmodium* infections to track the spatial distribution of infections. She

followed up the conference with visits to the Institut Pasteur, Paris and University of Copenhagen where she met with leading malaria researchers and presented other work from her lab.

Abebe Fola (Phd student Barry lab, WEHI) published a breakthrough article on *Plasmodium falciparum* drug resistance published at New England Journal of Medicine.

Menard et al. 2016. A Worldwide Map of *Plasmodium falciparum* K13-Propeller Polymorphisms N Engl J Med 2016;374:2453-64.DOI: 10.1056/NEJMoa1513137

Western Australia

Murdoch University

Parasitology Group (Andy Thompson & Alan Lymbery)

The Parasitology Group has had a lot to celebrate recently, with **Alison Hillman** submitting her PhD thesis, and **Amanda Kristancic** and **Fran Jones** both passing the assessments of their PhD's! Congratulations!

We also recently celebrated **Andy Thompson's** official retirement date, which was celebrated in suitable style, including an *Echinococcus granulosus* cake, complete with egg and faecal cupcakes made by some very multi-talented lab members! Andy will continue to be actively involved in the groups' research activities, but without the administrative headaches!

State News continued



Stephanie Godfrey will be leaving the Parasitology group (and Australia!) at the end of the year, to take up a Lecturer in Zoology position at the University of Otago in Dunedin (New Zealand) in 2017. This exciting new post will see her continue her research into wildlife host-parasite ecology and the influence of animal behaviour (and social networks) on parasite transmission in slightly colder climates than she is used to! She looks forward to continuing to be an active member of the ASP from across the ditch!

Siew Mee Bong has started a PhD investigating the effects of climate change and infectious disease on the aerobic scope of freshwater fish, supervised by **Alan Lymbery**, **Stephen Beatty** and **Adrian Gleiss**. **Hosna Gholipour-Kanani** from the University of Gonbad Kavous, Iran, will be visiting Murdoch on a sabbatical in the second half of 2016, to study immune responses to parasitic disease in freshwater fish.

Andy spent a week with **Peter Deplazes** in Zurich earlier this year to finalise a thematic issue of *Advances in Parasitology* on *Echinococcus* and echinococcosis that they are editing along with **Alan Lymbery**. More recently Andy attended the BSP meeting held at Imperial College in London. Notable was the cost! Registration was about three times as much as ASP conferences and very little included in terms of social activities. When questioned about the cost, the main organiser said well we don't own our journal! Made me realise how lucky we are to have the IJP and the foresight shown by **Desmond Smyth** to ensure ASP retained the copyright.

Andy and Alan have developed a project in

partnership with the Eastern Metropolitan Regional Council of WA to raise awareness among the general public about 'One Health' as it applies to urban wildlife. (See the Outreach section of this newsletter for more details)

The Parasitology Group hosted 'A day in the life of a Murdoch University student', with Parasitology representing the Biomedical Sciences at this event. (This event is also featured in the Outreach section of this newsletter)

Department of Agriculture and Food Western Australia

Time are a'changin' for the DAFWA parasitology group, and unfortunately it's not for the better. State government budget stringencies have hit the Department hard, with most R, D and E functions being terminated or handed to industry organisations, and some hundreds of staff have been retrenched. Parasitology has not escaped, and our research and extension work has ceased. In the wake of the changes, **Brown Besier** left DAFWA in mid-July, though it's not entirely involuntary, as the clock was ticking after 42 years with one employer! He is not leaving parasitology, however, and will run a part-time consultancy, and still has an adjunct position with Murdoch University. Until then, a big effort is needed to complete a large report on an MLA-funded project, which has produced some significant new recommendations for worm control in prime lambs.

The sole bright spot is that DAFWA will continue involvement with the *Haemonchus* sheep vaccine, producing "Barbervax" at the Albany laboratory. Now in its second year of sales and with volumes expanding, production is in a mature phase and the Moredun Research Institute team (David Smith and colleagues) have largely handed manufacture to the DAFWA technical team. Jill Lyon will be at the helm for this, with Brown still in the background. However, whether the Albany diagnostic parasitology laboratory can also stay open is another matter. It's closure would

be bad news for the livestock industries, as this is the only lab in WA that provides some tests, and has the capacity for large sample numbers. Dieter Palmer is still on deck at Animal Health Laboratories in the DAFWA South Perth offices, though mostly in a non-parasitology research role. Better news regarding agricultural research and service funding evidently awaits a higher iron ore price, and better returns to state government coffers!

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