

NEWSLETTER

Volume 23 Issue No. 1 March 2012

From the President's desk

Dear Members,

Welcome to the Autumn Edition of the ASP Newsletter. Firstly, a reminder that the 2012 ASP Conference will be held in Launceston at the Tasmanian Country Club from 2nd-5th July 2012; the deadline for registration is 25 June 2012. There is an excellent line-up of international and national speakers, an exciting free public event "Parasites and Marsupial Conservation" featuring Tassie Devils, and a special "Christmas-in-July" themed conference dinner. As with previous conferences, support will be provided for ASP Student Members through the ASP Student Conference Travel Grant scheme. For those members who are considering bringing their family to Launceston local attractions of interest include trail rides or pony rides, Seahorse World, Platypus House, Tasmania Zoo (with Tassie Devils and Fairy Penguins), caves, Cataract Gorge, and Cradle Mountain.

Council is pleased to announce that Elsevier has given final approval for a second IJP sister journal, IJP-Parasites and Wildlife (IJP-PAW), dedicated to diseases of wildlife (ecology, conservation, biodiversity, and surveillance). Andy Thompson and Lydden Polley will be appointed as Co-Chief Editors for IJP-PAW. The rationale behind this journal, as noted by Andy, was that unless the aetiological agent(s) of disease are of zoonotic significance, impact on livestock or in zoo animals, they are not covered by Veterinary Parasitology, and thus there appears to be a real need for a journal in this space.

Of interest to members will be a new addition to the ASP website of a database of approximately 1600 images of parasites (mostly medical but some veterinary) ordered in their taxonomic groupings and including clinical and epidemiological information. This stunning collection was kindly donated by Dr. Robyn Pugh as a free resource for research and teaching, and derives from 3,000 Kodachrome slides collected by Robyn and her late first husband Professor Peter Boreham. A major focus is on diagnostic information - how to prepare parasites or the tissues that contain parasites for examination and then how to recognise the parasites - but there are many other potential uses for the images. This collection complements the fantastic and well established PARA-SITE interactive multimedia electronic resource developed by Professor Peter O'Donoghue and Lynn Pryor at the University of Queensland. Both can be accessed via links on the ASP website. In



related news, the "Parasites in Focus" exhibition which has been touring Australia for the past few years is now based at the Queensland Museum, Southbank, Brisbane. and we will let you know which dates it will be on display.

Members are reminded of the new Council policy to promote outreach regarding support whereby a sum of \$2000 per annum per state is available for seminars, symposia, group events, networking etc. Proposals are to be submitted for consideration by State Representatives. Initiatives should foster outreach by members and advance the field of parasitology.

In other news, Council has been investigating the possibility of hosting an Australia-based Parasitology Course for students and early career researchers, along the lines of the excellent Woods Hole Parasitology Course held in Maine, USA. Please contact Nick Smith (Nicholas. Smith@jcu.edu.au) if you have been involved in the Woods Hole course or similar courses, or University teaching, and are interested in helping Council convene this course.

Finally, note the dates for submission of applications for the ASP Network for Parasitology Researcher Exchange, Training and Travel Awards Scheme and OzEMalaR (Australia Europe Malaria Research Cooperative) Travel Award Funding Assistance: Friday 25 May 2012 (ASP Network) and Friday 13 July 2012 (OzEMalaR), respectively.

With best wishes

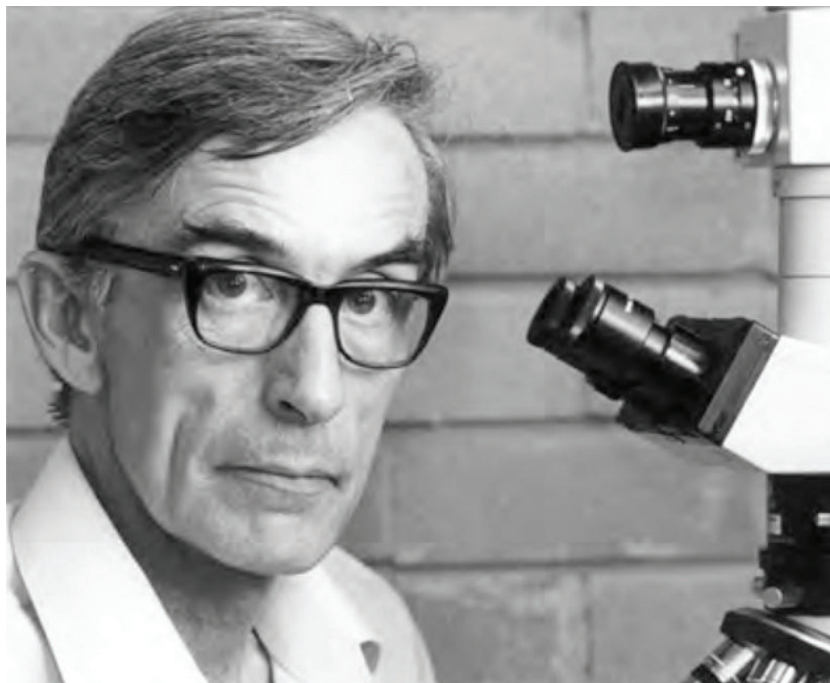
Denise Doolan

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Professor John Pearson

1927-2011



Professor John Pearson, Fellow of the Australian Society of Parasitology and Professor of Helminthology at the University of Queensland, passed away in October 2011. Professor Pearson was an international authority on trematode taxonomy and life cycles and wrote leading papers on the phylogeny of the Digenea.

John Cawardine Pearson was born in Toronto, Canada in 1927. While still at school, stirred by the gift of a microscope, John volunteered as a research assistant at the Royal Ontario Museum and it was here that he first witnessed cercariae, larval stages of trematode parasites, emerging from snails. After graduating from the University of Toronto (BA Hons, 1950; MA 1951), John pursued a PhD at the Ontario Research Foundation under Professor Murray Fails. John's doctoral dissertation, a detailed description of two diplostome trematodes of foxes and wolves, was published in 1954.

In 1956, encouraged by Professor John Sprent, whom he had known in Toronto, John came to the University of Queensland as the first Postdoctoral Fellow in Helminthology. Having told his mother that he would return to Canada within two years, John was in fact to remain at the University for the next 36 years. After a time as Lecturer and then Reader in the Department of Parasitology, the University bestowed on John a Personal Chair in Helminthology, a post that he held with great distinction at his retirement in 1992.

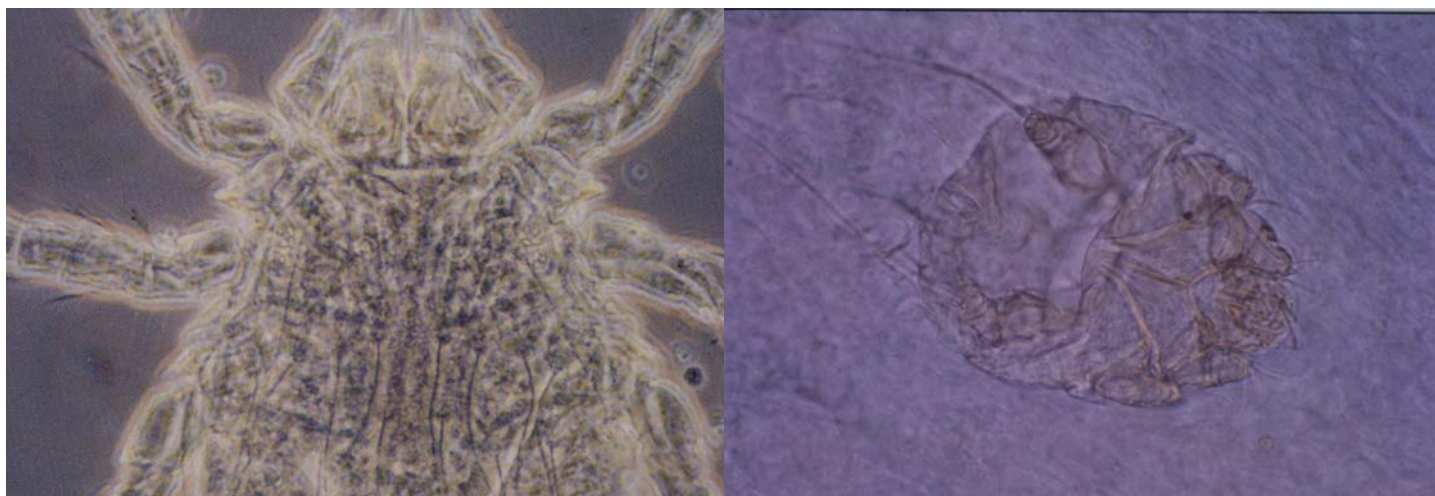
John published over 50 scientific publications. His 1972 paper "A phylogeny of life-cycle patterns of the Digenea" was, in the words of his student Professor Malcom Jones, "a highly influential study, displaying evidence of sound knowledge and deep thought." Twenty years later, John was still publishing and still a passionate advocate of scholarly rigour. He leaves, in the words of his friend and colleague Mike Howell, "a legacy of studies on trematode biology that will inspire students for years to come."

John will be remembered not only for his original research, but as a teacher and mentor. His former students speak of his generosity and gentlemanly manner. At UQ, he supervised the doctoral studies of a number of prominent parasitologists, including Malcolm Jones and Tom Cribb. A man of broad intellectual interests – he was widely read and fluent in several languages – he demanded from his students excellence both in observation and in their writing. Malcolm Jones writes of John:

"His own works were masterful works of literature and he felt that good science had to be communicated well. He told me that the noted author Somerset Maugham could take 3 months of full-time writing to complete a short story. If it took Maughan that long, then we, who are not naturally gifted writers, should also spend equal or greater times in presenting a work of science that would stand through the ages. His work will do this."

John has a special place in the memories of the Australian Society for Parasitology, who elected him to a Fellowship, an honour bestowed on few members. John will be sadly missed by those who knew him as a friend, colleague and teacher. John is survived by Margaret, his wife of 54 years, his three children Owen, Madeline and Jonathan and their families.

RE Pugh & PFL Boreham collection



Images copyright RE Pugh part of the RE Pugh and PFL Boreham slide collection. Left image *Trombicula autumnalis* and right image *Sarcoptes scabiei*.

Dr RE Pugh has made a stunning collection of parasite and other pictures available for research and teaching on the ASP website. This database contains a selection pictures collected by Dr RE Pugh and her late first husband Professor PFL Boreham.

Professor Peter Boreham had a distinguished career as a research scientist at Imperial College London including research in Africa notably on sleeping sickness and arthropod epidemiology, as a WHO consultant and research at the Queensland Institute of Medical Research (QIMR), Brisbane. This database contains some of this work. **Dr Robyn Pugh** (also known as RE Boreham) has worked as a scientist in pathology laboratories in Australia, Mt Hagen and Goroka Hospitals, Papua New Guinea and in a Laotian refugee camp, Ban Nam Yao in Thailand, lectured at the Queensland University of Technology, Brisbane, worked as a research scientist at QIMR and the University of Queensland and as a consultant parasitologist for Sullivan Nicolaides pathology firm, Queensland, Australia.

The database and website, developed by Robyn's husband Donald Keating, contains chiefly parasitic diseases of humans as well as some animal parasitic diseases, bacterial and fungal infections of humans and sundry other diseases. Many species are endemic to Australia but many others were from infections in travellers or residents from other countries especially PNG,

Thailand and Laos.

The aim of this slide collection is to assist in the diagnosis and research of parasitic and other diseases, particularly rare diseases. Robyn and Don wanted to provide a pictorial display of actual parasites with which to compare the parasites under investigation but, Robyn stresses, it is not meant to replace parasitology textbooks and atlases which provide full descriptions of all parasites and the diseases they cause including treatments. This is not intended to be a comprehensive collection of parasites, nor is the taxonomic classification complete.

"The slide collection is merely the parasites encountered during my work and that of Peter Boreham and which, I hope will be appreciated for their own intrinsic value as well. I find the study of parasites and their life cycles fascinating and hope that this collection will be useful to encourage others to continue studies in parasitology," said Robyn.

"The taxonomic classification I've used is a practical way of grouping the parasites which we encountered and in no way is meant to be comprehensive. Indeed, some of it may have become or will become superseded as taxonomic classifications change when more information is obtained about parasites' genomes, but hopefully the classification I have used is sufficiently useful to find parasites of interest," she said.

Robyn says that another useful way to find the parasites that interest you is to search according to infection site. She has focused on providing sufficient information to distinguish closely resembling parasites and also provide useful information to identify parasites, and in particular unusual forms especially of malaria parasites

which can present as aberrant forms because they have been affected by treatment, host responses, inadequate collection of specimens or preservation of specimens. Robyn refers to other texts in the bibliography below for more information.

To develop the parasite database Don Keating developed the software and loaded the Kodachrome slides into this database and Robyn described them. They consist of 1600 images, of mostly medical but also veterinary parasites, various clinical cases, epidemiological and research information. The main focus is on diagnostic information - how to prepare parasites or the tissues that contain parasites for examination and then how to recognise the parasites.

They are a part of 3,000 Kodachrome slides of parasites that Professor Peter Boreham and Dr Robyn Pugh collected from their work which I Robyn thought should be made available to all with an interest in parasites and ensure that this work is not lost.

The ASP would like to thank Dr Pugh for making this collection available for those interested in parasitology and human disease research.

The collection can be accessed from the ASP website www.parasite.org.au.

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RE Pugh & PFL Boreham collection cont...

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Student Prizes



ASP State Representative for NSW, Dr Jan Slapeta, presents the Australian Society for Parasitology Undergraduate Prize to Nicole Clothier of Macquarie University (centre). In a ceremony at the University of Sydney, Dr Slapeta also presented awards to Siaw-Yean Woon (left) and Sophia Morse (right.)

Closing Dates for Awards

ASP Network Travel Award (includes JD Smyth Award)

Friday 25 May 2012
Friday 5 October 2012

OzEMalaR Travel Award

Friday 13 July 2012
Friday 7 September 2012
Friday 9 November 2012

Bancroft-Mackerras Award

30 September 2012 (for award in 2013)

ASP Fellowships

9 January 2013

Visit the ASP website for more information

www.parasite.org.au

ASP MEMBERSHIP CHANGE OF ADDRESS

If you have changed your address, title or name; or if there is a mistake in your mailing label, please fill out the details below and send them to:

ASP Secretariat
1/9 St Georges Cr, Ashburton Vic 3147

Telephone: 0488139155
Email: Maureenengler@gmail.com

ASP Membership number.

Name as it appears on present mailing label (if possible, please enclose the old mailing label)

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Contact details for future mailing labels:

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Fish Parasitology at Lake Victoria

Four Australian parasitologists join a workshop in Kenya.

The **ASP** and the **University of Queensland** sponsored four parasitologists, **Tom Cribb, Ian Beveridge, Rob Adlard and Bob Lester** to join a Fish Parasitology workshop on Lake Victoria, part of a proposal developed with the **Kenya Marine and Fisheries Research Institute (KMFRI)** to build capacity in Kenya in fish parasitology and fish health. On February 5th we met with other participants from France, Congo and Kenya in Kisumu. It was not possible to use the facilities at the KMFRI research station so Dr Obiero, Executive Director of Osienala (Friends of Lake Victoria), offered us facilities and discount accommodation at his Mbita Tourist Hotel.

Fish for examination were caught by local fishermen in small gaff-rigged boats, parasitological methods demonstrated and parasites stored for further analysis. Of the parasites found, an unusual digenean from the urinary bladder of catfish has become the focus of a local project, Dr Scholtz, Czech Republic, has expressed great interest in the cestodes, and identification of parasites possibly valuable for separating stocks of Nile perch is underway. Monogenean and haematological results will be available shortly. Mr Caleb Ogwai, the KMFRI parasitologist, has since applied to Ausaid for a Ph.D. scholarship to study fish parasitology under Dr Cribb at the University of Queensland.

KMFRI staff keen to learn about fish parasites and aquatic disease were interviewed (by RJGL) in Mombasa and Kisumu. Two, Wilson and Abwao, conformed to the desired attributes for scholarship applicants specified by the Kenyan government and have since applied to Ausaid for master's scholarships for postgraduate work in fish health and related areas at the University of Queensland and the University of Tasmania. They were not permitted to join the workshop apparently because sufficient Kenya funds were not available. Before leaving for Kenya, we received a request that the workshop be rescheduled but this was not an option available to us.

Prof Aloo, Chair of KMFRI, has since requested Memoranda of Understanding (MOUs) be established between KMFRI, Moi University and the University of Queensland for training in fish parasitology and fish health

and this is being followed up. Prof Okeyo, Director of VIREO (Victoria Institute for Research on Environment and Development, Kisumu), is also very interested in developing a capability in fish parasitology and fish health assessment. He has prepared a long MOU between VIREO and UQ which is currently under review by the UQ Legal Office. An MOU in fish parasitology has also been proposed between Moi University and the University of Johannesburg through Prof Annemarie Oldewage who had originally hoped to be a participant in the workshop.

Because of financial and other obstacles in Kenya, the workshop was smaller than planned. Old hands shrug their shoulders and say by way of explanation, 'Welcome to Africa'. Tony Blair claims that 'Africa is on the move' (CEO Summit Africa, 19 March, 2012). From our experience, two steps forward are followed by one step back. With the ASP support, fish parasitology in Kenya is at least one step further along.

Below: Tom Cribb and Ian Beveridge on the shore of Lake Victoria 'spreading the word' to locals.





Clockwise from top-left:

Mbita main street – apparent chaos, after a few days the organised patterns of life and activity start to reveal themselves. This is a man-made causeway bounded on both sides by Lake Victoria and the centre for fish trade in this area.

Prof Ian Beveridge and Dr Rob Adlard at their high-tech fish dissection laboratory on the banks of Lake Victoria (Mbita, Kenya). In the background you can see the water pump used primarily for filling the header tank with water (and schistosomes?) for our showers at the Mbita Tourist Hotel.

Crossing an arm of Lake Victoria in a dhow on the way to Mbita after abandoning the vehicles (having neatly avoided the car ferry departure time). Emeritus Prof Bob Lester obvious in the second row on the right, Dr Antoine Pariselle (IRD, monogenean expert) in the cap immediately behind Bob.

Participants in the workshop, Caleb Ogwai (Kenya) and Fidel Bukinga (Republic of Congo) purchasing fish for dissection from the local Mbita fishermen who are just landing their catch.

News from the ASP Network for Parasitology

LAUNCESTON 2012 ASP ANNUAL CONFERENCE

We're looking forward to seeing you in Launceston for the 2012 ASP Annual Conference.

The 2012 ASP Annual Conference program is available to view online (<https://www.conftool.net/parasitology2012/sessions.php>) and includes an outstanding mix of quality international and Australian scientists, events for ECRs and the public, and the following themes and invited speakers:

Elsevier Lectures

IJP Lecture – **David Sacks** (NIH, Bethesda)

IJP DDR Lecture – **Ian Fairweather** (Queens University Belfast)

Fascioliasis

Carlos Carmona (Instituto de Higiene, Uruguay)

Terry Spithill (LaTrobe)

Grace Mulcahy (University College Dublin)

Marine Parasitology and Aquaculture

Stewart Johnson (Department of Fisheries and Oceans Canada)

Brian Jones (WA Fisheries)

Barbara Nowak (UTas)

Terry Miller (QLD Museum)

Malaria Immunology

James Beeson (Burnet)

Brendan McMorran (UTas)

Jennifer Reiman (Griffith)

State-of-the-Art Technologies

Simon Foote (UTas)

Geoff McFadden (UMelb)

Public event "Parasites and Marsupial Conservation"

Greg Woods (Menzies, UTas)

Ian Beveridge (UMelb)

Andrew Thompson (Murdoch)

Check the conference website <http://parasite.org.au/arcnet> for more information.

Parasites and Marsupial Conservation public event

Everyone is welcome to attend our free public event "Parasites and Marsupial Conservation" in the Country Club Tasmania Theatre, Mt Pleasant Room, Monday 2 July 2012 from 6 – 7pm. Pre-event drinks will be held in the Country Club Tasmania foyer from 545pm and the Conference Welcome Reception will be held in the adjacent Tonic Bar afterwards.

Events for Post-graduate students and Early Career Researchers

Rowena Martin (ANU) will run an evening Early Career Event "How to prepare your CV for different purposes" on Tuesday 3 July. Postgraduate students can participate in a Introductory Phylogenetic Systematics – from Sequence to Trees workshop, run by Terry Miller (Queensland Museum) and Jason Mulvenna (QIMR) will offer a Bioinformatics workshop. There will also be a Student breakfast "Grilling the experts - ten things you want to know but are too afraid to ask" will give students top tips to prepare for interviews, presentations, being an active audience participant, and how to make the most of social occasions at scientific meetings to the benefit of your career (how to "work the room") on Wednesday 4 July. Bookings are essential for all Student and Early Career Researcher events, please indicate on your registration form or contact the Conference Coordinator Lisa.Jones1@jcu.edu.au if you want to attend these events.

ASP Student Conference Travel Grant

Congratulations to the following 65 ASP students who applied successfully and were awarded a 2012 ASP Student Conference Travel Grant.

Harshanie Abeywardena, Amanda Ash, Gouri Banik, Kawthar Barkat, Dylan Hamilton, Adriana Gomez, Alex Brazenor, Mariana Brizuela, Julie Burel, Alice Butterworth, Timothy Cameron, Sarah Catalano, Sarah Charnaud, Vanida Choomuenwai, Candy Chuah, Stewart Dick, Timothy Elliott, Brendan Elsworth, Samantha Emery, Gillian Fisher, Christie Foster, Laura Gonzalez, Catherine Gordon, Andreas Greth, Katherine Harvey, Alison Hillman, Elinor Hurtle, Hong Huang, Fran Jones, Wan Koh, Melanie Koinari, Herng Leow, Yee Leow, Melissa Martin, Rachael McGeorge, Hamish McWilliam, Adebayo Molehin, Hugh Murray, Catarina do Carmo Norte dos Santos, David

Pattinson, Amanda Peers-Adams, Sarah Preston, Shiwanthi Ranasinghe, Sashika Richards, William Ritchie, Ranbir Sarai, Leigh Schulte, Sophie Schussek, Philippa Sharman, Yunliang Shi, Clare Smith, Felicity Smout, Yasmin Sultana, Robert Summers, Dulangi Sumnadasa, Marina Hsiang Hua Tai, Uli Terheggen, Erick Tjhin, Hayley Toet, Alejandro Trujillo, Hoai Dinh Truong, Grennady Wirjanata, Caroline Wohlfeil, Rina Wong, and Amanda Worth.

Grant winners have been advised about how to claim their grant. We look forward to seeing you at the conference. Don't forget you should be attending the student breakfast and ECR CV writing events and the ASP AGM.

Kids

Unfortunately we didn't have enough people interested to run Kids in Parasite Club but please contact Lisa if you are bringing your child/children to the conference (Lisa.Jones1@jcu.edu.au, 07-40421311) and I can let you know local child minding options. We will organise a babysitter and a movie room for children accompanying parents during the conference dinner on Thursday 5th July so please let Lisa know if you are bringing a child.

Tours around Launceston

You can pre-book a local tour through Bree Philpot at the Launceston Travel and Information Centre (bree.philpot@launceston.tas.gov.au) or book your tour on Monday 2 July at the registration desk, or indicate on your registration form. More details on the conference website advice page.

2012 ASP Invited Lecture Tours

Our 2012 ASP Invited Lecturers are:

David Sacks (NIH, Bethesda) who will visit Heinrich Korner (Menzies, Tasmania), Mal Jones (Queensland Institute of Medical Research), Jennie Blackwell (University of Western Australia) and Malcolm Mcconville (University of Melbourne) during his lecture tour.

Ian Fairweather (Queens University Belfast) who will visit Terry Spithill (Monash University) and Sheila Donnelly (University of Technology, Sydney) during his lecture tour.

Grace Mulcahy (University College Dublin) who will visit Wayne Hein (James Cook University, Townsville), David Emery and Rosanne Taylor (University of Sydney) and Neil

Young and Ken Hinchcliffe (University of Melbourne) during her lecture tour.

More details about visiting lecturer tours for 2012 will be posted on the ASP website, conference website and emailed to ASP members.

Congratulations ASP Network Travel Award winners

ASP Network Travel Award winners in the first round of the Award scheme for 2012.

Brioni Moore, Postdoctoral Research Scientist The University of Western Australia, based at the Vector Borne Disease Unit, Papua New Guinea Institute of Medical Research to attend 31st European Course in Tropical Epidemiology (ECTE) at Barcelona Institute for Global Health (ISGlobal) and the Barcelona Centre for International Health Research (CRESIB) in Barcelona, Spain.

Felicity Smout, PhD student, James Cook University for a Researcher Exchange to visit Murdoch University School of Veterinary and Biomedical Sciences Parasitology Section, Western Australia.

Michael Smout, Postdoctoral Scientist, James Cook University, for a Researcher Exchange to Belo Horizonte (Brazil) in Jeff Bethony's Lab testing STH treatment trial samples (four weeks) and San Diego (USA) obtaining parasite samples from Ray Kaplan (University Georgia.)

Jason Mulvenna, Queensland Institute of Medical Research, for a Researcher Exchange to support a visit from for peptide chemist Mercedes Maqueda, Professor of Microbiology at the University of Granada, Spain to the laboratories in James Cook University and QIMR to facilitate the development of such skills in Australian parasitologists..

The deadline for applications for the ASP Network Travel Awards in 2012 will be:

Friday 25 May 2012

Friday 5 October 2012

Congratulations ARC Discovery Early Career Research Awards

The total value of the latest grants and awards for Australian parasitologists is \$8.4 million.

Stephanie Godfrey, Murdoch University, for Using social network models to understand the factors driving parasite transmission in bettong populations

Darren Gray, The University of Queensland, for Transmission dynamics modelling of zoonotic neglected tropical diseases

Erinna Lee, The University of Melbourne, for Targeting cell death pathways in parasites

Kate Mounsey, University of the Sunshine Coast, for A porcine model to provide new insights on scabies immunopathology

Neta Regev-Rudzki, The University of Melbourne, for Export of effector proteins by *P. falciparum* to the infected red blood cell

Congratulations ARC Future Fellows

Norelle Daly, James Cook University, for Development of disulphide-rich peptides for drug design

Andreas Lopata, James Cook University, for Molecular and immunological approaches to managing Australia's seafood allergy epidemic

Sally-Ann Poulsen, Griffith University, for Development of small molecule primary sulfonamides as new drugs for malaria

Congratulations Fulbright Senior Fellowship

Alex Loukas is one of the 2012 recipients of a prestigious Fulbright Senior Fellowship; Alex will be travelling to the United States later this year, where he will spend 3 months working with Professor Phil Felgner at the University of California, Irvine, to further his work on developing a hookworm vaccine and anti-inflammatories based on hookworm proteins

Network Mentorship Scheme

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

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

Researcher News

\$USD1.05 million award to study liver-stage malaria

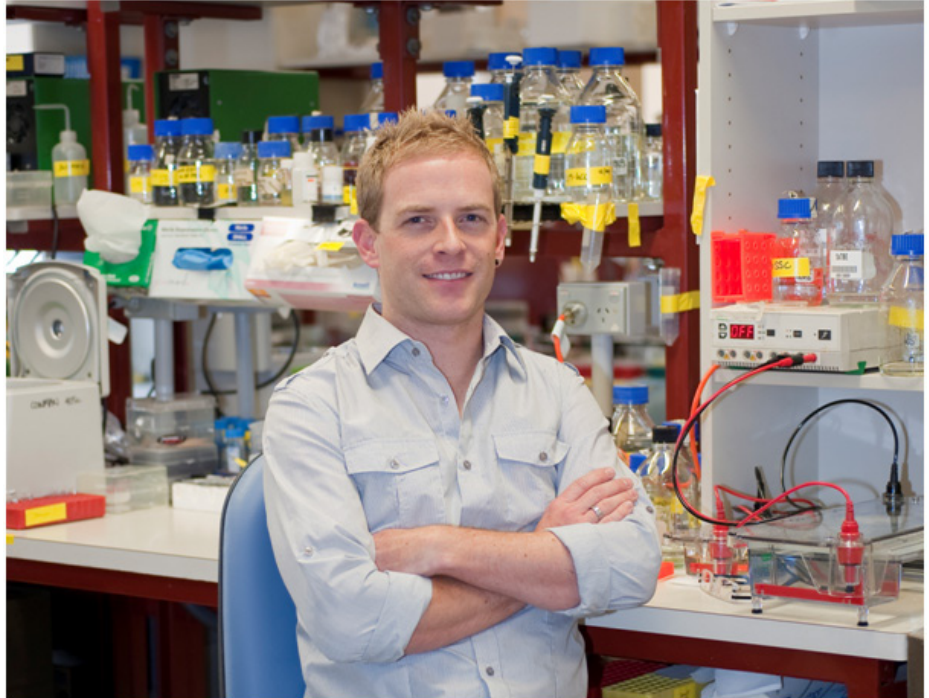
Dr Justin Boddey (WEHI) has won a \$1.05 million Human Frontier Science Program (HFSP) Young Investigators Grant to study the 'clinically silent' liver stage of malaria infection.

Justin studies the liver-stages of infection with *Plasmodium falciparum*, the most deadly form of malaria. The three-year HFSP grant will establish a collaboration between **Justin, Dr Rhoel Dinglasan** from the Johns Hopkins Bloomberg School of Public Health, USA, and **Dr Philipp Jost** from the Technical University of Munich, Germany.

Justin said the research team would study the proteins involved in the 'clinically silent' liver-stage of infection.

"Prior to the symptomatic blood-stage of malaria, parasites hide and develop in the liver," Justin said. "Within minutes of a bite from a parasite-infected mosquito, the parasites invade the liver. They develop here for about a week, before thousands of parasites erupt from the liver and infect the bloodstream, causing clinical symptoms. We are looking for proteins which are essential for parasite stealth in this early stage of infection, that could be a good target for new treatments or whole-organism vaccines to prevent malaria," Justin said

Every year more than 250 million people contract malaria and more than one million die, mostly African children. *Plasmodium falciparum* causes the most severe disease. He said a key to the success of *P. falciparum* infection was the parasite's ability to evade the immune system.



"The parasites develop in the liver without eliciting much of an immune response. Studies that have disarmed the liver-stage parasite through genetic mutation allowed the immune system to kill the parasites, which provided protective immunity against subsequent infection. Identifying proteins involved in the liver-stage of malaria is therefore very important for developing potential vaccines," Justin said.

"During the blood stage of malaria infection, parasites live in an isolated compartment in the cell and export several hundred proteins into it to 'renovate' it. Prior to this, parasites develop in a similar compartment in liver cells and we are interested in knowing whether the same mechanism occurs. It may be that liver cells are manipulated using the same parasite 'export

machinery' employed within blood cells," he said. The research team is particularly interested in investigating whether exported proteins protect the infected cell from stress and programmed cell death.

"Programmed cell death has developed during evolution to prompt the cell to 'self-destruct' when it becomes infected, cancerous or damaged. The ability to block the infected cell from suicide is closely linked to parasite survival and, thus, malaria transmission," Justin said.

Source WEHI website

http://www.wehi.edu.au/site/latest_news/USD1.05_million_award_to_study_liver-stage_malaria



Australian Government
Fisheries Research and Development Corporation

2013 Annual Competitive Round Call for Expressions Of Interest

The Fisheries Research and Development Corporation (FRDC) is calling for Expressions Of Interest (EOI) against the priority areas for RD&E investment nominated by the Fisheries Research Advisory Bodies (FRABs)/Subprograms/Coordination programs and their alignment with the FRDC's RD&E Plan.

Full details are available on the FRDC website. <http://www.frdc.com.au/announcements/2013-annual-competitive-round-call-for-expressions-of-interest>

Closing date: 22nd June 2012

Events



Parasitology & Tropical Medicine SIG Parasitology Masterclass

Adelaide 2013

Preliminary notice

Friday 1st March – Sunday 3rd March

Special guest: Lynne Garcia

Practical sessions, theory and updates - Make sure not to miss out!

www.parasitologymasterclass.org



25-29 August 2013

Perth Convention Exhibition Centre
Western Australia



24th International Conference of the World Association
for the Advancement of Veterinary Parasitology

12th INTERNATIONAL CONGRESS ON TOXOPLASMOSIS



Save the date

St. Catherine's College, Oxford, UK.

Saturday June 22nd to Wednesday June 26th 2013

Organised by

David Ferguson
Markus Meissner
Frank Seeber
Mohamed-Ali Hakiimi
Jonathan Wastling
Hansa Pertab
Gillian Murray

Supported by



Outreach Funding

ASP members are encouraged to apply for ASP funding to support outreach in their state. \$2000 per annum per state is available for seminars, symposia, group events, networking etc. Proposals are to be submitted for consideration by State Representatives. Initiatives should foster outreach by members and advance the field of parasitology.

Proposals are to be submitted for consideration by State Representatives.

News about Australia/Europe Malaria Research Cooperation

The **4th Molecular Approaches to Malaria Meeting 19 - 23 February 2012**, held at the Mantra Erskine Beach Resort, Lorne, Australia. MAM2012 was a huge success, scientific presentations focussed on the latest developments in malaria research, covering the spectrum in molecular advances from protein structure and single molecule imaging, cell biology and pathogenesis, right through to host immunity, systems biology and the latest developments in drug discovery/resistance and vaccines – all with an emphasis on cutting edge molecular approaches. The two focused workshops on systems approaches to malaria research, drug discovery, and strategies towards the development of a complete *in vitro* parasite lifecycle were very popular as was the Early Career Researcher Breakfast event. Media stories from MAM 2012 feature at the end of this news section.

"The theme for this year's **World Malaria Day 25 April 2012** - "Sustain Gains, Save Lives: Invest in Malaria" - marks a decisive juncture in the history of malaria control. Whether the malaria map will keep shrinking, as it has in the past decade, or be reclaimed by the malaria parasites, depends, to a great extent, on the resources that will be invested in control efforts over the next years." (source Roll Back Malaria Partnership www.rbm.who.int/worldmaliaday)

The **2nd Northern Australia Malaria Symposium** took place on Monday 23 April 2012 and was supported by Queensland Institute for Medical Research, Queensland Tropical Health Alliance and the Australian Society for Parasitology Inc.. Following the scientific program a free public forum on

malaria was held featuring Prof Tom Burkot, orchestrator of the Vector Control Development Network, from James Cook University.

Congratulations to our latest OzEMalaR Travel Award winners:

Hayley Bullen, PhD student, The Burnet Institute, Crabb/Gilson laboratory for a Researcher Exchange to visit University of Geneva, Soldati-Favre laboratory.

Dr Sarah Auburn, Menzies School of Health Research, Darwin, Crabb/Gilson laboratory for a Researcher Exchange to visit Wellcome Trust Sanger Institute, Cambridge, UK April 4th- 13th 2012 Sequenom genotyping in *Plasmodium* isolates and to attend a workshop at University of Leipzig, Leipzig, Germany March 17th- April 1st 2012 Programming for Evolutionary Biology.

Charlie Jennison, PhD student, Walter and Eliza Hall Institute, Barry laboratory for a Researcher Exchange to visit Sanger Institute, UK, Matt Berriman and Sutherland laboratory, LSHTM.

Dr Philippe Boeuf, Research Fellow, The University of Melbourne for a Researcher Exchange to visit Pr Hviid's laboratory (Surface team), Centre for Medical Parasitology, Copenhagen, Denmark

Dr Sarah Erickson, The Walter and Eliza Hall Institute of Medical Research, Cowman laboratory, for a Researcher Exchange to visit Imperial College London, Dr. Robert Sinden Laboratory, Centre for Clinical Malaria Studies, Nijmegen, The Netherlands, Laboratory of Dr. Robert Sauerwein, Leiden Malaria Research Group, Leiden, The Netherlands Dr. Chris J. Janse Laboratory, University of Glasgow, Scotland, Dr. Lisa Ranford-Cartwright Laboratory.

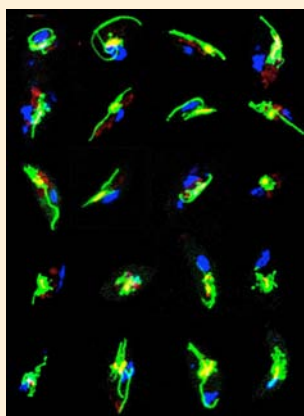
The closing dates in 2012 for OzEMalaR Travel Awards are:

Friday 13 July 2012
Friday 7 September 2012
Friday 9 November 2012

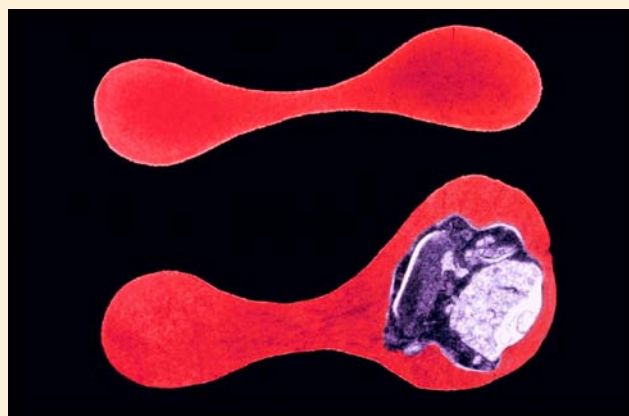
Visit our website www.ozemalar.org to find out how you can apply for **OzEMalaR Travel Awards** to support early career malaria researchers (PhD and postdocs) from Australia to work and be trained in top European laboratories within EviMalaR (= BioMalPar) for malaria research. To check which laboratories are eligible as hosts visit www.evimalar.org. Download funding guidelines from the ozemalar website and start planning your researcher exchanges to utilise this great opportunity. We hope to see lots of new applications.

Please email Lisa with any news, jobs or events you have for the website (lisa.jones1@jcu.edu.au) or with your comments and suggestions.

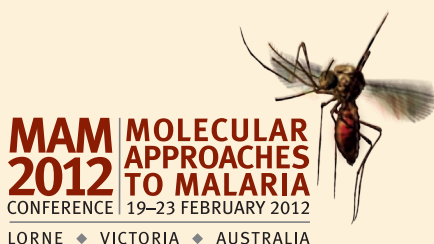
Geoff McFadden
 Convenor, OzEMalaR



Plasmodium falciparum gametocytes
 courtesy Noriko Okamoto, UBC,
 Canada



A healthy red blood cell & a malaria-infected red blood cell courtesy
 Geoff McFadden, University of Melbourne



A bright future for anti-malarials

The malaria parasite kills more than 600,000 people each year, most of them children and pregnant women, while another 225 million people suffer illness as a result of malaria infections. MAM 2012 gave a wonderful platform to the Australian and international scientists who are busy developing new drugs to combat this devastating infectious disease.

Associate Profesor Elizabeth Winzeler of the Scripps Research Institute, USA, reported at MAM 2012 the success of their large screening of potential drugs. "We screened 5697 molecules and found 275 hopeful compounds."

MAM chair and WEHI scientist, Dr Jake Baum, said "The future looks bright with the development of new anti-malarial drugs."

Do mosquitoes get malaria?

Malaria is the most devastating infectious disease in the world. But do the transmitters of the disease, the Anopheles mosquito, get it themselves? The answer, MAM 2012 delegates heard, is species specific.

Professor Elena Levashina of the Max Planck Institute for Infection Biology in Germany and University of Strasbourg in France said,

"We have studied the Anopheles mosquito, the exclusive transmitter of malaria, and have shown that a limited number of species of this mosquito are very efficient vectors of the malaria parasite, *Plasmodium*."

"The reason is because these species of Anopheles mosquito are genetically programmed to prefer blood meals on a human host for egg development, have a high reproductive rate, and a long life span, and these combine to support parasite development," said Professor Levashina.

"The malaria parasites have also developed sophisticated strategies to evade the mosquito immune system, to cope with a changing environment and to increase the duration of infection in both human hosts and the Anopheles mosquito."

The sexual habits of the malaria parasite

"Sex is a necessity for the malaria parasite, like all life," said Professor Geoff McFadden of the University of Melbourne and convenor of OzEMaLaR. "It seeks to avoid inbreeding and weakness. We can use knowledge of this to find out when and where the parasite is vulnerable."

The research team led by Dr Matthew Dixon and PhD student Megan Dearnley of the Bio21 Institute at the University of Melbourne, has published some interesting findings in the Journal of Cell Science. These show how the malaria parasite (*Plasmodium falciparum*) changes into a banana shape before sexual reproduction, a finding that could provide targets for vaccine or drug development and may explain how the parasite evades the

human immune system.

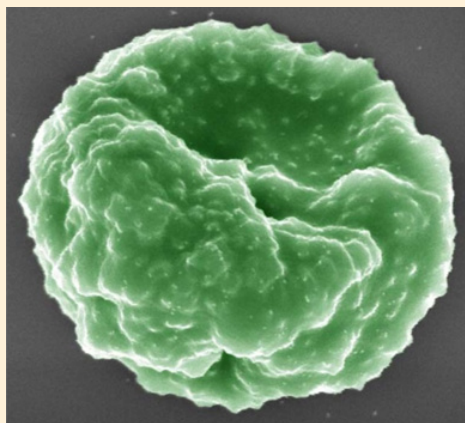
Dr Dixon said the new study solves a 130-year old mystery, revealing how the most deadly of human malaria parasites, *Plasmodium falciparum* performs its shape-shifting.

"In 1880 the banana or crescent shape of the malaria parasite was first seen in the blood of a patient. Using a 3D microscope technique, we reveal that malaria uses a scaffold of special proteins to form a banana shape before sexual reproduction," said Dr Dixon. "As the malaria parasite can only reproduce in its 'banana form', if we can target these scaffold proteins in a vaccine or drug, we may be able to stop it reproducing and prevent malaria transmission entirely."

When in its banana shape, the malaria parasite is passed from a human host to a mosquito where it reproduces in the mosquito gut. The study found that specific proteins form scaffolds, called microtubules, which lie underneath the parasite surface and elongate it into the sexual stage banana shape.

The work suggests that when the parasites are ready for sexual reproduction, they adopt the banana shape so that they can fit through the tiny sinusoidal slits in the spleen. This enables them to avoid the host's mechanical filtering and immune surveillance mechanisms and to survive in the circulation long enough to be picked up by a mosquito and transmitted to the next victim.

The banana shape was revealed in greater detail than ever before by using high-end imaging techniques - 3D Structured Illumination Microscopy and Cryo Electron Microscopy - conducted with the ARC Centre of Excellence for Coherent X-Ray Science.



Scanning electron microscopy of a *P. falciparum*-infected erythrocyte immunolabeled with an antibody against a surface protein. The erythrocyte surface is distorted by protruding knobs. Image by Dr Eric Hanssen (La Trobe University and Bio21Institute) (left)

The gametocyte stage of the malaria parasite *Plasmodium falciparum* expressing a green fluorescent protein chimera of a membrane protein. The cell is co labelled with a blue nuclear stain. Rotations of a super-resolution microscopy reconstruction are represented. The image was generated by Jeff Yeoman and Matt Dixon (La Trobe) and Lynne Turnbull (UTS) (right)

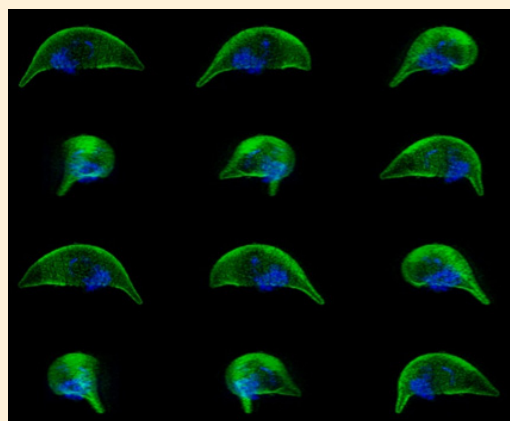


Photo gallery

Molecular Approaches to Malaria Conference, Lorne, February 2012





International Journal for Parasitology highlights

January 2012 issue

Invited Review

Toxoplasma and *Plasmodium* protein kinases: roles in invasion and host cell remodeling

Daniel C. Lim, Brian M. Cooke, Christian Doerig, Jeroen P.J. Saeij

February 2012 issue

A microscopic description and ultrastructural characterization of *Dientamoeba fragilis*: an emerging cause of human enteric disease

Gouri R. Banik, Debra Birch, Damien Stark, John T. Ellis

CattleTickBase: An integrated Internet-based bioinformatics resource for *Rhipicephalus (Boophilus) microplus*

Matthew I. Bellgard, Paula M. Moolhuijzen, Felix D. Guerrero, David Schibeci, Manuel Rodriguez-Valle, Daniel G. Peterson, Scot E. Dowd, Roberto Barrero, Adam Hunter, Robert J. Miller, Ala E. Lew-Tabor

Dual targeting of aminoacyl-tRNA synthetases to the apicoplast and cytosol in *Plasmodium falciparum*

Katherine E. Jackson, James S. Pham, Michelle Kwek, Nilushi S. De Silva, Stacey M. Allen, Christopher D. Goodman, Geoffrey I. McFadden, Lluís Ribas de Pouplana, Stuart A. Ralph

March 2012 issue

de novo analysis and functional classification of the transcriptome of the root lesion nematode, *Pratylenchus thornei* after 454 GS FLX sequencing

Paul Nicol, Reetinder Gill, John Fosu-Nyarko and Michael G. K. Jones

Acylation-dependent and independent membrane targeting and distinct functions of small myristoylated proteins (SMPs) in *Leishmania major*

Dedreia Tull, Joanne Heng, Paul R. Gooley, Thomas Naderer, Malcolm J. McConville

Trichostrongylus colubriformis larvae induce necrosis and release of IL33 from intestinal epithelial cells in vitro: implications for gastrointestinal nematode vaccine design

Nicholas M Andronicos, Jody McNally, Andrew C. Kotze, Peter W. Hunt, Aaron Ingham

State News

New South Wales

The University of Sydney

Laboratory of Veterinary Parasitology @ McMaster Building

At McMaster Building Parasitology Labs, University of Sydney, we have demonstrated a serious pathological effect of myxozoan parasite (*Cystodiscus axonis*) on one of the most endangered frogs in Australia. In collaboration with the Australian Registry of Wildlife Health (Taronga Conservation Society Australia, Australia) we have published these findings in the April issue of the prestigious *Emerging Infectious Diseases* (Hartigan, Sangster, Rose, Phalen and Šlapeta **Myxozoan parasite in the brain of critically endangered frog**). The parasite resides in the brain and not only that it is right in the myelinated axon! (Figure 1).

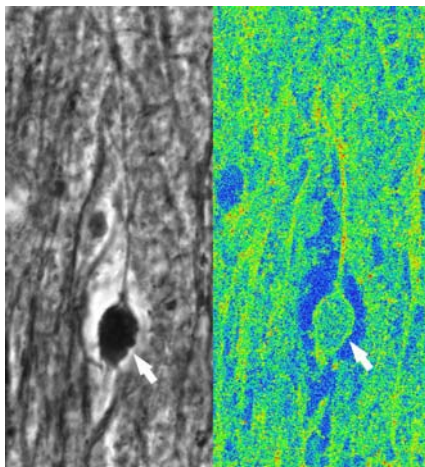


Figure 1 *Cystodiscus axonis* is enlarging a myelinated axon (arrow) visualised using laser scanning confocal microscope in reflection mode. Silver stained frog brain section.

The Yellow-Spotted Bell frog (*Litoria castanea*) was presumed to be extinct, because it has not been recorded since 1973. In 2010, the frog was rediscovered in an undisclosed location in the Southern Tablelands of New South Wales in Australia. The Chytrid fungus (*Batrachochytrium dendrobatidis*) was thought to be the cause for this presumed extinction. The newly rediscovered population of Yellow-Spotted Bell frogs comprises around 100 frogs, implying that this is the most critically endangered frog in Australia. More than three quarters of critically endangered species of amphibians are threatened by infectious disease with several already extinct. Frog myxozoan parasites are yet to be documented to be a cause of population decline, yet frequent presence of these parasites in moribund animals in captivity, including the Yellow-Spotted Tree frog, demonstrates the importance of monitoring parasites in endangered frog populations worldwide.

In February, Neil Portman has joined our group to work on the molecular machinery behind the flagellum assembly. Neil is the recipient of the University of Sydney Postdoctoral Fellowship. Neil completed his PhD in December, 2011 in Professor Keith Gull's lab at the Sir William Dunn School of Pathology at the University of Oxford, UK. He has an excellent track record in molecular biology of *Trypanosoma* flagellum and should not be unknown to Australian parasitologist, because he has written a review article published in IJP (Portman and Gull, 2010. **The paraflagellar rod of kinetoplastid parasites: from structure to components and function**. Int J Parasitol. 40(2):135-48).

Michael Vrieling is our new Honours student exploring resilience of *Trichomonas foetus*. Besides the usual protozoa that Jan looks after, he is now finding an interest in fleas. Jan is now hunting down fleas from any feral animal or wild life.

University of Technology Sydney

The ithree Institute (formerly IBID)

John Ellis and his group. In collaboration with Dr Damien Stark at St. Vincent's Hospital Sydney, the main focus of our group is presently

the study of neglected yet emerging human pathogens that cause gastrointestinal disease in humans, namely *Dientamoeba fragilis* and *Blastocystis* sp.

Joel Barratt recently celebrated the publication of his 16th peer reviewed journal publication since finishing Honours and is planning to submit his thesis by the end of the year. Since attending the 2011 ASP Annual conference held in Cairns July, he has been continuing his studies on developing new diagnostic tests for the clinical microbiology laboratory. He also completed a postgraduate certificate in commercialisation in 2011, and is hoping to use his new found skills in convincing an industry partner to commercialise diagnostics for *D. fragilis*.

Stephanie Fletcher's research looks at the clinical and epidemiological description of enteric infections in Sydney. Stephanie travelled to Malaysia to present a paper on 'Food and water borne protozoa: current considerations for public health' to the *2nd International Scientific Conference*, Port Dickson, Malaysia, 2-4 November 2011, hosted by the Masterskill University College of Health Sciences. She received the Silver medal for her oral presentation. After that she received a fellowship from the World Society of Paediatric Infectious Diseases to attend the *7th World Congress of the World Society of Paediatric Infectious Diseases*, Melbourne, Victoria, Australia, 16-19 November 2011. This included a special one day workshop for Fellows on paediatric infectious diseases with case studies presented from around the world. Stephanie hopes to submit her PhD thesis sometime later this year.

Varuni Munasinghe's research is mainly focused on studying the pathogenicity and immunopathology caused by *D. fragilis*. She has presented her work at a number of conferences during last year. She received a UTS Vice Chancellor's student travel award for the Cold Spring Harbour meeting on microbial pathogenesis and host response, September 13-17th held in Cold Spring Harbour New York, USA. She then received a Global Health Travel Award from the Bill and Melinda Gates Foundation which allowed her to go to the Keystone symposium on "Malnutrition, Gut microbial Interactions and Mucosal Immunity to Vaccines" held in New Delhi, India, November 7-11th hosted by the Bill and Melinda Gates Foundation. She also published her first paper on 'The new advances of the *in vitro* culture of *Dientamoeba fragilis*' in the journal Parasitology.

State News cont...

Gouri Banik has just published a description of the ultrastructure of *D. fragilis* in the IJP; she is most excited about having discovered a virus in *D. fragilis* for the first time. This is a very exciting finding as it extends the distribution of viruses in parasitic protozoa to another inhabitant of the human gut. Now she is getting prepared to present her findings at conferences, as well as wrap up her thesis. She was runner-up in the UTS science research day competition for her work on "*Dientamoeba fragilis* infection in children" published in Parasitology.

Tamalee Roberts presented oral presentations last year at the American Society for Microbiology 111th General Meeting in New Orleans and the American Society of Parasitologists 86th Annual Meeting in Anchorage. She was awarded the Marc Dresden Student Travel Award and the Wellcome- Boroughs Trust Travel Award. This February Tamalee is travelling to Bangkok on a full bursary to attend the Wellcome Trust advanced course in Working with Pathogen Genomes which will help with her PhD studies in parasite phylogenetics. To say that Tamalee has developed a thirst for travel would be an understatement. Tamalee also successfully upgraded her studies from an MSc to a PhD, just so she can keep travelling!

Noriyuki Nagata has published his first paper entitled "In vitro susceptibility testing of *Dientamoeba fragilis*" recently. He has just realised the two year MSc has come and gone so quickly, that he now needs to submit his thesis really quickly! So Nori is busy writing, and we expect another published paper really soon.

Stephen Goodswen has officially survived his first albeit exciting year as a PhD student last year. It was a year of firsts. He completed his first formal research seminar as part of his first year candidature assessment on apicomplexan genomes; he presented his first poster at his first conference – the Asia Pacific Bioinformatics Conference in Melbourne; and he is about to submit his first paper to BMC Bioinformatics. Let's hope he gets his first peer-reviewed publication as well (and all achieved without any lab work!).

We finally said farewell to **Sarwat Al-Qassab** whom returned home to Iraq during 2011, after completing his PhD studies on neosporosis. Sarwat had looked after the lab for several years, and so is missed a great deal. As a Senior Lecturer, he is now learning to cope with juggling teaching and research on neosporosis. We do however now welcome a new Honour's student

for 2012: **Maisie Cao** will be studying genetic diversity in *Dientamoeba*.

John Ellis spent the latter half of 2011 getting to grips with teaching Parasitology again; a welcome return after nearly 10 years. As always Graham Robertson and Marilyn Katrib ran the prac classes, and Damien Stark (St. Vincents), Rogan Lee (Westmead) and Peter Cox (Sydney Water) helped out as well with guest lectures. The new look subject got fantastic student feedback reviews, so everyone is happy. John also managed to go to the Functional Genomics and Systems Biology conference run at Hinxton Hall by the Wellcome Trust in December 2011, where surprisingly there was no parasitology!

Western Australia

WAAVP 2013

The WAAVP local committee is now meeting regularly. We have a website which is slowly being populated
<http://www.waavp2013perth.com/>

The conference will be held concurrently with the annual **ASP conference, 25-29 August 2013**. The venue will be the Perth Convention and Exhibition Centre, and the conference managers are EventEdge & Congress West. ACIAR have agreed to be a major sponsor and as such will be the conference 'Partner'. We have also lined up our three 'Platinum' sponsors who are prominent animal health companies. Our sponsorship document will shortly be sent to potential gold and silver sponsors. An International Scientific Program Advisory Group has been appointed, and we are in the process of developing the program.

Lisa Jones and **Nick Smith** visited Perth before Christmas and attended meetings of the local organising committee and conference managers to discuss how the WAAVP and concurrent ASP meetings will interact.

Murdoch University

Stephanie Godfrey just joined Murdoch. Stephanie has been awarded a four year DECRA Fellowship for her project 'Using social network models to understand the factors driving parasite transmission in bettong populations' in which she will focus on the transmission of trypanosomes in woylies and boodies. Stephanie completed her PhD last year with **Mike Bull** at Flinders and we are delighted she will be joining the group, as are our collaborators in the Department of Environment and Conservation and the Australian Wildlife Conservancy.

Alison Hillman has just started a PhD at Murdoch. Alison completed her veterinary science degree at Murdoch in 2005 and subsequently was in practice as well as a volunteer veterinary surgeon with "Vets Beyond Borders" in Sikkim, India with the Anti-Rabies and Animal Health (SARAH) Program, before completing a Masters at the Royal Vet College and London School of Hygiene and Tropical Medicine in epidemiology. Alison will be investigating parasite zoonoses in wildlife in an urban setting and taking a 'one health' approach using spatial analysis and other epidemiological models.

Wan Hon Koh has completed all her experimental work for her PhD and will start her thesis writing back home in Taipei. We will be sorry to see Wan go but are quite sure she will soon return. Wan has undertaken a challenging, novel program of research understanding how *Cryptosporidium* life cycle stages interact with biofilms. Wan's results are truly amazing and add more insights to the remarkable life cycle of *Cryptosporidium*. Wan's study has only been possible with the expert support and collaboration of co-supervisor **Peta Clode** from the Centre for Microscopy, Characterisation and Analysis at UWA.

Congratulations to **Hanna Edwards** (nee Borowski) and husband **Scott** on the arrival of baby number 3 - Luke - only a few weeks after Hanna was awarded her PhD! Congratulations also to two of honours students from last year, who were both awarded first class degrees; **Stefania Basile** for a study of *Lernaea cyprinacea* on native freshwater fishes and **Mikayla Morine** for the molecular characterization of *Cryptosporidium* spp. in ornamental fishes.

State News cont...

We also welcome a visitor to Murdoch. **Felicity Smout** drove from JCU via Sydney and arrived in late January for a 6 month visit. During this time she will analyse a 'pile of poos' from dingoes and dogs in north Qld and develop appropriate molecular procedures for identifying species of hookworm, *Giardia* and other parasites.

Queensland

UQ-QAAFI and DAFF Livestock Biotechnology Group (UQ St. Lucia Campus)

What is DAFF you may ask ? Well there was a Qld State election and now we have Department of Agriculture, Fisheries & Forestry (to replace DEEDI, formerly DPI :-). We are the same group now based at St. Lucia with a mix of UQ and State government staff. **Jess Morgan** and **Rosie Godwin** have been collecting and cycling geographic isolates of *Eimeria*. They have been kept busy as the prevalence of poultry coccidiosis around Australia has been high for the past couple of years. They will be presenting some of their results at the 2012 Australian Veterinary Poultry Association conference at the Gold Coast in late May. Yay the rest of us (**Ala, Manuel, Sandy, Anthea, Bronwyn, Cathy**) have finished our tick cattle trials for now much data analysis, reporting and paper writing has been happening. We are looking forward to the 6th International Veterinary Vaccines and Diagnostics Conference in Cairns late July. **Manuel** has been busy working with 3 students on all things tick (cattle and paralysis) and yeast expression. Our team has 2 other Honours students respectively working on *Eimeria* sp. and *Babesia bovis* strain differentiation.

Queensland Institute of Medical Research

Mal Jones has finished his first semester teaching and is preparing for a visit to Vietnam in June. While there he will meet with colleagues in Hanoi and all spend a week teaching parasitology to students in the Veterinary School at Nong Lam University in Ho Chi Minh city. His week of teaching coincides (unfortunately) with the Launceston meeting so he will miss an ASP meeting for the first time in many years, but he is looking forward to opportunity to collect some parasites while there (and the slightly warmer weather!).

James Cook University

Queensland Tropical Health Alliance Laboratories, Cairns

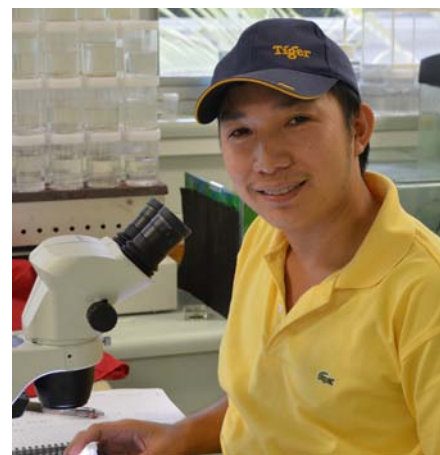
We were all delighted that **Alex Loukas** is one of the 2012 recipients of a prestigious Fulbright Senior Fellowship; Alex will be travelling, with his family, to the United States later this year, where he will spend 3 months working with Professor Phil Felgner at the University of California, Irvine, to further his work on developing a hookworm vaccine and anti-inflammatories based on hookworm proteins..

The first part of the year has been full of staff comings and goings for the QTHA Labs in Cairns. We were sad to farewell **Nathalie Ruyssers** (Postdoctoral Fellow), **Clare Omodei** (Mosquito Research Facility Manager), **Colette Godfrey** (Laboratory Manager), and **Jason Mulvenna** (Team Leader) but delighted to welcome **Norelle Daly** (ARC Future Fellow), **David Wilson** (Senior Research Officer), **Javier Sotillo** (Visiting Fellow from Spain), **Robert Walker** (Postdoctoral Fellow), **Cinzia Cantacessi** (Postdoctoral Fellow), **Edwin McBride** (Honours student), **Sattrachai Prasopdee** (Visiting Research Student from Khon Khen University, Thailand), **Sujittra Chaiyadet** (Visiting Research Student from Khon Khen University, Thailand), **Luke Carroll** (Research Student), **Alvaro Eiras** (Visiting Professor, Federal University of Minas Gerais, Brazil), **Tracy**

Edwards (Laboratory Manager) and **Beata Urban-Klein** (PhD student). Since opening in July 2011, the QTHA Laboratories have grown at a phenomenal rate from around 20 to over 50 people. JCU has recognised this and the laboratories are at the core of two new JCU Research Centres: The Centre for Biodiscovery and Molecular Development of Therapeutics (Directed by **Alex Loukas**) and The Centre for the Biosecurity of Infectious Diseases (Directed by **Scott Ritchie** and **Wayne Hein**).

Townsville campus

The *Marine Parasitology Laboratory* welcomes two new Masters students - **Dinh Hoai Truong** and **Alejandro Trujillo Gonzalez**. For his research project Dinh Hoai (supervised by **Kate Hutson**) has been examining the reproductive biology of *Neobenedenia* sp.. This has involved considerable time and effort in terms of laboratory work - with 72h long experiments and tens of thousands of parasite eggs counted! Dinh Hoai has been rewarded with an excellent dataset and he is looking forward to presenting his exciting findings in Launceston in July. Alejandro (supervised by Kate, **Jairo Posada** and **Constantin Constantinoiu**) recently commenced a research project in the lab investigating the pathology and tropical fish immune response to ectoparasite infections. Alejandro is also looking forward to the ASP conference where he plans to present his previous research on nematode infections of mosquitoes.



New ASP student member **Dinh Hoai Truong** (MSc candidate) counting monogenean eggs in the Marine Parasitology Laboratory, James Cook University, Townsville.

State News cont...

Honours student **Thane Militz** (supervised by Kate, **Guy Carton** and **Paul Southgate**) recently gave an outstanding pre-completion Honours seminar where he outlined the efficacy of garlic as a control against ectoparasite infections. Meanwhile, Thane has finalised his experimental work and is writing up his Honours thesis. Following Honours, Thane plans to develop flexible teaching programmes for JCU in Singapore and apply for a PhD scholarship.

Alexander Brazenor (supervised by Kate and **David Blair**) was awarded first class Honours for his thesis on the life cycles of two important ectoparasites (*Lernanthropus latis* and *Neobendenia* sp.) infecting barramundi (*Lates calcarifer*) and successfully secured an Australian Postgraduate Award (APA) – Congratulations **Alex**! Meanwhile he has submitted his first manuscript from his Honours research and is working on the final draft of a second. Alex is looking forward to presenting the findings of his Honours work at ASP and commencing his PhD research in July.

Kate had a busy semester one coordinating and teaching a new intensive summer subject (*Sustainable Aquaculture*) followed by *Introduction to Aquaculture* in Townsville. She is also involved with tutorials for the first year veterinary science students (on parasites, of course). She is looking forward to semester two where she will focus on her research profile which has been recently aided by a successful state government grant as part of the Queensland Tropical Agri and Aquatic Sciences (QTAAS) partnership being built between James Cook University (JCU) and the Department of Agriculture Fisheries and Forestry Queensland (DAFFQ; previously the Department of Employment, Economic Development and Innovation (DEEDI)).

Northern Territory Menzies School of Health Research

Waji Mahmood of the **Scabies Team** worked extremely hard in the last six months of 2011 and submitted his PhD thesis in December. The downside of this was that we then had to farewell Waji from Darwin, as he returned to Pakistan for the first time since arriving in Australia three and a half years earlier. Nevertheless, we sent him off in true Australian style with a "scabies mite pavlova" to celebrate his achievements during his time with us.

The "**Beating Scabies and Strongyloides Project**" is entering its final phase of sample collection with the case follow up phase of the second community wide drug administration. The project has been going extremely well and has significant input from a range of community members, including many who work for the project. The data analysis will occur over the next six months after which the impact of the drug administration on both the prevalence and re-infection rate of scabies and strongyloidiasis will be revealed.

The **Menzies Malaria Team** welcome the arrival of two new Research Assistants, **Peta Tipping** and **Steven Kho**. Peta completed Honours at Deakin University and Steven completed Honours at The University of Western Australia. Both recently relocated to Darwin to join our dynamic and friendly group at Menzies and appreciate the tropical weather and lifestyle here in Darwin.

Grennady Wirjanata finished his Honours project on the "Development and validation of novel quantification methods for *ex vivo* drug susceptibility testing in *Plasmodium*" in October 2011. In turn, he was successful with his IPRS/UPRS application at Charles Darwin University – Congratulations! This was fantastic news because Gren has now started his PhD project and will continue with his studies on the "Phenotypic characterization of chloroquine resistance in *Plasmodium*".

As our **Malaria Team** at Menzies grows we are even more equipped to train students

(both Honours and PhD) and we welcome all enquiries!.

South Australia South Australian Museum / University of Adelaide

In early 2011 **Lindsay Dent** (School of Molecular and Biomedical Science, University of Adelaide) spent enjoyable and instructive time on sabbatical in the laboratories of **Warwick Grant** (Genetics, La Trobe University) and **Alex Loukas** and **Jason Mulvenna** (Queensland Tropical Health Alliance at the Cairns Campus of James Cook University). Five months of living the other life have since been forced into the distant past by a return to teaching and more familiar ground. However study leave comes highly recommended.

Reshvinder Singh has joined Lindsay this year as a BSc (Honours) student and will be pursuing aspects of the collaboration developed with the La Trobe and JCU teams. Resh will be exploring gene expression in several life stages of *Nippostrongylus brasiliensis*. **Michelle Knott**, formerly a PhD student in Lindsay's lab, had her PhD thesis "Host-parasite interactions in primary and secondary infections with *Nippostrongylus brasiliensis* and *Heligmosomoides bakeri*" accepted with commendation in late 2010. She has since been working on another opus that is sure to be bigger and better. Michelle's daughter Elyssa was born on 20 January 2011, in plenty of time for mum's graduation ceremony and right on Lindsay's wedding anniversary (no excuses for forgetting either event).

Sarah Catalano (University of Adelaide) continues her PhD studies on the dicyemid parasite fauna of southern Australian cephalopods, with focus on the iconic and endemic giant Australian cuttlefish, *Sepia apama*. Upcoming collecting ventures will include a prawn survey in Spencer Gulf (SG), South Australia, to collect *S. apama* (by-catch material) from the southern SG population and examine their dicyemid parasites using molecular and morphological techniques. Sarah has her

State News cont...

fingers crossed for calm weather to minimise sea-sickness! Other cephalopod species in the by-catch will also be examined for dicyemid parasites. Sarah has recently differentiated what are considered to be the same host cephalopod species into subsets based upon respective differences in their dicyemid parasite fauna (via parasite morphological differences and differences in parasite COI minicircle sequence). She is currently preparing for her upcoming trip to Osaka University, Japan (funded by a JD Smyth Travel Award), to formally describe new dicyemid species from southern Australian cephalopods. At Osaka she will work with one of the world's leading dicyemid taxonomic experts, **A/Prof Hidetaka Furuya**. Sarah has also received funding recently from the Lirabenda Endowment Fund to travel interstate to New South Wales and Western Australia to sample *S. apama* from the other populations in southern Australian waters and compare and analyse their dicyemid parasite fauna.

Since **Ian Whittington** (South Australian Museum/University of Adelaide) returned from his ASP Research Network-funded visit in November 2011 to northern Brazil to work on hexabothriid monogeneans with Marcus Domingues, life has been busy. In January, Ian commenced as Head of Biological Sciences at the SA Museum which, so far, has involved numerous meetings about databasing, performance management and several working groups to plan the relocation and storage of the insect collection while new custom-built cabinets are constructed and installed and the space refitted to prevent (or reduce!) access by *Anthrenus verbasci* (carpet beetles). The eventual relocation of the insect collections will occur including some databasing of the nearly 2 million specimens within an 18 month timeframe. Currently, it is unknown how much of these activities will impact on the availability of and access to the parasite collections. Ian has also been involved with identifying flukes and writing reports for the fish health surveys of Gladstone Harbour and collaborating with **Kate Hutson** (James Cook University) on things monogenean. Amidst these activities, Ian has worked on several collaborative papers with colleagues in the UK, in Brazil, in France and completed some parasite descriptions from sharks and rays of Malaysian and Indonesian Borneo with **Leslie Chisholm** (SA Museum). Leslie has now assumed Collection Manager responsibilities for the arachnid collection at the SA Museum for 2 days/week in addition to her 3 days/week Collection Manager duties for the Australian Helminth Collection.

Lutz Bachmann, Professor for Molecular Systematics, Natural History Museum, Oslo, visited Adelaide in February and met with Ian, Steve Donnellan and Terry Bertozzi at the SA Museum to discuss parasite –omics, natural history collections and various potential collaborations. Lutz has done much work on the Russian doll salmon killer monogenean, *Gyrodactylus salaris*, in Norway where he works with Tor Bakke and Phil Harris in Oslo, arguably the centre of the *Gyrodactylus* research universe. Lutz also has broad research interests in ancient DNA, bowhead whale populations and mining natural history collections.

Lesley Warner is swanning off to Hawaii ... AGAIN ...! (all in the name of parasites Lesley - ed)

Tasmania The University of Tasmania

National Centre for Marine Conservation and Resource Sustainability

Barbara Nowak, **Victoria Valdenegro** and **Nicole Kirchhof** travelled to Croatia where they visited tuna farms, met with Croatian fish parasitologist Dr Ivona Mladineo and attended the European Association of Fish Pathologists conference in Split Croatia in September 2011. They delivered a number of oral presentations including two on tuna parasites and one on amoebic gill disease. EAFP conferences coverage of fish parasitology has increased and the content is of high quality. The next EAFP conference is in Finland in 2013.

Laura Gonzalez and **Barbara Nowak** attended International Symposium on Fish Parasitology in Vina del Mar Chile in September 2011, where they both gave presentations. Barbara delivered a keynote address on epidemiology of parasitic diseases. This conference was a really great overview of parasitic diseases in fish and a fantastic opportunity to meet with

fish parasitologists from other countries as well as share some pisco sours with Australian fish parasitologists. The next International Symposium on Fish Parasitology will be in Spain in 2015. Barbara travelled to Antofagasta to visit Prof Teresa Gonzalez and Prof Marcelo Oliva and attend a workshop on aquaculture development at University of Antofagasta, where she gave a presentation on emerging diseases in Australian aquaculture. However, all activities at this university were moved to another location as students were occupying the university buildings. Barbara gave three other presentations on aquatic animal health to research students at University of Antofagasta. This visit was fantastic mostly due to Marcelo's and Teresa's hospitality, which included a few days on Marcelo's farm and a trip to Andes.

We organised fish histopathology workshop in November 2011, which was fully booked, these workshops are run on regular basis and are attended by research students, scientists and diagnosticians who want to learn more about fish histopathology, including parasitic diseases (not surprisingly Amoebic Gill Disease is very well covered in the workshop). Next workshop will be most likely run this November.

PhD student **Laura Gonzalez** has only just returned from Chile, she stayed after the conference to work on parasitic diseases in salmonid culture in Chile. **Nicole Kirchhoff** is finishing her PhD – due to be submitted any day and writing up her papers on tuna health and performance. **Catarina Norte dos Santos** is completing her thesis on blood fluke egg distribution in tuna gills and hoping to start PhD later this year. PhD students **Victoria Valdenegro** and **Mark Polinski** are busy writing their first PhD manuscripts and working long hours in the lab. PhD student **Melissa Martin** has just done her PhD confirmation and is looking to her stay with **Dr Niel Bruce** in Townsville where she is going to learn more about taxonomy of parasitic isopods. We are currently hosting **Prof Chris Secombes** from University of Aberdeen, who is spending 6 weeks of his sabbatical at University of Tasmania. Prof Secombes is sharing his expertise in fish immunology through weekly presentations and informal discussions. His visit is partly sponsored by ASP.

State News cont...

Menzies Research Institute Tasmania

The Malaria Genetics Group) is looking forward to 2012 with a mixture of anticipation and dread as they prepare to move to Macquarie University, Sydney. They will be based at the Australian School for Advanced Medicine. Head of the group and ex-director of the Menzies, **Simon Foote**, has already moved to MQ to take a position as inaugural Dean of Medicine. Three PhD students and 4 professional staff will be moving, along with their research projects once facilities are in place at MQ.

A big congratulations to **Clare Smith** (Malaria Genetics Group) who recently handed in her PhD thesis for examination! The work culminates an excellent 3.5 years for Clare, who has won several awards and scholarships, including most recently as a finalist in the Tasmanian Young Achiever Awards. Clare is continuing to work with the malaria group at the Menzies, to extend her PhD studies and complete a few papers. We're looking forward to calling her "Doctor Clare" very soon.

The malaria group was well represented at the recent Molecular Approaches to Malaria 2012 conference in Lorne, Victoria. In all, we presented two talks and five posters. We all enjoyed the conference immensely. The majority of world leaders in malaria research attended, and many (if not all) of the presentations were extremely good and very thought-provoking. We would like to give our sincere thanks to the conference organisers, especially the co-chairs **Jake Baum** and **Kevin Saliba**, for superbly run and top quality meeting.

ASP 2012 conference

We are really excited to be organising this year ASP conference. Looking forward to seeing all of you in Launceston.

Victoria Monash University

Biotechnology Research Laboratories (BRL)

The BRL would like to welcome two new members of the lab: **Melissa Burke** (formerly of QIMR) joined the lab in August and is slowing adapting to the cooler Melbourne climate. Together with **David Piedrafita** and **Zane Andrews**, she is working on a project to determine the links between parasite-induced inappetence and hunger hormones.

Amanda Peers-Adams, hailing from New Zealand, joined BRL in March. Having successfully navigated her way through IKEA (her home is looking good!), she is now embarking on a PhD with **Els Meeusen**, **Mike de Veer** and **David Piedrafita** which will aim to identify innate immune markers and mechanisms associated with resistance to parasite infection in ruminants.

In other news, **David Piedrafita** is enjoying the fresh country air in his new appointment as an **Assoc. Prof. in the School of Applied Sciences and Engineering at Monash University's Gippsland campus**. However, he routinely visits the Lab to get a good dose of friendly abuse from all.

Hamish McWilliam, **David Piedrafita** and **Els Meeusen** have recently returned from China where, in collaboration with **Don McManus** and **Yuesheng Li** of QIMR, they have been investigating the immune response to schistosome infection in buffaloes. The hope is that these experiments will lead to the identification of more relevant and effective vaccine candidates. All involved report that the dumplings were excellent and that Hamish's snail hunting skills have improved exponentially.

Sarah Preston has also caught the travel bug following her trip to Argentina to attend the World Association for the Advancement of Veterinary Parasitology conference in late 2011. Sarah returned from her trip having formed strong connections with other students working in similar fields particularly those at the Moredun Research Institute (Scotland) which specialises in animal health. She also has a new found appreciation for South American food and slightly burnt coffee.

That's all in BRL news for now. Stay tuned for the next instalment.

Walter and Eliza Hall Institute

Congratulations to **Justin Boddey** has been notified that he has got a Human Frontiers Program grant.

Alan Cowman's group just published a paper identifying the first factor controlling the activation of var genes in *P. falciparum*:

PfSET10, a *Plasmodium falciparum* methyltransferase, maintains the active var gene in a poised state during parasite division.

Volz JC, Bártfai R, Petter M, Langer C, Josling GA, Tsuboi T, Schwach F, Baum J, Rayner JC, Stunnenberg HG, Duffy MF, Cowman AF.

Cell Host Microbe. 2012 Jan 19;11(1):7-18.

Jake's group has just published a paper describing the actin spatial dynamics in the malaria parasite lifecycle:

Malaria parasite colonisation of the mosquito midgut - Placing the *Plasmodium* ookinete centre stage.

Angrisano F, Tan YH, Sturm A, Baum J.

Int J Parasitol. 2012 Mar 3. [Epub ahead of print]

Chris Tonkin was recently awarded the ASBMB's BioPlatforms award. Chris also featured in an article in 8 May 2012 *Good Weekend* (see end of this news section).

Justin Boddey has just been promoted to lab head - he will run the insectary, and work on malaria liver-stage virulence and pathogenesis.

State News cont...

GW Starters



CAT MAD

THE "CRAZY CAT LADY" IS A PET STEREOTYPE OF COMEDY WRITERS, BUT COULD SHE BE BASED ON FACT? BY LISA PRYOR.

SOMETIMES A SEED OF TRUTH LIES WITHIN a stereotype. In the century before last, long before the Mad Hatter was immortalised in *Alice's Adventures in Wonderland*, hat makers really did go crazy, poisoned by mercury, a part of the felt-making process. Breathing in the heavy-metal vapour day after day, they were left with twitches and mood swings.

Then there is the modern stereotype of the Crazy Cat Lady, embodied by a recurring character of the same name in *The Simpsons*. True to the archetype, she lives alone with many cats. Wild-haired and raving, knee deep in the creatures, she flings them at strangers while screaming gibberish. Could it be true that cats send people crazy?

To understand how cats could bring about mental illness, we must consider an obscure parasite that makes its home in the guts of cats, a single-celled organism called *Toxoplasma gondii*. Under a fluorescence microscope, it is deceptively beautiful, a delicate red petal marked with a swirl of blue and tipped with acid yellow.

Though its appearance is attractive, its personality is not. A tricky, slippery kind of character, it enters the human body unannounced. The victim may experience the kinds of symptoms easily passed off as a mild flu: fatigue and fever, swollen glands, sore muscles and an aching head. These symptoms usually resolve without any intervention, says Dr Chris Tonkin of the Walter and Eliza Hall Institute of Medical Research. But after the symptoms fade, the parasite lives on. Like creatures in a microscopic horror film, cysts bubble

up in muscle tissue and in the brain, without the victim ever knowing. The cyst form of the parasite "likes living in the [central nervous system] and muscle tissue, and here they will reside for life", Tonkin says.

You may not have heard of "toxos", but there's a good chance that it is lurking within your body. Based on studies of pregnant women, it is estimated that between 23 and 35 per cent of the Australian population has been infected.

But so what? The infection has generally not been considered worth worrying about, unless you have problems with your immune system or are pregnant. Toxo, like food poisoning from listeria, looms large as a worry for pregnant women because the infection can cause deformity or miscarriage, so pregnancy manuals remind women to avoid Kitty's litter box until the baby is born.

So far, so settled, as far as science was concerned. Until speculation started to gain momentum in the US, the UK and beyond that this tiny parasite might cause some cases of schizophrenia.

Evidence about the mind-bending powers of *Toxoplasma gondii* has been gathering for some time. As early as 1953, the *American Journal of Medicine* recorded the case of a 47-year-old woman who handled the parasite in a laboratory before falling ill with delusions and hallucinations. She fell into a coma and died, with infection confirmed at autopsy. Toxo has also been blamed for cases of dementia in AIDS patients.

Greater insight into the way the parasite can manipulate mammal brains came last August

when Stanford University researchers published a paper on the powers this tiny protozoan has over rats. This is where the story gets seriously weird.

In order to reproduce sexually in the gut of a cat, the parasite must find a clever way to get there. Hitching a ride on a rat, which is then eaten by a cat, seems a sensible strategy, the only flaw being that the rat is repelled by its predator's smell.

In its typically tricky, slippery way, *Toxoplasma gondii* finds a solution to this problem. The parasite lingers in soil that has been contaminated by cat excrement. Rats ferreting through the soil pick up the infection. Setting itself up in the rodent's brain, it sends the animal wild, turning its usual fear of cat urine into a craving. Drawn to its predator, the rat is eaten, and with it the parasite. (Cats can also get the organism from eating other animals, such as birds, that are infected with the parasite, or from the faeces of other cats.) Those beautiful red petals travel through the digestive system, where they reproduce. The cat defecates, releasing spores from the parasites into the world. Mission complete.

AT THE STANLEY MEDICAL RESEARCH INSTITUTE IN Maryland, USA, scraps of evidence like this are being gathered. It is part of a search for causes of schizophrenia, the mental illness marked by delusions, hallucinations and confused thinking.

Last year, under the leadership of psychiatrist Dr E. Fuller Torrey, the institute gathered 38 studies and found that indeed there appears to be a link. Taken together, the studies suggest that individuals who test positive to the parasite are 2.7 times more likely to be diagnosed with schizophrenia than those who do not.

The institute has noted other similarities between the two diseases. For example, both toxo and schizophrenia most commonly come about in early adulthood, with men getting sick earlier than women; both are more common where individuals are poor and live in crowded conditions. (There are differences, too: toxo infection rates have fallen steeply in the US and Europe in the past 40 years; schizophrenia rates have not.)

Of course, none of this proves that toxo causes schizophrenia. If it turns out it does, it may have something to do with the way the parasite manipulates the neurotransmitter dopamine. Dopamine lubricates the brain's pathways for pleasure and reward, and levels can go haywire in cases of schizophrenia. In September, researchers from the University of Leeds released research showing that *Toxoplasma gondii* can orchestrate raised levels of dopamine in the mammal brain.

One of the researchers, Dr Glenn McConkey, will now consider how the parasite and the immune system interact to cause neurological changes. "We would like to understand why only some infected individuals are associated with neurological problems," he says. He hopes his work might ultimately shed light on other neurological conditions that are related to dopamine, such as Parkinson's disease.

So is it time to give away your cat?

Well, not really. Humans are not necessarily infected by cats directly but via other animals that cats have contaminated. The list of contagious reads as a pageant of clean-freak horror: cockroaches on vegetables, cysts in bloodied meat and the lumps of cat poo characteristic of playground sandpits.

All this research may come to something, or it may not. But if nothing else, it is a reminder that in an age focused on the role of genetics in disease, especially diseases of the mind, it might be the case that infection has a role to play as well. GW

NUMBER CRUNCH

BY JOHN E. CROUCHER*

70%

Proportion of surveyed Australian women who feel that men should foot the bill for a first date of gen Y women: 28%; of gen X women: 19%; baby boomer women: 27%

1292

National road toll in Australia in 2011 (the lowest since 1946); in 2009: 1507

\$US504,000

Amount paid at a 2011 auction for a dress worn by Marilyn Monroe in the 1954 Western movie *River of No Return*

27.6

Estimated average body-mass index of Australian males in 2008; in 1980: 24.9; of females in 2008: 26.9; in 1980: 23.6

\$18.5 billion

Amount spent on gambling in Australia in the 12 months to September 2011; amount of this spent on poker machines: \$11.2 billion; lotteries/skratches: \$2.1 billion



DICTIONARY FOR THE MODERN WORLD

BY JACQUELINE MALEY

BREASTAURANT

A restaurant, such as Hooters, where the waitresses' bosoms are as important as the food, and elicit at least as much salivation from the clientele. Some say that breastaurants are sexist; others retort that they are post feminist.

BROGA

A new type of yoga marketed to men, tailored to the "male psyche", where rock music is played in classes and you are not looked down upon if you can't touch your toes.

Jobs

Project Coordinator - Entomology (South Australian Museum, Adelaide)

The South Australian Museum has been awarded funds to develop new facilities to house its world class entomology collection. The Project Coordinator - Entomology will be responsible for the coordination and assistance with the management, relocation and rehousing of the Entomology collection into purpose built storage units. Working with the project team and a wide range of contractors, the Project Coordinator will be responsible for the day to day management of the project as well as assist with the preparation, identification, incorporation, loan, scientific study and interpretation of items in the South Australian Museum's Terrestrial Invertebrates Collection.

Salary: \$51,801 - \$55,465 p.a (OPS 3)

Employment Status:

Full time, Fixed term 18 months

Contact:

Debbie Churches

08 8207 7477

debbie.churches@samuseum.sa.gov.au

Applications close 28th May 2012.

Project Digitisation Officer (South Australian Museum, Adelaide)

The South Australian Museum has been awarded funds to develop new facilities to house its world class entomology collection. The Project Digitisation Officer will be responsible for the assessment, mapping and migration of extant data sets into a proprietary Collections Management System to ensure the effective tracking of all specimens as part of the Entomology Stores Project.

The Project Digitisation Officer will assist the Project Coordinator - Entomology with the management, relocation and rehousing of the Entomology collection into purpose built storage units. Working with the project team, collections management and conservation staff as well as casuals and volunteers, the Project Digitisation Officer will be responsible for collections tracking and documentation as well as establishing data standards that are compliant with Museum and international best practice. Image and data capture is an integral component of the

Entomology Stores Project.

Salary: \$51,801 - \$55,465 p.a (OPS 3)

Employment Status:

Full time, Fixed term 18 months

Contact:

Debbie Churches

08 8207 7477

debbie.churches@samuseum.sa.gov.au

Applications close 28th May 2012.

Science Team Leader Parasitology – AgResearch, New Zealand

In your role as Team Leader Parasitology you will be an active Senior Scientist leading a team that uses capabilities in parasitology, immunology and molecular biology to develop strategies for the management and control of parasitic diseases of livestock. These strategies include both on-farm and laboratory-based approaches which ensure the relevance of outputs to stakeholders and end-users.

Science Group Leader, Animal Nutrition & Health
Location: Grasslands Campus, Palmerston North
Responsible for: Reports: 15-25 direct reports

Read more : <http://www.leadingscience.co.nz/index>

Contact kitty.burton@agresearch.co.nz if you have any questions about this vacancy

Applications close 30th May 2012.

PhD Scholarship – Murdoch University

At PhD scholarship is available through the School of Veterinary and Biomedical Sciences at Murdoch University to explore the role of host behaviour in influencing parasite transmission in bettong populations. The proposed PhD project is a part of an ARC-funded project, focusing on two species of bettongs, the woylie (*Bettongia penicillata*) and the boodie (*Bettongia lesueur*) in Western Australia. These closely related species share a diverse parasite fauna, yet have contrasting forms of social organisation. The project will use social network models to explore how host behaviour (and in particular, how different forms of social organisation) influences

the transmission of parasites. It will involve a combination of field work (collecting behavioural data on bettongs) and laboratory work (analysing parasite samples). The PhD candidate is invited to formulate their own project within the scope of the broader project to suite their research interests.

Please see <http://www.research.murdoch.edu.au/gradcentre/docs/VBS%20PhD%20Scholarship.pdf> for more information, and the Murdoch Scholarships page <http://www.murdoch.edu.au/Scholarships/> for details on applying.

Applications close 31st May 2012.

Lecturer in Parasitology/ Vector Biology – Imperial College, London

We are seeking to appoint a Lecturer in Parasitology/Vector Biology to the academic staff of the Division of Cell and Molecular Biology in the Department of Life Sciences at the South Kensington campus of Imperial College. We are particularly interested in recruiting an individual who can complement and expand our existing strengths in malaria biology, insect host-pathogen interactions and genetic manipulation of mosquitoes, with a view to developing new approaches to control infectious diseases.

Informal queries about the position can be made by contacting Professor Andrea Crisanti (a.drcrisanti@imperial.ac.uk) or Professor Murray Selkirk (m.selkirk@imperial.ac.uk)

Our preferred method of application is online via our website: <http://www3.imperial.ac.uk/employment> (please select "Job Search" then enter the job title or vacancy reference number, including spaces, NS 2012 068 JT, into "Keywords"). Please complete and upload an application form as directed. Also please include your CV and a statement of research interests (up to two A4 pages).

Should you have any queries about the application process please contact Sandrine Nurboja at s.nurboja@imperial.ac.uk.

Salary: £43,350 - £48,400 per annum

Applications close 31st May 2012.

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